

Heads Up: How to Avoid the **REBATE RUNAROUND**

FAST!
NEW PENTIUM 4
EXCLUSIVE LAB TESTS

PCWORLD



BEST LCD BUYS
BIG & BIGGER! TOP FLAT
SCREENS FROM \$449



New Ways to **ZAP SPAM**
and Tame E-Mail Clutter

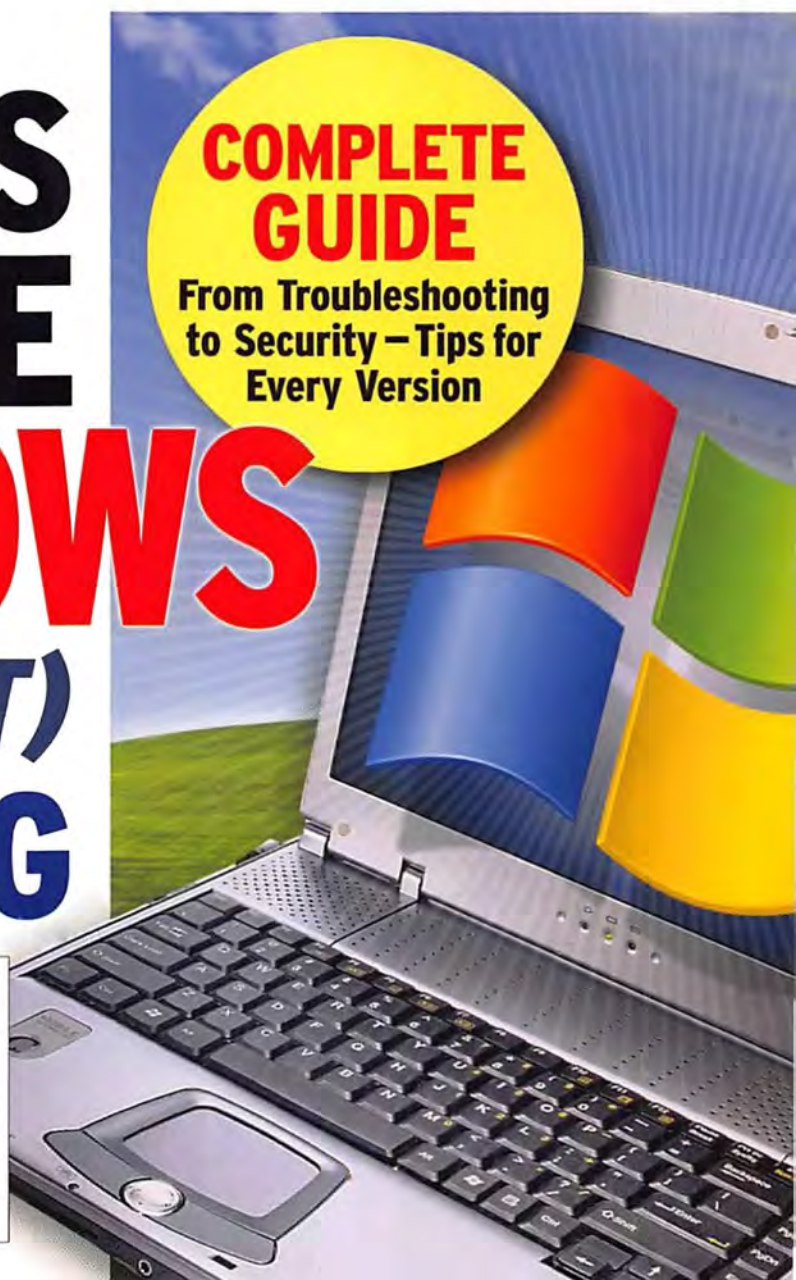
DIGITAL MUSIC Goes Wireless

MARCH 2004 • TECHNOLOGY ADVICE YOU CAN TRUST® • AOL KEYWORD: PCWORLD • WWW.PCWORLD.COM

76 WAYS TO MAKE WINDOWS DO (ALMOST) ANYTHING

**COMPLETE
GUIDE**

From Troubleshooting
to Security – Tips for
Every Version





iTunes.

Where digital music lives.

With iTunes, you get the world's best online music store and digital music jukebox in one place. iTunes lets you preview songs for free, download your favorites for only 99 cents each, easily manage your entire music collection, create custom playlists, burn CDs and sync up with your iPod.™ You can even share your music with other computers in your home – even over wireless networking. And because of iLife's seamless integration, you can effortlessly import your music into iPhoto, iMovie and iDVD projects.



iMovie.

You call the shots.

iMovie, Apple's legendary video editing application, now makes it even faster and easier to create movies like a pro. Trim clips right in the timeline. Use new alignment guides to precisely sync your video and audio elements. Add a soundtrack with music straight from your iTunes library or GarageBand, or use professional sound effects from Skywalker Sound™ (the folks behind *Star Wars* and more). When you're done, just click to send your movie to iDVD, your .Mac homepage or even your Bluetooth device to take with you.



iDVD.

Creativity to burn.

You've created your own movies, photo albums and playlists. Now use iDVD to share them with your family and friends. Start by choosing between 20 new Hollywood-style themes. Add your iMovies. Add albums from iPhoto to create slideshows. Add a playlist from iTunes for the soundtrack. Then use the new DVD Map to get an overview of your entire project. When you're done, burn your masterpiece¹ – up to 2 hours of content – to a DVD that can play on almost any DVD player.



From 9 to 5, there's Microsoft Office. For the rest of your life, there's iLife – Apple's award-winning suite of applications that work seamlessly together so you can do amazing things with your photos, music and movies. Organize and share up to 25,000 of your digital photos with iPhoto™ 4. Download and listen to your favorite songs with iTunes – the world's best online music store* and digital music jukebox. Turn raw video from your digital camcorder into a keepsake movie with iMovie, then burn it onto a DVD to share with family and friends with iDVD.™ And now create your own music – by recording a live performance or using 65 built-in software instruments and over 1,000 professionally recorded loops – with GarageBand,™ the newest member of the iLife suite. It's all just \$49,* or included with any new Mac.



iPhoto.

25,000 photos, zero waiting.

Digital cameras make it easy to shoot tons of photos in no time. Thankfully, iPhoto 4 makes it easy to organize and share up to 25,000 of them. iPhoto's new date folders automatically organize your photos by year. And you can now enjoy them in slideshows featuring new cinematic-quality transitions, and music from an entire iTunes playlist. Share your photos between all the computers in your home – even over wireless networking, email them, order prints, or have them printed in a professional hardcover iPhoto book!



GarageBand.

Compose yourself.

Whether you're a serious musician or just want to sound like one, GarageBand is the easiest way to create music like a pro. Turn your Mac into a grand piano, drum kit or any of 65 built-in software instruments by simply plugging in a USB or MIDI keyboard. Add live guitar and vocal recordings. Then add the rest of the band by choosing from over 1,000 professionally recorded loops. It's like having a complete recording studio right on your Mac.



There's a big difference between

black & black.

That's why the i860 has
one for text and one for photos.

It's a funny thing about ink. Photographs print best with one kind of black, while text prints best with another. Problem is, you can't fit both in a standard four-ink printer. Canon's solution? A five-ink printer. Introducing the new Canon i860: with a pigment-based black for laser quality documents, and a photo-grade black for high-contrast photos. Its speed? The i860 prints out at up to 23 pages a minute in black and up to 16 pages a minute in color* – making it one of the fastest printers in its class. Resolution? The i860 will deliver up to 4800 x 1200 dpi.** If you'd like to learn more, visit us at www.usa.canon.com/consumer, or call 1-800-OK-CANON. Odds are you'll discover that the difference between the i860 and four-ink printers is as great as the difference between black and black.



The i860 Photo Printer

*Up to 4800 x 1200 dpi** - Borderless Printing*

MicroFine Droplet Technology™

5 Individual Ink Tanks - 1600 Nozzles

Canon KNOW HOW®

Camera must be purchased separately. Specifications subject to change. *Print speed based on the highest speed driver mode. Print speed will vary depending on system configuration, software, document complexity, print mode and page coverage. **Ink droplets can be placed with a minimum pitch of 1/4800 inch. Resolution may vary based on printer driver setting. ©2003 Canon U.S.A., Inc. Canon and Canon Know How are registered trademarks of Canon Inc. MicroFine Droplet Technology is a trademark of Canon Inc.

End-User Promotions

FREE LAMP (\$400 value)

PB6200

\$100 Mail-In Rebate

PB6100, PB2220

Valid through 3/31/04



The DLP™ Collection. A projector for everyone.



Micro Series

PB2120 / PB2220
2000:1 Contrast Ratio
1200 / 1700 lumens
SVGA/XGA resolutions
3.8 lbs



Value Series

PB6100 / PB6200
2000:1 Contrast Ratio
1500 / 1700 lumens
SVGA/XGA resolutions
5.6 lbs



Palm Pro Series

PB7100 / PB7200 / PB7220
2000:1 Contrast Ratio
1800 / 2200 / 2500 lumens
SVGA/XGA resolutions
5.6 lbs



Professional Series

PB8120 / PB8220 / PB8230
2000:1 Contrast Ratio
1800 / 2200 / 2500 lumens
SVGA/XGA resolutions
6.9 lbs



Home Theater Series

PE7800 / PE8700
2000:1 Contrast Ratio
800 / 1000 lumens
WSVGA/WXGA resolutions
17.4 lbs



For the ultimate choice in DLP technology projectors, go to the DLP experts—BenQ. Our huge array of projectors features ultra-high 2000:1 contrast ratios, up to 2500 ANSI lumens, and end-user pricing starting at \$899.* Every BenQ projector includes a DLP Chipset that ensures high-quality, digitally based images that won't fade or degrade over time. And with our 3-year warranty and 1st year Xpress Xchange policy, it's fast and easy to get a new projector should you need a replacement. For more details, call 1-866-700-2367 or visit us at www.BenQ.com.

*Price after \$100 mail-in rebate © 2004 BenQ America Corp. All rights reserved. All trademarks & registered trademarks are the property of their respective holders. The DLP™ medallion is a trademark of Texas Instruments.

BenQ

Enjoyment Matters

The FP767.
Ultra-chic physique.



Available in two casing colors:
White-Purple and Black-Silver

Super sharp images. Super sleek style. One amazing LCD Display

Introducing the ultra-modern, high performance FP767 from BenQ, the second largest LCD monitor manufacturer in the world. Featuring astonishing 16ms response time, A+ panel quality, and integrated speakers, you'll enjoy smooth, fluid images with ultra high 260cd/m² brightness and 500:1 contrast ratios. Available in two contemporary designs. Call 1-866-700-2367 or go to www.BenQ.com.

© 2004 BenQ America Corp. All rights reserved. All trademarks & registered trademarks are the property of their respective holders.

BenQ

Enjoyment Matters

Sharing photos is far too much fun to be interrupted by things like virus scanning.

The ZT PRO System with the Intel® Pentium® 4 Processor with HT Technology quickly runs multiple applications at one time. Now you can share more and be interrupted less.

No one likes to wait to have fun. Thanks to ZT PRO System with the Intel® Pentium® 4 Processor with HT Technology, you won't have to. Now you can have the ability to share the music, photos or other files you like while you seamlessly run the background applications you need. Get more performance today with the ZT PRO System with the Intel® Pentium® 4 Processor with HT Technology.



ZT PRO X6248

Microsoft® Windows® XP Home Edition
Intel® 875 Chipset XPC 800MHz FSB (SB75G2)
Crucial 512MB PC3200 (400MHz) Dual Channel DDR RAM
Seagate® 160GB Serial ATA/150 (8MB Cache) Hard Drive
7 in 1 Universal Media Reader & 1.44MB Floppy Combo Drive
128MB ATI RADEON™ 9600 XT w/TV Out & DVI
Sony 8X DVD±RW & CD-RW Universal Combo Drive
Integrated 6 Channels 5.1 Audio, SPDIF In & Out, Firewire 1394, USB 2.0
Integrated Broadcom Gigabit 10/100/1000 LAN
Small Form Factor Aluminum Chassis w/220Watt Power Supply
Logitech® Cordless MX Duo Keyboard & Rechargeable Optical Mouse
Free Microsoft® Works Suite 2003
(Microsoft® Works, Word, Money, Encarta Encyclopedia, MS Picture It, Streets & Trips)
3 Years Limited Warranty
Logitech® Z-640 6 Piece Speakers w/Sub-woofer (Add \$59.00)
1 Year On-Site Service & 24/7 Technical Support (Add: \$55.00)
NEC/MITSUBISHI 17" 1280x1024 Flat Panel LCD (Add: \$429.00)

Intel® Pentium® 4 Processor w/HT-Technology at 2.80GHz (800MHz FSB)\$1,399

Intel® Pentium® 4 Processor w/HT-Technology at 3.0GHz (800MHz FSB)\$1,449

Intel® Pentium® 4 Processor w/HT-Technology at 3.20GHz (800MHz FSB)\$1,499

ZT recommends Microsoft® Windows® XP



FREE SHIPPING!
For system only

ZT PRO X6246

Microsoft® Windows® XP Professional Edition
Intel® 875PBZLK (875 Chipset) 800FSB Mainboard
Crucial 1.0GB PC3200 (400MHz) Dual Channel DDR RAM
Seagate® 240GB Serial ATA/150 (8MB Cache) Hard Drive
(2 x 120GB SATA Hard Drive in RAID 0 Configuration)
16X DVD-ROM
8X DVD±RW & CD-RW Universal Combo Drive
256MB ATI RADEON™ 9800 XT w/TV Out & DVI
Integrated Intel® Gigabit 10/100/1000 LAN
Creative® Labs Sound Blaster® Audigy 2™ w/1394 Firewire
U.S. Robotics® 56K V.92 Fax Modem
Antec Sonata MID Tower Chassis w/380Watt Power Supply
Logitech® Internet Keyboard & Logitech® Optical Wheel Mouse
Free Microsoft® Works Suite 2003
(Microsoft® Works, Word, Money, Encarta Encyclopedia, MS Picture It, Streets & Trips)
3 Years Limited Warranty
Logitech® Z-680 THX Certified 6 Piece Speakers w/Sub-woofer (Add \$279.00)
FREE 1 Year On-site Service & 24/7 Technical Support
NEC/MITSUBISHI 17" 1280x1024 Flat Panel LCD (Add: \$429.00)

Intel® Pentium® 4 Processor w/HT-Technology at 3.0GHz (800MHz FSB)\$1,949

Intel® Pentium® 4 Processor w/HT-Technology at 3.20GHz (800MHz FSB)\$1,999

Intel® Pentium® 4 Processor w/HT-Technology at 3.40GHz (800MHz FSB)\$2,149



BEST DEAL!

ZT PRO X6247

Microsoft® Windows® XP Home Edition
Intel® D865PERLK (865PE Chipset) 800FSB Mainboard
Crucial 512MB PC3200 (400MHz) Dual Channel DDR RAM
Seagate® 120GB Serial ATA/150 (8MB Cache) Hard Drive
16X DVD-ROM & 52x32x52 CD-RW Drive
128MB ATI RADEON™ 9600 XT w/TV Out & DVI
Integrated Intel® Gigabit 10/100/1000 LAN
Integrated 6 Channel 5.1 Audio
U.S. Robotics® 56K V.92 Fax Modem
Enermax X-MEN Black MID Tower Chassis w/350W Power Supply
(See through Windows & Blue Neon Light)
Logitech® Internet Keyboard & Logitech® Optical Wheel Mouse
Logitech® Z-640 6 Piece Speakers w/Sub-woofer
Free Microsoft® Works Suite 2003
(Microsoft® Works, Word, Money, Encarta Encyclopedia, MS Picture It, Streets & Trips)
3 Years Limited Warranty
1 Year On-Site Service & 24/7 Technical Support (Add: \$55.00)
NEC/MITSUBISHI 17" 1280x1024 Flat Panel LCD (Add: \$429.00)

Intel® Pentium® 4 Processor w/HT-Technology at 2.80GHz (800MHz FSB)\$999

Intel® Pentium® 4 Processor w/HT-Technology at 3.0GHz (800MHz FSB)\$1,049

Intel® Pentium® 4 Processor w/HT-Technology at 3.20GHz (800MHz FSB)\$1,149

(984-7687)

866-ZTGROUP

<http://www.ztgroup.com/go/pcw0304>

Special Discount for Education, Government & Corporate
Call Our Experienced Account Managers for
Custom Configurations. Available While Supplies Last.
Quality Assured • 3 Years Limited Warranty •
Life Time Tech Support •



Purchaser is responsible for all freight costs on all return of merchandise. Full credit will not be given for incomplete or damaged returns. Absolutely no refunds for merchandise returned after 30 days. All prices and configurations are subject to change without notice and obligation. Opened software is non-refundable. All return have to be accompanied with an RMA number and must be in re-sealable condition including all original packaging. System's picture may include some equipment and/or accessories, which are not standard features. Not responsible for errors in typography and/or photography. All rights reserved. All brands and product names, trademarks or registered trademarks are property of their respective companies. * Intel®, Intel® Inside, Pentium®, are registered trademarks of Intel Corporation and its subsidiaries in the United States and other countries.

PC WORLD

MARCH 2004
VOLUME 22 ♦ NUMBER 3
AOL KEYWORD: PCWORLD
WWW.PCWORLD.COM

FEATURES

LCD MONITORS

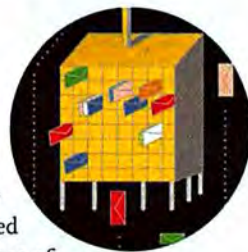
98 Flat Panel Face-Off

Good news: Big LCDs have recently been shrinking—in price. And 17-inch and 19-inch displays support higher resolutions than 15-inches do. We screened 16 models for a clear view of the Best Buy in each size.

E-MAIL

125 Hassle-Free E-Mail

Looking for a better e-mail option? Here are four shrink-wrap packages and four Web-based services that promise ease of use, helpful features, and powerful spam protection. Plus: Cool add-on tools.



REBATES

135 Rebate Roulette

Cash-back offers on tech products are everywhere—but complicated, confusing rules for claiming rebates are leaving some buyers empty-handed. Learn how to play the game and get the money you deserve.

ON THE COVER



WINDOWS TIPS

82 76 Ways to Get More Out of Windows

Even the most seasoned Windows veterans can still learn some new tricks. Our resident Windows wizard, Scott Dunn, has assembled a wealth of tips covering everything from file management and security to networking and account management to interface enhancement, as well as quick and easy speed tweaks.

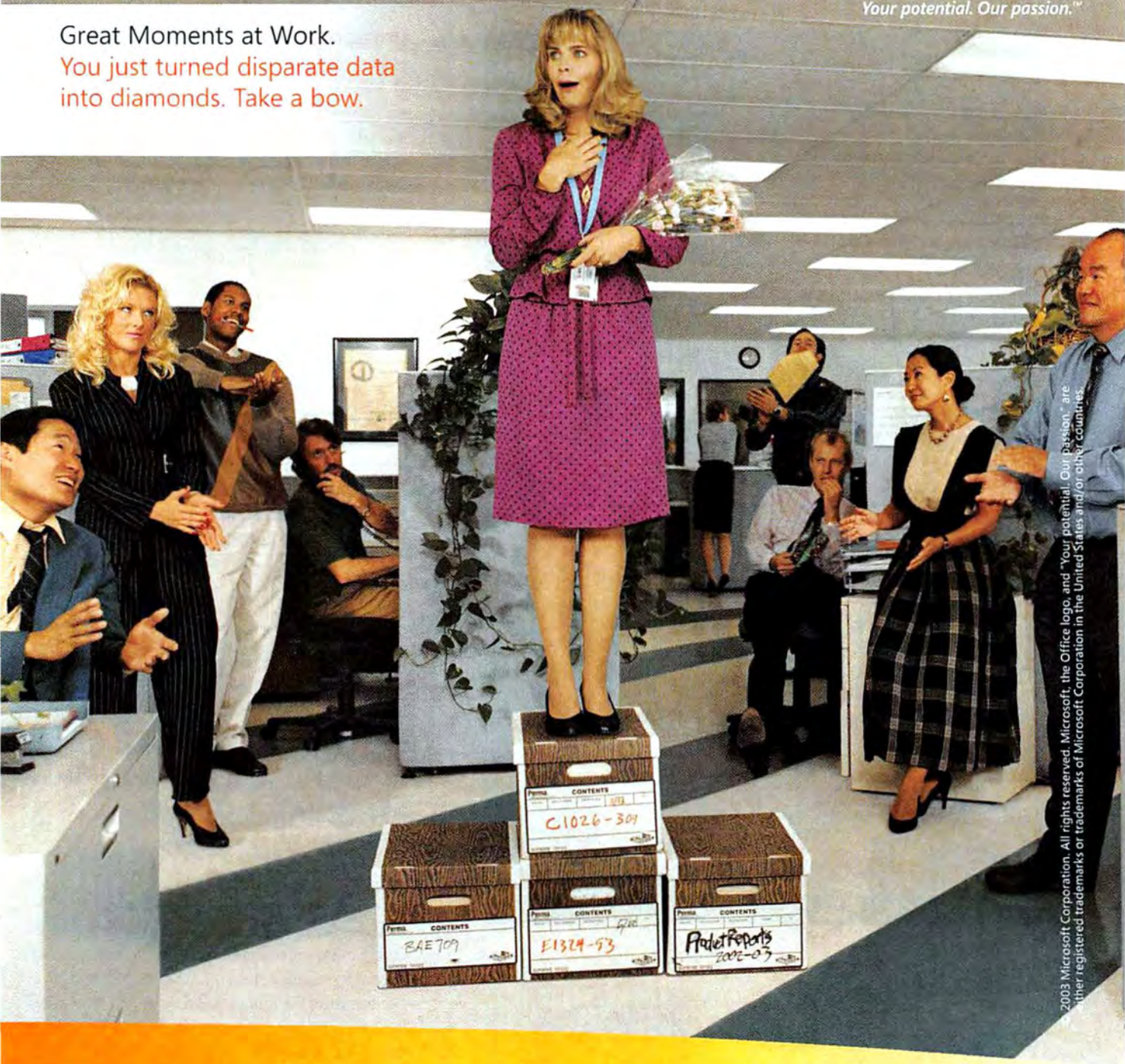


Cover photography by Marc Simon

Microsoft

Your potential. Our passion.™

Great Moments at Work.
You just turned disparate data
into diamonds. Take a bow.



© 2003 Microsoft Corporation. All rights reserved. Microsoft, the Office logo, and "Your potential. Our passion." are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries.

Introducing the new Microsoft® Office System.

It's time to make those ever-growing piles of information less intimidating and more impactful. It's all possible when you can share, update, and track changes on team projects from your own personal site on the corporate intranet. Now brilliance is but a few keystrokes away. Gear up for great moments at microsoft.com/greatmoments



TOP 100

- 150 **Spotlight: Motherboards**
Assembling your dream PC? Start here.
- 156 **Top 15 Desktop PCs**
- 160 **Top 15 Notebook PCs**
- 163 **Top 10 Printers**
- 165 **Top 10 Digital Cameras**
- 167 **More Reviews**



DEPARTMENTS

- 23 **Up Front**
- 41 **Letters**
- 45 **Plugged In**
The newest e-mail scam reels in the unwary.
- 49 **Consumer Watch**
Key questions to ask and steps to take before you try to build your own PC.
- 59 **Home Office**
Ideas for keeping in touch on your next business trip.
- 61 **Bugs and Fixes**
A hole in IE opens the way for identity thieves.
- 188 **Full Disclosure**
Memory card mysteries.



RESOURCES

- 21 **How to Contact PC World**
- 178 **PC World Marketplace**
- 186 **Advertiser Index**



TELL US WHAT YOU THINK

Visit www.pcworld.com/pcwinput and rate this issue—you could win a 3.2-megapixel Nikon Coolpix 3700 digital camera, which currently sells for approximately \$400. You'll need the subscriber number from your mailing label to take this survey online. The site explains the official rules and also how to participate in the drawing if you're not a subscriber. You can enter from February 10 through March 12, 2004.

COMING UP IN APRIL

Find Everything Faster: Save valuable time when you search by going straight to the source.
Mobile Phones: What do the various plans charge you for sending photographs and watching TV?

PC Lockdown: All you need to know to protect your gear, your software, and your network.
Pennywise Printing: Tips for keeping your recurring printing costs as low as they can go.

NEWS & TRENDS

- 24 **Irate Over Ink**
Customers angry over unused ink in printer cartridges may be focusing on the wrong variable.
- 27 **New P4s Offer Mixed Results**
Intel's new E (Prescott) and EE chips outperform their predecessors but still trail Athlon 64 chips.
- 28 **Disc Labeling Simplified**
LightScribe can burn a label on a disc's flip side.
- 30 **Windows XP's Big Security Fix**
Service Pack 2 looks like a must-have update.
- 32 **Where Do Old CRTs Go to Die?**
Recycling yesterday's tech gear can be hard to do.
- 34 **Online Tax Preparation Takes Off**
Low-cost Web-based services appeal to taxpayers.

NEW PRODUCTS

- 66 **Tablet PCs**
Electrovaya Scribbler SC-2010, Gateway M275XL
- 70 **Projector**
Hewlett-Packard Mp3130
- 72 **Digital Camera**
Concord Eye-Q Go Wireless
- 74 **External Optical Drives**
I/O Magic MediaStation 4X Dual DVD±RW, Micro Solutions ReadStor
- 76 **Wireless Headsets**
Cardo Systems Allways, GN Netcom GN 6110, Logitech Mobile Bluetooth Headset
See page 67 for a complete list of new products reviewed.

NEXT GEAR

- 141 **Digital Audio Hi-Fi**
Play digital audio via your home theater system.
- 144 **Handheld Gaming Devices**
Multifunction handhelds challenge Game Boy.
- 146 **Gadget Freak**
DVR-friendly PCs versus the TiVo way of life.

HERE'S HOW

- 168 **Internet Tips**
Use instant messaging comfortably and securely.
- 172 **Hardware Tips**
Tune up your PC in six no-cost, hassle-free steps; create virtual CDs on your notebook's hard drive.
- 174 **Step-By-Step**
Make your PC quieter with a few simple tricks.
- 176 **Answer Line**
Restore speed to a slowing PC; overcome OE 6's attachment blocking; destroy old CDs safely.



NEC-MultiSync LCD1960NX-BK

- > 19" flat-panel monitor
- > Thin-frame design enhances your visual experience with superior screen performance, advanced technologies and comforting design elements
- > Digital and analog inputs
- > XtraView® technology allows for wide-angle views up to 170°

NEC/MITSUBISHI
NEC-MITSUBISHI ELECTRONICS DISPLAY
SEE MORE:

\$699.99
CDW 522077



VERITAS Backup Exec™ 9.1 for Windows Servers

- > Provides comprehensive, cost effective protection for Microsoft Windows server environments
- > Web-based administration console and intuitive graphical user interface with easy-to-use wizards simplify installation and enhance manageability
- > High performance agents and options deliver flexibility to quickly protect desktop, laptop and server data

VERITAS™

\$579.40
CDW 562979



SimpleTech 256MB Full Speed USB 2.0 Flash Drive

- > Easily store, transfer, and share files
- > Interface speed: up to 12 Mb/s interface speed
- > LED indicates drive is in use
- > All-in-one unit requires no batteries, no external power, and no additional cables or adapters

SimpleTech

\$86.89
CDW 527856



\$39.90 Original Price
-10.00 Mail-In Rebate¹
\$29.90 Your Price

Intuit TurboTAX Deluxe 2003 for Windows

- > Guides you through your return step-by-step with more money-saving advice, help and tips
- > Get ideas from tax experts on video and easily search onscreen IRS publications
- > Return is double-checked for accuracy, audit flags and overlooked deductions so you can have confidence in your return

Intuit

\$29.90
CDW 554482



Exabyte VXA-2 PacketLoader 1x10 1u

- > Two weeks of unattended back-up at single drive pricing
- > 1 VXA-2 Packet Tape Drive, 10 slots, 1.6TB capacity
- > Field replaceable/upgradeable drive
- > Barcode and remote management capability

Exabyte

\$2199.95
CDW 549763



CDW.com • 800.399.4CDW

We have more brands,
so you have more choices.



Xerox Phaser 8400B

- > 24ppm full color/24ppm black and white
- > First page out in 6 seconds
- > 128MB Memory standard
- > Duty Cycle: 85,000 pages/month

XEROX **\$999.00** CDW 563463

¹Receive \$10 mail-in manufacturer rebate when you purchase Intuit Turbo Tax Deluxe 2003 for windows; offer ends 4/15/2004. Customer understands that CDW is not the manufacturer of the products purchased by customer hereunder and the only warranties offered are those of the manufacturer, not CDW. All pricing is subject to change. CDW reserves the right to make adjustments to pricing, products and service offerings for reasons including, but not limited to, changing market conditions, product discontinuation, product unavailability, manufacturer price changes and errors in advertisements. All orders are subject to product availability. Therefore, CDW cannot guarantee that it will be able to fulfill customer's orders. The terms and conditions of sale are limited to those contained herein and on CDW's Web Site at CDW.com. Notice of objection to and rejection of any additional or different terms in any form delivered by customer is hereby given. © 2004 CDW Corporation

CS/PCM/PCW 3/04

Carrying over 1,200 leading technology brands is a lot.
But our shipping people have adjusted.



Offering so many technology products from so many leading name-brands covers a lot of ground. And keeps over 370,000 customers satisfied who need their technology right away. From servers to software to notebooks and beyond, we have what you need in stock and ready to ship.

Learn more. Call or visit us online today.

CDW.com • 800.399.4CDW

CDW

*The Right Technology.
Right Away.*

Svelte Screens, Portable Playmates, and Tempting Tablet PCs

THIN AND LIGHT isn't just for notebooks anymore. This month we examine 17- and 19-inch LCD monitors, look for R&R with the latest handheld gaming devices, and take a hike with two promising Tablet

PCs. Meanwhile, we train our *Top 100* Spotlight on motherboards, and in *Next Gear* we audition digital audio devices. You'll find complete coverage of each product mentioned here on the pages listed below.



- 100 Large, High-Resolution LCDs**
Samsung's 173P (left) and Princeton's Digital SEnergy 914 are two of the affordable (\$750 or less), power-saving flat panels in our roundup.



- 144 Handheld Gaming Devices**
Choose a way to get game (from left): Samsung's VGA-1000, Tapwave's Zodiac 1, Nokia's N-Gage, and Nintendo's Game Boy Advance SP.



- 66 Tablet PCs**
The Gateway M275XL (left) and the ElectroVaya Scribbler SC-2010 use Centrino technology to up the ante on performance and battery life.

THIS MONTH'S CROP OF TOP PRODUCTS

DESKTOP PCs

- 156 Micro Express MicroFlex 3000D ★★★★★
156 Sys Technology Performance 3200+/64 ★★★★★
156 Tangent UltraBox Multimedia PC ★★★★★

NOTEBOOK PC

- 160 IBM ThinkPad R50 ★★★★★

TABLET PCs

- 66 ElectroVaya Scribbler SC-2010 ★★★★★
66 Gateway M275XL ★★★★★

COLOR LASER PRINTERS

- 163 Brother HL-4200CN ★★★★★
163 Xerox Phaser 8400N ★★★★★

17-INCH LCD MONITORS

- 104 Dell UltraSharp 1703FP ★★★★★
104 Eizo Nanao FlexScan L557 ★★★★★
104 IBM ThinkVision L170p ★★★★★
104 Samsung SyncMaster 173P ★★★★★

19-INCH LCD MONITORS

- 101 Dell UltraSharp 1901FP ★★★★★
101 Princeton Digital SEnergy 914 ★★★★★
101 Sharp LL-T19D1 ★★★★★

DIGITAL CAMERA

- 165 Nikon Coolpix 3700 ★★★★★

MOTHERBOARDS

- 152 Asus A7V600 ★★★★★
152 Chaintech 9PUL2 ★★★★★
152 Gigabyte GA-K8NXP 940 ★★★★★
152 Leadtek WinFast K8NW ★★★★★
152 MSI 655 MAX-FISR ★★★★★

CENTRAL PROCESSING UNITS

- 27 Intel Pentium 4 E (Prescott)
27 Intel Pentium 4 Extreme Edition

DIGITAL PROJECTOR

- 70 Hewlett-Packard Mp3130 ★★★★★

OPTICAL DRIVE

- 74 I/O Magic MediaStation 4X Dual DVD±RW ★★★★★

WIRELESS HEADSET

- 76 Logitech Mobile Bluetooth Headset ★★★★★

UPS DEVICE

- 78 APC Back-UPS RS 800VA ★★★★★

DIGITAL AUDIO DEVICES

- 142 Onkyo TX-NR801 ★★★★★
142 Xitel Pro HiFi-Link ★★★★★

HANDHELD GAMING DEVICES

- 144 Nintendo Game Boy Advance SP ★★★★★
144 Tapwave Zodiac 1 ★★★★★

E-MAIL SOFTWARE

- 126 Microsoft Outlook 2003 ★★★★★
126 Mozilla Thunderbird 0.4 ★★★★★

WEB-BASED E-MAIL SERVICE

- 130 Mailblocks 2 ★★★★★

WEB-BASED TAX SOFTWARE

- 34 TaxAct
34 TurboTax

THE HIGHEST-RANKING new products reviewed in this issue of *PC World* are listed above, together with the page number where

each product is reviewed and the star rating it received. See find.pcworld.com/10860 for more about *PC World's* Star Ratings.



WEEKENDS

Made better with MSN

Fitness & Recreation Health News & Events Sports Weather

MSN Search Photo E-Mail Junk E-Mail Guard

Calendar Entertainment Yellow Pages City Guides

MSN Hotmail Golf Gear

Life's better with the Butterfly

msn. 

Come get more done at msn.com

Tech & Gadgets MSN Money Plus MSN Messenger

PC WORLD

NOW ONLINE AT PCWORLD.COM
WWW.PCWORLD.COM ♦ AOL KEYWORD: PCWORLD

ONLINE FEATURES



Hottest Consumer Electronics

find.pcworld.com/40544

Multimedia galore: Find boxes to stream music and video from PCs to the stereo; ever-smaller MP3 players; and lots more.



Your Annual PC Tune-Up

find.pcworld.com/40556

It's time to get your PC into shape: Check it over and clean it out. Our expert guidance will help get your system firing on all cylinders.

FEATURED COLUMN



Left to My Devices

find.pcworld.com/40547

Columnist Michael S. Lasky tells tales of gear for gadget-lovers—everything from radio-enhancing devices to a test run of new, wide, flat-screen TVs.

E-MAIL NEWSLETTERS

Weekly Brief

Best stories of the week.

Daily Product Review

Expert reviews, sneak previews.

Steve Bass's Home Office

Get the most from your gear.

Best Buys

Award winners from our *Top 100*.

Daily Downloads

The hottest software on the Web: games, utilities, drivers, and more.

Visit find.pcworld.com/37577 for these newsletters and more.

Visit find.pcworld.com/39908 for regular *PC World* columns.

PRODUCT FINDER

How it works: Powerful search tools find the products you want.

Best prices: Real-time prices drawn directly from vendors.

Merchants: Hundreds of retailers, with ratings from customers.

Services: Simplified order tracking and shipping calculations for all of your online purchases.

Go to find.pcworld.com/37580 for all Product Finder listings.

FIND-IT URLS

TO ACCESS information about any item in *PC World* with an accompanying Find-It URL, enter find.pcworld.com/xxxxx (where *xxxxx* is the appropriate five-digit number) into your browser's location field. You'll jump to a Web page containing the information you want.

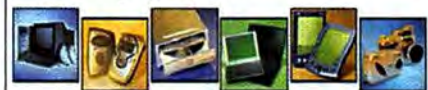
HIGHLIGHTS

Buying Guides

find.pcworld.com/38231

Our Expert Buying Guides, which have been completely updated for 2004, will help you make informed purchasing decisions about products ranging from desktop and notebook PCs to digital cameras, PDAs, and MP3 players.

Expert Buying Guides



Buying Guide Easy-to-read guides to buying all the most popular products. You'll learn what to look for and where to get the best prices.

- [How to Buy a CD-RW](#)
- [How to Buy a PDA](#)
- [How to Buy a Notebook PC](#)
- [How to Buy a Home Theater System](#)
- [How to Buy a Digital Camera](#)

TOP 10 DOWNLOADS

Head to find.pcworld.com/40364 to locate and download these popular files.

- | | |
|---------------------------------|--------|
| 1. ZoneAlarm 4.5.538 | 3666KB |
| 2. Norton AntiVirus 2004 | 85MB |
| 3. System Mechanic 4.0f | 5400KB |
| 4. FreeRAM XP 1.40 | 517KB |
| 5. Browser Hijack Blaster | 394KB |
| 6. Popup Defender 6.02a | 458KB |
| 7. MyUninstaller 1.00 | 24KB |
| 8. AI RoboForm 5.5.4 | 1300KB |
| 9. Fast Defrag Standard 2.02.71 | 496KB |
| 10. Restoration 2.514 | 193KB |

MOST POPULAR PRODUCTS

At press time, these were the top sellers, by category, at *PC World's* Product Finder.

- **Digital Projector**
InFocus X1
find.pcworld.com/40550
- **Wireless Networking**
D-Link AirPlus Xtreme G
find.pcworld.com/40538
- **Digital Music Player**
Apple iPod
find.pcworld.com/40553
- **Ink Jet Photo Printer**
HP Photosmart 7960
find.pcworld.com/40541
- **Tax Software**
Intuit TurboTax 2003
find.pcworld.com/40559



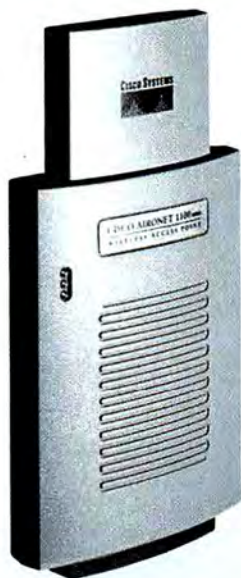
I AM JOHNSONVILLE SAUSAGE.

I AM SO MUCH MORE THAN A HOT DOG. I HAVE VISIONS OF BRATWURSTS BEING GRILLED ALL OVER THE WORLD. WHICH MEANS I HAVE TO FILL MORE ORDERS. I HAVE TO TRACK MORE INVENTORY. BUT I WOULD RATHER SPEND TIME PERFECTING MY NEW TOP-SECRET SAUSAGE FLAVOR.



I AM JOHNSONVILLE SAUSAGE WITH EVERY LINK ACCOUNTED FOR.

I AM A CISCO AIRONET 1100 SERIES WIRELESS ACCESS POINT. I CAN USE WIRELESS TECHNOLOGY TO LINK FORKLIFTS TO PALLETS AND PALLETS TO LOADING DOCKS SO INVENTORY CAN BE TRACKED IN REAL TIME. I CAN TURN A FAMILY-OWNED COMPANY INTO A LEAN, MEAN, SAUSAGE-SELLING MACHINE. **I AM MORE THAN A CISCO AIRONET 1100 SERIES WIRELESS ACCESS POINT.**



To learn more about networking solutions for growing businesses, or to find a Cisco Certified Partner, visit cisco.com/grownow.

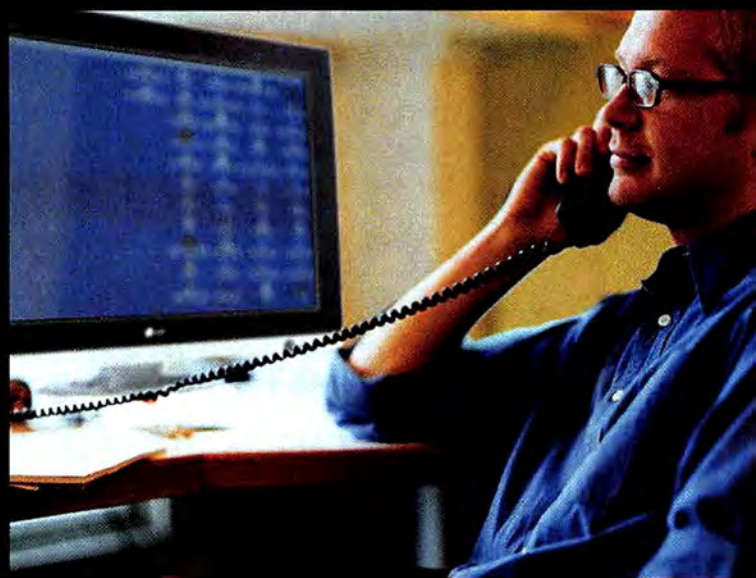
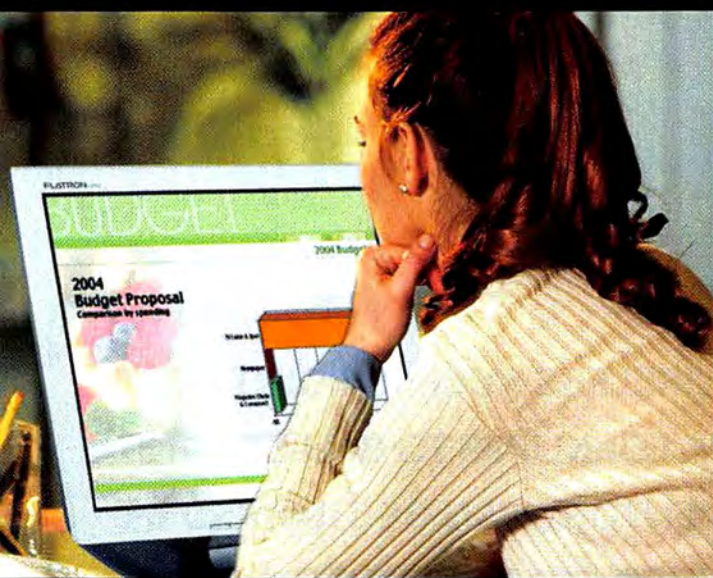
THIS IS THE POWER OF THE NETWORK. NOW.

CISCO SYSTEMS



© 2003 Cisco Systems, Inc. All rights reserved. Cisco, Cisco Systems, Aironet and the Cisco Systems logo are registered trademarks or trademarks of Cisco Systems, Inc. and/or its affiliates in the U.S. and certain other countries. Johnsonville Sausages is the registered trademark of Johnsonville Sausages, LLC in the U.S. and certain other countries. The use of the word "sausage" does not imply any affiliation, relationship, license, or endorsement to, or other company.

LG FLATRON LCDs.
Available in LG, XLG and XXLG.

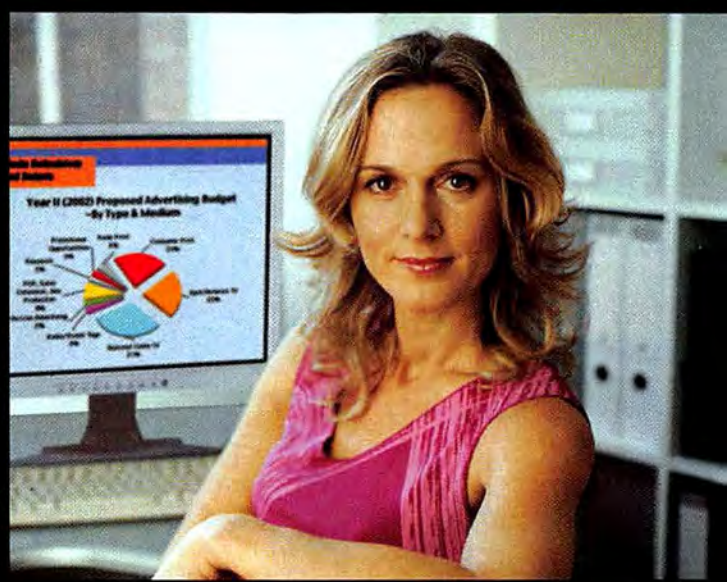
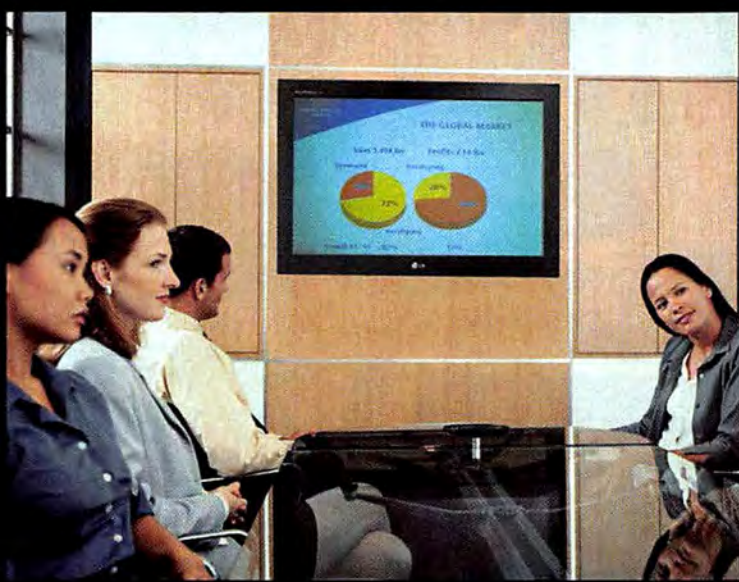


©2004 LG Electronics U.S.A., Inc.

FLATRON®



L2320A-23" Wide-Screen HD/WUXGA LCD Monitor

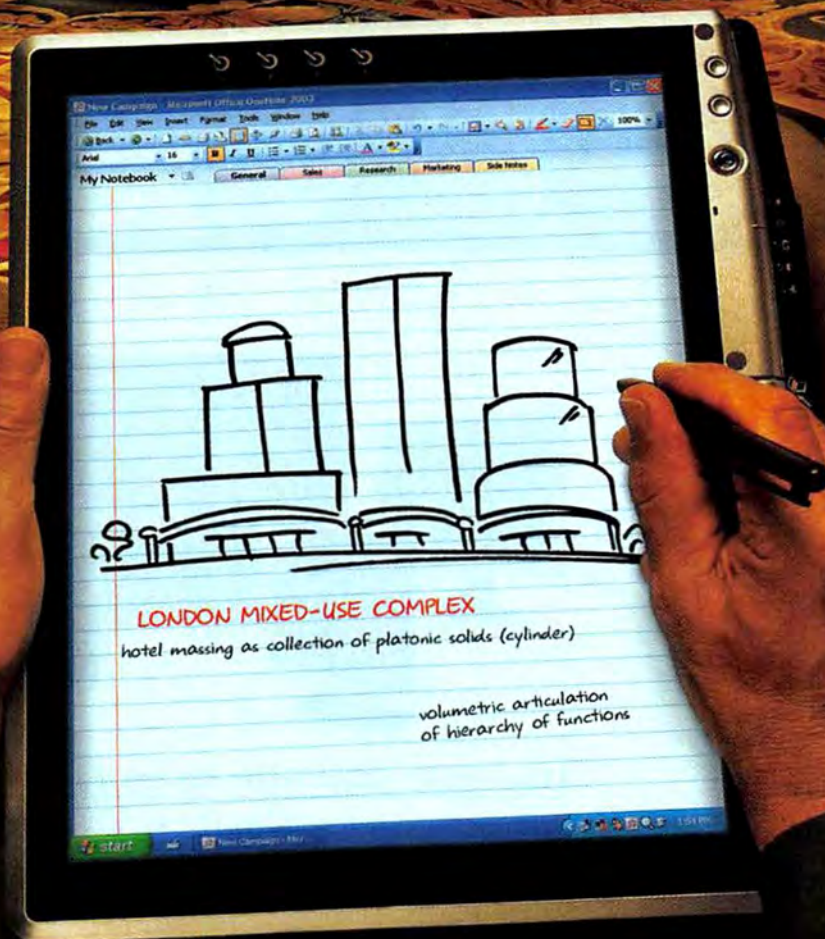


Because one size does not fit all.

With screen sizes from 15" to 30", offering features such as DVI and HD inputs or TV function, there's a perfect LG fit for every home or office. LG LCD monitors offer exceptional quality, innovative features and are all backed by an outstanding 3-year replacement warranty. The view is better with LG.

www.LGUSA.com

Microsoft
Your potential. Our passion.



Ideas often come in a flash. And leave the same way.

It's a notebook PC, and with a flip of the screen it's as simple to use as a pad and pen. It's a Tablet PC. Now when an idea strikes you can sketch it out right on the screen. Plus it runs the full range of Windows® XP compatible applications, including the new Microsoft® Office System, so they can be at your command wherever you go. See it in action at microsoft.com/tabletpc

Microsoft
Windows^{XP}
Tablet PC Edition

PCWORLD

PHONE:
415/243-0500
FAX:
415/442-1891
E-MAIL:
letters@pcworld.com

WORLD WIDE WEB:
www.pcworld.com

AOL KEYWORD:
pcworld

MAIL:
PC World Editorial
501 Second St. #600
San Francisco, CA
94107

EDITOR Harry McCracken CREATIVE DIRECTOR Robert Kanes

EDITORIAL

EDITOR, PCWORLD.COM & EXECUTIVE EDITOR, NEWS Ramon G. McLeod
MANAGING EDITOR Kimberly Brinson
EXECUTIVE PRODUCER Andrew Eisner
EXECUTIVE EDITORS Edward N. Albro, Tracey Capen, Randy Ross
ASSISTANT MANAGING EDITOR Paul-Michael King
SENIOR EDITORS Yardena Arar, Rex Farrance, Rebecca Freed, Karl Koessel, Michael S. Lasky, Aoife M. McEvoy, Alan Stafford, Peggy Watt, Anush Yeghazarian
SENIOR ASSOCIATE EDITORS Grace Aquino, Richard Baguley, Andrew Brandt, Seán Captain, Eric Dahl, Kalpana Ettenson, Tom Mainelli, Anne B. McDonald, Dennis O'Reilly
SENIOR REPORTER Tom Spring
ASSOCIATE EDITORS Eric Butterfield, Liane Cassavoy, Alexandra Krasne, Melissa J. Perenson
SENIOR PRODUCER, DOWNLOADS Max Green
ASSISTANT EDITOR Laura Blackwell
SENIOR COPY EDITORS Stephen Compton, Steven Gray, Tracy Yee, Sally Zahner
ONLINE INDEXER David Lake
RESEARCH EDITOR Kristina Saar
EDITORIAL PRODUCTION ASSOCIATE Henry Pham
EDITORIAL ASSISTANT Erin Kerwin
BUSINESS MANAGER Thomas Peña

ART AND DESIGN

DEPUTY ART DIRECTOR Barbara Adamson
ASSOCIATE ART DIRECTORS Kate Godfrey, Pierre Granier
ASSISTANT ART DIRECTORS Jeff Berlin, Beth Kamoroff
SENIOR DESIGNER Diego Aguirre
ASSOCIATE DESIGNER Marlene Tobias
DIGITAL IMAGING SPECIALIST Rick Rizner

CONTRIBUTING EDITORS

Steve Bass, Scott Dunn, Steve Fox, Judy Heim, Stuart J. Johnston, Anne Kandra, Dan Littman, Stephen Manes, James A. Martin, Stan Miastkowski, Scott Spanbauer, Lincoln Spector, Kirk Steers, Carla Thornton, Dan Tynan

PC WORLD TEST CENTER

TEST CENTER DIRECTOR Ulrike Diehlmann
MANAGER OF BENCHMARK DEVELOPMENT James Motch
SENIOR PERFORMANCE ANALYST Elliott S. Kirschling, Jeffrey Kuta
DEVELOPMENT ANALYST Thomas Luong
PERFORMANCE ANALYST Tony K. Leung
SENIOR TEST CENTER COORDINATOR Julian Weatherby
TEST CENTER COORDINATOR Julio C. Giannobile

NEW PRODUCT ANNOUNCEMENTS

Send press releases via e-mail to newproducts@pcworld.com.

PCW COMMUNICATIONS

PRESIDENT AND CHIEF EXECUTIVE OFFICER Jeff Edman
PUBLISHER Bob Ostrow
SENIOR VP, COO/CFO Vicki Peilen
VP, HUMAN RESOURCES Kate Coldwell
VP, CONSUMER MARKETING Shawne Burke Pecar
FOUNDER David Bunnell
FOUNDING EDITOR Andrew Fluegelman

SUBSCRIPTION SERVICES

MAIL: PC World Subscriber Services, P.O. Box 37571, Boone, IA 50037-0571. (Include a mailing label with correspondence.)
INTERNET: www.pcworld.com/customer
E-MAIL: pcwcustserv@cdsfulfillment.com (Send your full name and the address at which you subscribe; do not send attachments.)
PHONE: In the U.S. 800/234-3498
New orders 800/825-7595
FAX: 515/432-6994

QUESTIONS AND SUBMISSIONS

Send material electronically to the appropriate online address listed below, or mail it to PC World. We reserve the right to edit letters. PC World pays \$50 for published *Here's How* tips and questions; accepted submissions will be acknowledged by payment. Editors cannot guarantee personal responses to all questions.

ANSWER LINE: answer@pcworld.com
BUGS AND FIXES: bugs@pcworld.com
CONSUMER WATCH: consumerwatch@pcworld.com
FULL DISCLOSURE: steve@cranky.com
HARDWARE TIPS: kirk_steers@pcworld.com
HOME OFFICE: homeoffice@pcworld.com
INTERNET TIPS: nettips@spanbauer.com
LETTERS: letters@pcworld.com
ON YOUR SIDE: onyourside@pcworld.com
PLUGGED IN: steve_fox@pcworld.com
PRIVACY WATCH: privacywatch@pcworld.com
STEP-BY-STEP: stan_miastkowski@pcworld.com
WINDOWS TIPS: scott_dunn@pcworld.com

REPRINTS AND PERMISSIONS

You must have permission before reproducing any material from PC World. Write to PC World, Reprints and Permissions, 501 Second St. #600, San Francisco, CA 94107, or e-mail permissions@pcworld.com; include a phone number. To order reprints of your company's editorial coverage in PC World, call 717/399-1900 ext. 135.

BACK ISSUES

PC World issues are available in digital format starting with the July 2002 issue. Go to www.pcworld.com/singlecopy. PC World issues and article copies are available on microfilm and microfiche from UMI, 300 N. Zeeb Rd., Ann Arbor, MI 48106-1346; 800/521-0600.

MAILING LISTS

Occasionally we make our subscribers' names available to other companies whose products may interest you. To have your name excluded from these mailings, send a request along with your mailing label to PC World Subscriber Services, P.O. Box 37571, Boone, IA 50037-0571 or e-mail us at pcwcustserv@cdsfulfillment.com.

Go beyond the notebook PC with the Tablet PC.



It's a notebook PC.



It's a desktop PC.



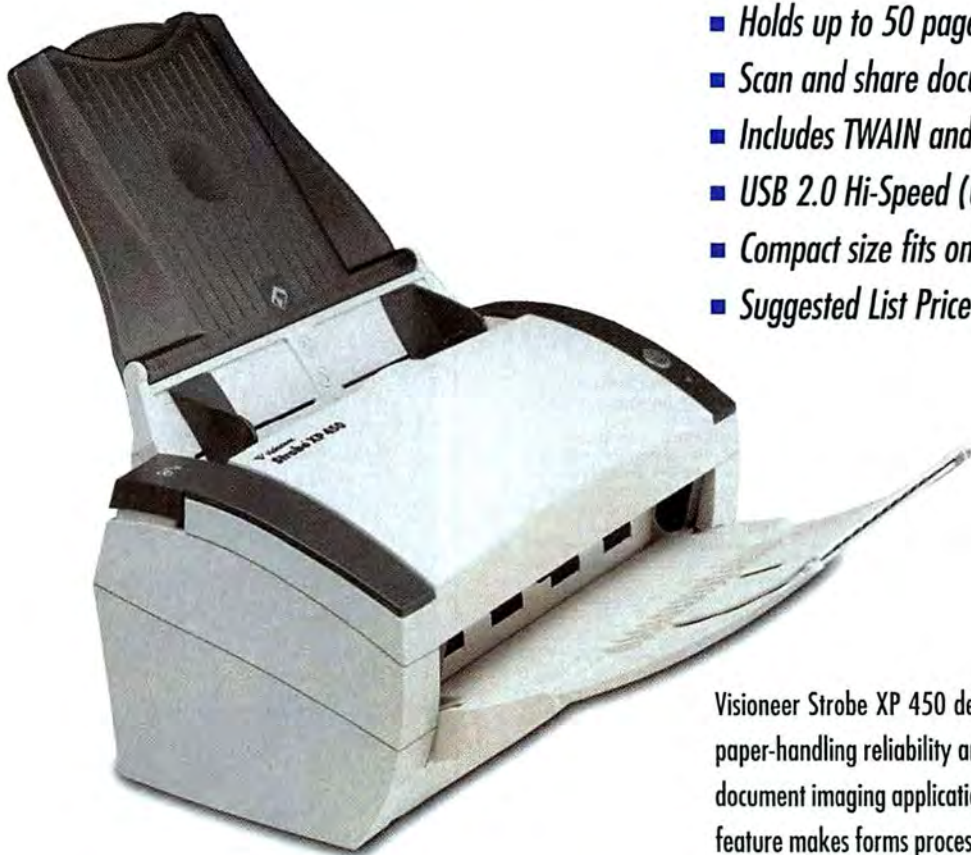
It's a pad and pen.

Microsoft
Windows^{XP}
Tablet PC Edition

Convert documents into PDF files at 20 pages per minute

INTRODUCING

visioneer.
Strobe™ XP 450
Document Scanner



- Captures up to 20 pages per minute*
- Holds up to 50 pages in Auto Document Feeder
- Scan and share documents directly to network drives
- Includes TWAIN and Certified ISIS Drivers
- USB 2.0 Hi-Speed (USB 1.1 Compatible)
- Compact size fits on your desk (5"x12")
- Suggested List Price \$699.99

Powerful suite of bundled software:

- ScanSoft® PaperPort® Deluxe 9.0
- ScanSoft® TextBridge Pro 9.0
- Pixel QuickScan™ 3.0 (demo version)
- ArcSoft PhotoImpressions™



Visioneer Strobe XP 450 delivers speed, image quality, unmatched paper-handling reliability and compatibility with over 250 ISI-based document imaging applications. Its red, green and blue color dropout feature makes forms processing easier than ever. Affordable enough to put on every desk.

Visioneer is a leader in distributed and mobile scanning solutions. InfoTrends Research Group ranked Visioneer as one of the top three vendors in the fastest growing segment of the document imaging scanner market in 2002. And 9 out of 10 customers choose Visioneer for their mobile scanning solution.**



Isn't it time you found out why customers prefer Visioneer?

www.visioneer.com



The Check's in the Mail? Rebate Realities

Sellers can do much more to cut the red tape and long waits buyers endure.

I NEEDED A NEW PHOTO PRINTER, and after some research I discovered a respectable model that carried an attractive \$50 rebate. But a close reading of the rebate terms on the Web (rendered in type so fine it would make stock tables look like billboard text) revealed that I had just one

day remaining to buy the printer and less than three weeks to collect the required paperwork and mail in the forms, including my original receipt.

It's tough to avoid rebates these days, and they seem to be getting more problematic than ever. Are rebates really worth the hassle? For most people, the answer depends on the value of the promised return. But even a thrifty buyer has to doubt whether getting a few lousy bucks back justifies going to all the trouble.

Next to tech support woes, complaints about rebates are the most common reason why *PC World* readers write seeking help from our *On Your Side* columnist Grace Aquino.

Aquino, a senior associate editor who has been our *On Your Side* author for three years, says that most of the complaints she hears about rebates involve checks that are long overdue. "When I contact the company on the reader's behalf, the check usually gets expedited. Overall, I think vendors do hang on to people's money, probably assuming that the customers will forget about it."

This month we examine various aspects of the rebate problem—including how rebates actually work, the roles of fulfillment companies and of vendors, and your responsibilities as a buyer—in "Rebate Roulette" on page 135.

Aquino, who edited the article, notes that certain grounds for rejecting a rebate recur frequently. Common customer



FOCUS ON THE FINE PRINT: Reader advocate Grace Aquino fields hundreds of complaints about rebates.

errors include: submitting an incorrect product code and/or an invalid receipt; improperly following directions in assembling the documentation; purchasing a version of the product not covered in the offer; failing to note the rebate expiration date before sending in the forms; and attempting to claim multiple rebates for multiple products purchased, when only one rebate per person is allowed.

CALL IN THE FEDS

IN SOME CASES, the Federal Trade Commission (which works to prevent fraudulent business practices) intervenes when buyers fail to receive their money from a rebate offer. Before the 2003–2004 holiday season, for example, FTC investigators performed a random sweep of 51

Internet retailers to review their rebate claims. The agency found it necessary to send warning letters to 11 sites—that's more than 20 percent of the sample—demanding that they clarify the type of rebate being offered. Was it in-store or mail-in? What were the conditions for getting the rebate? What was the total price a customer would pay at the time of purchase to receive the rebate? And after how long an interval could customers reasonably expect to receive a check?

"Consumers should be aware of what a company says it's going to do," says FTC senior staff attorney Michael Ostheimer. He says most rebate complaints occur because a company either sends checks late or doesn't pay the money at all.

Incomplete or poorly expressed instructions are another common culprit. For example, Ostheimer recalled, one vendor provided a space on its rebate form for an e-mail address and then declined to pay rebates to people who failed to fill in this address. The instructions, however, had not specified that an e-mail address was mandatory.

There's no reason any of us should have to risk being denied payment on a poorly defined technicality, or wait for months for a check to arrive. Vendors could do more—much more—to list pre-rebate prices clearly, to explain terms straightforwardly, and to pay rebates promptly.

In the end, I didn't buy the photo printer. I was too skeptical about ever getting the rebate. And that kind of response is not good for either buyers or sellers. ■

Contact PC World Managing Editor Kimberly Brinson at mageditor@pcworld.com.

NEWS & TRENDS

EDITED BY RAMON G. McLEOD

INSIDE

- 27 INTEL'S LATEST PENTIUM 4
- 28 BURN YOUR OWN CD AND DVD LABELS
- 30 SP2: WINDOWS XP'S BIG SECURITY FIX
- 32 GETTING RID OF YOUR OLD COMPUTER EQUIPMENT
- 34 TAX SOFTWARE: SHOULD YOU DO YOUR 1040 ONLINE?

IRATE OVER INK

SOME SEETHE ABOUT WASTED INK. BUT WHILE SPECS CAN BE HARD TO FIND, TESTS SHOW MOST PRINTER VENDORS DELIVER ON EXPECTED YIELDS.

BY TOM SPRING

COMPUTER TECHNICIAN Alan Frandsen isn't a conspiracy theorist, but he says his ink jet printer is making him paranoid. Frandsen is convinced that his Epson Stylus Color 480SX printer warns him to replace the unit's expensive ink jet cartridges from Epson long before he's used up all the ink inside.

"When the ink costs more than the printer, you notice these things," Frandsen says. Over the past two years he has chucked dozens of cartridges containing leftover ink that he believes was wasted.

The ink may have gone unused, but tests done for PC



TESTERS: Brian Hilton (left), Nabil Nasr (center), and Steve Raig of RIT's Imaging Products Laboratory, who test ink jet cartridge yields.

World show that most ink jet vendors—at least those who told us what numbers their customers should expect—did deliver on promised quantities of printed pages (page yields).

Nevertheless, the sense that they may not be getting all

they paid for is very real for some ink jet owners.

With the price of replacement ink cartridges running as high as \$50 an ounce—on a par with fine imported Russian caviar—Frandsen and other unhappy ink jet customers are

crying foul. And in some instances, consumers are going to court in the belief that printer companies are pressuring them into buying more ink than they really need.

This perception is aggravated if a printer stops functioning when a cartridge's ink level dips to a certain level (as is the case with some Epson and Hewlett-Packard printers), denying users the option of continuing to print after the driver software warns that it's time to replace the cartridge.

Printer companies say that they do this to benefit the customer, because trying to print with cartridges containing too little ink would risk damaging the printer and would produce unacceptably ugly prints.

"If people try to bleed their cartridge dry, then there is a high risk of customer dissatisfaction with printouts and a good chance of causing irreversible damage to the printer," says Pam Barnett, Epson's public relations manager.

Complaints that cartridge

buyers are not getting their money's worth are less easily answered, however. Most ink jet printer companies simply won't say how much usable ink is in their cartridges.

Epson says that it prices cartridges based not on the volume of ink they hold but on how many printed pages they produce. Epson publishes this page yield information online, but some other companies don't tell how many pages their cartridges will produce, or make this information difficult to find.

To investigate customers' complaints that printers prematurely force ink cartridge replacement, we enlisted the assistance of the Imaging Products Laboratory at the Rochester Institute of Technology, which performs independent testing for aftermarket and name-brand ink cartridge manufacturers.

IPL tested five ink jets—one model from each of five major vendors—to determine the page yields of each printer and to see how much ink remained in the cartridge at the moment the printer stopped printing. For each printer, IPL used up five cartridges per color.

TESTING YIELD

IPL'S TESTS OF a Canon i850 Color Bubble Jet Printer, a Dell A940 Printer, an Epson Stylus C84, a Hewlett-Packard Deskjet 6122, and a Lexmark Z65 Color Jetprinter bore out the perception that the Epson and Canon printers in particular stop printing while a fair amount of ink remains in the cartridge: The Stylus C84 on average stopped printing with 20 percent of the ink left in the cartridge, while the Canon i850 stopped printing with 10

percent of the ink left. Canon says that it generally strives to leave 6 percent of a cartridge's ink as a safety margin. Epson doesn't disclose its target residual ink levels, nor will the company comment on why so high a proportion of the total



Most companies won't say how much usable ink is in their cartridges.

ink is unused when printing stops. The other printers we tested gave low-ink messages but never stopped functioning (see the chart on page 26).

IPL's tests showed that of the printers that provide yield figures, each produced slightly less black than the vendor had estimated—except the Canon, which overdelivered. On the other hand, the Canon, Epson, and HP printers' color yields exceeded vendor promises; Lexmark, meanwhile, did not meet its color yield estimates.

The Epson cartridges we tested have a chip that records the amount of ink used from the cartridge and then alerts the driver software when the

ink level reaches a certain point. The software, in turn, prevents you from printing further until you replace the cartridge. Canon printers use an optical sensor to check on ink levels; Canon's ink tanks don't have smart chips that can prevent printing, so you can continue using the printer even after you receive an out-of-ink warning.

The printheads of the Dell, HP, and Lexmark printers we tested were located on the cartridge, so running their cartridges dry can't harm an integral printer part.

The Epson's printheads are located on the printer, and the Canon's printheads sit on an assembly inside the printer; vendors say continuing to print with either printer after a cartridge ran dry might introduce air bubbles into the printheads and cause costly damage. A limited number of HP ink jet printers (not tested here) use a smart chip technology similar to Epson's and force you to replace the cartridge when the printer decides it's out of usable ink.

IN THE DARK

IN SOME respects, vendors may have themselves to blame for consumer anger over ink costs. Expenditures on ink jet printer consumables—that is, ink and paper—can easily exceed the printer's price within the first year of ownership. But in reviewing how manufacturers present data like page yields per cartridge, we found that important data on consumables is sometimes inconsistent, hard to find, or missing completely.

Epson provides yield information on its Web site and in its product documenta- ▶

IN BRIEF

Product Pipeline



LISTEN UP: Consumers snapping up digital tunes online have a new option for digital audio players. Apple's trend-setting iPod has a slighter, smaller sibling, the iPod Mini (find.pcworld.com/20178). This \$249 device comes in five colors, is 0.5 inch thick, and is about the length and width of a business card. Its 4GB hard drive can store about 1000 songs.



PICTURE THIS: Epson America, best known for its printers, is testing a new product line: big-screen televisions. The company's Livingstation LCD projection TVs, which are slated to ship this month (March), will feature HDTV resolution and—yes—a built-in color photo printer. The hybrid TVs can produce 4-by-6-inch prints and will also include a CD-R/RW drive and slots for popular memory cards, including CompactFlash, Memory Stick, MultiMediaCard, SD, and SmartMedia. The 47-inch model will retail for \$3499, and a 57-inch model is expected to carry a price of \$3999.

tion, but we also found incomplete data on Epson printers at PCConnection.com, as well as contradictory information at OfficeDepot.com. Epson's Barnett explains that this is because in many cases an Epson cartridge can be used in more than one printer, and print yields vary depending on the printer; but Office Depot's Web site permits listing only one yield per cartridge. An Office Depot spokesperson says that the company's Web site lists the mean of the various yields for each cartridge.

HP printers do not include ink yield data in their product documentation, but the information is available at HP's Web site. Canon USA did not supply page yield data in the past, but in response to *PC World's* questions for this article, the company says that it is making the information available to customers on request through its presales or post-sales support lines. Lexmark's policy is not to provide yield data to customers, but to share it with reviewers such as *PC World*. Dell does not provide any yield information.

Dell and Lexmark say that they have chosen not to provide their customers with page yield information because, in the absence of industry-wide standards for testing page yields, such figures would be meaningless. But this means that prospective buyers have no way of trying to calculate their per-page printing costs.

INK LAWSUITS

THE RELATIONSHIP between printer makers and some of their customers may be less than picture-perfect across the board, but it seems particularly acrimonious in the case of

TEST REPORT

PAGE YIELDS: WHAT YOU GET, WHAT IT COSTS

PRINTERS GENERALLY DELIVER the page yields vendors promise, but per-page costs differ widely.

INK JET PRINTER	Page yields per cartridge (stated/actual)					Ink cost per page ¹	
	Black	Tricolor	Cyan	Magenta	Yellow	Black	Color
Canon i850	330/526	n/a	570/603	440/603	380/870	2.7¢	5.3¢
Dell A940	² /424	² /361	n/a	n/a	n/a	7.1¢	9.7¢
Epson Stylus C84	420/370	n/a	450/1610	450/758	450/509	6.4¢	4.8¢
HP Deskjet 6122	833/785	450/534	n/a	n/a	n/a	3.8¢	6.6¢
Lexmark Z65	600/420	450/360	n/a	n/a	n/a	7.1¢	9.7¢

n/a = Not applicable. FOOTNOTES: ¹ Actual. ² Dell does not provide yield data. HOW WE TEST: Page yield data supplied by the Rochester Institute of Technology's Imaging Products Laboratory. Go to find.pcworld.com/40499 for details of IPL's testing methodology. Pricing is based on the OEM list or suggested retail price. For details on ink cost per page calculations, again go to find.pcworld.com/40499.

Epson, which is the target of four lawsuits—three (in California, Texas, and New York) filed by a single New York law firm, and the other (also in California) filed by a different firm. All seek class-action sta-

ters will get 100 printed pages based on its specs, then a consumer will likely get that," says imaging expert Jim Forrest, with Lyra Research. "Yes, there may be some ink left over, but that is by design."

In some respects, vendors may have themselves to blame for consumer anger over ink costs.

tus, and all accuse Epson of manipulating its printer hardware to notify customers that their ink jet cartridges need to be replaced while a substantial amount of ink remains.

The lawsuits reason that—just as a low-oil light on your car's dashboard doesn't shut down the vehicle's engine—Epson's out-of-ink message shouldn't prevent users from printing when the cartridge evidently still holds a considerable amount of ink.

In a written statement, Epson has asserted that the lawsuits it currently faces are "frivolous" and "without merit," and some industry observers evidently share that view.

"If Epson says that consum-

Canon, Hewlett-Packard, and Lexmark have also been targets of consumer grouching over ink, both in the United States and abroad. Indignation overseas in recent years has prompted U.K. and European Union regulators to urge Canon, Epson, HP, and Lexmark to tell consumers more clearly what their long-term printing costs are likely to be.

"Yes, as an industry, we could do a much better job of making page yield and printing costs more transparent," says Boris Elisman, vice president of marketing and sales for Hewlett-Packard. Elisman says efforts are underway to create standards for yield and total cost of ownership.

"Don't hold your breath for standards," says Tricia Judge, executive director of the International Imaging Technology Council, which represents third-party ink manufacturers and vendors. Judge says leading printer makers have been promising standards for the past five years.

Nabil Nasr, director of IPL's test center, believes page yield data for printers should be as readily available as gas mileage information is for new cars. "Consumers are entitled to know," he says, adding that without this information buyers can't compare the costs of operating competing printers.

STANDARDS NEEDED

UNTIL PRINTER firms make apples-to-apples comparisons of ink yields possible, don't count on getting a lot of help in figuring out what you'll be paying for ink jet ink.

Next month, we'll examine ways to keep these and other printing costs down. Meanwhile, if getting a handle on costs is important to you, consider buying from companies that offer the most complete page yield specs, and calculate the per-page costs yourself. ■

FIRST LOOK

NEW P4s OFFER MIXED RESULTS

NEW INTEL CPUs OFTEN OUTPERFORM EARLIER MODELS, BUT STILL TRAIL AMD'S BEST.

SPEED, SPEED, and more speed. High-end computer users demand it, and every new PC processor promises to deliver it. That's certainly true of Intel's latest update to its Pentium 4 line of CPUs, formerly code-named Prescott, which the company has just released along with a 3.4-GHz version of its gaming-oriented Pentium 4 Extreme Edition.

Do these chips live up to their promises? That depends largely on the application you are running, according to preliminary results from a test system with parts provided by Intel. Our results do show, however, that systems with AMD's current high-end gaming chip, the Athlon 64 FX-51, remain the top performers.

Our reference system came

with Windows XP Professional, 1GB of DDR400 SDRAM, a 160GB hard disk, and an ATI Radeon 9800 Pro graphics card packed with 128MB of RAM. We initially tested the system with Intel's new 3.2-GHz P4 3.20E (Prescott) chip (look for the telltale E at the end of chip names to distinguish new chips from older models when similar speeds overlap). Then we swapped in the new 3.4-GHz Pentium 4 EE gaming processor and retested the system.

BY THE NUMBERS

ON PC WORLDBENCH 4, both incarnations of the reference PC outscored systems with older-generation P4 CPUs. The P4 3.2E garnered a 131

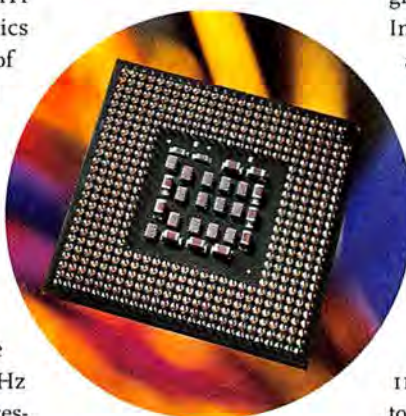
score, beating the 126 score of a comparably equipped Alienware PC carrying the original 3.2-GHz Pentium 4. And the 3.4-GHz P4 EE earned a score of 134, whereas an Alienware PC packing the original 3.2-GHz version of the EE chip turned in a mark of 131. True, these are relatively minor differences, but if you consider that the older Alienware units

configured 2.2-GHz Athlon 64 3200+ ABS unit also carrying 128MB of graphics memory outperformed both forms of the PC, with a score of 139 on PC WorldBench 4. (AMD introduced its new Athlon 64 3400+ as we went to press; watch for forthcoming test results.) Meanwhile, three previously tested Athlon 64 FX-51 PCs, each carrying 256MB of graphics memory, bested the Intel-based test PC, too, with an average score of 142.

In additional tests that compared older versus newer P4 chips, results were mixed (refer to the chart below for results of these and other tests).

INSIDE THE NEW PENTIUM 4

INTEL MADE several changes to the internal architecture of the new P4 E processor. Most important, according to Dean McCarron, principal analyst with Mercury Research, the company raised the L2 cache from 512KB to 1MB. In addition, the new chips include SSE3—new instructions ▶



INTEL'S PENTIUM 4 (Prescott) runs at speeds of 2.8 to 3.4 GHz.

had double the ATI graphics memory, too (256MB versus 128MB), the performance improvement seems noteworthy. Nevertheless, a similarly

TEST REPORT

AMD MAINTAINS PERFORMANCE LEAD

THE LATEST PENTIUM 4 SYSTEMS post better scores than archival AMD in only one of our tests: Musicmatch 7.1.

SYSTEM	Processor	Graphics memory	PC WorldBench 4 Faster	Return to Castle Wolfenstein	Unreal Tournament 2003	TIME (IN SECONDS) REQUIRED TO RUN TEST		
						VideoWave 1.5 (DIVX)	Photoshop 7.0.1	Musicmatch 7.1
Intel P4 EE reference system	3.4-GHz P4 EE	128MB	134	135	259	74	269	137
Intel P4 E reference system	3.2-GHz P4 E	128MB	131	120	247	74	286	160
Alienware Area-51 Extreme	3.2-GHz P4 EE	256MB	131	138	256	81	265	139
Alienware Area-51 Extreme	3.2-GHz P4	256MB	126	127	243	82	269	140
Average of three systems	2.2-GHz Athlon 64 FX	256MB	142	138	276	75	255	152
ABS Awesome 5100	2.2-GHz Athlon 64 3200+	128MB	139	96	269	72	271	165

TEST CENTER FOOTNOTE: Frame rate, in frames per second, at 1024 by 768 resolution with 32-bit color depth. **HOW WE TEST:** See find.pcworld.com/40586 for testing details. On PC WorldBench 4 and frame-rate gaming tests, higher is better. In other tests, lower is better. Bold denotes best score. **CHART NOTE:** All PCs had 1GB of memory and used ATI Radeon 9800 Pro graphics cards.

that should improve the chips' performance on 3D rendering and complex mathematical calculations, he says.

The new chips mark Intel's transition to 90-nanometer production, which should lower the company's manufacturing costs, increase its production yields, and make its chips faster and more efficient. At launch, the chips will be available at speeds ranging from 2.8 GHz to 3.4 GHz.

Because the P4 chips use existing chip sets, you can just drop them into existing 875- and 865-based motherboards (double-check with your PC's vendor to be certain).

YOUR BOTTOM LINE

THE NEW PENTIUM 4 E definitely shows promise, and Intel's latest P4 EE remains a competitive option for gamers and other demanding users. Though you'll pay a premium for the P4 EE over the P4 E, the price difference between the 3.2-GHz and 3.4-GHz P4 EE should be reasonably low. And the price difference between the new P4 E and a regular Pentium 4 of the same speed should be negligible, according to McCarron. Intel has a big incentive to move to the new manufacturing process to keep its own costs down, he

says, so it's likely to encourage consumers to make the move.

If you're not a die-hard Intel fan, however, you might consider AMD's latest chips. The company continues to upgrade its already strong Athlon 64 line with the newly released Athlon 64 3400+. The forthcoming Athlon 64 FX-53 should offer a further performance boost over today's FX-51. And you'll probably save money with the Athlon 64 chip, too, because similarly equipped systems generally run about \$100 to \$300 less than PCs equipped with comparable Pentium 4 chips.

—Anush Yeghazarian ■

OPTICAL DRIVES

SIMPLIFIED DVD LABELING

HP'S INVENTION, DUE IN DRIVES SOON, LETS USERS BURN LABELS.

LOOKING FOR a way to label your multitude of CDs and DVDs neatly and efficiently? HP has come up with an elegant answer: Use the same laser that already burned the data to make a label on the flip side of the disc.

A technology dubbed LightScribe enables drives to burn a silk screen–like, high-contrast label on the upper side of CD or DVD media bearing a special coating. After completing a data burn, users will be prompted to flip the disc over to burn a label onto the other side.

The first LightScribe drives and media are expected to hit the market about six months from now, from leading manufacturers such as Hitachi-LG, MicroVision, Mitsubishi Chemical, Moser Baer India,



DOUBLE-DUTY LASER in a LightScribe burners cuts the disc labels and data.

Sonic Solutions, and Toshiba. HP estimates that a drive that uses LightScribe will carry a premium of about \$10 over the going price today, and that a disc will cost about a dime more than today's discs.

"There are no consumables like ink or ink jet cartridges; the only consumable is the disc itself," says Daryl Anderson, project manager and HP

engineer responsible for inventing the technology as part of a joint effort between HP's Imaging and Printing Group and its Personal Systems Group.

HP's technology differs from Yamaha's DiscT@2, introduced a year ago on the CRW-F1 CD-RW drive (see "Tattoo You: Burn Your Own CD Labels" at find.pcworld.com/40361).

DiscT@2 burns a label on the disc's underside, reducing the amount of data the disc can store; and the exposure of the data side renders it more easily scratched or scuffed.

HP notes that LightScribe is likely to show up eventually on such consumer electronics products as stereo-component CD recording decks and set-top DVD recorders.

—Melissa J. Perenson ■

IN BRIEF

Product Pipeline



MUST SEE TV: At 7 inches deep, the new 61-inch (diagonal) ScreenPlay DLP TV from InFocus is about half the thickness of the slimmest projection TVs currently on the market. What's more, the ScreenPlay TV is lightweight enough to hang on a wall. It uses DLP technology from Texas Instruments. The ScreenPlay TV is expected to ship in the second half of the year.



TRIPLE DUTY: Targus's new \$80 input device is much smarter than the average travel mouse. The three-in-one unit combines the functions of a mouse, a pointer, and a remote control for running projector-based presentations. The Wireless Optical Mouse/Pointer/Presenter operates at 2.4 GHz, a frequency that was previously found exclusively on desk-bound mice. Its receiver is also dual purpose: It's the first small travel mouse capable of recharging itself.



**Surprisingly small.
Incredibly powerful.**



Micro Series PB2120/PB2220
1200/1700 ANSI Lumens
SVGA/XGA Resolution
Starting at just \$999.

BenQ. The world leader in DLP™ projectors. Like the legendary Habanero chile, this beauty packs quite a wallop. Tipping the scales at a mere 3.8 lbs, the 2" high PB2000 projector series boasts a 2000:1 contrast ratio at up to 1700 ANSI lumens and is HDTV compatible. Smaller than a sheet of paper, the PB2000 series is ideal for enjoyment on the road, at home and everywhere in between. And like all BenQ digital projectors, it utilizes the DLP chipset to ensure high quality, digitally based images that won't fade or degrade over time. Light, bright and perfectly portable, the PB2000 series personal digital projector is a delicious way to spice up any presentation.

For more information, visit www.BenQ.com.



TigerDirect.com

PC Mall

© 2004 BenQ America Corp. All rights reserved.
All trademarks and registered trademarks are the property of their respective holders.
Product specifications subject to change without notice.

BenQ

Enjoyment Matters

OPERATING SYSTEM

WINDOWS XP'S BIG SECURITY FIX

OUR TEST DRIVE SUGGESTS SERVICE PACK 2 IS A KEEPER—ASSUMING NO INCOMPATIBILITIES.

IF YOU'VE BEEN longing for a more secure version of Windows, Windows XP Service Pack 2, due in mid-2004, should fit the bill. A response to the electronic attacks that crippled Windows PCs worldwide last year, Windows XP SP2 is a crucial upgrade centered on what Microsoft calls security technologies.

I tested a beta of XP SP2 and came away impressed: With a simple installation (I experienced none of the compatibility hassles that some users encountered with SP1), much-needed security enhancements, and a friendlier front-end to wireless networking, XP SP2 is shaping up as a must-have upgrade for all Windows XP users.

Service Pack 2 will be free, but Microsoft hasn't yet said how it will distribute the pack.

A FINER FIREWALL

ONE COMPONENT of the original Windows XP is the Internet Connection Firewall, but this line of defense is disabled by default and is difficult to find and configure. The version in XP SP2, now renamed Windows Firewall, receives more-prominent advertising and is enabled by default, providing a decent level of network protection even when the system is booting up.

In addition, the new Windows Firewall is more powerful than the previous version, with both inbound and outbound scanning capabilities similar to those of third-party firewalls such as ZoneAlarm.

For example, the first time an application wants to access the Internet, Windows Firewall pops up a dialog box in which you can configure the firewall to grant such access.

Windows XP included wireless networking support but Microsoft then hobbled the feature somewhat with Service Pack 1, forcing users to log on manually to insecure networks (a hassle for most home users). With SP2, the software giant has significantly improved the user interface for wireless networking, simplifying the tasks of browsing, configuring, and connecting to wireless networks. One nice touch is an option that lets you pick the wireless network you always want to connect to when you are within range of it.

In Service Pack 2, Internet Explorer has been updated to include pop-up ad blocking, a key feature that some competing browsers have had for months. And if you do choose to allow pop-ups, Internet Explorer prevents questionable Web sites from altering those windows in ways that might harm your system; this innovation should put an end to the annoying proliferation of

windows at some Web sites.

In another welcome nod to security, Internet Explorer includes a new browser add-on



module that helps deter spyware by controlling how XP installs, configures, and enables add-ons. In the short term, some IE add-ons—for example, various Netscape-style plug-ins—may not work after the upgrade; but even so, the additional security and stability are worth it.

Both Outlook Express and Windows Messenger will now protect you from dangerous file types, isolating attachments so that they cannot attack your system. OE has also been updated with a feature drawn from Outlook 2003: By default, HTML e-mail messages will not download images; this keeps spammers from figuring

out that your e-mail address is valid by having the embedded images phone home. This is a fine feature, but the ability to set up a white-

list of approved senders whose images aren't to be filtered would have been nice, too.

Microsoft has significantly changed Windows Update for use with SP2, placing the most critical software updates into a friendly, new, single-step installation routine. Other software and driver updates are available separately.

Behind the scenes, Microsoft has made many low-level changes to XP in SP2 to make the operating system as secure as possible. A new memory protection system guards XP against common buffer overrun errors that many viruses and worms exploit to compromise the OS. And new networking technologies will help ensure that attackers find fewer vulnerabilities when probing SP2-protected Windows systems over the Internet.

A MUST-HAVE UPGRADE

WINDOWS XP Service Pack 2 may not solve all of your security problems: Hackers are notoriously industrious, and Windows will continue to be their target of choice. It's also too early to tell whether SP2 will generate any woes similar to those that plagued many users who installed SP1.

Nevertheless, this update does provide much of the basic plumbing you need for a better-protected operating system. If the beta is any indication, Windows XP Service Pack 2 will be a winner.

—Paul Thurrott ■

SP2'S GREATEST HITS

- Simple, secure wireless networking
- Stronger firewall enabled by default
- Pop-up blocking in Internet Explorer
- Attachment protection in Outlook Express and Windows Messenger
- Automatic updates

Small Workgroup Office ●

● Branch Office

● Corporate Office

Road-Warrior Office ●

● Home Office

**Take cost out of your business and increase productivity.
No matter where you do business.**

The Brother Advantage

- Comprehensive selection
- Increased productivity
- Lower acquisition costs
- Reduced consumable costs
- 24/7/365 support and service
- Free evaluation program



Desktop Laser Solutions



Color Laser Solutions



Network Printer Solutions



Multi-Function Solutions



Fax Solutions

Brother Printer, Fax and Multi-Function Center® models — designed to increase productivity while decreasing overhead.

Considering that over 94% of Fortune 1000 company employees* work outside corporate headquarters, equipping them with a cost-effective solution is, to say the least, a major challenge.

That's why Brother's Commercial Division is committed to providing superior and reliable imaging solutions that increase productivity while reducing costs. This enables businesses like yours to effectively address critical organizational goals and challenges.

But it is our product reliability, coupled with a responsive nationwide support and service network, that has companies like yours putting Brother at the top of their requisition lists.

Brother's Commercial Division welcomes the opportunity to put our resources to work for you. Contact us today so we can show you how we can positively impact your bottom line while enhancing your performance.

For more information, call 1-866-455-7713.

* Purchase Influence in Larger American Businesses (Erdos & Morgan, 2001).



brother® At your side.

© 2003 Brother International Corporation, Bridgewater, NJ • Brother Industries Ltd., Nagoya, Japan
For more information please call the Brother Fax-Back System at 800-521-2846 or visit our Web site at www.brother.com

**PCWORLD
WORLD
CLASS
2003**



Award Winning HL-5040 Laser Printer

RECYCLING

WHERE DO OLD CRTs GO TO DIE?

PROPER HARDWARE DISPOSAL IS A DILEMMA.

OUTDATED 15-INCH CRT monitors and PCs too poky to run Photoshop are piled in a back room that WorldWide, a Web design shop in Grand Blanc, Michigan, also uses as a kitchen. The company stacks so much equipment there, according to WorldWide co-founder Jerry Kocis, that "I think [employees] started going out so they wouldn't have to eat on top of old keyboards and other stuff."

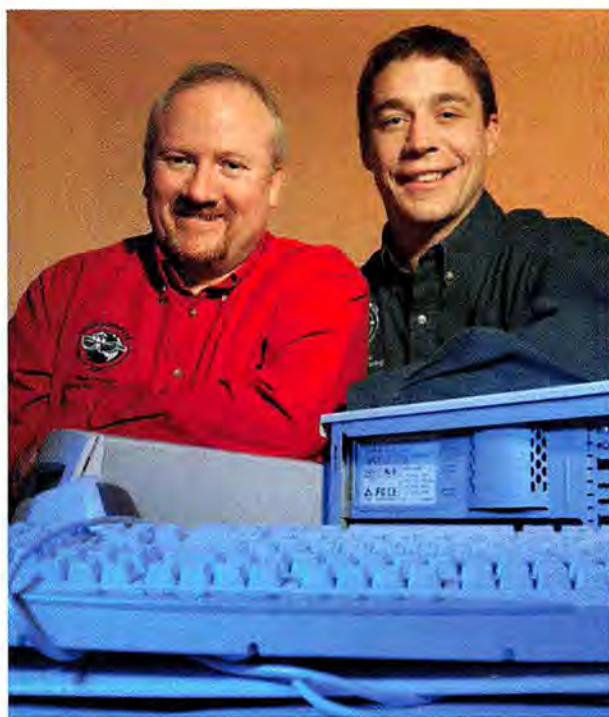
MOUNDS OF MONITORS

KOCIS IS JUST one of many business owners who worry about the escalating problem of disposing of unwanted tech equipment cheaply, safely, and legally. For instance, a national stampede to LCD monitors leaves thousands of lowly CRTs, like WorldWide's 15-inchers, awaiting disposal.

In the third quarter of 2003,

LCDs outsold CRTs for the first time; and Rhoda Alexander, director of monitor research for ISuppli/Stanford Resources, reports that they're expected to dominate sales in 2004. But at least five states (California, Maine, Massachusetts, Minnesota, and Virginia) have passed laws banning CRTs from their landfills, according to the Environmental Protection Agency. And monitors aren't the only problem. The National Recycling Coalition (NRC) has estimated that nearly 500 million PCs in the United States will become obsolete between 1997 and 2007.

Dell, Gateway, HP, and IBM all offer business and consumer recycling options (see chart). Some charge a moderate fee for taking old equipment from any manufacturer off your hands; several offer rebates good for new products



SO MUCH OLD EQUIPMENT, so little room. Michael Newcomb (left) and Jerry Kocis, Web design firm co-owners, with some outdated gear.

to recyclers; and two might even pay you if they can sell your unwanted devices.

BIG BLUE PAYS YOU?

IBM'S RECENTLY expanded Asset Recovery Solutions buyback program pays firms of any size for desirable used equipment. If that equipment has no resale value, the business pays IBM for proper disposal. Either way, the fees are

determined in advance. However, equipment older than three years seldom qualifies for buyback. Note: Individuals are eligible for most of these business recycling programs.

If you don't want to pay fees, look for drop-off centers, recycling events, or rare municipal curbside pickups. You can get EPA guidance at find.pcworld.com/40307, and NRC suggestions at find.pcworld.com/40331. But don't count on a charity to accept elderly equipment. Many charities are now struggling to avoid being overwhelmed with older technology that they must pay to dispose of. And don't forget to wipe your PCs' hard drives clean before they leave your offices; we explain how at find.pcworld.com/35603.

As WorldWide plans a move to new quarters, Kocis says, it has to resolve the clutter issue. But even if the company has to pay, he says, the stuff in the kitchen isn't coming with it.

—Scott Plamondon ■

RECYCLING RESOURCES

MOVE OUT THOSE MOTHBALLLED MICROCHIPS

COMPARE RECYCLING PROGRAMS to ensure that your business gets the best deal.

VENDOR	Business pays	Comments	More information
Dell ¹	\$7.50 per 50-pound increment ²	Recycling only; no buyback.	find.pcworld.com/40337
Gateway Professional	\$30 per unit, minimum of 10 units ³	Business may receive credit for future Gateway purchases.	find.pcworld.com/40322 ; find.pcworld.com/40325 (for consumers)
Hewlett-Packard ³	\$13 to \$34 each, depending on item ²	Recycling only; no buyback.	find.pcworld.com/40334
IBM Buyback	1-5 items, \$25 each; 6-49 items, \$15 each; 50-plus items, \$12 each ²	If items are marketable (as determined by IBM), business receives payment.	find.pcworld.com/40328 ; find.pcworld.com/40346 (for consumers)

¹ For large recycling needs, try Dell's Asset Recovery Services (find.pcworld.com/40496). ² Includes shipping costs. ³ Until April 30, 2004, HP offers up to \$50 in rebates on HP products if you use its service to recycle computer hardware. See find.pcworld.com/40343 for details.



Control all from your desk
Integrated DDC/CI function
with exclusive NaViSet™
Administrator software
allows the displays to be
controlled from anywhere
on the LAN

Long cable lengths?
No problem
Central control gets easier
with CableComp™ automatic
compensation, preventing
image quality degradation
on long cable runs

Economize space,
improve ergonomics
Ultra-thin frames, easy pivot
and height-adjustable stands
adapt to your users' styles

Clamp down on energy costs
Power-off timer automati-
cally shuts monitor down
after a user-determined
amount of time

Another big idea in intelligent displays.

The NEC MultiSync® LCD 80 Series. Our most technologically advanced line now offers up to 21"(21.3"VIS) of precision viewing and performance. The number one brand of stand-alone flat-panel displays gives you more precision from every angle with our largest professional desktop model yet. Outside, you'll find crisp, vivid viewing wrapped into a space-saving ultra-thin frame design. Inside are highly advanced technologies that ease set-up, centralize control, reduce energy costs and ensure the best possible screen performance. Their sophisticated design makes them ideal for serious computing applications when only the best will do. And they're available right now. See details on the 19"(19"VIS) MultiSync LCD1980SX, 20"(20.1"VIS) MultiSync LCD2080UX and 21"(21.3"VIS) MultiSync LCD2180UX at www.necmitsubishi.com. Or call 888-NEC-MITS ext. 1454.

SEE MORE.™



NEC MultiSync monitors.
Bright outside. Brilliant inside.

TAX SOFTWARE

ONLINE TAX PREPARATION TAKES OFF

WEB-BASED TAX SOFTWARE IS MORE POPULAR THAN EVER. SHOULD YOU GIVE IT A WHIRL?

IF YOU'VE SHIED away from doing your taxes online, maybe it's time to reconsider. While not for everyone, Web-based tax prep services have several distinct advantages over their desktop counterparts, especially for new users.

Web-based tax software is rapidly gaining in popularity. Intuit, whose TurboTax is the best-selling shrink-wrapped and online tax prep software, says that 3.6 million returns were filed via TurboTax on the Web last year, up from 1.4 million just three years earlier.

MANY CHOICES

OTHER ONLINE tax prep vendors include H&R Block and TaxAct (both of which also have shrink-wrapped versions), and the online-only CompleteTax and TaxBrain. Overall, we recommend using TaxAct for simple returns and TurboTax for more complex ones; see find.pcworld.com/40310 for our in-depth reviews of desktop tax programs, and find.pcworld.com/40313 for our re-



views of Web-based options.)

Perhaps the biggest appeal of Web-based tax software is that it tends to cost less than boxed software, and doesn't involve you in the irritating rebate structure that commonly afflicts desktop software. H&R Block offers a new Web-only deal under which an H&R Block tax pro will review your return before you e-file and sign off as your tax preparer, accompanying you to an IRS audit if need be—all for \$80. (The same support would cost you \$130, on average, at an H&R Block office.)

Travelers can work on tax returns anywhere they can access the Web. Most tax prep

sites don't charge anything until you're ready to file, so you can try out the service before you buy. In addition, software changes are immediately posted to the Web server, so you don't have to download patches.

Web-based software is also a good way to go if you don't use Windows and therefore have few or no commercial shrink-wrapped alternatives.

WHEN TO SAY NO

BUT DESKTOP TAX software has its advantages, too. All of the major commercial packages let you import the previous year's tax file; in contrast, only H&R Block allows you to upload TurboTax or TaxCut data files to its Web software. If you prepared last year's return on your PC and now want to switch to the Web, you may have to retype lots of information from that return—a time-consuming job if your return is complex. (However, you can import data from a previous year's return if it was prepared on the same Web site.)

Web software resembles its desktop counterpart, except that navigation options tend to be more limited: People who revisit forms find that moving around within a return is faster with desktop software.

SECURITY MATTERS

WEB-BASED SERVICES generally follow good practices such as limiting FTP access to their servers (leaving one less opening for intruders), displaying current security certificates in the company's name, and encrypting cookie file data such as passwords. Web servers are professionally managed, and security fiascos are relatively rare. But read the company's privacy policy and be sure to opt out of newsletters or marketing e-mail you don't want.

A complicated return, or the need to import data from a previous year, might keep you tethered to desktop products. Otherwise, though, I'd recommend trying a Web-hosted product—both for the convenience and to save money.

—Tony Lima ■

FEATURES COMPARISON

TAX WEB SITES: HOW SECURE ARE THEY?

FEEES FOR WEB-BASED tax services can vary depending on whether you opt for extras such as professional tax advice and video clips.

SERVICE	FTP access	Security certificate	Cookie data encrypted	Cost range ¹	Browsers supported
CompleteTax	No	Yes	Password only; user name visible	\$30 ²	IE 4.0+ SP2+, Netscape 4.73-5.x, AOL 5.0+
H&R Block	No	Yes	Yes	\$25-\$80 ³	IE 4.0+, Netscape 4.7+, AOL 5.0+
TaxAct	No	Yes	Yes	\$0-\$8 ⁴	IE 4.0+, Netscape 4.06+, AOL 4.0+
TaxBrain	No	Yes	Password only; user name visible	\$20-\$70	IE 5.0+, Safari, Opera, AOL 7.0+, Netscape 7+
TurboTax	No	Yes	Yes	\$10-\$50	IE 5.0+, Netscape 7+, AOL 5.0+

¹ Federal return only, except as noted. ² Includes state return. ³ For \$80 you get H&R Block's review and signature as tax preparer. ⁴ Printing completed return is free; charge is for e-filing.



SONY

Sony recommends Microsoft® Windows® XP Professional for Mobile Computing.



Sony® VAIO® Z1 Series Notebook
The Sony VAIO® Z1 Series Notebook PC with Intel® Centrino™ mobile technology. Ultra-slim. Built-in CD-RW/DVD combo drive. Up to six hours of battery life.* Inspired design meets wireless perfection. Starting at just \$2,099.99 [after mail-in rebate].†

There's only one PC that's made like a Sony. No surprise. It's a Sony.

Most PC makers are just now discovering the power of music, movies and photography. We, on the other hand, have known it all along. Our VAIO® desktop and notebook PCs, peripherals and other accessories are designed and built to work together. Suddenly, your Handycam® camcorder, digital camera and Walkman® MP3 player are more than just peripherals. They're all part of a system that's built specifically around your life. With the same Sony quality you've come to expect. Call today, and our trained specialists will help you create a digital toolbox that's perfect for you. We'll even help with financing.‡

Sony VAIO® Z1 Series Notebook with Intel® Centrino™ mobile technology.

Sony VAIO® Z1 Series Notebook PC
LAPTOP Magazine's
2003 Ultimate Choice Award
Slim/Light Notebook PC Category



CALL	1-877-407-SONY [7 6 6 9] www.sonymstyle.com/pcworld4
VISIT	

Call or visit us online to discover a universe of entertainment, inspiration and innovation—only from Sony.

SONY



SONY VAIO® NOTEBOOKS

You're unique. Shouldn't your PC reflect your individuality, as well as your interests? Sony VAIO® Notebook PCs featuring Intel® Centrino™ mobile technology have wireless capability and interconnectivity wrapped in sleek designs that proclaim your independence. And, we can help you build your very own to your exact needs and specifications. So whether your passion is music, pictures, spreadsheets, video, games or graphics, you can combine your own style with the substance that's Sony.



Powerful. Mobile. Slim Design. V505 SERIES

V505

- Intel® Celeron® Processor 2GHz¹
- Microsoft® Windows® XP Home Edition
- 40GB Hard Drive²
- 12.1" XGA TFT display
- 256MB RAM
- Integrated CD-RW/DVD Combo Drive⁴
- 1-Year Limited Warranty⁵

\$1,399⁹⁹ As low as \$35 per month for qualified customers.¹¹

UPGRADES

- Upgrade to a 60GB Hard Drive² for \$100
- Sony VAIO® Double-Capacity Lithium Ion Battery⁴ for \$200

- Featuring Intel® Centrino™ mobile technology
- Intel® Pentium® M Processor 1.40GHz¹
- Integrated Wireless LAN—Intel® PRO/Wireless Network Connection 802.11b²⁰
- Intel® 855 Chipset
- Microsoft® Windows® XP Home Edition
- 40GB Hard Drive²
- 12.1" XGA TFT display
- 256MB RAM
- Integrated CD-RW/DVD Combo Drive⁴
- Sony VAIO® Creation Suite Standard software package
- 1-Year Limited Warranty⁵

\$1,729⁹⁹ As low as \$44 per month for qualified customers.¹¹

UPGRADES

- Upgrade to 60GB Hard Drive² for \$50
- Sony VAIO® Double-Capacity Lithium Ion Battery⁴ for \$200



Essential Computing for Home FRV SERIES

PCG-FRV26

- Intel® Pentium® 4 Processor 2.80GHz¹
- Microsoft® Windows® XP Home Edition
- 40GB Hard Drive²
- 15" XGA TFT display
- 512MB RAM
- Integrated CD-RW/DVD Combo Drive⁴
- 1-Year Limited Warranty⁵

\$1,499⁹⁹ As low as \$38 per month for qualified customers.¹¹

UPGRADES

- Sony VAIO® Standard Lithium Ion Battery⁴ for \$249.99
- Sony VAIO® USB Adapter with Bluetooth® Wireless Technology³ for \$99.99

PCG-FRV37

- Intel® Pentium® 4 Processor 2.80GHz¹
- Microsoft® Windows® XP Home Edition
- 60GB Hard Drive²
- 15" XGA TFT display
- 512MB RAM
- DVD-RW/CD-RW Drive⁴
- Exclusive Click to DVD™ software for easy moviemaking
- Sony VAIO® Creation Suite Standard software package
- 1-Year Limited Warranty⁵

\$1,599⁹⁹ As low as \$40 per month for qualified customers.¹¹

UPGRADES

- Sony VAIO® Standard Lithium Ion Battery⁴ for \$249.99
- Sony VAIO® USB Adapter with Bluetooth® Wireless Technology³ for \$99.99



Flagship Performance GRT SERIES

GRT

- Intel® Pentium® 4 Processor 2.40 GHz¹
- Microsoft® Windows® XP Home Edition
- 40GB Hard Drive²
- 15" XGA TFT display
- 256MB RAM
- CD-RW/DVD Combo Drive⁴
- 1-Year Limited Warranty⁵

\$1,399⁹⁹ As low as \$35 per month for qualified customers.¹¹

UPGRADES

- Upgrade to a 60GB Hard Drive² for \$100
- Integrated Wireless LAN 802.11b/g²⁰ for \$50

PCG-GRT280ZG

- Mobile Intel® Pentium® 4 Processor 3.06GHz¹
- Microsoft® Windows® XP Home Edition
- 80GB Hard Drive²
- 16.1" UXGA (1600x1200) with XBRITE™ technology
- 512MB RAM
- DVD±RW/CD-RW Drive
- Record and watch your favorite TV programs with Sony's Giga Pocket™ Personal Video Recorder and remote control
- Convert your old analog videos to digital and record to DVD
- Integrated 802.11g Wireless LAN¹⁹
- 1-Year Limited Warranty⁵

\$2,999⁹⁹ As low as \$75 per month for qualified customers.¹¹

UPGRADES

- Sony VAIO® Port Replicator for \$199.99
- Sony VAIO® Standard Lithium Ion Battery⁴ for \$249.99

Transportable TV Entertainment Center



Sony's Smallest PC. Packed with Features. TR SERIES

PCG-TR2A

- Featuring Intel® Centrino™ mobile technology
- Intel® Pentium® M Processor 1GHz¹
- Integrated Wireless LAN—Intel® PRO/Wireless Network Connection 802.11b²⁰
- Intel® 855 Chipset
- Microsoft® Windows® XP Home Edition
- 40GB Hard Drive²
- 10.6" widescreen XBRITE™ LCD display
- 512MB RAM
- Integrated CD-RW/DVD Combo Drive⁴
- Amazing battery life up to 7.0 hours⁹
- Integrated swivel camera
- Sony VAIO® Creation Suite Standard software package
- 1-Year Limited Warranty⁵

\$2,199⁹⁹ As low as \$55 per month for qualified customers.¹¹

UPGRADES

- Privacy Screen for \$79.99
- Sony VAIO® Standard Lithium Ion Battery⁴ for \$299.99
- Sony VAIO® Double-Capacity Lithium Ion Battery⁴ for \$349.99

PCG-TR2AP1

- Featuring Intel® Centrino™ mobile technology
- Intel® Pentium® M Processor 1GHz¹
- Integrated Wireless LAN—Intel® PRO/Wireless Network Connection 802.11b²⁰
- Intel® 855 Chipset
- Microsoft® Windows® XP Professional Edition
- 40GB Hard Drive²
- 10.6" widescreen XBRITE™ LCD display
- 512MB RAM
- Integrated CD-RW/DVD Combo Drive⁴
- Amazing battery life up to 7.0 hours⁹
- Integrated swivel camera
- Sony VAIO® Creation Suite PLUS software package
- 1-Year Limited Warranty⁵

\$2,299⁹⁹ As low as \$58 per month for qualified customers.¹¹

UPGRADES

- Privacy Screen for \$79.99
- Sony VAIO® Standard Lithium Ion Battery⁴ for \$299.99
- Sony VAIO® Double-Capacity Lithium Ion Battery⁴ for \$349.99



Call or visit us online to find out about going mobile—and wireless—in style.

MOBILE TECHNOLOGY

VAIO

A style all your own.

Sony recommends Microsoft® Windows®
XP Professional for Mobile Computing.

MY MUSIC

Nobody does audio like Sony. Just plug the Network Walkman® Digital Music Player into your Sony VAIO® PC, and you'll hear what we mean. After all, they were designed to make beautiful music together.

Elegance and Mobility **Z1 SERIES****PCG-Z1VA**

- Featuring Intel® Centrino™ mobile technology
- Intel® Pentium® M Processor 1.60GHz
- Integrated Wireless LAN—Intel® PRO/Wireless Network Connection 802.11b™
- Intel® 855 Chipset
- Microsoft® Windows® XP Home Edition
- 60GB Hard Drive
- 14" SXGA+ TFT display
- 512MB DDR SDRAM
- Integrated CD-RW/DVD Combo Drive
- Amazing battery life up to 6.5 hours
- Integrated Bluetooth® Wireless Technology
- USB 2.0
- Stylish and sophisticated design in a 4.7-lb.-light and 0.9–1.5"-thin body
- Sony VAIO® Creation Suite Standard software package
- 1-Year Limited Warranty

\$100
mail-in rebate
~~\$2,199.99~~**\$2,099.99**

After \$100 mail-in rebate.
Rebate offer expires March 31, 2004.
See www.sonymusic.com for coupon, terms and conditions.
As low as \$55 per month for qualified customers.

UPGRADES

- Sony VAIO® Port Replicator for \$199.99
- Sony VAIO® Double Capacity Lithium Ion Battery (battery life up to 12 hours) for \$499.99

PCG-Z1VAP2

- Featuring Intel® Centrino™ mobile technology
- Intel® Pentium® M Processor 1.70GHz
- Integrated Wireless LAN—Intel® PRO/Wireless Network Connection 802.11b™
- Intel® 855 Chipset
- Microsoft® Windows® XP Home Edition
- 60GB Hard Drive
- 14" SXGA+ TFT display
- 1024MB (512MBx2) DDR SDRAM
- Integrated CD-RW/DVD Combo Drive
- Includes Sony VAIO® double-capacity battery for an amazing battery life up to 12 hours
- Integrated Bluetooth® Wireless Technology
- USB 2.0
- Stylish and sophisticated design in a 4.7-lb.-light and 0.9–1.5"-thin body
- Sony VAIO® Creation Suite PLUS software package
- 1-Year Limited Warranty

~~\$2,999.99~~**\$2,999.99**

As low as \$75 per month
for qualified customers.

UPGRADES

- Sony VAIO® Port Replicator for \$199.99
- Sony VAIO® Large Carrying Case for \$129.99

PCG-TR2ASony VAIO® TR Series
Notebook PC

- Intel® Centrino™ mobile technology
- Microsoft® Windows® XP Home Edition
- 10.5" widescreen XBRITE™ LCD display
- Manage all of your music with included SonicStage™ software

Starting at **\$2,199.99****NW-MS700**Network Walkman®
Digital Music Player

- 256MB built-in memory with MagicGate™ Memory Stick Duo™ expansion slot
- USB cradle for easy PC connection and recharging
- Internal battery provides up to 33 hours of continuous playback

\$299.95**MEMORY STICK® MEDIA**From Peripheral to PC. Now Your Memory
Goes Where You Do.**MSX-1G Memory Stick PRO™ Media**

Store and move more advanced media including more data and higher-resolution moving images. With enhanced features, Memory Stick PRO™ media is Sony's next-generation storage format.

1GB® Memory Stick PRO™ Media¹ (940MB usable)**\$599.99****MSA-128S2**

Memory Stick® Select Media

Store, transfer and share 246MB (usable memory) of your digital pictures, videos, music, presentations, data, voice files and more with Sony's Memory Stick® media.

128MB X2 Memory Stick® Select Media

\$99.99**LCH-MA**

Memory Stick® Media Carrying Case

Protect your Memory Stick® media with this durable and stylish silver Sony carrying case. Its compact design is layered, allowing you to store up to eight Memory Stick® media and eight Memory Stick Duo™ media.

\$19.99**MSX-M256A Memory
Stick PRO Duo™ Media**

Ideal for use in small devices, including cell phones, portable audio players and pocket-sized digital imaging devices. Attach the adapter (included) and it can also be used in products compatible with standard-size Memory Stick PRO™ media.

256MB (220MB usable) Memory Stick PRO Duo™ Media¹**\$114.99****FREE SHIPPING/FREE PRINTER**

GET FREE SHIPPING¹ AND A FREE EPSON® PRINTER² (AFTER EPSON MAIL-IN REBATE) WHEN YOU BUY AN ELIGIBLE PC DIRECT FROM SONY BY 3/31/04.

CALL
VISIT**1-877-407-SONY [7 6 6 9]****www.sonymusic.com/pcworld4**

SONY



Now saving your most precious memories is as simple as saving a spreadsheet. Your Sony VAIO® PC and Sony Cyber-shot® Digital Camera work hand in hand to make digital photography easier than ever.

MY PICTURES

SONY VAIO DESKTOPS

Sony Desktop PCs with Intel® processors are designed to fulfill all of your entertainment passions. With all the features you crave—and nothing you don't! From the sleek V and W Series to the ultra-functional RS and RZ Series. Whatever you're into—DVD burning, downloading music, even recording TV content—Sony can help you do it all.

PCG-V505
VAIO® V505 Series
Notebook PC



- Intel® Celeron® Processor 2GHz
- Microsoft® Windows® XP Home Edition
- Integrated CD-RW/DVD Combo Drive*
- 40GB Hard Drive*
- Exclusive PictureGear Studio™ software for easy photo management

\$1,399⁹⁹

DSC-P8
Cyber-shot® Digital Camera



- Combines exceptional image quality with compact design
- 3.2 megapixel Effective Super HAD™ CCD
- 3X optical zoom lens
- Continuous auto focus
- Live histogram display
- Rechargeable InfoLithium™ Battery

\$299⁹⁵

MSX-256
256MB Memory
Stick PRO™ Media†



Advanced media with expandability and new capabilities to meet the needs of the coming broadband era, including real-time recording of high-resolution moving images. The Memory Stick PRO™ format offers high capacity and fast data transfer speeds (220MB of usable capacity).

\$114⁹⁹



W SERIES

The All-in-One Entertainment PC

PCW-W510G

- Intel® Pentium® 4 Processor 2.40GHz*
- Microsoft® Windows® XP Home Edition
- 80GB Hard Drive*
- 512MB DDR at 333MHz
- CD-RW/DVD-ROM Combo Drive*
- Built-in 17.5" widescreen LCD display
- Memory Stick™ Media Slot
- Built-in stereo speakers featuring SRS™ WOW™ technology
- Giga Pocket™ Personal Video Recorder with remote control
- 1-Year Limited Warranty†

\$1,699⁹⁹ As low as \$43 per month for qualified customers.



V SERIES

The Ultimate TV & PC Solution

PCV-V100G

- Intel® Pentium® 4 Processor 2.40GHz*
- Microsoft® Windows® XP Home Edition
- 80GB Hard Drive*
- 512MB DDR at 333MHz
- CD-RW/DVD-ROM Combo Drive*
- 15" LCD display
- Wireless keyboard, wireless mouse and remote control
- Built-in stereo speakers
- Giga Pocket™ Personal Video Recorder
- 1-Year Limited Warranty†
- Free wireless LAN PC card™ when purchased from www.sonymstyle.com.¹⁹ While supplies last.*

\$1,499⁹⁹ As low as \$39 per month for qualified customers.



RS SERIES

The Entertainment Center DVD-Erasing Machine

Build-to-Order PCV-RS500C Series Desktop

- Intel® Celeron® Processor at 2.4GHz*
- Microsoft® Windows® XP Home Edition
- 80GB Hard Drive* (7200 rpm)
- 256MB DDR at 400MHz
- DVD-ROM/CD-RW Drive*
- 128MB ATI® RADEON 9200 Graphics Card
- Stereo speakers
- Sony VAIO® Creation Suite Standard software package
- 1-Year Limited Warranty†

\$699⁹⁹ As low as \$16 per month for qualified customers.*

UPGRADES

- Upgrade to a 160GB Hard Drive* for \$50
- 3-Year Limited Warranty* for \$199



RS SERIES

The TV & DVD Entertainment Machine

PCV-RS530G Desktop

- Intel® Pentium® 4 Processor with HT Technology at 3.2GHz*
- Microsoft® Windows® XP Home Edition
- 160GB Hard Drive* (7200 rpm)
- 512MB DDR at 400MHz
- DVD±RW/DVD-ROM Drives*
- 128MB ATI® RADEON 9200 Graphics Card
- Giga Pocket™ Personal Video Recorder with remote control
- Multimedia Card Reader
- Stereo speakers
- Sony VAIO® Creation Suite Standard software package
- 1-Year Limited Warranty†

\$1,449⁹⁹ After \$100 mail-in rebate. Rebate offer expires March 31, 2004. See www.sonymstyle.com for requirements and conditions. As low as \$38 per month for qualified customers.*

\$1,349⁹⁹

\$100 mail-in rebate*

Call or visit us online and create the perfect PC to meet your needs.

VAIO

Sony recommends Microsoft® Windows® XP Media Center Edition.

A world of entertainment possibilities.



Build-to-Order RZ40C

- Intel® Pentium® 4 Processor with HT Technology at 3GHz¹
- Microsoft® Windows® XP Home Edition
- 120GB Hard Drive² (7200 rpm)
- 512MB DDR at 266MHz
- DVD±RW/DVD-ROM Drives⁴
- 128MB nVIDIA® GeForce™ FX5200 Graphics Card
- Sony VAIO® Creation Suite PLUS software package
- Creative® Inspire™ 5.1 5200 Speaker System with Sound Blaster™ Sound Card
- Multimedia Card Reader
- 1-Year Limited Warranty³

\$1,589⁹⁹ As low as \$40 per month for qualified customers.¹

UPGRADES

- Upgrade to a 160GB Hard Drive² for \$35
- 3-Year Limited Warranty³ for \$199

Build-to-Order RZ40CG

- Intel® Pentium® 4 Processor with HT Technology at 2.60GHz¹
- Microsoft® Windows® XP Media Center Edition
- 160GB Hard Drive² (7200 rpm)
- 1GB DDR at 400MHz
- DVD±RW/DVD-ROM Drives⁴
- 128MB nVIDIA® GeForce™ FX5600 Graphics Card
- Creative® Inspire™ 5.1 5200 Speaker System with Sound Blaster™ Sound Card
- Multimedia Card Reader
- Personal Video Recorder powered by Giga Pocket™ Engine with remote control
- 1-Year Limited Warranty³

\$1,774⁹⁹ As low as \$45 per month for qualified customers.¹

UPGRADES

- Upgrade to a 200GB Hard Drive² for \$65
- 3-Year Limited Warranty³ for \$199

SONY CLIE® HANDHELD

Transfer data from your desktop and take it on the road with you.

PEG-SJ22

The PEG-SJ22 CLIE™ handheld provides everything you need to stay organized and entertained. Compact and lightweight, you can take your CLIE™ handheld wherever you go.

- 320x320 high-resolution color display
- Memory Stick™ media expansion slot¹
- Jog Dial™ navigator
- Lithium Ion rechargeable battery² (internal)
- Palm OS® v4.1 software²
- FREE shipping³



\$149⁹⁹

After \$30 mail-in rebate.
Rebate offer expires February 28, 2004.
See www.sonymstyle.com for coupon/terms and conditions.

\$119⁹⁹

PEG-UX50

The PEG-UX50 CLIE™ Mobile Internet Communicator features dual wireless integration in a compact and lightweight design. Powered by Palm OS® software, the UX50 is powerful, portable and easy to use!

- Integrated Wireless LAN (802.11b)¹
- Integrated Bluetooth® Wireless Technology²
- 310,000 pixel digital camera
- Video playback (MPEG-4, 30 fps)
- Built-in MP3/ATRAC3™ player
- Built-in voice recorder
- Built-in QWERTY-layout keyboard
- 480x320 high-resolution TFT color display—SwivelScreen™ design
- Palm OS® v5.2 software²
- FREE shipping³



\$599⁹⁹ As low as \$15 per month for qualified customers.¹

MY VIDEO

Lights. Camera. Action. With the super-compact Sony MiniDV Handycam® camcorder and your Sony VAIO® PC, you can easily create a memorable movie. Better yet, burn your masterpiece to DVD using Sony's easy Click to DVD™ software. Nobody does video like Sony.

\$100
mail-in rebate¹



PCV-RZ44G VAIO® RZ Series Desktop PC

- Intel® Pentium® 4 Processor with HT Technology at 2.80GHz¹
- Microsoft® Windows® XP Media Center Edition
- 160GB Hard Drive² (7200 rpm)
- Exclusive Click to DVD™ software for easy moviemaking

\$1,649⁹⁹
\$1,549⁹⁹

After \$100 mail-in rebate.
Rebate offer expires March 31, 2004.
See www.sonymstyle.com for coupon/terms and conditions.



DCR-PC330 MiniDV Handycam® Camcorder

- 3.3 megapixel Advanced HAD™ CCD imager
- Professional-quality Carl Zeiss® Vario-Sonnar® T* lens
- 10X optical/120X precision digital zoom
- i.LINK® DV interface (IEEE 1394)²
- Super SteadyShot™ Picture Stabilization System
- Super NightShot® and color slow shutter
- Click to DVD™ software connectivity
- Free carrying case. While supplies last.
- FREE shipping³

\$1,699⁹⁹

VMC-IL4415 i.LINK® Digital Interface Cable

Provides a high-speed, bi-directional digital link between your camcorder and computer with i.LINK® DV in/out interface (IEEE 1394)² (1.5 meters, 4-pin to 4-pin)

\$39⁹⁹



FREE SHIPPING/FREE PRINTER

GET FREE SHIPPING¹ AND A FREE EPSON® PRINTER® (AFTER EPSON MAIL-IN REBATE) WHEN YOU BUY AN ELIGIBLE PC DIRECT FROM SONY BY 3/31/04.

CALL
VISIT

1-877-407-SONY [7 6 6 9]

www.sonymstyle.com/pcworld4

[illegible]

FREE PHOTO EDITORS

ACCESSIBLE WEB SITE DESIGN

HOW TO STOP PHONE-CAMERA PEEPIING



SOUND AND FURY OVER MICROSOFT'S PATCHES

I AM INFURIATED by Ms. Hamilton (the woman suing Microsoft), her lawyer, and all the other idiots in your article, "Patch Backlash" [*News and Trends*, January].

With some Windows versions now approaching 100 million lines of code, perfect software just isn't going to happen. Do you want to wait ten years for near-perfect versions that will cost \$10,000?

User agreements are there because *no* software company can produce bug-free

code, and the makers would otherwise be put out of business by all these lawsuit-happy yahoos.

It is past time for computer users to take the training wheels off their PCs and ride on two wheels.

K. Cotreau, Bedford, New Hampshire

I'M TRULY SURPRISED that a technical analyst like Jonathan Ofori-Amoah would assert that "The real problem is...user ineptitude and ignorance."

I've worked on computers since before PCs existed. Getting a patch to run, let alone install, involves many headaches; and often the fix screws up perfectly useful software. I went through the upgrade process back in August, followed all the directions, and couldn't patch and update my operating system and Office suite.

Some of the patches crashed the system.

To suggest that people are ignorant and inept because they can't update and patch their PCs adds enormous insult to injury.

Paul T. Jackson

Trescott Research

Enumclaw, Washington

WHY ISN'T THE BLAME for security breaches placed on the people exploiting them? If there weren't so many bad guys out there, with apparently nothing to do but violate corporate and individual computer systems, the "glitches" in Windows would never be an issue. Should we sue General Motors because it did not provide sufficient security to keep thieves from stealing our cars? Do we go after home builders following a house break-in?

L. Wilkerson, Jacksonville, Florida

COMPUTERS AND software are marketed in the same fashion as a TV, with consumers not being told up front that the computer takes an investment of time for upkeep. And for software makers, the incentive to create stable products runs well behind the incentive to rush to market new versions with more features.

Matia Schultz, Chicago

WHAT MICROSOFT should be held accountable for is the numerous promises of upgraded performance that many of us paid for but never received.

Scott A. Russell, via the Internet

THE FREWARE ALTERNATIVE

YOUR ARTICLE on photo editors ("Photo Finishers," January) missed an opportunity to showcase a more cost-effective solution. Although it probably isn't for everybody, the open-source, readily available GIMP software is a free photo editor. It's not perfect, but I think it deserves ▶

FACE-OFF

Do-It-Yourself Web Sites—for Real?

PRO: REGARDING "Instant Web Sites" [January]: It was grand to see someone else acknowledging Netscape Composer! I have been using it for many years, with great satisfaction, to build and edit the sites I have maintained.

I have tried just about all the other Web authoring tools, from the most expensive to other freebies, and Netscape's is the easiest to work with. It lets me do what I wish without my having to use unwanted predesigned stuff or to take a week to learn all of its ins and outs.

*Diane Ollivett-Miles
South Cairo, New York*

CON: ALTHOUGH I CAN appreciate your efforts to help do-it-yourselfers create a Web site, your article gives readers the idea that they can quickly and easily put up a site and expect it to work for them—which it will if it is only for sharing, say, family photos with other family members.

But your simplified steps using freebie "construction equipment" will send many people scampering to create their own imagined overnight Web site sensations. These people will be sorely disappointed.

Deb Colgan

*Web Design and Hosting Solutions
Watertown, Wisconsin*

to be considered. Please try to include more free software options in the future.

Bob Boehm, via the Internet

Editor's response: We often mention free software, but many free image editors are available, and we couldn't have covered them adequately in our roundup. —Eric Butterfield

WATCH YOUR SPEEDSTEP

AFTER READING "Notebook CPU Is Too Darn Slow" [*On Your Side*, January], I tested my Dell notebook—an Inspiron 5000e (as in your article) with a 750-MHz processor. For my PC, as for your reader's, the Intel chip-set test stated 600 MHz. Though you said Dell concluded it had installed the wrong chip, I remembered that my notebook came with a feature called SpeedStep that reduces processor power, and thus speed, when it is not needed. I disabled SpeedStep in the BIOS and reran the test, which concluded that the processor was then running at 750 MHz.

Josh Tinley, Huntington Beach, California

ACCESS TO THE INFO HIGHWAY

A JANUARY LETTER noted difficulties in teaching visually impaired veterans to use Web sites. The new NIH Senior Health page (nihseniorhealth.gov) uses a great design for persons with limited vision.

The page has three options at the top—to increase font size, improve text/background contrast, or activate a synthesized voice to read aloud text on which the cursor is clicked. The site is a joint product of the National Institute on Aging and the U.S. National Library of Medicine, both part of the National Institutes of Health.

Al Reynolds

U.S. National Library of Medicine

Bethesda, Maryland

CELL-PHONE CANDID CAMERA

REGARDING your article on cameras in cellular phones ["New Phones Raise Privacy Fears," *News and Trends*, January]: I've heard that, in Japan, such cameras

must make fairly loud, attention-grabbing noises, to alert passersby you're taking a photo. That would probably go a long way toward getting rid of these 21st-century Peeping Toms everyone's afraid of.

Robert Martens, via the Internet

PC World welcomes letters to the editor. We reserve the right to edit for length and clarity. Send e-mail to letters@pcworld.com. ■

CORRECTIONS

IN JANUARY'S "Photo Finishers," we should have said that Jasc Paint Shop Pro 8 does have a slider to vary the opacity of a layer; the slider is in the layers palette, but it may not be visible when that palette is docked.

In the January *News and Trends* story "Patch Backlash," Rich Levin should have been credited as sole author of the *KISS Guide to Microsoft Windows*.

PC World regrets the errors.

IDC
Analyze the Future

MARCH 31, 2004
SAN JOSE CONVENTION CENTER
SAN JOSE, CALIFORNIA

APRIL 7, 2004
JOHN B. HYNES CONVENTION CENTER
BOSTON, MASSACHUSETTS

IDC'S ANNUAL IT INDUSTRY BUSINESS BRIEFING

DIRECTIONS 2004 Making IT Matter

Finding Opportunities and Defining Value

Join IDC's leading analysts at Directions 2004 and receive predictions and analysis into spending expectations and IT challenges for 2004. Our analysts will offer insight into cutting through the marketing "hype" so you can focus on products and technologies that offer the best solutions for your customers, and sustainable growth for your company. Through a compelling mix of keynotes, 7 tracks, special interest sessions, and breakfast briefings, Directions offers prescriptive advice for a winning IT strategy.

A complete lists of speakers and topics can be found at www.idc.com

REGISTER ONLINE NOW

<http://www.idc.com/Directions04/SanJose>

<http://www.idc.com/Directions04/Boston>

or Call 800-605-5849 (+1-978-597-0133 outside the US)

Co-sponsored by:

PC WORLD

InfoWorld
GET TECHNOLOGY RIGHT

SPECIAL OFFER!

Register by February 27 and receive a \$200 discount off the conference fee.



David (and the rest of our team) will be happy to help you configure your Anthro workstation.



Sure, you can use Anthro furniture for that..

And that..And that..You get the picture. No matter what equipment you use, Anthro furniture can be configured however you want. It can fit in just about any space, and there are over 70 accessories, so you can make every piece your own. Whatever that may be.

Contact our helpful folks at Anthro.com or 800-325-3841.



ANTHRO
TECHNOLOGY FURNITURE®
-Fast and Friendly!

Are you ready for superhuman reflexes?



INTRODUCING 16MS RESPONSE TIME ON SELECT VIEWSONIC® THINEDGE™ LCDs. CLEARLY FASTER.

Realistic, artifact-free 3-D video is all about speed. For years, gamers and videophiles looked to ViewSonic CRTs for the best on-screen experience. Now, you can enjoy sizzling screen performance in sleek LCDs, with a blistering 16 millisecond (16ms) response time available in silver or black, including the 17" VP171 and the 20" VP201 series. Specially designed to keep up with the speed of your video and gaming applications with digital HDTV resolution, faster monitor response means improved images and realistic movement. Thanks to advanced ClearMotiv™ technology, you'll get startlingly realistic images and textures with no ghosting or lagging, even on your fastest and most graphic-intensive applications.



Get the ultimate in big screens with the 20" VP201 series. Sleek silver trim, 16ms response, ClearMotiv performance, ultra-wide 176° viewing angle, high-speed USB hub and full ergonomic adjustments. It's the video enthusiasts' choice when they choose only the best.

And all VP Series LCDs offer complete digital/analog connectivity plus height and pivot adjustments.

Go for the total productivity solution and create your own multi-panel display for an awesome field of vision with minimal image gaps. Add matching NeoSat™ speakers, video processor with TV tuner, keyboard and mouse for complete style and versatility.



More than a thousand awards for technical innovation (and just plain coolness) demonstrate ViewSonic's single-minded dedication to visual technology advancement, making it the #1 monitor display company in the U.S.*

Experience the complete visual solution; visit ViewSonic.com today. And improve the View wherever you work or play.



ViewSonic
See the difference.™

Leading stand-alone, branded monitor by sales (CRT and LCDs combined; iSupply/Stanford Resources Monitor and Flat Panel Monitor* 3Q03 report). Specifications subject to change without notice. Corporate names and trademarks stated herein are the property of their respective companies. Copyright © 2004 ViewSonic Corporation. All rights reserved. [11507-02E-12/03]

Think faster



STEVE FOX

Beware of 'Phishy' E-Mail From the Bank

Plus: TiVo competitors, wearable MP3 players, and roaming with Wi-Fi.



1 Something Smells Phishy

The Buzz: The hot new scam works like this: You get an e-mail from Citibank asking you to change your password for security reasons. The message directs you to a "secure Web site," which bears a URL like "citibank-security.net" and a Citibank logo, and you dutifully follow the steps. Two weeks later, you discover that some scoundrel has set up a fraudulent bill-pay system and emptied your account. You've fallen for a phishing scheme, hook, line, and sinker. The current variation targets customers of credit cards and banks. The scammers don't have any client lists; they

simply spew spoofed e-mail and eventually stumble on unsuspecting customers.

Bottom Line: Check those URLs carefully, and pick up the phone if you're suspicious. As for passwords and account info: When in doubt, don't give it out.

2 Move Over, TiVo

The Buzz: If you resisted the urge to plunk down

the green on a TiVo digital video recorder last year, you may be glad that you waited. As if to reward your patience, cable giants Comcast and Time Warner are getting into the act, rolling out DVR-capable set-top boxes throughout this year. For about \$10 per month (beyond your regular cable charges), you get a set-top box with a hard disk that holds at least 30 hours of programming. Some units will even offer high-definition recording.

Bottom Line: The price is nice, but the

Comcast DVR won't automatically skip commercials. Shame on them! Now turn to the facing page and carefully examine the ad there before continuing, please.

3 Wearable Wares

The Buzz: You won't carry your next MP3 player—you'll wear it. Plummeting flash-memory prices and tiny new high-capacity drives are making it possible to build miniature, lightweight devices that fit on an armband or dangle from a neck chain. Aiwa, Creative, iRiver, RCA, and Rio have all introduced wearable players, and more are inevitable.

Bottom Line: Eventually vendors will sell articles of clothing with such devices built in. I would like that MP3 player in about a 32/30, please.



4 Hot Spots Get Hotter

The Buzz: Commercial Wi-Fi hot spots have one fatal flaw: They don't allow users to roam across providers. Cometa customers can use only Cometa hot spots, T-Mobile surfers are restricted to T-Mobile locations, and so on. But recent agreements between MCI and Boingo Wireless will allow customers to access either service while continuing to pay just one bill. A similar deal between corporate Wi-Fi provider iPass and T-Mobile could jumpstart the Wi-Fi market.

Bottom Line: MCI says that more deals are coming. At this rate, hot spots are in danger of becoming useful someday. ■

Contributing Editor Steve Fox covers buzz-worthy products, ideas, and trends. Contact him at steve_fox@pcworld.com. Visit find.pcworld.com/31643 for more Plugged In.

NAGGING QUESTION

How Did Longhorn Get Its Name?

IF YOU'VE EVER wondered what product managers are drinking when they concoct those obscure product code names, consider that Longhorn, the version of Windows due in 2005, is named after a bar. A little history: Windows XP was code-named Whistler, after a ski area in British Columbia, Canada. A far-future version of the Microsoft desktop OS is called Blackcomb,



also a B.C. ski spot. Just as the Longhorn Saloon & Grill sits between these two mountains, Microsoft's Longhorn will ship between Whistler and Blackcomb. Joey Gibbons, Longhorn Saloon general manager, confirms that the bar—a popular watering hole for mulling Microsofties—uses Windows XP. "But we'll have to upgrade to Longhorn when it comes out," he says.



Best Value, Always!

- ▶▶ 6,000+ Customer Testimonials
- ▶▶ A Rating on ANY Merchant Ranking Site
- ▶▶ 98% of Orders Ship within 1 Business Day
- ▶▶ 62,000+ Product Reviews From Customers



FREE SHIPPING*
FedEx Super Saver Shipping

Memory

512MB PC 2700
184 Pin DDR SDRAM
Unbuffered - OEM

crucial



PCW20145059 **\$70.00**

512MB PC 3200
Value Series 184 Pin
DDR SDRAM - OEM

geil



PCW20144305 **\$79.00**

512MB XMS Extreme
Memory Speed Series PC
3200 184 Pin DDR - OEM

corsair



PCW20145416 **\$112.00**

512MBx2 ValueRAM
Dual Channel Kit 184
Pin DDR SDRAM - Retail

kingston



PCW20141423 **\$165.00**

Motherboards

K7S5A PRO SIS 735
Chipset for AMD Socket A
CPU - Retail

ecs



PCW13135126 **\$38.00**

A7N8X-E Deluxe
nForce2 Ultra 400 for
AMD Socket A - Retail

asus



PCW13131478 **\$118.99**

BOXD875PBZLK
for Socket 478 Intel
Pentium 4 CPU - Retail



PCW13121180 **\$142.00**

IC7-MAX3 875P
Chipset for Intel Socket
478 CPU - Retail

181T



PCW13127158 **\$183.99**

AMD

Athlon XP 2500+
Barton 333MHz FSB
- Retail

amd



PCW19103379 **\$90.00**

Opteron 246
2.0GHz 1MB L2 Cache
64-bit Processor - Retail

amd



PCW19103412 **\$799.00**

Featured Item

Athlon 64 3000+
512KB L2 Cache 64-bit Processor



The ONLY
Windows-compatible
64-bit PC Processor

\$240.00

Find It Code™ PCW19103424

Intel

Intel Celeron 2.4GHz
400MHz FSB 128K Cache
- Retail

intel



PCW19112176 **\$70.00**

Intel Pentium 4 2.6GHz
800MHz FSB 512K Cache
HT - Retail

intel



PCW19116159 **\$174.00**

Video Cards

V7100 PRO64Pure
64MB SDR GeForce2
MX400 128-bit 4x AGP
- Retail

asus



PCW14121134 **\$37.99**

Radeon 9200
128MB DDR DVI/TV-Out
8x AGP GV-R92128DH
- Retail

gigabyte



PCW14125113 **\$67.99**

AIW Radeon 9600Pro 128MB DDR
128-bit FM/CATV/VIVO
- Retail

ati



PCW14102316 **\$218.00**

GeForce FX 5900SE
128MB DDR 256-bit 8x
AGP DVI/TV-Out - Retail

nvidia



PCW14130179 **\$184.00**

Hard Drives

40GB 7200RPM IDE
Ultra ATA133 6E040L0
- OEM

maxtor



PCW22140133 **\$58.00**

40GB 7200RPM E-IDE
ATA100 ST340014A
- OEM

seagate



PCW22148013 **\$55.00**

80GB 7200RPM
Special Edition IDE Ultra
ATA100 WD800JB - OEM

western digital



PCW22144122 **\$75.00**

160GB 7200RPM IDE
Ultra ATA133 SP1604N
- OEM

samsung



PCW22152011 **\$112.00**

Sound Cards

GameSurround
Fortissimo III 7.1
Dolby Digital EX PCI 2.1
- Retail

audigy



PCW29116113 **\$45.00**

SantaCruz 6 Channel
PCI 20-bit Dolby Digital
- OEM

turtle beach



PCW29118101 **\$49.00**

Sound Blaster
Audigy 2 ZS Platinum
Pro PCI 24-bit - Retail

creative



PCW29102162 **\$89.00**

CD/DVD Media

CD-R Blank Media
700MB 52x 100 Spindle
Pack - Retail

memorex



PCW17131834 **\$39.00**

Optical Drives

52x32x52 CD-RW
ATAPI/E-IDE 2MB Buffer
LTR-52327S - OEM

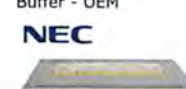
liteon



PCW27106197 **\$37.00**

4x DVD±RW
IDE/ATAPI Ultra DMA33
ND-1300A/GEN 2MB
Buffer - OEM

neec



PCW27152006 **\$100.00**

Software

Call of Duty
PC Game - Retail

activision



PCW32133111 **\$42.00**

Nero 6 All Purpose
CD/DVD Creation Tool
- Retail

ahead



PCW32111102 **\$75.00**

Speakers

Logitech Z640 5.1
Speaker 7.1 Watts - Retail

logitech



PCW36121104 **\$66.00**

Inspire T7700 7.1
Surround Sound Speaker
System - Retail

creative



PCW36116140 **\$129.00**

ProMedia Ultra 5.1
Personal Audio System
- Retail

klipsch



PCW36119106 **\$359.00**

DVD-R 4.7G 1x/2x
Speed "Gold Surface"
General Use 50 Pack
- Retail

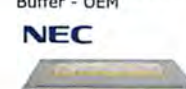
optodisc



PCW17131735 **\$39.99**

4x DVD±RW
IDE/ATAPI Ultra DMA33
ND-1300A/GEN 2MB
Buffer - OEM

neec



PCW27152006 **\$100.00**

Cases

ATXB3KLW/350W
X-Dreamer Mid-Tower
Case w/ 350 Watt Power
Supply - Retail



PCW11144001 **\$56.00**

Metis Series ATX
Case w/ 300 Watt
Power Supply - Retail



PCW11138001 **\$40.00**

Solution Series
350 Watt Power Supply
SLK3700AMB - Retail



PCW11129121 **\$84.00**

Xaser III V2000A
Super Tower Case Dual
Front USB 2.0 - Retail



PCW11133117 **\$106.00**

Monitors

V700 17" CRT Shadow
Mask 1600x1200 - Retail



PCW24134022 **\$114.00**

753DF-T/T 17"
DynaFlat CRT 0.20mm
Dot Pitch 1280x1024
- Retail



PCW24001120 **\$140.00**

VE155B 15" LCD
0.297mm Pixel Pitch
1024x768 XGA - Retail



PCW24116210 **\$340.00**

LCD1760V-BK
MultiSync 17" LCD Black
Active Matrix 1280x1024
- Retail



PCW24002078 **\$480.00**

Laptops

Satellite A10-S1291
Celeron 2.4GHz 15" TFT
256MB RAM 40GB - Retail



PCW34114031 **\$899.00**

ThinkPad T40
Centrino Pentium-M
1.5GHz 14.1" TFT 256MB
RAM 40GB - Retail



PCW34146013 **\$1639.00**

VAIO TR2A Centrino
Pentium-M 1GHz 10.6"
TFT 512MB RAM 40GB
- Retail



PCW34115083 **\$2058.00**

NX9010 Celeron
2.4GHz 14" TFT 256MB
RAM 30GB - Retail



PCW34147001 **\$949.00**

Featured Item

TOSHIBA

Satellite A10-S169

- Intel Pentium 4-M 2.2GHz
- 15" TFT 1024x768 @ 24 bit
- 256MB Memory 40GB Hard Drive
- 8x DVD/ 24x CDRW Combo Optical Drive
- 56k Modem 10/100 LAN
- Windows XP Pro



\$1019.00

Find It Code™ PCW34114035

Digital Cameras

Coolpix 4300
4.1 Megapixel 2272x1704
3x Optical Zoom - Retail



PCW30113103 **\$335.00**

C-750UZ Ultra Zoom
4.1 Megapixel 3200x2400
10x Optical Zoom - Retail



PCW30111120 **\$476.75**

DSC-P10
5.0 Megapixel 2592x1944
5x Optical Zoom - Retail



PCW30150029 **\$450.00**

FinePix S5000
3.1 Megapixel 2816x2120
10x Optical Zoom - Retail



PCW30122016 **\$332.75**

PowerShot S400
4.0 Megapixel 2272x1704
3x Optical Zoom - Retail



PCW30120015 **\$395.00**

DiMAGE Z1
3.2 Megapixel 2048x1536
10x Optical Zoom - Retail



PCW30126009 **\$321.00**

Camera Accessories

Sandisk 256MB
Ultra II Compact Flash
SDCFH-256-901 - Retail



PCW20171022 **\$63.00**

Kingston 128MB
Secure Digital Card
SD/128 - Retail



PCW20160019 **\$43.00**

Olympus 256MB
xD-Picture Card
XDPC256MB - Retail



PCW20196103 **\$94.50**

Sony 128MB
Memory Stick
MSA128A - Retail



PCW20191207 **\$54.75**

Power Supplies

ATX400 400 Watt
Power Supply w/ Two
Fans AMD Approved
- Retail



PCW17154013 **\$36.00**

TRUE430 430 Watt
Power Supply ATX12V
Type - Retail



PCW17103908 **\$78.00**

Network

WGT624 Wireless
802.11G 108Mbps
Firewall Router - Retail



PCW33122022 **\$118.00**

WET54G Wireless-G
Ethernet Bridge 802.11G
Web-Based - Retail



PCW33124015 **\$140.00**

DI-624 AirPlus Xtreme
G Series High Speed
2.4GHz 4 Ports - Retail



PCW33127028 **\$92.00**

DWL-900AP+
Enhanced 2.4GHz Wireless
Access Point - Retail



PCW33127015 **\$70.00**

PDA's

iPAQ h4155 400MHz
320x480 TFT 64MB RAM
Pocket PC - Retail



PCW58103115 **\$397.50**

CLiÉ PEG-UX50 104MB
RAM 480x320 Palm v5.2
- Retail



PCW58201015 **\$535.00**

Input Devices

K50-00001 Natural
Multimedia PS2 102 Keys
- Retail



PCW23109112 **\$41.00**

CanoScan 5000F
USB 2.0 Flatbed Scanner
2400x2400 dpi - Retail



PCW38111004 **\$115.00**

Cordless MX Duo
Elite Keyboard & Mouse
- Retail



PCW23126124 **\$76.00**

Perfection 3170
USB 2.0 3200x3200 dpi
Photo Scanner - Retail



PCW38110113 **\$200.00**

Photo Printers

i960 Bubble Jet
4800x1200 dpi - Retail



PCW28102135 **\$192.00**

Stylus Photo 2200
2880x1440 dpi - Retail



PCW28103133 **\$699.00**

Photosmart 7960
4800x1200 dpi - Retail



PCW28104263 **\$275.00**

640PS 403x403 dpi
Instant Photo Printing
- Retail



PCW28116004 **\$265.00**

new egg.com™
Best Value, Always!



"When do I start?"



- Revolutionary NO•NOIS engine for virtually silent printing and a no-hassle toner-change system
- Unparalleled print speeds of up to 5 ppm color, 21 ppm monochrome — the fastest in its class
- Built-in auto-duplexing for automatic two-sided printing
- 850-sheet capacity with optional second paper cassette
- 1-year on-site service program*

Samsung's CLP-500. The color printer with office skills.

If it came with a resume, you might think it was over-qualified. Introducing Samsung's CLP-500 color laser printer. Renowned for its whisper-quiet, NO•NOIS™ laser engine and state-of-the-art color matching software, it literally screams color, without ever raising its voice. And with print speeds of up to 5 ppm color/21 ppm monochrome, it's always ready for crunch time. The Samsung CLP-500. When you're ready for color, it's ready to start.

Think. Print. Lead.

Visit www.samsungusa.com/printer
or call 1-800-SAMSUNG





CONSUMER WATCH

ANNE KANDRA

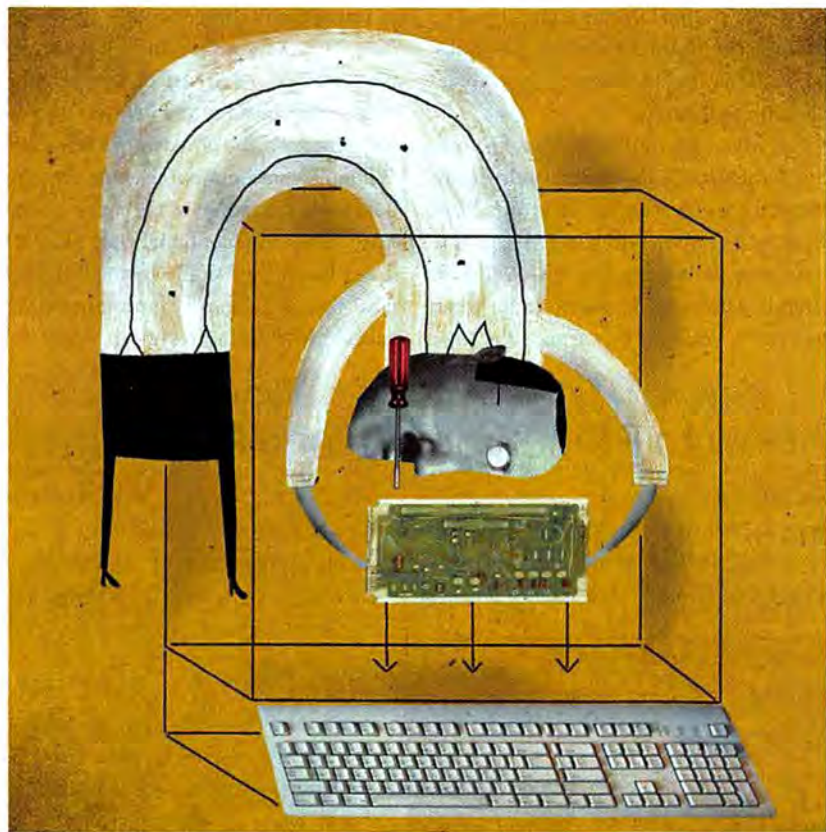
**TIPS FOR ASSEMBLING
A PC FROM SCRATCH**

**PRIVACY WATCH: PASS-
WORD MEMORY TRICKS**

**ON YOUR SIDE: AVOIDING
PRINTER CRASHES**

If You Build It, Will It Run?

Building your own PC? Here's how to save some headaches and some dollars.



WHEN JIM DESMOND needed a new PC a few years ago, he figured that he could save a few bucks by building it himself. He was right—but the adventure wasn't without other costs.

"I spent at least one entire week of evenings just doing research, before I even started building," says Desmond, manager of information protection at a large financial institution. Since that first try, Desmond has built a dozen more systems for himself and others, and he says that the process has gotten easier each time as he's gained experience and as parts have

become less difficult to assemble. "It used to be sort of like building a car," says the Cleveland native. "These days it's more like putting together a cabinet."

Once a hobby of supergeeks, PC building is going mainstream. Stores like Best Buy and CompUSA are playing up their selection of motherboards, and companies like Memorex are selling products to customize PCs and cases.

The option of rolling your own PC can be attractive: If everything goes according to plan, you end up with exactly the system you want and maybe save some

dough in the process. But of course, things don't always go according to plan, even for technically savvy users. If you're on the fence, ask yourself these questions: **Will this project be a pleasure or a pain?** If you truly enjoy tinkering with tech toys and chasing down the cause of mysterious error messages, you won't mind (too much) if a particularly stubborn problem crops up. If you don't, you could end up with nothing more than an impressive collection of parts, an inflated credit card bill, and a migraine headache.

Are you doing it because you're a cheap-skate? If so, be careful. Building a system from parts can certainly save you some cash, but mostly on midlevel to high-end, highly customized systems. Though you may be able to cobble together a basic system for a couple hundred bucks, you may also find yourself replacing those cheesy components in a few months.

If you're just looking for an inexpensive, reliable machine, you can buy a ready-made one—with a warranty—from many reputable vendors for \$500 or less.

Do you have plenty of spare time? Like most do-it-yourself projects, building a computer will probably take at least twice as long as you expect. Experts I spoke with say that first-timers should plan on at least two weeks to properly research, order parts, and build a computer. If you need to be up and running quickly, or if you have other demands on your time (such as a job, a family, or a houseplant) building might not make sense for you.

Do you mind being your own tech support department? If the prospect of an inexplicable hardware failure in the middle of the night makes you feel like the mis- ▶

sion commander in *2001: A Space Odyssey* after HAL went haywire, think long and hard before you commit to building. Most component manufacturers do offer warranty coverage for their parts, but you may not be able to tell whether a particular problem is due to a faulty part or some other incompatibility. And keeping track of the individual warranties for each component can be a headache.

BEFORE YOU BUILD

IF YOU'VE DECIDED you were born to build, great. But before you start pricing motherboards, consider the following tips, which I've culled from a handful of self-builders who've been there, done that, and learned from their mistakes. They might just save you some ibuprofen.

Know what you want. Before you order a single component, decide exactly the system you want, just as you would if you were buying a vendor-built machine. Once you've figured out what you'll be

using the computer for, you can focus on finding parts that will best fit the bill.

Do your homework. Plenty of books, articles, and Web sites out there can help you navigate your way to PC perfection.

Rob Williams, a software developer and computer game designer in Longwood, Florida, started his own Web site (www.MySuperPC.com) after constructing his first PC from scratch. The site offers a cornucopia of advice on everything from choosing components and vendors to avoiding typical newbie problems. Another helpful site is HardwareCentral (www.hardwarecentral.com), which includes pages of easy-to-follow information about all things hardware.

For advice on motherboards, see our Spotlight on page 150. When you're ready to put the pieces together, last July's *Step-By-Step* (find.pcworld.com/39938) can help you with the specifics. And ask friends, family, and coworkers for their two cents; you may be surprised at how

many closet PC builders are out there.

Build a budget. And stick to it. After all, one of the reasons to build your own is to save money, right? Shane Rau, a technology industry analyst and build-it-yourself veteran in Palo Alto, California, recommends that builders set a budget based on the cost of buying their ideal PC from a commercial PC maker. "Overspending is a common pitfall for first-time builders," says Rau. "If you go into the project with an idea of what the retail price would be, you'll be a lot less likely to buy overpriced or unnecessary components."

Buy the good stuff. Snapping up a \$50 motherboard or \$20 hard drive to beat the budget may be tempting, but you'll probably regret it if you do. MySuperPC.com's Williams considers purchasing bargain-basement components the biggest mistake a new computer builder can make. "I don't know how many times builders who bought cheap components have asked me why their system won't ►

PRIVACY WATCH

E@4#N or E@4#W? How to Remember Strong Passwords

WITH SO MUCH of your personal data stored on a hard drive or on the Internet, the only way to maintain your privacy securely is by creating tough passwords and changing them regularly. But how do you dredge up e*TY#\$98@ from your already overtaxed brain?

You don't need to have a perfect memory. Here are a few ways to come up with passwords no one else will guess, but that you'll be able to recall: **Make the password out of the first letter of a list of several words.** The list you use can consist of a sentence or perhaps the names of your children, brothers, or favorite football teams, but you can turn any memorable string of words into a memorable password. Robert A. Heinlein did just that in his 1966 novel *The Moon Is a Harsh Mistress*, when he made up the acronym *tanstaaf* from the first letter of each word in the sentence, "There ain't no such thing as a free lunch."

Turn words into numbers and special characters. Adding anything from the number row of your keyboard (either the numbers or the shifted special characters) to a password makes it much stronger. For instance, you could turn a memorable pet emergency into the password *m3dcac^at* ("My three dogs chased a cat up a tree").

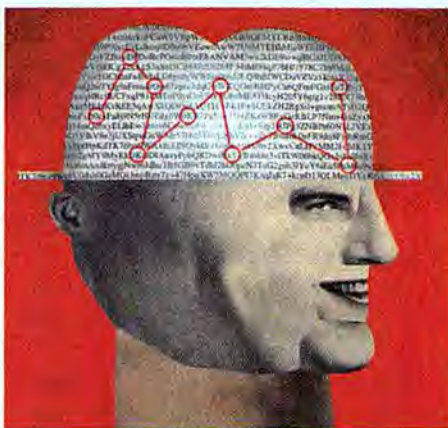
Blend the letters of two or more words into one password. Rather than using your mother's name as a password, you could combine the words *mom* and *Ella* into the password *Emlolma* by alternating letters from the two words. Need a new password? Just reverse the letters to make *amlolmE*.

Use password manager software to keep track of your passwords. The tricks identified above will help people with average memories keep a reasonable number of passwords in their heads. But what if you frequently need to buy a vowel just to remember a co-worker's name, or if you have dozens of password-protected accounts?

In such situations, the best option is to use software specifically designed to manage, securely store, and help you use your passwords. Two examples are Password Safe (find.pcworld.com/39599) and Password Corral (find.pcworld.com/39602).

Even if you have a good memory, it's wise to store your passwords in a password manager, just in case. Because it's scary how many people can foil the other popular password storage technique—Post-it notes stuck on the underside of your desk.

—Andrew Brandt





Find the Perfect Gift

Find the Lowest Prices,

find the right features,



*find the best way
to buy it online.*

PCWORLD

PRODUCT FINDER

Find the very best in products, prices,
and customer satisfaction, go to

www.pcworld.com/productfinder

PC World.com | Product Finder - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://pcworld.pricegrabber.com/home_mostpop.php/

TECHNOLOGY ADVICE YOU CAN TRUST

PCWORLD HOME NEWS REVIEWS HOW-TO DOWNLOAD
TOOLS PRODUCT FINDER MAGAZINE

SEARCH USE FIND.PCWORLD.COM

PRODUCT GUIDES Cameras Notebooks Desktops Printers Monitors Home

PRODUCT FINDER Powered By

Find product by name: Go or: Select product type

PRODUCT GUIDES All Products >







Ratings & How to Buy
Pick Category

Categories

- All Hardware
- All Photography**
- All Software
- All Electronics

Pictures On
Pictures Off

Most Popular
Top 200 Most Popular Products

-  **PowerShot S400** (4MP, 2272x1704, 3x Opt. Zoom) - (B392A001)
-  **PowerShot A70** (3.2MP, 2048x1536, 3x Opt. Zoom) - (B400A001)
-  **C-750 Ultra Zoom** (4MP, 2280x1712, 10x Opt. Zoom, Picture) - (225390)
-  **Combo Drive DVD-RW/+R DVD-RW/-R 4.7GB 4X-DVD+RW+R 2** (Sony) - (DRU510A)
-  **EOS Digital Rebel SLR** (6.3MP, 3072x2048) - (B861A003)
-  **EOS Digital Rebel EF-S 18-55mm Kit** (6.5MP, 3072x2048) - (B861A001)

work," says Williams. "I tell them to ask the outfit they bought it from."

Protect yourself. Check the warranty details on every part you get, and test each component before its warranty expires. "Make sure everything you buy is returnable," advises PC builder Desmond.

Should you attempt to build your own PC? If you're prepared to do a lot of work and to deal with some potential frustration, you just might be rewarded with the system of your dreams—along with the satisfaction and knowledge that you'll gain from having done it yourself. ■

Anne Kandra is a contributing editor and Grace Aquino and Andrew Brandt are senior associate editors for PC World. You can e-mail them at consumerwatch@pcworld.com. If you'd like to read previously published Consumer Watch, Privacy Watch, or On Your Side columns, visit find.pcworld.com/31703, find.pcworld.com/31706, or find.pcworld.com/31709, respectively.

ON YOUR SIDE

Printer Constantly Causes Crashes

UMY LEXMARK Z65p ink jet printer worked fine until about two months ago, when my computer started crashing every time I tried to print. I removed and downloaded the printer driver about ten times without improvement. I called Lexmark tech support and was told the problem involves an OS failure. Specifically, the rep said, the spooler file is corrupt and nothing is wrong with the printer. The service rep said Microsoft has a repair disc available for this issue, but no one I have talked to who works in computer repair is aware of such a thing. Am I getting the runaround, or just an uninformed service rep?

Jack Stroupe, Slidell, Louisiana

On Your Side responds: Lexmark spokesperson Shannon Lyman confirms that the

service rep's assessment was correct: Stroupe's installation of Windows 98 SE recognized the Z65p printer but not its driver. Another tech support representative advised Stroupe to download a USB Plug and Play Patch (one that is sometimes used with Lexmark's laser printers) from the company's Web site and to install it on his machine. That did the trick. If you encounter a similar problem, Lexmark recommends running the Windows recovery disc that was bundled with your PC to help diagnose the issue.

A Microsoft spokesperson says that Lexmark printer drivers for LEXBCE version 1.03 and earlier are incompatible with Windows 98 SE. Later versions of the Lexmark drivers do work, however.

—Grace Aquino

Presenting
Product Finder:
Your #1 Choice for
Shopping & Savings



Now you can get the best products and the best deals, all in one convenient place:
www.pcworld.com/productfinder

Whether you're starting to shop or you're ready to buy, PC World's **Product Finder** is the only resource you need on the Web. You'll find more than 200,000 different products—including PCs, digital cameras, DVD drives, CD-RWs, PDAs, software, and more—along with detailed specs, helpful buying information, and shopping tools you won't find anywhere else.

- PC World articles and ratings
- Lowest prices available
- Side-by-side feature and price comparisons
- User reviews from buyers like you
- Complete pricing info with tax & shipping charges
- Respected and reputable retailers
- Manufacturer rebates, discounts & promotions
- Much, much more!

PC World's **Product Finder** brings you the very best in products, prices, and customer satisfaction.

PCWORLD

Visit www.pcworld.com/productfinder today!

Immaculate ~~WiFi~~ Reception

The 802.11g USB 2.0 adapter with twist-and-shout flexibility!



GWU513

Wireless-G to USB 2.0 Flex Adapter

- Uses USB port, not cardbus or PCI slot
- No configuration hassles
- Flexes and pivots for optimal reception

IOGEAR's ultra fast Wireless-G 802.11g USB 2.0 adapter can help you connect to a wireless network with "higher power." It bends and twists to ensure optimal reception so you can work at up to 54Mbps at home or anywhere a hotspot is available.

Installation takes just moments. All IOGEAR Wireless-G products offer the latest security and are backward compatible with 802.11b.

So "retire the wire" without sacrificing Internet speeds - pick up IOGEAR's line of Wireless-G products today!



GWA501

Wireless-G Broadband Gateway/Print Server

- Fast setup in just a few simple steps
- Includes everything for effortless installation
- Built-in firewall, supports WPA and WEP
- Built-in print server shares your printer with all connected computers

GWP511

Wireless-G Notebook Network Card

- Low-profile high-gain antenna achieves favorable sleek design
- Included Software Access Point allows you to turn your notebook into a wireless Access Point



Retire the Wire.

trailblazer

scout



Visit www.ibm.com/pc/safecomputing periodically for the latest information on safe and effective computing. **Warranty Information:** For a copy of applicable product warranties, write to: Warranty Information, P.O. Box 12195, RTP, NC 27709, Attn: Dept. JDJA/B203. IBM makes no representation or warranty regarding third-party products or services. All offers subject to availability. IBM reserves the right to alter product offerings and specifications at any time, without notice. IBM is not responsible for photographic or typographic errors. *Prices do not include tax or shipping and are subject to change without notice. Reseller prices may vary. †Mobile Intel Pentium processors feature Intel SpeedStep™ technology. With Intel SpeedStep, processor speed may be reduced to conserve battery power. †11a, 11b and 11g wireless are based on IEEE 802.11a, 802.11b and 802.11g, respectively. An adapter with 11a/b or 11a/b/g can communicate on either or any of these listed formats respectively; the actual connection will be based on the access point to which it connects. ‡Some software may differ from its retail version (if available) and may not include user manuals or all program functionality. Software license agreements may apply. †For hard drive, GB = billion bytes. Accessible capacity is less; up to 4GB is in service partition. †Includes battery and optional travel bezel instead of standard optical drive in Ultrabay bay, if applicable; weight may vary due to vendor components, manufacturing process and options. Thinness may vary at certain points on the system. †Support unrelated to a



IBM recommends Microsoft®
Windows® XP Professional
for Business.

IBM ThinkPad R40

Distinctive IBM Innovations:

- Access Connections – Easiest wired and wireless connectivity
- IBM Embedded Security Subsystem 2.0¹¹ – Strongest security as a standard feature

System Features:

- Intel® Centrino™ mobile technology
- Intel Pentium® M processor 1.40GHz¹
- Intel PRO/Wireless Network Connection 802.11b²
- Microsoft Windows XP Home Edition³
- 14.1" XGA TFT display (1024x768)
- 128MB DDR SDRAM⁴
- 20GB⁵ hard drive
- Ultrabay™ Plus CD-ROM
- IBM UltraNav™ – TrackPoint™ and touch pad
- 1-yr system/battery limited warranty⁶

\$1,179* ■ NavCode 27229FU-M118

Recommended Option:

- ServicePac⁷ Service Upgrade:⁸
3-yr Depot Repair #30L9192 ⁹132

IBM ThinkPad T41

Distinctive IBM Innovations:

- Access Connections – Easiest wired and wireless connectivity
- IBM Embedded Security Subsystem 2.0¹¹ – Strongest security as a standard feature

System Features:

- Intel Centrino mobile technology
- Intel Pentium M processor 1.40GHz¹
- Intel PRO/Wireless Network Connection 802.11b²
- Microsoft Windows XP Professional
- 14.1" XGA TFT Display (1024x768)
- 256MB DDR SDRAM⁴
- NEW! 40GB hard drive with IBM Hard Drive Active Protection System
- Ultrabay Slim CD-RW/DVD-ROM combo
- Only 1" thin³ • 4.5-lb travel weight⁴
- 1-yr system/battery limited warranty⁶

\$1,699* ■ NavCode 2378DHU-M118

Recommended Option:

- ServicePac⁷ Service Upgrade:⁸
3-yr Onsite Repair/9x5/Next Business
Day Response #30L9195 ⁹243

With the easiest way to go from wired to wireless networks,
exploring new territory can be a walk in the park.

Wherever you want to work, the sky is the limit when you have IBM ThinkPad® notebooks with Access Connections software and wireless Intel® Centrino™ mobile technology (on select models). Now it's easier than ever to switch between wired and wireless networks — whether you're at an airport, the office, an Internet café, even your kitchen.¹⁰ So consider the IBM ThinkPad wireless notebook, and experience a whole new level of wireless possibilities. **think freedom**

1 866 426-8044 | ibm.com/shop/m118
Save on shipping. Order online.⁹

warranty issue may be subject to additional charges. ⁷These services are available for machines normally used for business, professional or trade purposes, rather than personal, family or household purposes. Service period begins with the equipment date of purchase. If the machine problem turns out to be a Customer Replaceable Unit (CRU), IBM will express ship the part to you for quick replacement. Onsite 24x7x2-hour service is not available in all locations. For ThinkPad notebooks requiring LCD or other component replacement, IBM may choose to perform service at the depot repair center. ⁸For PCs without a separate video card, memory supports both system and video. Accessible system memory is up to 64MB less than the amount stated, depending on video mode. ⁹Standard shipping included when you order online. U.S. only. ¹⁰Public wireless access limited. Subscription may be required and fees may apply. ¹¹Requires download of client software. IBM, ThinkPad and ThinkCentre are trademarks or registered trademarks of IBM Corporation in the U.S. and other countries. Microsoft and Windows are trademarks or registered trademarks of Microsoft Corporation. Intel, Intel Inside, the Intel Inside logo, Intel Centrino, the Intel Centrino logo, Intel Pentium, Intel Celeron and Intel SpeedStep are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Other company, product and service names may be trademarks or service marks of others. © 2004 IBM Corp. All rights reserved.

Powerful. Wireless. Secure. Enlighten your workload.



IBM ThinkPad® R40

Distinctive IBM Innovations:

- Embedded Security Subsystem 2.0¹ – Strongest security as a standard feature

System Features:

- Intel® Centrino™ mobile technology
 - Intel Pentium® M processor 1.40GHz²
 - Intel PRO/Wireless Network Connection 802.11b³
- Microsoft Windows XP Professional⁴
- 15" XGA TFT Display (1024x768)
- 256MB DDR SDRAM⁵ • 20GB⁶ hard drive
- Integrated Ethernet and modem
- Ultrabay™ Plus CD-RW/DVD-ROM combo
- IBM UltraConnect™ Antenna for increased signal strength⁷
- 1-yr system/battery limited warranty⁸

\$1,299*

NavCode 289783U-M118

ServicePac® Service Upgrade:⁹

3-yr Depot Repair
#30L9192 *132

IBM ThinkPad R40

Distinctive IBM Innovations:

- Embedded Security Subsystem 2.0 – Strongest security as a standard feature

System Features:

- Intel Centrino mobile technology
 - Intel Pentium M processor 1.50GHz²
 - Intel PRO/Wireless Network Connection 802.11b³
- Microsoft Windows XP Professional
- 15" SXGA+ TFT Display (1400x1050)
- 256MB DDR SDRAM⁵ • 60GB hard drive
- Integrated Ethernet and modem
- Ultrabay Plus CD-RW/DVD-ROM combo
- IBM UltraNav™ TrackPoint® and touch pad
- 1-yr system/battery limited warranty⁸

\$1,679

NavCode 2897GAU-M118



MOBILE
TECHNOLOGY

IBM ThinkPad T41

Distinctive IBM Innovations:

- Access IBM – IBM help at your fingertips

System Features:

- Intel Centrino mobile technology
 - Intel Pentium M processor 1.40GHz²
 - Intel PRO/Wireless Network Connection 802.11b³
- Microsoft Windows XP Professional
- 14.1" XGA TFT Display (1024x768)
- 32MB ATI Mobility RADEON 7500 graphics
- 256MB DDR SDRAM⁵ • 40GB hard drive
- Integrated Gigabit Ethernet and modem
- Ultrabay Slim CD-RW/DVD-ROM combo drive
- IBM UltraConnect Antenna for increased signal strength
- Only 1" thin⁶ • 4.5-lb travel weight⁷
- 1-yr system/battery limited warranty⁸

\$1,699

NavCode 2378DHU-M118

ServicePac® Service Upgrade:⁹

2-yr Onsite Repair/9x5/Next Business
Day Response
#30L9189 *197

IBM ThinkPad T41

Distinctive IBM Innovations:

- Embedded Security Subsystem 2.0 – Strongest security as a standard feature

System Features:

- Intel Centrino mobile technology
 - Intel Pentium M processor 1.60GHz²
 - Intel PRO/Wireless Network Connection 802.11b³
- Microsoft Windows XP Professional
- 14.1" SXGA+ TFT Display (1400x1050)
- 32MB ATI Mobility RADEON 9000 graphics
- 256MB DDR SDRAM⁵ • 40GB hard drive
- Ultrabay Slim CD-RW/DVD-ROM combo drive
- Integrated Gigabit Ethernet and modem
- IBM UltraConnect Antenna for increased signal strength
- Only 1" thin • 4.5-lb travel weight
- 3-yr system/1-yr battery limited warranty⁸

\$1,939

NavCode 2379DJU-M118

ServicePac® Service Upgrade:⁹

5-yr Onsite Repair/9x5/Next Business
Day Response
#69P9200 *449

IBM ThinkPad X31

Distinctive IBM Innovations:

- Rapid Restore™ – Push-of-a-button data backup and recovery

System Features:

- Intel Centrino mobile technology
 - Intel Pentium M processor 1.40GHz²
 - Intel PRO/Wireless Network Connection 802.11b³
- Microsoft Windows XP Professional
- 12.1" XGA TFT Display (1024x768)
- 16MB ATI Mobility RADEON graphics
- 256MB DDR SDRAM⁵ • 40GB hard drive
- Integrated Ethernet and modem
- Integrated IEEE 1394 FireWire
- 5.5-hr Li-Ion battery⁶
- 3.6-lb travel weight
- 1-yr system/battery limited warranty⁸

\$1,599

NavCode 2884CRU-M118

ServicePac® Service Upgrade:⁹

3-yr Depot Repair
#30L9192 *132

IBM ThinkPad X31

Distinctive IBM Innovations:

- Access Connections – Easiest wired and wireless connectivity

System Features:

- Intel Centrino mobile technology
 - Intel Pentium M processor 1.60GHz²
 - Intel PRO/Wireless Network Connection 802.11b³
- Microsoft Windows XP Professional
- 12.1" XGA TFT Display (1024x768)
- 16MB ATI Mobility RADEON graphics
- 256MB DDR SDRAM⁵
- 40GB hard drive
- Integrated Gigabit Ethernet and modem
- Integrated IEEE 1394 FireWire
- 5.5-hr Li-Ion battery
- 3.6-lb travel weight
- 1-yr system/battery limited warranty⁸

\$1,799

NavCode 2884NRU-M118

ServicePac® Service Upgrade:⁹

4-yr Depot Repair
#69P9195 *249

IBM ThinkPad X31 Solution Pack

Distinctive IBM Innovations:

- Access Connections – Easiest wired and wireless connectivity

System Features:

- Intel Centrino mobile technology
 - Intel Pentium M processor 1.40GHz²
 - Intel PRO/Wireless Network Connection 802.11b³
- Microsoft Windows XP Professional
- 12.1" XGA TFT Display (1024x768)
- 16MB ATI Mobility RADEON graphics
- 256MB DDR SDRAM⁵ • 20GB hard drive
- 5.5-hr Li-Ion battery
- 1-yr system/battery limited warranty⁸

Accessories Included:

- UltraBase™ X3 media slice
- Ultrabay Plus CD-RW/DVD-ROM combo

\$1,799

NavCode 2884WU-M118

ServicePac® Service Upgrade:⁹

3-yr Onsite Repair/9x5/Next Business
Day Response
#30L9195 *243

IBM ThinkPad X31 Solution Pack

Distinctive IBM Innovations:

- Embedded Security Subsystem 2.0 – Strongest security as a standard feature

System Features:

- Intel Centrino mobile technology
 - Intel Pentium M processor 1.60GHz²
 - Intel PRO/Wireless Network Connection 802.11b³
- Microsoft Windows XP Professional
- 12.1" XGA TFT Display (1024x768)
- 16MB ATI Mobility RADEON graphics
- 256MB DDR SDRAM⁵ • 40GB hard drive
- Integrated Gigabit Ethernet and modem
- 5.5-hr Li-Ion battery
- 3-yr system/1-yr battery limited warranty⁸

Accessories Included:

- UltraBase X3 media slice
- Ultrabay Plus CD-RW/DVD-ROM combo

\$1,999

NavCode 2885PWU-M118

ServicePac® Service Upgrade:⁹

4-yr Onsite Repair/9x5/Next Business
Day Response
#69P9198 *299

NavCode® Get the latest pricing and information fast. Use NavCode on the phone or on the Web.

Visit ibm.com/pcc/safecomputing periodically for the latest information on safe and effective computing. **Warranty Information:** For a copy of applicable product warranties, write to: Warranty Information, P.O. Box 12195, RTP, NC 27709, Attn: Dept. JD, A/B203. IBM makes no representation or warranty regarding third-party products or services. *Prices do not include tax or shipping and are subject to change without notice. Reseller prices may vary. ¹Requires download of client software. ²Mobile Intel Pentium processors feature Intel SpeedStep™ technology. With Intel SpeedStep, processor speed may be reduced to conserve battery power. ³11a, 11b and 11g wireless are based on IEEE 802.11a, 802.11b and 802.11g, respectively. An adapter with 11a/b or 11a/b/g can communicate on either or any of these listed formats respectively; the actual connection will be based on the access point to which it connects. ⁴Software may differ from its retail version (if available) and may not include user manuals or all program functionality. License agreements may apply. ⁵For PCs without a separate video card, memory supports both system and video. Accessible system memory is up to 64MB less than the amount stated, depending on video mode. ⁶For hard drive, GB = billion bytes. Accessible capacity is less: up to 4GB in service partition. These model numbers achieved the Ziff Davis Media, Inc.'s Business Winstone® 2002 BatteryMark™ Version 1.0 Battery Runtime Time of at least the time shown. This test was performed without independent verification by the VeriTest testing division of Lionbridge Technologies, Inc. ("VeriTest") or Ziff Davis Media, Inc., neither Ziff Davis Media, Inc., nor VeriTest makes any representations or warranties as to these test results. Winstone is a registered trademark and BatteryMark is a trademark of Ziff Davis Publishing Holdings, Inc., in the U.S. and other countries. A description of the environment in which the test was performed is available at ibm.com/pcc/www.thinkpad/batterylife. Battery life (and recharge times) will vary based on many factors including screen brightness, applications, features, power management, battery conditioning and other customer preferences. ⁸Includes battery and optional travel bezel instead of standard optical drive in Ultrabay bay, if applicable; weight may vary due to vendor components, manufacturing process and options. Thinness may vary at certain points on the system. ⁹Support unrelated to a warranty.



(Monitor not included)



(Monitor not included)



(Monitor not included)

IBM ThinkCentre™ A50p

Distinctive IBM Innovations:

- Rapid Restore Ultra – Push-of-a-button data backup and recovery

System Features:

- Intel® Pentium® 4 Processor with HT Technology 2.80GHz
- Microsoft Windows XP Professional
- 256MB DDR SDRAM⁵
- 40GB hard drive • CD-RW
- Intel Extreme Graphics 2
- Integrated 10/100 Ethernet
- Norton AntiVirus™ 2003 OEM Edition
- Lotus® SmartSuite® Millennium license
- 1-yr limited warranty with limited onsite service¹⁰

\$819 NavCode 843398U-M118

ServicePac® Service Upgrade:¹⁰
2-yr Onsite Repair/9x5/Next Business
Day Response
#54P1859 *75

IBM ThinkCentre A50p

Distinctive IBM Innovations:

- Rapid Restore Ultra – Push-of-a-button data backup and recovery

System Features:

- Intel Pentium 4 Processor with HT Technology 2.80GHz
- Microsoft Windows XP Professional
- 256MB DDR SDRAM⁵
- 40GB hard drive • CD-RW
- Intel Extreme Graphics 2
- Integrated 10/100 Ethernet
- Norton AntiVirus 2003 OEM Edition
- Lotus SmartSuite Millennium license
- 3-yr parts/1-yr limited onsite service limited warranty¹⁰

\$889 NavCode 843298U-M118

ServicePac® Service Upgrade:¹⁰
3-yr Onsite Repair/9x5/4-hr Response
#41L2732 *229

IBM ThinkCentre M50

Distinctive IBM Innovations:

- Rapid Restore Ultra – Push-of-a-button data backup and recovery

System Features:

- Intel Pentium 4 Processor with HT Technology 2.80GHz
- Microsoft Windows XP Professional
- 512MB DDR SDRAM⁵
- 40GB hard drive • CD-ROM
- Intel Extreme Graphics 2
- Gigabit Ethernet-integrated
- Norton AntiVirus 2003 OEM Edition
- Lotus SmartSuite Millennium license
- 3-yr limited warranty with limited onsite service¹⁰

\$1,149 NavCode 8187EJU-M118

ServicePac® Service Upgrade:¹⁰
4-yr Onsite Repair/9x5/Next Business
Day Response
#69P161 *89

IBM ThinkCentre M50

Distinctive IBM Innovations:

- Rapid Restore Ultra – Push-of-a-button data backup and recovery
- IBM Embedded Security Subsystem 2.0 – Strongest security as a standard feature

System Features:

- Intel Pentium 4 Processor with HT Technology 3.00GHz
- Microsoft Windows XP Professional
- 512MB DDR SDRAM⁵
- 40GB hard drive • DVD-ROM
- Intel Extreme Graphics 2
- Gigabit Ethernet-integrated
- Norton AntiVirus 2003 OEM Edition
- Lotus SmartSuite Millennium license
- 3-yr limited warranty with limited onsite service¹⁰

\$1,269 NavCode 8187F4U-M118

ServicePac® Service Upgrade:¹⁰
3-yr Onsite Repair/24x7/4-hr Response
#41L2740 *159

IBM ThinkCentre S50

Distinctive IBM Innovations:

- The smallest IBM desktop without compromise: 62% smaller than a standard IBM desktop

System Features:

- Intel Pentium 4 Processor with HT Technology 2.80GHz
- Microsoft Windows XP Professional
- 512MB DDR SDRAM⁵
- 40GB hard drive • CD-ROM
- Intel Extreme Graphics 2
- Gigabit Ethernet-integrated
- Norton AntiVirus 2003 OEM Edition
- Lotus SmartSuite Millennium license
- 3-yr limited warranty with limited onsite service¹⁰

\$1,189 NavCode 818336U-M118

ServicePac® Service Upgrade:¹⁰
4-yr Onsite/9x5/4-hr Response
#69P162 *250

IBM ThinkCentre S50

Distinctive IBM Innovations:

- The smallest IBM desktop without compromise: 62% smaller than a standard IBM desktop
- IBM Embedded Security Subsystem 2.0 – Strongest security as a standard feature

System Features:

- Intel Pentium 4 Processor with HT Technology 3.00GHz
- Microsoft Windows XP Professional
- 512MB DDR SDRAM⁵
- 40GB hard drive • DVD-ROM
- Intel Extreme Graphics 2
- Gigabit Ethernet-integrated
- Norton AntiVirus 2003 OEM Edition
- Lotus SmartSuite Millennium license
- 3-yr limited warranty with limited onsite service¹⁰

\$1,299 NavCode 818343U-M118

ServicePac® Service Upgrade:¹⁰
3-yr Onsite/9x5/4-hr Response
#41L2734 *129

IBM recommends Microsoft® Windows® XP Professional for Business.

IBM Think Express Program.

Select and purchase IBM Think Express products, designed and priced for small and medium businesses.

IBM Service Upgrades

Protect your notebook with IBM ThinkPad Protection service. It covers accidental damages like drops, spills or damage to your ThinkPad LCD display. (Not available in all states; ask your sales representative for details.)¹¹

1-yr Depot to 3-yr Onsite + 3-yr
ThinkPad Protection

#58P8772 *389

3-yr Depot to 3-yr Onsite + 3-yr
ThinkPad Protection

#58P8774 *299

IBM ThinkPad Accessories

Tripp Lite Traveler portable surge
suppressor #22P7141 *12

Gemplus GemPC400 Compact Smart
Card Reader Writer from IBM
#31P8901 *75

Targus Value Mobile Essentials Kit
#22P8684 *90

ThinkPad Leather Carrying Case¹⁴
#10K0209 *99

IBM iLM300 MicroPortable Data/Video
Projector #0037A03 *2,299

IBM ThinkCentre Accessories

IBM UPS 500 #33L3477 *99

Lexmark X6170 All-in-One
#22P9147 *250

15" IBM ThinkVision™ L150 Flat Panel
Monitor with system purchase
#W9SPAB1 *299

1 866 426-8044 | ibm.com/shop/m118

Save on shipping. Order online.¹¹

Issue may be subject to additional charges. ¹⁰This machine is designed to be repaired during the applicable warranty period primarily with customer-replaceable parts provided by IBM. IBM will only send a technician onsite to perform a repair if (a) remote telephone diagnosis and/or customer part replacement are unable to resolve the problem, or (b) the part is one of the few designated by IBM for onsite replacement. For a list of onsite replaceable parts, contact IBM. Support unrelated to a warranty issue may be subject to additional charges. ¹¹These services are available for machines normally used for business, professional or trade purposes, rather than personal, family or household purposes. Service period begins with the equipment date of purchase. If the machine problem turns out to be a Customer Replaceable Unit (CRU), IBM will express ship the part to you for quick replacement. Onsite 24x7-hour service is not available in all locations. For ThinkPad notebooks requiring LCD or other component replacement, IBM may choose to perform service at the depot repair center. ¹²Standard shipping included when you order online. U.S. only. ¹³Requires compatible wireless-enabled options, sold separately. ¹⁴ThinkPad Protection is not available in all states; contact your sales representative for details. ThinkPad Protection cannot be combined with other warranty service upgrades. ThinkPad Protection #58P8774 is for purchase with 3-year warranty systems; #58P8772 is for purchase with 1-year warranty systems. ¹⁵IBM does not manufacture, warrant or support this product. IBM logos and trademarks used under license. Contact IBM for details. IBM reserves the right to alter product offerings and specifications at any time, without notice. IBM is not responsible for photographic or typographic errors. All IBM product names are registered trademarks or trademarks of International Business Machines Corporation in the U.S. and other countries. Intel, Intel Inside, the Intel Inside logo, Intel Celeron, Intel Centrino, the Intel Centrino logo and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the U.S. and other countries. Microsoft and Windows are trademarks or registered trademarks of Microsoft Corporation. Other company, product and service names may be trademarks or service marks of others. © 2004 IBM Corp. All rights reserved.

HOLDS ON TO THE PAST.

THE LACIE (DGG) IS A TRADEMARK OF LACIE, LTD. © LACIE. ALL RIGHTS RESERVED.

THE LACIE DUAL DRIVE, DESIGN BY F.A. PORSCHE, ALLOWS YOU TO STORE 4.7GB OF PRICELESS PHOTOS, FAVORITE MP3S, AND VIDEOS OF YOUR BAND'S FIRST GIG.

WWW.LACIE.COM



LACIE

DESIGN BY F.A. PORSCHE



STEVE BASS

Road Rules: Work Smart, Travel Light

Keep in touch without lugging an office's worth of gear in your carry-on bag.

PICTURE ME IN a Las Vegas hotel room, cables strewn across the floor, scrambling to file a story about the trade show I'm attending. I'm stuck with dial-up because I forgot my notebook's network adapter card, and I need to get my mitts on six old e-mail messages on three different accounts. Am I frazzled? Not a bit. I've got a steamer trunk full of tricks that keep my load light while letting me stay in touch with the home office.

E-MAIL TO GO

WHENEVER I TRAVEL, I check e-mail on several of my accounts and respond to critical messages. All the new e-mail I retrieve and send while on the road absolutely has to get back onto the desktop system in my office. Whether I'm gone for a day or a month, I rely on Mail2Web.com, a smart, free service that lets me check my POP3 and IMAP accounts. I can do everything with Mail2Web.com—read, reply to, forward, compose, and delete e-mail. The Web-based service checks mail at the server level, so I never clog a narrow dial-up line with 10MB attachments. I prefer Mail2Web.com over my ISP's Web mail because (and this is critical) by default Mail2Web.com leaves mail on the server indefinitely unless I delete it. When I return home, I simply download the messages on the server to my desktop PC.

For short trips, I choose a hotel with an Internet-connected PC available for rent in the room or in the business center. I don't bother taking my notebook. Instead I use the rental to check mail through Mail2Web.com (I always remember to clear the browser cache, history, and temporary Internet files before I leave). If you have a Wireless Access Protocol-enabled

cell phone, you can use Mail2Web.com to read your e-mail from almost anywhere. Of course, if you've ever tried to read your e-mail on a cell phone display, you know that it works in a pinch—if the message



is short and your in-box isn't overloaded. Otherwise, it's crazy-making.

If I'm out for more than a few days, I burn critical e-mail, Word, Excel, and other files onto one or two CDs, and then I copy the files from the discs to my notebook's hard drive. To grab my old Eudora messages, I use Aaron Sherber's free Aas-Backup (go to find.pcworld.com/39722 for the download); for instructions on backing up Outlook and Outlook Express messages, browse to find.pcworld.com/39725. To get the mail I send from the road back to my desktop, I just cc: myself on everything outbound.

When I backpack, I lighten my load by drilling a hole in my toothbrush's handle; I do the equivalent when business traveling by toting APC's TravelPower case and its integrated universal charger (\$80 street, www.apcc.com). It has plenty of room for my notebook, cell phone, PDA, and other rechargeable gadgets (even a

USB toothbrush, if I had one), and I can use and recharge all of them at once—without their power-block adapters—when I plug the case's single cord into an airplane, auto, or AC power outlet.

Despite being weight-conscious (I'm working on that with my therapist), I still stick a 9-foot phone cord, a 12-foot ethernet cable, and an electrical extension cord (for rooms that hide the electrical outlet behind the bed or under the desk) into the TravelPower case. Because cables tangle so easily, I always wrap colored Velcro strips around each to keep them tightly bound for storage. The colored strips also help when I make one last scan of the room before I depart to ensure that I haven't left any cables—or anything else, for that matter—behind. To keep my USB and phone connections in line, I use retractable Zip-Linq cables (\$13 to \$15, www.ziplinq.com) because they can extend outward as far as 30 inches from a small, key chain–like device.

KEEP YOUR ACCESS FREE

ONE MORE THING: To avoid toll charges, I never walk out the door without a list of my ISP's local dial-up numbers. If I know ahead of time that I'm going to need them, I play it safe and use Windows XP's built-in fax feature to send the list to the hotel's fax machine via e-mail fax.

I have tons more travel tips and products that I'll describe in my *Home Office* newsletter; go to find.pcworld.com/38942 to sign up for it. And visit find.pcworld.com/39728 to check out the "Road Tools" feature from last month's issue. ■

Contributing Editor Steve Bass is the author of *PC Annoyances*, published by O'Reilly. Contact him at homeoffice@pcworld.com.

Big kahuna protection

The right software gives you big business protection without costing big bucks.

CA Protection Suite Antivirus and Backup software for small business

Protecting and storing your data is vital to the success of any business, regardless of size. That's why we're pleased to offer the CA Protection Suite for small business. The CA Protection Suite gives your company the same superior antivirus protection and data backup capabilities that we've provided to Fortune 500® companies without costing a fortune. And because the CA Protection Suite features award-winning eTrust™ Antivirus and BrightStor® ARCserve® Backup software in a value-priced bundle*, rather than multiple point solutions, you can be secure in the knowledge that you'll save money and everything will integrate seamlessly. Try it on your own network for a limited time and see for yourself—it won't cost you a cent. To find out more, go to ca.com/smb.

**FREE
TRIAL**

Receive a free trial of the CA Protection Suite and money-saving offer.
Visit ca.com/smb or call 1-866-576-9727.
(mention code 1159)



Computer Associates®

*also available individually

© 2003 Computer Associates International, Inc. (CAI). All trademarks, trade names, service marks, and logos referenced herein belong to their respective companies.

Little fish affordability



BUGS & FIXES

STUART J. JOHNSTON

New Flaws With Internet Explorer, Excel

Plus, Microsoft decides to continue support for Windows 98 and Windows Me.



IT'S A GRAB BAG of Microsoft updates this month: You need to know about a new hole in Internet Explorer. Plus, the company announced that it was extending all paid support for Windows 98 and Me.

First, the flaw. Danish secu-

rity research firm Secunia (www.secunia.com) discovered a hole in IE 5.01 through 6.0. The flaw allows a miscreant to fool the browser into thinking it's pointing to a valid site. This aids in phishing, which refers to ploys for luring you to a legitimate-looking but fake site to get you to reveal personal information. An identity thief could fool IE into displaying a seemingly valid, but false, URL in the address window. The link would

also look genuine if you hovered your mouse over the bogus link in an e-mail, say. Take Secunia's test at find.pcworld.com/39980 to see if your version of IE is at risk.

Microsoft says that it is monitoring the situation

closely but has no plans to issue a patch at this point.

"[We have] no indication of widespread exploit of the vulnerability," reports a spokesperson. Coincidentally, the company recently posted some advice on how to steer clear of IE spoofs. Visit find.pcworld.com/40100 and find.pcworld.com/40103 for info.

On the support front, there's good news. Microsoft had originally planned to pull the plug on support for Windows 98 and Windows 98 Second Edition in the middle of January—and end Me paid support at the end of December 2004. But the company had a change of heart. It scrapped those plans and, instead, decided to extend its support for these operating systems to June 30, 2006.

Paid support means that when you contact a Microsoft technician, you pay \$35 for each problem until it's resolved. The company said that it would review any critical security issues affecting these operating systems and release patches when necessary.

Microsoft's new plan is a blessing for more people than you might think. According to research firm IDC, 15 percent of Windows users around the world were still using Windows 98 at the end of 2003 (and about 7 percent of users were running Windows Me).

Go to find.pcworld.com/40106 for information on Microsoft's life-cycle policy. ■

Stuart J. Johnston is a contributing editor for PC World. Visit find.pcworld.com/31580 to see more Bugs and Fixes columns.

IN BRIEF

Messenger Fix

YAHOO HAS plugged a hole in its instant messaging software. You're vulnerable if you've lowered your security in Yahoo Messenger from the default setting of "medium" to "low." Go to find.pcworld.com/40118 to get the patch.

Activation Patch

HAVING TROUBLE activating Symantec products, such as Norton AntiVirus 2004? Symantec has taken care of the snag. Go to find.pcworld.com/39992 to grab the fix.

Linux Hole

THE DEBIAN GNU/Linux project (debian.org) has patched a security flaw. Go to find.pcworld.com/39986 for more details and upgrade instructions.

BUGGED?

FOUND A hardware or software bug? Tell us about it via e-mail at bugs@pcworld.com.

BUG EXTERMINATOR

Random Bug in Excel 2003

I FOUND A fairly significant bug in Excel 2003. It involves the random number generation (RAND) function. When working properly, RAND creates pseudorandom numbers, which are positive. However, repeated use will break the function, causing it to generate negative numbers. Previous versions of Excel do not

have this problem. Calls to Microsoft have been futile.

Earl Takasaki,

Newport Beach, California

Bugs and Fixes responds: The company says that it is currently working on a fix. Microsoft hopes to have a patch available through Office Update (find.pcworld.com/40115) by the time you read this.

ATTENTION GETTERS

Recipes for Successful Presentations



Illustration by Bryan Leister

>> Recipes and successful presentations share similar elements: a careful blending of quality ingredients, and an attractive presentation. The presenter's goal, however, is to provide food for thought rather than food for fuel. Or is it? One entrepreneur, at least, has discovered that the two goals are not all that different.

Alexa Fasse, president and founder of the soon-to-launch Food for Thought, a New York-based Web catering service, says she spends "at least two hours every day convincing people that

a caterer doesn't really need a catering hall" to display her talents. Fasse needed to find a low-cost way to sell her signature low-

carb dishes to prospective clients. At first, she tried traveling to clients with actual samples, but she found that having to keep her entrees hot for a "road trip" of any but the minimum length took away from the attractiveness of the offering.

Then, Fasse hit upon the idea of displaying her wares digitally rather than in dishes. She spent months wrestling with different methods and technologies. JPG images displayed on a laptop worked on occasion, but only for

very small groups. Finally, she acquired a lightweight portable projector. Now, Fasse shows off her entrees—with dazzling impact—on a three-foot-square folding wall screen.

Fasse and others like her would certainly benefit from the projector technology available from InFocus Corp. (www.infocus.com). As the worldwide leader in digital projection technology and solutions, InFocus projectors draw upon nearly 20 years of experience to enhance creativity and learning in all presentations, whether they take place in board rooms, meeting rooms, or classrooms.

Consider, for example, the LP540 from InFocus, which integrates an innovative design and peerless projectability. A 12-language smart interactive display offers the working status of the LP540 in real time, making it simpler to operate and maintain.

Continued on page 3

INTERVIEW



Ron Gillies is Senior Vice President and General Manager for NEC Solutions America, Inc.'s Visual Systems Division.

WHY CONSIDER NEC FOR YOUR DISPLAY TECHNOLOGY NEEDS?

NEC is a venerable, 100-year-old, \$43-billion global company and a true innovator in the manufacture of visual display technology. Supported by rock-solid engineering, our commercial and professional home entertainment projectors and plasma displays have won numerous awards for excellence. And we back all this up with industry-leading worldwide service and support, including our InstaCare repair and return and TravelCare loaner programs. We pride ourselves on taking great care of our customers.

WHAT IS NEC DOING TO ADDRESS THE TRENDS IN WIRELESS NETWORKS?

Wireless is truly exploding. IDC says that the number of public WiFi hotspots will double worldwide this year, while WiFi adoption in the enterprise continues. NEC's LT200 Series portable projec-

Continued on page 3

SPONSORED BY:

NEC Solutions America, Inc.
www.necvisualsystems.com

InFocus Corp.
www.infocus.com

IT'S LIKE...
HAVING THOUSANDS OF
PEOPLE BEHIND YOU
REGARDLESS OF WHAT
LIES AHEAD.

Visual Systems is a division of NEC Solutions (America), Inc. ©2004.

You deserve a display device, whether it's in your home or at the office, that provides you with the highest level of image quality, simple operation and responsive global support to assist times of need. NEC wants you to know that our commitment to quality products, award-winning service and to the environment is unmatched in the industry. For details on our robust line of projection and plasma display products, visit our web site at www.necvisualsystems.com or call 1.800.NEC.INFO.



NEC. The name you trust, the reliability you deserve.

mobile | wireless

NEC gives you the choices you need to succeed. Put your trust in an industry leader.

LT10. lightweight projector.

At a mere 2.1 lbs., the LT10 will easily slide into any carry-on. Packed with punch, including 1,100 ANSI lumens and DLP technology, your presentations are sure to impress the most critical of audiences.

The DLP™ logo and DLP™ medallion are trademarks of Texas Instruments.



LT240K. portable projector.

Bright enough for installation and light enough for travel, the powerful LT200 Series will make your ideas shine. With features including wireless or wired networking capabilities and extensive input options, it's no wonder NEC's LT240K was listed as a PC World Best Buy.

Empowered by Innovation

NEC

Continued from page 1

The LP540 also sports automatic keystone adjustment and automatic image synchronization with external sources such as a computer, allowing a quick start and smooth transitions. And with 1700 lumens, the LP540 offers exceptional color saturation.



InFocus projectors: innovative design and ease of use

Meanwhile, the InFocus LP820 represents a new breed of installation-ready projectors enabling an era of wireless projection, convenience, and collaboration. In fact, the LP820 is the first meeting-room projector to support InFocus LiteShow—the secure wireless digital projection solution that allows presenters to securely project their ideas from anywhere in the room on a shared projector. The LP820 also features an interactive smart display panel that guides presenters through the set-up process, leading to smooth, error-free presentations that really make their point effectively. With 3000 lumens for spectacular color saturation, the LP820 has three optional lenses to accommodate all room sizes.

For more information on these and other outstanding projection products, click now on www.infocus.com.

A Feast for the Eyes

Meanwhile, although Alexa Fasse's focus is on selling her food, her experiences apply to any successful sales presenta-

tion. "We've all heard the adage about selling the sizzle, not the steak. I found out the hard way—it's true," she says. "People don't buy a product; they buy into a promise. It took me months, but I finally realized that a persuasive, colorful presentation is 80 percent of closing the sale."

Here are some recommendations from presentation experts:

1 PICTURES, NOT WORDS.

Use as many visuals (images, clip art, photographs) to tell your story as you can. Why? Because we humans "digest" images faster than text. Reading text requires the brain to work through a sort of decoding process. Because of how we're wired, visuals can bypass the decoding and analysis.

2 INSERT AN OCCASIONAL "QUESTION" SLIDE.

By anticipating your audience's questions, you can hold their interest while demonstrating that you understand their concerns. Oh—and it keeps them from drifting off, too (probably a throwback to their second-grade teachers jolting them awake by calling on them unexpectedly).

3 COLOR IS SIGNIFICANT.

As much as possible, choose your background colors for their subliminal effect. Industrial psychologists, the people who study what makes advertising effective, offer these guidelines:

RED: Excitement, intensity

BLUE: Truth, trust, justice

ORANGE: Action, optimism

GREEN: Expansion, growth

YELLOW: Confidence, wisdom

PURPLE: Royalty, sophistication

WHITE: Professionalism, newness, innocence

BLACK: Authority, strength

GRAY: Integrity, maturity

INTERVIEW

Continued from page 1

tors include a wireless option enabling users to place their laptops anywhere in the room and switch seamlessly to the projector with the touch of a button for true collaborative communication. You can even remotely control and monitor the projector using the wireless function. It's no wonder NEC's LT240 was listed as a *PC World* Best Buy.

JUST HOW IMPORTANT IS MOBILITY?

IDC data shows that shipments of notebooks and projectors will continue to grow this year, while the US has one of the highest notebook and projector attach ratios in the world. This direct relationship, coupled with decreasing size and increases in functionality, makes notebooks and projectors the ideal combination for today's mobile professional.

NEC's 2.1-pound LT10 is a sleek, compact dynamo with the kind of stunning data and video display, superior brightness, and ease-of-use that empowers any on-the-road professional. These features also make the LT10 an ideal crossover projector for use both at work and home.

One guaranteed attention-grabber, used by experienced presentation designers, is to show the effect of your product or service on people. Through their facial expressions and body language, the customers (who can be your secretary, son-in-law, or neighbor, as well as a paid professional) enable you to portray the sense of security, gratification, and pleasure that your product or service delivers.

So, whether you're preparing a presentation or a four-star meal, color, clarity, and sizzle are requisite ingredients.

3 OPEN THE VICTIM'S AIRWAY

Open the victim's airway by tilting his/her chin gently with one hand, while pushing back on his/her forehead with the other hand. If you suspect a neck injury, put your fingers behind the jawbone just below the ear, and push the jaw forward to open the victim's mouth.

Lifesaver.

Firefighter. Educator. Presenter.

He takes no chances with his equipment. Neither do you. You require reliability, ease of use and innovative features. So when it comes to projectors, you demand InFocus.

InFocus innovation makes your job easy. You buy from the worldwide leader in digital projection technology. Users get ultimate dependability, the most intuitive interfaces — and incredibly powerful tools for sharing their ideas with impact.

That means less maintenance. Fewer emergency calls. Perhaps even the occasional thank-you call. And more time to focus on what really matters.

People rely on you. You rely on InFocus.



- The InFocus® X1** **\$999**
Designed for both business and entertainment.
- Outstanding digital video
 - Incredible value
 - Intuitive controls



- The InFocus® LP640** **\$2699**
Designed by a breakthrough engineer: you.
- Best-in-class capabilities
 - Intuitive controls
 - Brightness that lasts

InFocus®

To find out more about InFocus or where to buy:

**Call 1-888-InFocus or
visit www.InFocus.com**

NEW PRODUCTS

EDITED BY TOM MAINELLI

Powerful Tablet PCs Arrive

Latest crop offers notably better performance and battery life.



NEW TABLET PCs: Gateway's M275XL (left) and ElectroVaya's Scribbler SC-2010.

TABLET PCs

TABLET PC devices have come a long way since their November 2002 launch, especially in terms of battery life and performance. Now mobile professionals who want to lose the paper pad and keep the functionality of a laptop have effective alternatives. Two good examples: ElectroVaya's \$2599 **Scribbler SC-2010** and Gateway's \$2100 **M275XL**.

Although they're not the first portables based on Microsoft's Windows XP Tablet PC Edition operating system to make use of Intel's Centrino technology (which includes the Pentium M processor,

Pro/Wireless 802.11b wireless networking, and the 855 chip set), these two shipping units use significantly faster Pentium M chips than the previous Tablets we've seen, and it showed in our tests. The 1.6-GHz Pentium M-based Gateway received a whopping 121 score on our PC WorldBench 4 test, which is nearly 20 percent higher than the average score of two 900-MHz Pentium M-based Tablet PCs that we looked at in our August issue (find.pcworld.com/40229). The ElectroVaya, using a 1.2-GHz Pentium M, wasn't far behind, earning a score of 114. (All scores were for sys-

tems with 512MB of RAM.)

Moreover, these scores fall well in line with those of full-featured notebooks we have reviewed in our *Top 15 Notebooks* chart, so you're no longer sacrificing performance if you opt for a Tablet PC.

Battery life also takes a leap forward. In this respect the Scribbler stood out, lasting an impressive 6 hours, 5 minutes in our tests. That's not quite the 9 hours ElectroVaya touts, but it's still about 2.5 hours more than previous Tablet champs and it's enough to last the better part of a workday. Gateway's M275XL fared well also, lasting 4 hours, 39 min-

utes in our tests—again, a significant improvement over previously tested Tablets.

TABLET TO GO

OF THE TWO, the pearly off-white Scribbler is a more traditional tablet, and its 3.7-pound weight makes it easy to carry. A separate, collapsible wire frame lets you position the system for comfortable stylus input. Or you can use the bundled keyboard to prop up the display for typing. (The keyboard has a secondary function: You can attach it to cover the screen, although doing so adds half a pound to the unit's carrying weight.)

66 TABLET PCsElectrovaya Scribbler SC-2010,
Gateway M275XL**68 GRAPHICS SOFTWARE**CorelDraw Graphics Suite 12
DESKTOP PC
Nimble V5**70 PROJECTOR**Hewlett-Packard Mp3130
REMOTE PRINTING
Net2Printer**72 DIGITAL CAMERA**Concord Eye-Q Go Wireless
SOFTWARE UTILITY
Microsoft Virtual PC 2004
NETWORKING
Kanguru Wireless LAN**74 EXTERNAL OPTICAL DRIVES**I/O Magic MediaStation 4X Dual
DVD±RW, Micro Solutions RoadStor**75 MP3 PLAYER**

Gateway DMP-X20

76 HEADSETSCardo Systems Allways, GN Netcom
GN 6110, Logitech Mobile
Bluetooth Headset**78 UPS**APC Back-UPS
RS 800VA

75

The Scribbler's stylus and touch screen were responsive, though the stylus sounded as if it was scratching the surface of the screen (it wasn't). Between the nimble stylus and the many quick-launch buttons for the Tablet PC Input Panel, the Windows Start menu, the Windows Journal, and other features, I found using the Tablet sans keyboard easy. Also, one button quickly switched screen orientation from portrait to landscape, which made reverting to keyboard use a snap. However, the Tablet PC OS's bad handwriting recognition—Microsoft's problem, not Electro-
vaya's—remains frustrating.

The unit features a 12.1-inch screen with 1024 by 768 resolution; a 40GB hard disk; built-in 802.11b Wi-Fi, ethernet, and modem; FireWire and USB ports; and a PC Card slot. Notably missing are an optical drive and a floppy drive—you'll spend extra if you need one or both (as most people do). Electro-
vaya offers third-party, USB-based external drives, including a 24X

TEST REPORT**New Tablets Provide More Speed, Run Time**

THE LATEST TABLET PCs with Centrino technology show gains in performance and battery life.

SYSTEM	CPU	PC WorldBench 4 score	Hard drive size (GB)	Screen size (inches)	Weight (pounds)	Battery life (hours: minutes)
Electrovaya Scribbler SC-2010	1.2-GHz/600-MHz Pentium M	114	40	12.1	3.7	6:05
Gateway M275XL	1.6-GHz/600-MHz Pentium M	121	60	14.1	5.9	4:39



HOW WE TEST: Performance scores are based on PC WorldBench 4 tests, which use real-world applications. To determine battery life, we run a series of tests, each with a device's power management set to maximize battery life. Tests designed and conducted by the PC World Test Center. All rights reserved. **CHART NOTE:** Each unit had 512MB of DDR266 RAM.

CD-ROM drive for \$149 and a floppy drive for \$79.

The company does throw in a nice bonus for the security-minded: a built-in fingerprint biometric scanner and Sofex Omnipass password manager software to protect your data. The software bundle also includes Corel Grafigo, a trial version of Franklin Covey Tablet Planner, McAfee Virus-Scan 7, and Alias Sketchbook, among others. In addition, you get a portfolio case.

CONVERT ME

GATEWAY'S M275XL serves those who are in the market for a conventional notebook

with Tablet PC features. This attractive silver and black convertible unit has a large, 14.1-inch screen (1024 by 768 resolution), a roomy 60GB hard drive, an 8X DVD-ROM and 16X/10X/24X CD-RW combination drive, and a four-in-one flash media reader. Of course, these features weigh it down: It's nearly 6 pounds (without the AC adapter).

You also get a PC Card slot; built-in 802.11b Wi-Fi, ethernet, and modem; one FireWire port; and two USB 2.0 ports. The full-size keyboard and the touchpad both worked well, but the layout of the directional keys is nonstandard and may take getting used to. In addition, the button designated for changing screen orientation didn't work on my shipping model (Gateway sent us a software fix and says the problem is corrected on units shipping now). The system's screen swiveled flawlessly

from notebook to tablet mode, and the unit's DVD video playback was smooth, with fairly good audio quality. The software includes Microsoft Works and a trial version of Symantec's Norton AntiVirus.

WAIT IT OUT?

POOR HANDWRITING recognition continues to plague Tablet PCs, but Microsoft expects to release an upgrade to Windows XP Tablet PC Edition by midyear that is supposed to improve this feature (see find.pcworld.com/40274).

So if handwriting recognition is the key reason you're considering a Tablet PC, you may want to wait to see if the update offers substantial improvements. For buyers who need a Tablet now, either of these units should serve you well—and in the Scribbler's case, it should serve you nearly an entire workday, too.

—Anush Yeghazarian ■

M275XL

Gateway

★★★★☆

Top performer gives you a large screen and good battery life, but it's a bit weighty.

Street: \$2100

find.pcworld.com/40238**Scribbler SC-2010**

Electrovaya

★★★★☆

A powerful tablet with a long-lasting battery, but it lacks an included optical or floppy drive.

Street: \$2599

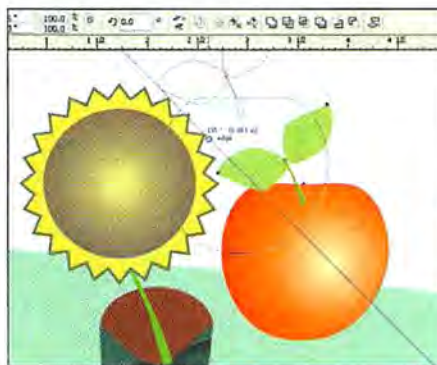
find.pcworld.com/40232

A More Precise CorelDraw

GRAPHICS
WITH VERSION 12, Corel's venerable **CorelDraw Graphics Suite** hasn't undergone a sweeping makeover. In fact, most significant tweaks are focused on one goal: speeding the creation of precise drawings in the namesake CorelDraw illustration program. The suite remains a good bet for business and technical users who want lots of graph-

ics tools at an attractive price, and its improvements will please many existing CorelDraw fans. But those seeking meaty new features, especially in the Photo-Paint image editor, may be disappointed. I tested a prerelease version.

Among CorelDraw's useful precision-oriented enhancements are Dynamic Guides, similar to Smart Guides in Adobe's Illustrator CS: Drag a drawing object around the page, and the guides pop up to show you the object's distance and angle in relation to other items on the page. The new Smart Drawing tool lets you doodle an approximation of a square or another shape, then turns it into a tidy geometric form. Existing tools like object



CORELDRAW'S
new Dynamic
Guides let you
place objects in
relation to
others with
greater
accuracy.

CorelDraw Graphics Suite 12

Corel

★★★★☆

New tools speed creation of precise drawings, but Photo-Paint has barely changed.

List: \$399, upgrade \$179

find.pcworld.com/40175

snapping, text alignment, and file importing and exporting now work more precisely.

As for the suite's other applications, R.A.V.E., the Flash-compatible Web animation program, shares many of CorelDraw's enhancements. But Photo-Paint has only one important addition: a handy Touch-up Brush tool for erasing minor blemishes.

Both CorelDraw and Photo-Paint still lack some slick fea-

tures available in the latest versions of their Adobe rivals, which are more squarely aimed at professionals; examples are the 3D tools of Illustrator CS and the shadow/highlight correction tool of Photoshop CS. Then again, the \$399 Corel suite is more aggressively priced: You get CorelDraw, R.A.V.E., and Photo-Paint for \$100 less than Adobe Illustrator alone.

—Harry McCracken

Bookshelf PC With a Twist

DESKTOP
NIMBLE Microsystems' **Nimble V5** is the most unusual mini PC I've seen in some time. Besides its diminutive stature (it stands a mere 7.7

inches tall, 2 inches wide, and 7.7 inches deep), the unit's most distinctive feature is a built-in KVM switch that lets the unit and another computer share the same keyboard, video monitor, and mouse.

I tested an \$899 shipping unit with Windows XP Pro, and found that the switch worked well with the PC in my home office, as long as I stuck with standard peripherals. It didn't play well with my wireless mouse, however.

The Nimble also serves as a serviceable personal communicator and network router. For simple voice- and video-conferencing (with an optional Web camera), the system

has a built-in mike with noise-canceling capabilities and a small, front-mounted speaker; each works well enough. As a router, the unit has a WAN port (which you usually connect to a cable or DSL modem) and handles network address translation; but since it has only one LAN connector, you will need a separate hub if you want to connect more than one additional PC.

The Nimble appears simple to operate, but I found its documentation skimpy, making the unit a questionable choice for novice users.

As a PC, the Nimble's best features are its small size and quiet, fan-free operation. Its minute stature, however, requires some compromises. For example, it lacks an internal optical drive, and its 733-MHz Via C3 processor limit-

ed its PC WorldBench 4 score to just 66 (most mainstream desktops score 109 or higher).

The Nimble is suited to running basic applications like word processing, e-mail, and simple image editing. If that's what you need, and you're looking for an ultrasmall, quiet PC with built-in KVM, networking, and video- and audio-conferencing capabilities, this is the box for you. Otherwise, you're probably better off buying a full-size PC for about the same price.

—Tracey Capen ■



NIMBLE Microsystems' bite-size Nimble V5.

Nimble V5

Nimble Microsystems

★★★☆☆

Tiny size and built-in KVM are appealing, but the performance and documentation are weak.

List: \$899 with Windows XP

find.pcworld.com/40181

OKI®

2 printers in 1



Fast, affordable color and black & white!



C5000 Series Digital Color Printer

**3x faster than comparable
color laser printers¹**

GET THE CONVENIENCE OF TWO PRINTERS IN ONE

- One printer handles color and black and white
- As easy to use and maintain as a mono printer

SAVE UP TO 15% ON TOTAL COST OF OWNERSHIP²

- Color printed at lower cost per page than competing color printers
- Black and white at comparable to lower cost than many dedicated mono printers

HIGHER PRODUCTIVITY THROUGH SUPERIOR SPEED

- 3 times faster color printing speed – up to 12 ppm¹
- 25% faster mono printing speed – 20 ppm¹

PHOTO-REALISTIC IMAGE QUALITY

- High-quality color outputs at 1200 x 600 dpi
- Razor-sharp mono text and detail

IDEAL FOR PROFESSIONAL DESKTOP NEEDS

- Corporate office, home office and small workgroups
- Light to moderate letter and legal monthly print volumes

CHOOSE FROM A FULL LINE OF DIGITAL COLOR PRINTERS

- C5000 Series: Desktop letter/legal starting at \$799
- C7000 Series: Award-winning workgroup letter/legal
- C9000 Series: High-performance workgroup tabloid-extra

For more information,
call 1-866-OKI-COLOR,
or visit

www.okidata.com/business

OKI®

PROVEN.



C9300/C9500
January 2003



C7300n
C9500dxn
April 2003



C7300n
April 2003



C7300n
July 2003



C5000/C7000/
C9000 Series
July 2003

© 2004 Oki Data Americas, Inc. Oki Reg. T.M., Oki Electric, Industry Co., Ltd., Single Pass Color and Design Reg. T.M. Oki Data Corporation. Better Buys for Business 2003 Editor's Choice award applies to the C9300 Series and C9500dxn Oki color printers. Published performance results are based on laboratory testing; individual results may vary. Total cost of ownership (TCO) claim based on 2,000 pages per month (100 pages per day). For further information, visit www.okidata.com/business.

HP's Versatile Projector

DISPLAY
PROJECTOR manufacturers often claim their products are suited for both business and home use, but that's rarely true. Hewlett-Packard's new **Mp3130** digital projector, however, comes close to that ideal.

Home theater projectors are generally used in darkened rooms, so they don't need to put out a lot of light; color accuracy, clean images, and low

fan noise matter most. Business projectors, on the other hand, need to display razor-sharp text and pump out enormous amounts of light to accommodate the conditions in the average conference room.

The most attractive aspect of the sleek-looking Mp3130 is its ability to automatically detect what it's connected to and then adjust its light output accordingly. For example, if you plug it into a notebook, it automatically switches to business graphics mode (you can also adjust the unit manually). In that situation, the projector puts out an excellent 1800 (peak) ANSI lumens, more than bright enough for

the best-lit meeting room. If, however, you connect it with an S-Video cable to a DVD player, it lowers the light output to about 800 lumens for more comfortable movie viewing in a home theater setting.

In hands-on testing of a \$2699 shipping model, I found the Mp3130 easy to use, with sensible controls and a good remote. The projector has XGA (1024 by 768) native resolution, but will adjust automatically to accept most notebook screen resolutions. For business use, I found the text crisp and the colors true.

As a home theater projector, the Mp3130 offers accurate and pleasing colors. The unit's fan noise—average for



THE HP
Mp3130.

a business projector—is a bit loud for home use, though.

Considering its capabilities—and they are substantial—this is an excellent projector for buyers seeking a business product that they can occasionally use at home.

—Ramon G. McLeod

Mp3130

Hewlett-Packard

★★★★☆

Great business projector that can double for home theater use.

Street: \$2699

find.pcworld.com/40172

Remote Printing Made Easy

SERVICE
EVEN IN THE AGE of e-mail, sometimes you want others to see your documents on paper. Fax machines can get the job done, but the reproduction may not be up to snuff; and e-mailed documents aren't

always the perfect solution.

Net2Printer seeks to address both problems by turning printers attached to Internet-connected PCs into virtual fax machines. For \$50 a year it lets you send an unlimited number of documents from your PC to any remote printer attached to an Internet-connected PC that's running the company's free software. My tests revealed a solid service, but one that's likely to appeal to a relatively specialized group of users.

Subscribers install Net2Printer's software on their PC, creating an address book (called an ID book) that stores account information for each remote print-

er. To add a new remote printer that doesn't already have a Net2Printer account, you plug the recipient's e-mail address and name into a form that generates a message with a link to a receive-only version of the software. (The \$50 fee applies only to senders.) Once the recipient has installed the software, their printer is available to you alongside your own local printers.

When you print to a remote printer, the software renders the document and then notifies Net2Printer's server that the recipient has a print job. On the recipient's end, the Net2Printer software checks in periodically. If a print job is waiting, the server creates a peer-to-peer connection; the program then downloads the document and prints it.

In its favor, the service is far less expensive than the annual cost of a phone line dedicated

exclusively to a fax machine (though Net2Printer can't replace a fax machine for non-electronic content such as signatures). However, the online service's superiority to the occasional e-mailed document is more dubious, since PDF-creation apps such as Adobe Acrobat can make documents others can view and print with Adobe's free Acrobat Reader.

Net2Printer will be most useful to people who often need to print remotely in volume. Those with occasional print jobs have other options.

—Yardena Arar ■



NET2PRINTER'S ID book displays which remote printers are available to you.

Net2Printer

Net2Printer

★★★★☆

An alternative to faxing and e-mailing documents—but unlikely to replace either.

Street: Software is free; service costs sender \$50 a year

find.pcworld.com/40253



Fujitsu recommends Microsoft®
Windows® XP Tablet PC Edition for Mobile Computing.

*** Now get Tablet PC and notebook functionality in one system—for one low price.**

Presenting the Fujitsu LifeBook® T3000 Tablet PC. A unique combination tablet and notebook that gives you the best of both worlds, all for the same price as a standard notebook. The LifeBook T3000 Tablet PC sets a new standard for mobile versatility and convenience. When you need a sleek, high-powered notebook, simply open it up and use its full-size keyboard. Or, when you want to sketch, write, or take notes, pivot and secure the screen and it instantly turns into a Tablet PC. Either way, it offers you built-in wireless access to information anywhere with the latest Intel® Centrino™ mobile technology. So stop trying to decide on whether to get a new notebook or Tablet PC. Instead, get the functionality of both, for the price of only one. Go to www.computers.us.fujitsu.com/2in1 or call **1.877.372.3473** today for details.



A notebook...



that converts...



to a tablet...



FUJITSU

THE POSSIBILITIES ARE INFINITE

©2003 Fujitsu Computer Systems Corporation. All rights reserved. Fujitsu, the Fujitsu logo and LifeBook are registered trademarks of Fujitsu Limited. Intel, Intel Centrino, and the Intel Centrino logo are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Microsoft and Windows are registered trademarks of Microsoft Corporation.

Poky Bluetooth Camera

DIGITAL CAMERA

EVERYTHING ELSE has gone wireless; why not digital cameras? Concord Camera's **Concord Eye-Q Go Wireless** is the first digital camera I've seen that uses Bluetooth technology to transfer your pictures to a computer, a PDA, or even a cell phone—with no wires.



Too bad the camera behind the Bluetooth is abysmal.

The \$149 Eye-Q Go comes with a small Bluetooth dongle that plugs into the back of your computer. But the camera transmits only one picture at a time. Transferring 7MB of images—the contents of the camera's internal memory—took 15 minutes. Transferring the same pictures using an SD (Secure Digital) card in the camera's SD slot (no card is bundled) took 8 seconds.

The Eye-Q Go employs a 2-megapixel CMOS sensor. Every snapshot I took was very dark, and the flash

THE CONCORD Eye-Q Go Wireless camera plus dongle.

on my shipping unit didn't always go off when it should have. When I forced it to fire, it did so very slowly.

The camera body is made of cheap plastic, with chintzy buttons; and a switch on the front adjusts a crude aperture in front of the lens.

Even if the Bluetooth were speedier, I'd still call the Eye-Q Go Wireless a drugstore camera I wouldn't pay \$50 to own. You can obtain a far better 2-megapixel digital camera, such as Canon's PowerShot A60 (with cable), for nearly the same price.

—Alan Stafford

Concord Eye-Q Go Wireless

Concord Camera

★★★★☆

Bluetooth is just a gimmick on this poor-performing camera.

Street: \$149

find.pcworld.com/40091

QUICK TAKES

Kanguru's Double-Duty Flash Drive

IF KANGURU Solutions' **Wireless LAN** adapter looks like a USB thumb drive, that's



because it is one.

Available in 64MB (\$100) and 128MB (\$120) capacities, the unit offers both 802.11b wireless connectivity and flash storage that works easily with both notebooks and desktop PCs. In my tests, I found its antenna to be quite sensitive—picking up signals other adapters missed. find.pcworld.com/40094

—Michael S. Lasky

Microsoft Goes Virtual

UTILITY

IF YOU FREQUENTLY boot your PC into different versions of Windows to enable software compatibility or to support other computer users, Microsoft's \$129 **Virtual PC 2004** can simplify your life. The program allows you to install and run Windows 95/98/Me, Windows NT/2000/XP, MS-DOS, or even IBM's late,

lamented OS/2 Warp from within your PC's current operating system without repartitioning drives or rebooting.

But stock up first on RAM and disk space. Running a virtual copy of Windows 2000 using a Windows XP Professional host system requires a minimum of 224MB of RAM and 4GB of disk space. Running memory-intensive apps in either OS will require more (I'd recommend 512MB).

Virtual PC might also be a handy way to try out Linux on your PC. Looking to quash such competition, though, Microsoft dropped official support for the alternative OS from the application after purchasing it from Connectix last

year. However, I did install and run a copy of SuSE Linux 8.2 using the utility.

Which brings up another Virtual PC 2004 limitation: Microsoft supports only Windows 2000, XP Professional, or Tablet Edition as a host OS. I was able to install Virtual PC 2004 on a machine with XP

Home Edition, but don't expect Microsoft to help if you try it and things go wrong.

Despite these drawbacks I found Virtual PC 2004 useful and stable. If you need broader OS support, consider VMware's \$299 VMware Workstation 4 application.

—Scott Spanbauer ■

Virtual PC 2004

Microsoft

★★★★☆

Streamlines the use of multiple operating systems; no official support for Linux.

List: \$129; free upgrade for users of some recent versions

find.pcworld.com/40097



THE NEW Virtual PC 2004 successfully ran SuSE Linux, although Microsoft has officially dropped support for the operating system.

EPSON®



After all our intensive inspections, there was one thing we didn't need to double check. The price.

Introducing the Epson PowerLite® S1. Finally, an extremely reliable projector with an equally remarkable price.

▷ *Bright: 1200 lumens dazzle, even in a well-lit room*
▷ *Light: 7.0 pounds travel easily wherever you go*

▷ *Tested: 60 functional tests, 12 image quality tests, 1-hr. lamp-on test*
▷ *Trusted: Epson is chosen 5 to 1 by leading experts as most reliable*

\$999

For more information, call 1-800-GO-EPSON or visit epson.com/4presenters

Complete results of the reliability study on Epson projectors are available by calling 1-800-GO-EPSON. Epson is a registered trademark of Seiko Epson Corp. PowerLite is a registered trademark of Epson America, Inc. © 2003 Epson America, Inc. © Hunter Freeman

Local

Control



SwitchView® USB



www.avocent.com | 866.286.2368

Take CONTROL of today's desktop. Consolidate control of desktop PCs and your favorite USB devices

SwitchView USB eliminates today's desktop clutter. With just one switch, you can use one keyboard, monitor and mouse to switch between four PCs AND share your USB devices on connected computers.

- Share access to your computer, printer, scanner, digital camera or PDA or other USB devices
- Share your speakers and microphone
- Installation is easy with color-coded connectors
- Flash upgrades are standard

Take control of today's desktop with SwitchView USB.

Available from your favorite catalog, online retailer or authorized reseller.

Avocent, the Avocent logo and SwitchView are registered trademarks of Avocent Corporation or its affiliates. Copyright 2003 Avocent Corporation.

Two Slick New Flash and Burn Drives

OPTICAL DRIVES

AFTER YOU'VE snapped your way to a full flash memory card, you need a method to offload and back up all of those images from your digital camera. These twin tasks are the specialties of two external drives from different companies: the \$249 RoadStor

by Micro Solutions and the \$249 MediaStation 4X Dual DVD±RW by I/O Magic.

The versatile RoadStor, which can be used with a computer or independently, combines multiple functions in one product: It's an 8X DVD-ROM and 24X/16X/24X CD-RW combination drive; a six-in-one flash media card reader (CompactFlash I and II, Memory Stick, Microdrive, MultiMediaCard, Secure Digital, and SmartMedia); and a playback device for DVDs, audio and MP3 CDs, and JPEG images (when connected to a television).

Using the unit was easy, but transferring images in stand-alone mode was slow. Copying images from a full 64MB CompactFlash card to CD-R took more than 7 minutes.



ROADSTOR
(left) and MediaStation.

MediaStation 4X Dual DVD±RW

I/O Magic

★★★★☆

Snazzy DVD burner/card reader.

List: \$249

find.pcworld.com/40157

RoadStor

Micro Solutions

★★★★☆

Handy CD-RW drive/card reader.

List: \$249

find.pcworld.com/40160

I/O Magic's MediaStation requires a connection to your computer—a shortcoming that makes this USB 2.0 all-in-one DVD/memory card reader appear less useful at first blush. But if you haven't already taken the DVD plunge (and you don't require the zip-pier 8X speeds found in the latest stand-alone burners), you'll find much to appreciate

about this 4X DVD±RW drive. It's stylishly and smartly designed, and its combination of the disc burner and a seven-in-one card reader (it adds Memory Stick Pro) saves you precious desk space.

I'd recommend the portable RoadStor if you take lots of pictures and need to burn them while traveling; otherwise, the bulkier MediaStation provides the benefits of DVD burning for the same price.

—Melissa J. Perenson ■

PHOTOGRAPH: MARC SIMON

Gateway's New MP3 Player Disappoints

MP3 PLAYER

GATEWAY COMES late to the portable MP3 player party with its new **DMP-X20**—but unfortunately, it's not a case of saving the best for last. Saddled with a clunky design and an outdated interface, the \$300 unit falls short of competing products.

The 20GB, hard drive–based DMP-X20 is nearly a carbon copy of E.Digital's Odyssey

1000 player, which shipped way back in January 2003. The Odyssey included voice navigation, but Gateway dispenses with this somewhat novel feature. What's left is a slow and antiquated-looking interface. Particularly annoying is the 8-second delay when the unit switches from the FM receiver to audio files—complete with an hourglass icon and a plaintive 'please wait'. Thankfully, I had little reason to use the radio, as it proved too weak to pick up more than just a few stations in my area.

Gateway recommends that you move music into the unit using the included Microsoft Windows Media Player 9 and

plug-in, which did the job well enough (you can use Windows Explorer, as well). I was frustrated, however, by the device's inability to store and play fully tagged MP3 tracks in the order in which they appear on an album (Gateway is working to fix this problem).

The DMP-X20 isn't completely without charm: It includes a serviceable voice recorder (with integrated mike), support for audiobooks from Audible.com, and a built-in rechargeable battery with a respectable run time

of 9 hours, 15 minutes. Still, these features and a reasonable price tag aren't nearly reason enough to buy—especially with comparable units like Samsung's YP-910GS and IRiver's IHP-120 doing so many more things right.

—Tom Mainelli ■



GATEWAY'S DMP-X20 MP3 player.

DMP-X20

Gateway

★★★★☆

Poor interface hobbles this affordable player.

Street: \$300

find.pcworld.com/40154

PHOTOGRAPH: MARC SIMON

Remote Control

Add REMOTE access to any KVM switch. Control your servers over IP connections, anywhere, anytime

- Add IP-based remote access to your existing KVM switch or PS/2 server for less than \$1,000
- Remotely reboot business critical servers from any location
- 128bit encryption for BIOS-level access and secure control
- Convenient browser-based access simplifies access and control – no software is required for your target servers

SwitchView IP, the most affordable KVM over IP device available today.

Available from your favorite catalog, online retailer or authorized reseller.



SwitchView™ IP



www.avocent.com | 866.286.2368

To: All People That Bought in 1995 or 1996 Microsoft's SideWinder 3D Pro Digital Joystick Packaged With Activision's Combat Simulation Game MechWarrior 2 not for resale (the "SideWinder/MechWarrior 2 Bundle"), or Who Paid \$14.95 To Upgrade The MS-DOS Version Of The MechWarrior Game Included In The SideWinder/MechWarrior 2 Bundle To A Windows 95 Version Of The Game.

Who Is Affected?

Consumers who purchased the SideWinder/MechWarrior 2 Bundle not for resale in 1995 or 1996 or who paid \$14.95 to upgrade the MS-DOS version of the MechWarrior 2 game included in the SideWinder/MechWarrior 2 Bundle are affected. If you purchased these products, you may be entitled to receive computer game software as part of a class action settlement.

What Is This About?

The lawsuit, Trull v. Microsoft Corp. & Activision, Inc., No. 97 CH 3140, Circuit Court of Cook County, Illinois, claims that the SideWinder 3D Pro Joystick and MechWarrior 2 game that were sold as a bundle in 1995 and 1996, are incompatible with each other, and are incompatible with the Windows 95 operating system. Microsoft and Activision deny these claims and allege that the joystick and game included in the SideWinder/MechWarrior 2 Bundle are compatible with each other and with the Windows 95 operating system. The Settlement is not an admission of wrongdoing or an indication that any law was violated.

What Can You Get From The Settlement?

If you are a member of the class of persons described above, you can receive your choice of one of the following packages of personal computer game software: (1) Tony Hawk's Pro Skater 3 bundled with Mat Hoffman's Pro BMX; or (2) the MechCollection, which includes MechWarrior 4: Vengeance, MechWarrior 4: Black Knight Expansion, and MechCommander 2.

How Do You Participate In The Settlement?

You may request a detailed notice and claim form by writing to the Trull Settlement Administrator at P.O. Box 13005, Birmingham, Alabama 35202 or by calling the Trull Settlement Administrator toll free at 888-878-1992. Completed claim forms must be received by the Trull Settlement Administrator or postmarked no later than **May 27, 2004**. You will need to provide information described on the claim form.

What Are Your Options?

If you wish to participate, you should contact the Trull Settlement Administrator and obtain a claim form. The completed claim form must be received by the Trull Settlement Administrator or postmarked no later than **May 27, 2004**.

If you want to exclude yourself from the Settlement and do not want to be legally bound by its terms, you must exclude yourself by **April 2, 2004** in order to preserve your right to sue Microsoft or Activision about any of the legal claims in this case. If you exclude yourself, you cannot get any benefit from the Settlement. If you do not want to exclude yourself, but object to the Settlement, you may do so by **April 2, 2004**. You may obtain a detailed notice of the Settlement from the Trull Settlement Administrator. The detailed notice explains how you can exclude yourself or object.

The Court will conduct a hearing to decide whether to approve the Settlement as fair and reasonable, to award attorneys' fees and costs, and to deal with such other matters as may properly come before the Court at that time. The hearing will be held at **2:30 p.m. on April 27, 2003** in Room 2305 of the Richard J. Daley Center, 50 West Washington Street, Chicago, Illinois, 60602. You are permitted to attend the hearing, but it is not necessary to do so in order to participate in the settlement. Objections can be made with the Trull Settlement Administrator in accordance with the provisions of the detailed notice that can be obtained from the Trull Settlement Administrator.

This is only a summary of the proposed settlement. In order to receive a copy of the detailed notice of the Settlement or a claim form, you may write or call at the address or phone number below:

Trull Settlement Administrator
P.O. Box 13005
Birmingham, Alabama 35202

Web address: www.noticeclass.com/trullsettlement

Toll Free Phone Number: 888-878-1992

Any additional inquiries regarding the settlement should be made to the claims administrator or Plaintiff's counsel at:

The Langone Law Firm
25 East Washington Street
Suite 1805
Chicago, IL 60602

Please do NOT call, write, fax or e-mail the Court or the Clerk.

Date Jan. 5, 2004

ENTER: /s/ The Honorable Richard Siebel
Circuit Court of Cook County, Chancery Division

NEW PRODUCTS

Bluetooth for Your Ear

WIRELESS HEADSETS

BLUETOOTH HEADSETS are truly a matter of personal taste—especially if, like me, you're fussy about hanging contraptions from your ear. I found distinct design differences between Cardo Systems' \$100

Allways, Logitech's \$100 Mobile Bluetooth Headset (both shipping units), and GN Netcom's preproduction \$299 GN 6110, which lets you field calls simultaneously from a Bluetooth-enabled cell phone and a standard phone.

My Bluetooth-enabled cell phone, a Sony Ericsson T610, easily recognized all three headsets, allowing me to handle calls while leaving the phone in my bag. Each headset attaches to your ear in a



NEW
Bluetooth
headsets.

different way: The Logitech unit—the only one with a nice cushy ear pad—hooks around the ear with a clip. The Allways' earpiece goes into the ear held by an adjustable ear loop that didn't feel terribly secure (there's also a handy clip that lets you attach the Allways to your glasses). The GN 6110 sits flat against the ear, and despite a nonadjustable ear loop, it felt snug. The most comfortable? The Logitech.

On the buttons, the Allways' designers did the best job; to pick up or end a call, you tap a big, easy-to-locate button on the headset. Logitech's tiny on/off button is hard to find, while the GN 6110's sits in between two volume buttons—making it easy at first to accidentally end your call instead of altering the sound.

All three of the headsets offered good sound quality. Of the devices, I favored the comfy Logitech unit. If you wear glasses—and can ditch the awkward ear loop—the Allways is also a good option. The GN 6110, however, is a bit pricey unless you need access to two phones at once.

—Aoife M. McEvoy ■

Allways

Cardo Systems

★★★★

Excellent usability, but not very comfortable to wear.

List: \$100

find.pcworld.com/40082

GN 6110

GN Netcom

Preproduction unit, not rated
Compact headset includes great extra features, for a premium.

List: \$299

find.pcworld.com/40085

Mobile Bluetooth Headset

Logitech

★★★★

Comfort wins out over undersize buttons; the best unit here.

List: \$100

find.pcworld.com/40088

SAMSUNG DIGITall
everyone's invited™

And you thought Magic Johnson
only performed miracles on the court.



..... www.fourseasonsofhope.com

Partners: **MAGIC JOHNSON**
FOUNDATION, INC.
CELEBRATING 10 YEARS!



©2003 Samsung Electronics America, Inc.

Samsung's Four Seasons of Hope, Best Buy and the Magic Johnson Foundation have teamed up to make a difference in the community. The funds we raise benefit the Magic Johnson Foundation's work to prevent HIV/AIDS and address inner-city health, education and social issues. Programs include scholarships, mentoring, new technology centers and health-awareness campaigns. We're proud to support this deserving cause. The Four Seasons of Hope. Because no one should ever go without.

SAMSUNG

PC WORLD

In New Digital Format!

Subscribe Now.



Why get PC WORLD
in digital format?

- 1> **Same great magazine.** Read the magazine you know in a convenient new format.
- 2> **Immediate access.** Get your issues before they hit the newsstand, then read them anytime—even offline.
- 3> **Keyword searchable.** Find a topic or name in seconds.
- 4> **Live links.** Quick hotlinks for easy navigation to Web content, advertisers' sites, and other articles throughout the issue.
- 5> **Paperless archives.** Keep back issues on your computer for fast reference and easy storage.
- 6> **Great savings.** Canadian and other International subscribers will save even more as postage costs are eliminated!

SPECIAL
CHARTER PRICE

12 issues for \$19.97

No Additional Postage in Canada and
Other Foreign Countries

CALL 1-800-234-3498

Use Order Code H3DMPCD

In Canada, price includes 7% GST (#R124669680).

Order Online and get a
Bonus Issue Instantly!

You'll get 13 issues for \$19.97.
<http://www.pcworld.com/digital>

NEW PRODUCTS

APC Offers Safe PC Power

UPS DEVICE

AMERICAN POWER Conversion's \$190 **Back-UPS RS 800VA** can protect the equipment of everyone from business users to home theater owners, with 540 watts of backup power. It features seven surge-protected outlets (four with battery backup) and comes with APC's automated-shutdown software, PowerChute Personal Edition. Unlike less-expensive uninterruptible power supply units, the RS 800VA also provides automatic regulation for undervoltage conditions, which offers an extra safeguard for expensive electronics.

Setting up my shipping unit was a snap. After plugging it in for more than 8 hours (the time APC recommends to fully charge the device), I attached the included USB cable and connected it to my 2-GHz Athlon XP 2400+ test computer, my power-gulping Panasonic PanaSync E21 monitor, my cable modem, and my D-Link DI-604 four-port broadband router. Next I installed PowerChute, which recognized the UPS and estimated my battery backup run time at 15 minutes (plus a 5-minute reserve). The software also offered options on how much reserve to leave before shutdown in case of a power

failure; I selected the unit's 5-minute minimum option.

I pulled the wall plug and continued computing. My PC ran for 15 minutes and 30 seconds before the RS 800VA elegantly and safely closed all of my documents and then shut down my system.



APC'S Back-UPS RS 800VA provides added PC protection.

To further test the unit's mettle, I tried plugging more peripherals into a separate power strip, which I plugged into the RS 800VA. When I attached my big-draw laser printer, PowerChute popped up an on-screen warning saying that I was exceeding the power rating—a nice touch.

Power surges and outages can impair productivity and damage expensive equipment. APC's Back-UPS RS 800VA is a nicely designed, relatively inexpensive way to buy some insurance for the next time power problems strike.

—Rex Farrance ■

APC Back-UPS RS 800VA

American Power Conversion

★★★★☆

Top-notch UPS provides total power backup and protection.

List: \$190

find.pcworld.com/40133

I'd like to...

...archive my song collection in **MP3**.

...make a **DVD** from last holiday's video.

...make a **Photo CD** of Julie's birthday party.

...**Playback** all my digital media files.

...make a **Backup** of my personal data.



Now I can!



Nero 6 Ultra Edition is the ultimate CD/DVD Burning Suite for all your audio, video, photo, data and backup needs. Now you can capture, edit, author and burn your photos and home videos, and recode DVD files onto CDs. Known for its ease of use and reliability, Nero 6 Ultra Edition simplifies your digital media needs in an all-in-one solution.

Nero 6 Ultra Edition – Simplify Your Life.

WWW.NERO.COM



PCUPGRADE
UTILITY OF THE MONTH

PC
MAGAZINE
BEST
2003

CNET
EDITORS'
CHOICE

Available now at:
BEST BUY

city

COMPUSA

Fry's

Office DEPOT

FEATURING THE WORLD'S
FASTEST MPEG-4 ENCODER
nero
DIGITAL
SIMPLY THE BEST
IN AUDIO AND VIDEO

Nero 6 Ultra Edition cannot be used to copy CSS-encrypted discs.

small and
medium business



Time is money, and replacing your old technology brings more of both.

Upgrade from your old technology to HP and lower the cost of doing business—starting with a 0% lease. New Intel® Pentium® 4 processor-powered PCs, HP servers and printers pay for themselves by helping to eliminate the costs of maintaining, updating and securing outdated technologies. Dated operating systems on older PCs and servers are susceptible to viruses and security breaches, leaving your data and network exposed—with serious financial implications. New, more efficient technology also means less downtime and more productive uptime. It's more than the latest hardware—HP offers tools, services and support to ease your technology transition. Act now to configure the system that is right for your business. And with HP, get more reliability, more service and support, and more local expertise through our SMB partners.



monitor
not included

**HP COMPAQ d220
MICROTOWER**
Affordable Reliability

\$479 Lease for \$20
a month*

Intel® Pentium® 4 processor 2.66GHz
Microsoft® Windows® XP Home Edition
128MB PC2700 DDR
40GB Ultra ATA Hard Drive† (5400 rpm)
48X CD-ROM Drive
Integrated audio with internal speaker
Integrated Broadcom 10/100 networking
1-1-1 (Parts/Labor/On-site) Limited Warranty**

Get even more:

256MB PC2700 Memory Upgrade, add \$57
48X/24X Combo CD-RW/DVD, add \$89‡
S7500 17" CRT Monitor, add \$145

**HP COMPAQ d530
SMALL FORM FACTOR**
Easy to Manage, HP's Smallest Footprint

\$699 Lease for \$30
a month*

Intel® Pentium® 4 processor 2.53GHz
Microsoft® Windows® XP Professional Edition
128MB DDR SDRAM Memory
Seagate 40GB Ultra ATA Hard Drive† (7200 rpm)
48X CD-ROM Drive‡
Integrated Intel® Extreme Graphics 2
Integrated Gigabit Ethernet
3-3-3 (Parts/Labor/On-site) Limited Warranty**

"Best of CES 2003 Innovation Award"
D500 Series

"Best of Show Award", "Best Security Product"
Tech&NY, September 2003



Prices shown are HP direct prices; reseller and retailer prices may vary. Prices shown are subject to change and do not include applicable state and local sales tax or shipping to recipient's destination. Photography may not accurately represent exact configurations priced. *Implicit lease rate, assuming lessee does not exercise a fair-market-value purchase option at the end of the lease term and timely returns the leased equipment to Hewlett-Packard Financial Services Company (HPFSC) at the end of the lease term and disregarding any charges payable by lessee other than rent payments (such as taxes, fees and shipping charges). Offer valid through 3/31/04 on all lease transactions with a total transaction amount between \$499 and \$100,000. Lease products available through HPFSC to qualified commercial customers in the U.S. and subject to credit approval and execution of standard HPFSC documentation. Other restrictions may apply. HPFSC reserves the right to change or cancel this program at any time without notice. †For hard drives, GB=billion bytes. ‡48X Max CD-ROM Drive data transfer rates may vary from 6750 Kbps to 7800 Kbps. **Certain warranty restrictions and exclusions may apply.

HP recommends Microsoft® Windows® XP Professional for Business.



HP COMPAQ nx9008 NOTEBOOK

Entry Level Value

\$799 Lease for \$34
a month*

Intel® Celeron® processor 2.60GHz
Microsoft® Windows® XP Home Edition
14" XGA Display
128MB DDR SDRAM (1 DIMM)
20GB SMART Ultra ATA Hard Drive†
24X CD-ROM Drive
Integrated 56K V.92 Modem†† + 10/100 NIC
8-cell Lithium Ion Battery
1-Year Worldwide Limited Warranty**
Get even more:
Top-Load Nylon Case, add \$49
Kensington Security Cable Lock, add \$49
Second Battery, add \$109



HP COMPAQ nx9010 NOTEBOOK

Performance and Value

\$1,369 Lease for \$58
a month*

Mobile Intel® Pentium® 4 processor 2.80GHz
Microsoft® Windows® XP Professional Edition
15" XGA Display
512MB DDR SDRAM
40GB Hard Drive†
DVD/CD-RW Drive
Integrated 56K Modem†† + 10/100 NIC
Integrated 802.11g 54MB Wireless LAN
Integrated 1.44MB Floppy Drive
1-Year Limited Warranty**
Get even more:
Top-Load Leather Carry Case, add \$99
Second Battery, add \$109
Port replicator, add \$149



HP WORKSTATION xw4100

High Performance

\$979 Lease for \$41
a month*

Intel® Pentium® 4 processor 2.60GHz
(800MHz FSB)
Microsoft® Windows® XP Professional Edition
40GB Ultra ATA/100 Hard Drive†
(7200 rpm)
512MB PC3200 DDR SDRAM
NVIDIA® Quadro NVS 280 AGP
48X CD-RW Drive††
Broadcom Gigabit 10/100/1000 NIC
3-Year Worldwide Limited Warranty**
Get even more:
17" Flat Panel Display, add \$429



HP PROLIANT DL140 SERVER

Simple, Dependable Value

\$1,299 Lease for \$55
a month*

Up to 2 Intel® Xeon™ processors
2.40GHz/533MHz-512KB FSB
(3.20GHz available)
512MB Advanced ECC PC2100
DDR SDRAM Upgradable to 4GB
Integrated Dual Channel ATA - 100
IDE Controller
80GB ATA/7200 Hard Drive†
Integrated Dual 10/100/1000 NICs
(Wake on LAN and PXE capable)
Standard Quick Deployment Rails
1-Year Limited Global Warranty**

Upgrade your business with help from HP.

Free TCO Snapshot Tool

Web-based tool that generates a detailed report of your direct and indirect PC life-cycle costs and areas where you could save money.

HP Trade-in Program

Trade in your old equipment to get cash back.

HP's Instant ROI Online Printer Tool

Shows you how to save money while upgrading your printer equipment.

Enhance your system.



HP OFFICEJET 5510 ALL-IN-ONE

Color Printing, Color Scanning,
Color Copying and Faxing

\$199



NEW HP iPAQ™ h4150 POCKET PC

HP's Thinnest and Lightest iPAQ™
with Integrated Wireless

\$449

HP is the proud recipient of
the 2003 SBA Small Business
Champion Award.



0% business lease for 24 months.

For a limited time, get 0% lease rate on qualifying total purchases greater than \$499 made before March 31, 2004.*

Click www.hp.com/go/pcworld

Call Toll Free

1-888-811-9582

*For complete warranty details, call 1-800-345-1518 (U.S.). †16X, 48X CD-RW drive data transfer rates may vary as follows: for recording to CD-R media, the max transfer rate may be up to 4800 Kbps (use 48X scs for best performance); for writing to CD-RW media, the max transfer rate may be up to 1500 Kbps (use 4X-12X high-speed media discs for best performance); for reading CD media, the max transfer rate may be up to 6000 Kbps. Actual transfer rates may vary depending on media quality. ††ITU V.90/V.92 Modems are designed only to allow faster downloads from K56flex- or V.90/V.92-compliant digital sources. Maximum achievable download transmission rates are currently unknown, may not reach 56 Kbps and will vary with line conditions. Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States and/or other countries. Intel, Intel Inside, the Intel Inside Logo, Intel Centrino, Intel Xeon, Pentium and Celeron are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Other products mentioned herein may be trademarks or registered trademarks of their respective companies. ©2004 Hewlett-Packard Development Company, L.P.

76 ways to get more out of Windows

Quick, easy ways to tame your operating system...from speed tweaks to security checks to troubleshooting tips.

I thought I knew it all. Or all about Windows, at least. But it seems like every time I turn around I find a new and better way to move a file, fix a disk error, patch a security leak, or browse the Web. Whether you need to record a CD, encrypt a folder, or find a wireless network, there are still plenty of new tricks to learn, even if you're an experienced user. Here are 76 fast and easy ways to make Windows work better than ever. ▶

BY SCOTT DUNN ILLUSTRATIONS BY GLENN MITSUI





File Finesse

1 All Bring back the tree: You open a folder, but there's no directory tree on the left. What to do? Just click the Folders icon on the Standard toolbar (in 2000, Me, and XP), or choose *View•Explorer Bar•Folders* (in any version).

2 All Customize Details, part 1: To change the order of the Name, Size, Type, Date Modified, and other columns in the default Details view (click *View•Details*), just put your pointer over a column head and drag right or left.

3 2K ME XP Customize Details, part 2: Why settle for the default Details columns? Right-click any heading and choose an item with no check mark to add that information, or uncheck to remove it. Choose *More* on the right-click menu (or *View•Choose Columns* or *View•Choose Details* on the main menu) to make these changes via a dialog box.



FIGURE 1: TOGGLE THE MAGICAL disappearing folder tree with this pushpin button below the Standard toolbar.

4 All Get the big picture: Whenever you need to see more of a folder or Internet Explorer browser window, simply press <F11> to view the window in full-screen mode. Then press <F11> again to revert to normal view. **Bonus tip:** If you're using Windows 2000, Me, or XP, you can add a button to toggle between modes by right-clicking the Standard toolbar and choosing *Customize*. Click *Full Screen* under 'Available toolbar buttons', and then choose *Add* and *Close*.

5 All Autohide the folder tree: In full-screen mode, you can make the folder tree—or any option set via *View•Explorer Bar*—disappear to give you an even broader view, and yet reappear when you move the mouse to the left edge of the window. Click the pushpin button at the top of the left pane to unpin the current Explorer Bar, and then move your pointer to the right pane (see FIGURE 1).

6 All Bring hidden files into the open: By default, Windows hides many system files. This can make correcting problems difficult. To see all files, choose *Tools•Folder Options•View* in any Explorer or folder window. In the 'Advanced settings' list, select *Show hidden files and folders* (*Show all files* in Windows 98). In versions other than 98, uncheck *Hide protected operating system files* (*Recommended*). Click *Yes* and *OK*.

7 2K ME XP Broaden your folder view: If your folders have a margin on the left with links to resources or tasks you never use, give more screen real estate to your files and folders by choosing *Tools•Folder Options•Use Windows Classic Folders*•OK. This will remove the Explorer Bar and its "common tasks" shortcuts.

8 XP Squeeze in more thumbnails: You can fit more icons in the right pane of Explorer's Thumbnails view (*View•Thumbnails*) by hiding the name listed under each. Click a different folder in

the tree pane to change the view, and then hold down <Shift> as you click the folder with thumbnails to view it with no names.

9 XP Take folders to task: If you like Explorer's task pane but want the various tasks displayed there to match the folder's contents, right-click the control icon in the window's upper-left corner, choose *Properties•Customize*, and pick the most appropriate description under 'Use this folder type as a template.'

10 All Get a new disk view: Wondering how full your disk is getting, or how to clean it up? Right-click any drive icon in Explorer (under *My Computer*) and choose *Properties*. You'll see a pie-chart representation of your disk use, a button that launches the Disk Cleanup utility, and a *Tools* tab that lists other maintenance utilities.

11 XP Squeeze your disk, part 1: If your disk is formatted with NTFS, you can compress your files and folders to conserve space. Select the files or folders you want to smooch, right-click the selection, and choose *Properties*. On the *General* tab, click *Advanced*. Check *Compress contents to save disk space* and click *OK*. You may be asked to specify which files and folders to include.

CD TIP

Plug AutoPlay

12 XP When you put a CD in the drive, Windows gives you a choice of actions. You can answer once for each type of content (music, say), but if you want AutoPlay off, right-click the CD drive in Explorer and choose *Properties*. Under AutoPlay, select a content type from the list at the top and pick your preferred settings below. To turn AutoPlay off for a specific type, click *Select an action to perform•Take no action*, and click *OK*.



13 XP Squeeze your disk, part 2: To compress an entire NTFS hard-disk partition, right-click the disk's icon in Explorer and choose *Properties*. Check *Compress drive to save disk space* and click *OK* or *Apply*. At the confirmation prompt, select the option to compress all subfolders and files (not just those in the root), and click *OK*.

14 ME XP Squeeze your disk, part 3: You can squish your files automatically by moving them to a compressed folder. To create one, right-click in any folder window or on the desktop and choose *New•Compressed Folder* (in Me) or *New•Compressed (zipped) Folder* (in XP). If you don't see this command, make sure you've installed this feature (see tip 47).

15 2K XP Take a letter: If you want to reassign the letters of your disk volumes, log in as an administrator, choose *Start•Run*, type *diskmgmt.msc*, and press *<Enter>*. Right-click a disk in the bottom of the window and choose *Change Drive Letter and Path*. Click *Edit* or *Change*, select an unused letter from the drop-down list, click *OK*, answer any prompts, and click *OK* again.



Safety First

16 XP Preserve your password: Trust your friends, but cut the cards. And trust your memory, but keep a password reset disk nearby in case you ever forget your XP password. First, get a blank, formatted floppy disk at the ready, and then type *Control Panel\User Accounts* in the Address bar of any Explorer or Internet Explorer window. Press *<Enter>*, select your account, click *Prevent a forgotten password* in the Related Tasks list, and follow the steps presented in the Forgotten Password Wizard.

17 XP Bypass forgotten passwords, part 1: If you don't have a password reset disk, log in with another administrator account, open the User Accounts control panel (see tip 16), select the account with the forgotten password, click *Change the password*, and follow the instructions to reset it.

18 XP Bypass forgotten passwords, part 2: If you don't have another administrator account, reboot your PC and press *<F8>* until you see the Windows start-up options as described in tip 28. Use the arrow keys to highlight *Safe Mode*, and press *<Enter>*. When you see the Welcome screen, select *Administrator* (a hidden account that by default needs no password). Follow the steps in tip 17 to reset the account password, and then restart your computer.

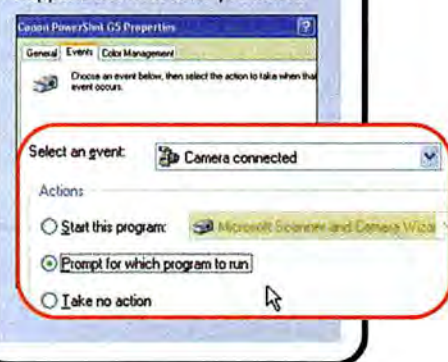
19 2K XP Be a power user: When you log in as an administrator, your system is vulnerable to Trojan horse programs and other risks. When you log in as a power user, however, you avoid these risks and get all the functionality you typically need (switching back to administrator when necessary is easy; see below). To demote yourself, choose *Start•Run*, type *lusrmgr.msc*, and press *<Enter>*. Click *Groups* and double-click *Administrators*. Make sure you have an account listed under Members that you can use when you need full administrator privileges. Select the account to demote, click *Remove*, and then click *OK*. Double-click *Power Users*, click *Add*, type your account name, and click *OK* twice.

20 2K XP Become a part-time administrator: Power users don't need to log out and back in with an administrator account to run an administrator program (such as the *lusrmgr.msc* program described in tip 19). Instead, hold down *<Shift>* and right-click the program's executable (.exe) file in Explorer, or any shortcut to it. Choose *Run as*, select either *Run the program as the following user* (in 2000) or *The following*

PICS TIP

Camera Action

21 XP The initial time you connect your digital camera to your PC, you can select an action and check *Always use this program for this action* to keep from seeing a prompt. But what if you want something else later? Connect the camera again, right-click its icon in Explorer, and choose *Properties*. Use the settings on the Events tab to select what happens the next time you link it.



user (in XP), and enter the name and password (and domain, if necessary) of an administrator account. Click *OK*.

22 XP Pro Keep your secrets: To protect sensitive files and folders on NTFS-formatted drives, use Windows' built-in encryption. Choose the uncompressed files or folders to encrypt, right-click them, and then select *Properties*. On the General tab, click *Advanced*. Check *Encrypt contents to secure data* and click *OK*. Specify the files and folders to include. The files are accessible only to the user who encrypted them. To undo, uncheck the Encrypt box. (The encryption option is disabled in XP Home.)

23 XP Keep a no profile: Any administrator can see the files on your desktop, in your My Documents folder, and elsewhere in your profile folder by finding your account subfolder in the Documents and Settings folder. For additional privacy on NTFS-formatted disks, open the Documents ►

and Settings folder, right-click the folder you want to keep private, and choose *Properties*. Click *Sharing*, check *Make this folder private*, and click *OK* (see **FIGURE 2**).



Quick Fixes

24 ME XP Turn back the clock: If your PC is acting strangely, use System Restore to return Windows to an earlier, stable state. Select *Start*•*Programs* (All Programs in XP)•*Accessories*•*System Tools*•*System Restore*, click *Restore my computer to an earlier time*•*Next*, and follow the instructions.

25 ME XP Put a finer point on it: Whenever you're planning to make any changes to your system, be sure to create a restore point before you begin. Open System Restore as described above, select *Create a Restore Point*, click *Next*, and follow the instructions. **Bonus tip:** Manual restore points aren't needed when you install software, updates, or device drivers; Windows creates them for you automatically.

26 XP Customize your restorations, part 1: To choose which drives System Restore monitors for changes and how much space it reserves for its backups, right-click *My Computer* and choose *Properties*. Click *System Restore*, select a drive, click *Settings*, and set the controls to your taste.



FIGURE 2: PREVENT PEEKING by others on your system by making your folders private.

27 ME Customize your restorations, part 2: Adjusting the space System Restore uses for its backups in Me is slightly different: Right-click *My Computer*, choose *Properties*•*Performance*•*File System*, and under *Hard Disk*, drag the 'System Restore disk space use' slider to the desired amount. **Bonus tip:** Click *Disable System Restore* under System Properties' *Troubleshooting* tab to turn System Restore off.

NETWORK TIPS

Network and Account Know-How

FIRST THERE WAS THE TWO-CAR FAMILY. Then there was the two-television family. Now there's the two (or more)-computer family. These simple tweaks let you get more out of your networked and multiuser PCs.

33 XP Let Windows do the work: The first time you connect to a network, Windows XP's Network Setup Wizard steps you through the details. To run the wizard manually, choose *Start*•*Run*, type *netsetup*, and press <Enter>.

34 XP Go wireless: When you plug a wireless adapter into your computer, XP displays the *Connect to Wireless Network* dialog box. If it does not, right-click the wireless-network icon in the system tray and choose *View Available Wireless Networks*. (If you don't see this icon, go to the Address bar of any Explorer window, type

Control Panel\Network Connections, and right-click the *Wireless Network Connection* icon.) Select your wireless connection and click *Connect*.

35 XP Link to an insecure wireless net: If the *Connect* button is disabled (grayed out) in the *Wireless Network Connection* dialog box, the network may lack Wired Equivalent Privacy or newer Wi-Fi Protected Access security. To get around this, check *Allow me to connect to the selected wireless network, even though it is not secure* (see **FIGURE 3**). Be aware, though, that your privacy is at risk.

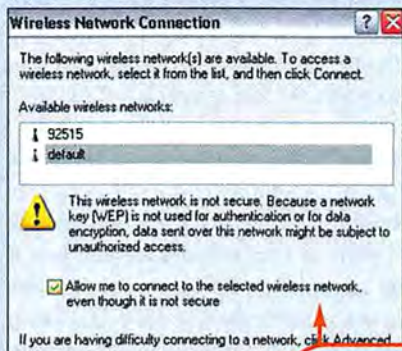


FIGURE 3: LINK to an insecure wireless net at your own risk.

36 XP Do-it-yourself wireless: By default, Windows XP configures your wireless network automatically (the so-called Wireless Zero Configuration feature). But if your wireless hardware comes with its own software drivers, you may need to turn the Windows feature off. To do so, double-click the *Wireless Network Connection* icon in the Network Connections window (as described in tip 34, "Go wireless"), or click the miniature version of that icon in your system tray. Select the *Properties* button, and in the *Wireless Network Connection Properties* dialog box, click *Wireless Networks*. Uncheck *Use Windows to configure my wireless network settings* and click *OK* (see **FIGURE 4**).

37 XP Switch accounts in a blink: If your PC has enough memory, you can move from one user account to another without first logging off. To do so, click *Start*•*Log Off*•*Switch User*. This can save time when you just need to make a quick visit to another

☒ Allow me to connect to the selected wireless network, even though it is not secure

28 All **Seek solutions in Safe Mode:** If something stops Windows in its tracks or causes it to misbehave, reboot and press <F8> before Windows loads (you may have to press it a few times to find the moment that gets a response). This brings up the Advanced Options menu. Use the arrow keys to select *Safe Mode*, and press <Enter> to launch Windows using a minimal set of drivers. With luck, you can undo whatever you did to cause the problem, and then restart Windows normally.

29 2K XP **Revert your Registry:** If Safe Mode doesn't solve the problem, access the Advanced Options menu as explained in tip 28, but this time select *Last Known Good Configuration* and press <Enter>. This

launches Windows using the last version of the Registry that led to a successful start-up. No files are removed.

30 2K XP **Copy your error messages:** When Windows tells you something's gone haywire, you may want to preserve the error messages to send to a support tech or your local PC guru. To do so, just press <Ctrl>-C to copy the message to your Clipboard, open a new e-mail to your tech helper, press <Ctrl>-V to paste the error alert text, and then send the message on its way.

31 All **Get the big error picture:** If you can't copy just the error message's text as described above, press <Alt>-<Print Screen> (the name of the latter key may be abbreviated on

your keyboard) to capture an image of the error message box. Paste the image into your e-mail application (if it supports graphics) or into your word processor. You can also paste the screen into Windows' Paint imaging utility by opening that program and choosing *Edit*•*Paste*. Save the picture as a bitmap (.bmp), JPEG (.jpg), or other file format that you can send as an e-mail attachment to your friendly neighborhood Windows repairperson.

32 All **Find help in Google Groups:** To find help online, enter some or all of the text from the Windows error message into Google's main search box. If that doesn't help you find a fix, click the *Groups* tab on the Google search results page to see archived discussions that may relate to your problem. ▶



FIGURE 4: DISABLE AUTOCONFIGURATION
If your wireless hardware has its own drivers.

account. But you probably don't want to make a habit of it, because your system's performance may lag, especially when you run games, system utilities, and other demanding applications.

38 XP **Disable fast switching:** There's another disadvantage to Fast User Switching: With this feature on you can't use Windows' Offline Files function, which automatically down-

loads Web pages for offline viewing. To do without Fast User Switching, go to the Address bar of any Explorer or Internet Explorer window, type *Control Panel\User Accounts*, and press <Enter>. Click *Change the way users log on or off*, uncheck *Use Fast User Switching*, and finally click *Apply Options*.

39 XP **Disable accounts instead of deleting them:** If Maria takes an extended leave, don't delete her account as a security precaution. Re-creating the account later with the same name won't confer the same permissions she enjoyed previously—and it won't let Maria access her encrypted files (see tip 22). If you think someone may need an orphaned user account again, you can disable it instead of deleting it altogether (note that this procedure doesn't work in XP Home): Press <Windows>-

R, type *lusrmgr.msc*, and press <Enter>. Click the *Users* folder icon and then double-click the name of the user account. Check *Account is disabled* and click *OK* (see FIGURE 5). To restore the account, simply uncheck this box.

40 XP **Save files from a deleted account:** If you're positive you will never need Maria's account again, you can delete it and still preserve her user files: First, log in with an administrator account, click in the Address bar of any Explorer or Internet Explorer window, type *Control Panel\User Accounts*, and press <Enter>. Next, select the account name to be deleted,

choose *Delete the account*, click *Keep Files*, and lastly select *Delete Account*. Even though Maria's account will be gone for good, all of her desktop and My Documents files will be placed in a new folder on the administrator account's desktop. Keep in mind, however, that Maria's e-mail and all of the other settings for her account are lost permanently.



FIGURE 5: DISABLE rather than delete an old account.

41 XP **Run your ancient apps:** If a pre-XP application doesn't run under Windows' latest incarnation (and an update isn't available for the program), right-click the program's shortcut and choose *Properties*. Select *Compatibility*•*Run this program in compatibility mode for* and choose the appropriate Windows version (see **FIGURE 6**). Click *OK*. **Safety alert:** Never run an antivirus program, a defragmenter, or any other system utility under a version of Windows it isn't intended for. Doing so could damage your system.

42 All **Fix broken uninstallers:** If you try to uninstall a program using the Add or Remove Programs applet in Control Panel, but the uninstaller refuses to run, some or all of the program's files may already be deleted. Just reinstall the app to the same folder it was in, and use Add or Remove Programs again to delete it properly.

43 All **Update your graphics driver:** Many common Windows problems can be traced to outdated or buggy graphics drivers. If you can't find the source of recurring

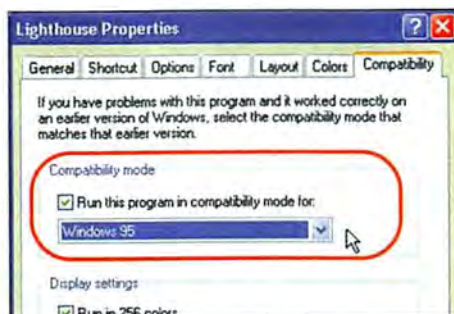


FIGURE 6: OLD APPS NEVER die—or even fade away—when you run them in compatibility mode.

problems with one or more of your applications, go to the Web site of your graphics card manufacturer and see whether you can download a more recent driver.



Fresh Starts

45 XP **Make the smart move:** The Files and Settings Transfer Wizard is the best way to move your Windows settings from one PC to another. You can transport files and settings from Internet Explorer, Outlook Express, and other parts of Windows via a network or a removable medium. Install your apps on the new machine, choose

Start•*All Programs*•*Accessories*•*System Tools*•*Files and Settings Transfer Wizard*, and follow the instructions (see **FIGURE 7**).

46 XP **Don't forget your big mailbox:** If you choose 'Settings only' in the Files and Settings Transfer Wizard and use a floppy disk to transfer the settings, Windows will move your Outlook Express mail only if it fits on the disk. Use a larger medium to make sure Windows brings your OE messages along, too.

47 All **Get all the OS you paid for:** Not all the Windows tools and toys you need may be installed on your PC. Open any Explorer or folder window, and in the Address bar type *Control Panel\Add/Remove Programs* (in Windows 98, 2000, and Me) or *Control Panel\Add or Remove Programs* (in XP). Click *Windows Setup* or *Add/Remove Windows Components*, select an item, and click *Details* (if necessary); you may need to click *Details* again to see more subcomponents. Check the items you want, click *OK*, and follow the instructions. You may be prompted to insert your Windows CD to install some of these programs.

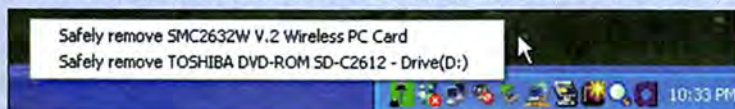
48 2K ME XP **Speed up your disk-keeping:** To create a shortcut that cleans your disk the way you want, choose *Start*•*Run*, type *cleanmgr /sageset:*, enter a number from 0 to 65,535 (don't type a comma), and press *<Enter>*. (The number simply identifies the options you select.) Choose the settings you want and click *OK*. To make the shortcut that runs Disk Cleanup, right-click on the desktop or in a folder and choose *New*•*Shortcut*. In the location box, type *cleanmgr /sagerun:x* (replacing *x* with the number you entered previously). Follow the prompts to finish the shortcut.

49 2K ME XP **Automate your updates:** To automate the Windows Update feature in Windows XP, right-click *My Computer*, choose *Properties*, and click the *Auto-* ▶

GEAR TIP

Remove Devices the Safe Way

44 2K ME XP You can plug in and remove some peripheral devices (such as cameras) with no problems. However, other removable gear poses a greater risk to your PC's stability. For example, removing a network PC Card adapter from a notebook or an external hard drive from a desktop can cause you to lose data if you're working on files that reside on the network or on the hard drive. The proper approach: Click the *Safely Remove Hardware* icon in the sys-



tem tray (you may need to click the 'Show hidden icons' arrow first). From the pop-up menu, select the hardware to be removed. You can now unplug the device. Double-click the *Safely Remove Hardware* icon if you prefer to work with a dialog box.

Z Force F1

Turbocharge Your Mobility

ABS® Recommends Microsoft® Windows® XP

ABS® zForce F1

Microsoft® Windows® XP Home SP1a
Intel® Pentium® 4 3.06GHz 512K 533MHz FSB
with Hyper-Threading
ATI Mobility™ Radeon™ 9000 with 64MB Memory
Sound Blaster Pro Compatible Audio
15" SXGA+ TFT Display 1400 x 1050
60GB 5400RPM Hard Drive
512MB PC2700 DDR Memory
24x12x24x8 DVD/CDRW Combo Drive
Integrated 3 in 1 SD/MMC/MS Card Reader
Integrated 10/100 Mbps Ethernet Controller
Integrated 56K V.90 Modem
Touchpad with 2 Buttons, 2 Scroll
Travel Weight: 7.7 lbs.

1 Year Limited Parts Warranty
Lifetime Technical Support

~~\$1899~~
Regular Price

Sale Price
\$1429

Free Shipping



ABS® zForce F1
is powered by Intel®
Pentium® 4 processor
with HT technology.



http://www.abspc.com 800.876.8088

► 1 Year Limited Parts Warranty

► 30 Days Money Back Guarantee

► Sales Hours: Mon-Fri 8:30AM-5:30PM PST

► 24/7 Technical Support: 888.983.9988 ► Lifetime Toll-Free Tech Support

Price, specification, and terms are subject to change without notice. Picture shown with upgraded options. ABS® is not responsible for errors in typography and/or photography. 30 days money back guarantee does not include opened software, parts, or special orders merchandise. Original shipping and handling fee along with return shipping charge are non-refundable. Products returned after 30 days or in a non-refundable condition are subject to a restocking fee. Intel, Intel Inside, and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries.

matic Updates tab. In Windows Me and 2000 (Service Pack 3 or later), open Control Panel and double-click *Automatic Updates*. In Windows 2000 and XP, check *Keep my computer up to date*. In all versions, select one of the three available options (see **FIGURE 8**).

50 ME XP Undo your automatic updates: Windows creates a restore point before it performs an update. See tip 24 for instructions on starting System Restore. On the 'Select a Restore Point' screen, click the date of the update, pick the restore point prior to the problem, click *Next*, and follow the prompts.

51 98 2K Add an update utility: Windows 98 or 2000 versions before Service Pack 3 need the Windows Critical Update Notification utility to check for patches automatically. Double-click the Scheduled Tasks icon in the system tray or Control Panel. If the utility isn't there, go to windowsupdate.microsoft.com, click *Pick updates to install*, and click *Critical Updates and Service Packs*. Look for and select this utility.

52 All Update manually: To freshen up Windows the old-fashioned way, check for available patches yourself: Choose *Start>Windows Update* or *Start>All Programs>Windows Update* and follow the prompts at the Windows Update site.



CD Writing

53 XP Enable CD writing: With a blank disc inserted in your recordable CD drive, press **<Windows>-E** to open Explorer, right-click the drive's icon, choose *Properties>Recording*, and make sure *Enable CD recording on this drive* is checked (see **FIGURE 9**). Note

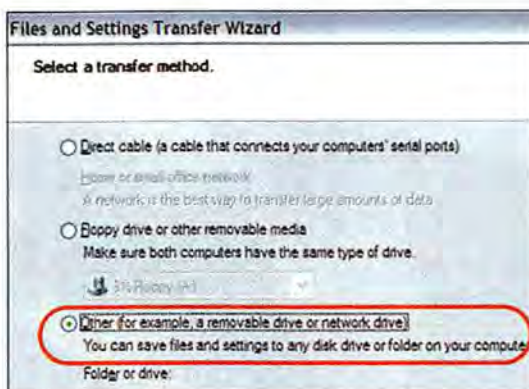


FIGURE 7: SPECIFY THE REMOVABLE medium or network you'll use to transfer files and settings to a new computer.

that the tabs and options listed in the CD Drive Properties dialog box are driver specific; those available vary by drive.

54 XP Go the third-party route: If you use a CD recording utility such as Roxio Easy CD & DVD Creator (www.roxio.com), follow the steps in tip 53, but uncheck *Enable CD recording on this drive* (or the equivalent option for your driver). That way, Windows' own recording features won't conflict with those of your utility.

55 XP Relocate your CD image: Windows reserves hard-disk space for data that will be written to a recordable CD—usually 650MB to 700MB, but as much as 1GB on high-capacity drives. You can tell Windows to use the drive with the most free space: Open the CD Drive Properties dialog box as described in tip 53 and click the *Recording* tab (or the equivalent option for your driver). Choose the drive, which in the example in **FIGURE 9** is listed in a drop-down list under 'Desktop CD recording'.

56 XP Do a slow burn: By default, Windows uses a CD-R drive's fastest transfer speed. If you're having problems, slow it down: Open CD Drive Properties to the *Recording* tab (or your driver's equivalent) and choose a slower speed, which in **FIGURE 9** is under 'Select a write speed'.

57 XP Send files to CD: You can choose the files you want to burn to a CD in Windows Explorer and drag them to the drive's icon, or just right-click the selected files, click *Send To*, and pick your drive. Windows will copy the files to a holding area rather than directly to the CD. You can double-click the drive icon

in Explorer to view the files. In the task pane on the left, click *Write these files to CD* when you're ready to transfer, and follow the steps in the CD Writing Wizard.

58 All Make media CDs with Windows Media Player: If you use Windows Media Player 9 to create a custom playlist, you can copy those tunes to a CD (providing they fit). With Media Player open in full mode, click *Copy to CD or Device* on the left. Select your playlist from the 'Music to Copy' drop-down list. If you see 'Will not fit' in the status column of your playlist, uncheck one or more files. Finally, click *Copy Music* in the upper-right corner.

59 All Make media CDs with another program: Windows Media Player 9 provides free, built-in file copying to CD-R drives, but third-party utilities give you more options, including the ability to copy your ▶

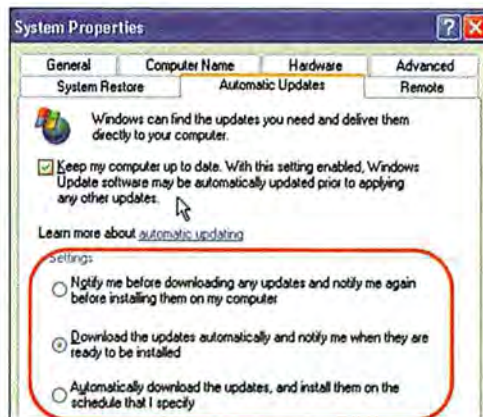


FIGURE 8: YOU DECIDE how Windows updates itself.



View innovative HP technology through an entirely different lens.

HP's complete line of sophisticated digital projectors starts at a highly mobile 2.2 pounds. The more intelligent the projector, the smarter the presentation. It was this thinking that led us to infuse our digital projector line with the most sophisticated image-reproduction technology available. All our projectors feature Digital Light Processing™ technology, which manipulates light to consistently achieve the sharpest, brightest image possible under a wide range of light conditions. Meaning your conference room doesn't have to be perfectly dark for the finer points of your presentation to appear perfectly crisp. And our projectors are easy to use and easy to maintain. So when your company needs to project an image with impact, you'll just get more from HP.



HP vp6110 PROJECTOR

\$999

Lease for under \$37 a month*

After rebate

\$1,299 - \$300 mail-in rebate** = \$999

6.7 lbs

1500 lumens

Native SVGA (800 x 600 pixels)

Automatic image optimization

3-watt speaker

2-year express-exchange warranty



HP sb21 PROJECTOR

\$1,599

Lease for under \$49 a month*

After rebate

\$1,699 - \$100 mail-in rebate** = \$1,599

2.2 lbs

1000 lumens

Native SVGA (800 x 600 pixels)

Keystone correction

Remote mouse

2-year express-exchange warranty



HP vp6120 PROJECTOR

\$1,899

Lease for under \$57 a month*

After rebate

\$1,999 - \$100 mail-in rebate** = \$1,899

6.7 lbs

2000 lumens

Native XGA (1024 x 768 pixels)

Automatic image optimization

3-watt speaker

2-year express-exchange warranty



HP mp3130 PROJECTOR

\$2,599

Lease for under \$77 a month*

After rebate

\$2,699 - \$100 mail-in rebate** = \$2,599

3.8 lbs

1800 lumens

Native XGA (1024 x 768 pixels)

Automatic image optimization

3-year express-exchange warranty



Call 1-800-282-6672, visit hp.com/go/innovation, or contact your reseller to see our complete line of digital projectors.

*Implicit lease rate, assuming lessee does not exercise a fair-market-value purchase option at the end of the lease term and timely returns the leased equipment to Hewlett-Packard Financial Services Company (HPFSC) at the end of the lease term and disregarding any charges payable by lessee other than rent payments (such as taxes, fees and shipping charges). Lease products available through HPFSC to qualified commercial customers in the U.S. and subject to credit approval and execution of standard HPFSC documentation. Other restrictions may apply. Visit www.hp.com/go/hpFinancialServices or call 888-277-5942 and ask for the 36-month, 0% FMV lease offer for more information. **Rebate offers good on purchases made between 2/1/04 and 4/30/04 on qualifying HP projectors. Mail-in rebate not valid in the state of Connecticut. Rebates are subject to change; check www.hp.com/go/getmore for most current rebate values. Actual retail prices may vary. HP/HPFSC reserves the right to change or cancel these programs at any time without notice. ©2004 Hewlett-Packard Development Company, L.P.

TYPE TIP

Character-ize

60 **All** If your documents need the occasional special typographic character, choose *Start•Programs (All programs in XP)•Accessories•System Tools•Character Map*, or just press <Windows>-R, type charmap,



Characters to copy: ©

Select

Copy

and press <Enter>. (If you don't have the character map installed, see tip 47 for instructions on how to add it.) Set your font, double-click the character you need, click the *Copy* button, and paste the character into the desired document. In Windows 2000 and XP, you can also drag and drop from the character map's 'Characters to copy' box to WordPad and several other applications.

music CDs without the loss of audio quality that is a consequence of Windows Media Player's format conversion.



DVD Playback

61 **All** **Enable your player's controls:** If you open a DVD or CD in Windows Media Player 9 but the player controls are disabled, make sure the player's menu bar is visible (you may have to click the button in the upper-left corner in full mode). Choose *Play•DVD, VCD or CD Audio* (the wording may vary); see **FIGURE 10**.

62 **All** **Zoom your DVDs:** If you use Windows Media Player 9 to watch DVDs, use the full-screen icon in the bottom-right corner to zoom, or press <Alt>-<Enter> to switch to and from full-screen mode. Move the pointer away from the screen edges (and then keep the mouse immobile) to banish the controls and to fill the screen with your show. To keep the controls in view, click the pushpin at the top of the screen.

63 **All** **Control your DVD speed:** When viewing DVDs in Windows Media Player 9, click or drag the slider on the seek bar to move ahead or back. Press <Ctrl>-<Shift>-F to play in fast motion, <Ctrl>-<Shift>-G for slightly speeded-up playback, and <Ctrl>-<Shift>-S for slow motion. <Ctrl>-<Shift>-N returns the playback to normal speed.

64 **All** **Control DVDs from your keyboard:** Other handy keys for DVD are <Ctrl>-P to pause or resume, <F10> to turn up the volume, <F9> to decrease it, and <F8> to mute it.



FIGURE 9: CONFIGURE YOUR CD-R and CD-RW recording in the Properties dialog box for that drive.



Speed Tweaks

65 **XP** **Tone down the bling-bling, part 1:** If your PC's application windows open too slowly, you can help out by turning off some of Windows' razzle-dazzle visual effects. Right-click *My Computer* and choose *Properties*. Select *Advanced*, and under *Performance*, click *Settings*. Under the *Visual Effects* tab, select *Adjust for best performance*, or choose *Custom* and turn off all the effects you can live without.

66 **98 2K ME** **Tone down the bling-bling, part 2:** To pep up Windows 98, 2000, or Me, right-click the desktop and choose *Properties*. Click the *Effects* tab. Uncheck the items in the *Visual Effects* box until you find the balance of speed and attractiveness that's best for you. In Windows 98, turn off *Animate windows, menus and lists*; in all three versions, you can uncheck *Show window contents while dragging*.

67 **XP** **Set your priorities:** XP's Performance Options dialog box gives you limited control over how Windows uses memory and what tasks are given priority for your computer's processor. To check your settings, open the Performance Options dialog box as described in tip 65 and click *Advanced*. Under *Processor Scheduling*, leave *Programs* selected to give foreground applications priority over those running in the background. However, if you usually work in one application while another sorts a database, prints heavy-duty graphics, or performs some other kind of processor-intensive task in the background, select *Background services* to have the processor share its time ►



Lighten Up.

It wasn't so long ago that if you wanted to bring your data with you, your hardware had to come too. Well, that's all in the past now thanks to the new SanDisk Cruzer™ Mini. At under half an ounce, the Cruzer Mini goes anywhere, and with up to 256MB of flash memory, it takes a lot with it. Hi-speed USB 2.0 compliant, SanDisk's Cruzer Mini lets you transfer data faster than ever before. And at less than 8mm thick, all it needs is a single USB slot. Just drag, drop, and go. It's all about convenience – no extra hardware, no worries.

So whether you're installing utilities or updating print drivers for the umpteenth time, you can take your files with you wherever you go – and you won't even need your dolly.



For more information on SanDisk Cruzer Mini, visit www.sandisk.com/mini

SanDisk 

SanDisk and the SanDisk logo are registered trademarks and Cruzer is a trademark of SanDisk Corporation. Other brands and products are trademarks of their respective holders. © 2003 SanDisk Corporation. All rights reserved.



with all running tasks equally instead of giving priority to the foreground application. You likely will want to use the default *Programs* setting under 'Memory usage'. Choose *System cache* only if you use your computer as a server rather than as a workstation.

68 All Check hibernation compatibility: If you'd like Windows to start in seconds with all your apps and documents open just as you left them when you shut down, try hibernation. Click in the Address bar of any Explorer or Internet Explorer window and type **Control Panel\Power Options**. If the Power Options Properties dialog box has no Hibernation tab, you're out of luck. If it does, click it to see if you meet hibernation's disk-space requirements.

69 All Snooze and win, part 1: If your system does support hibernation, enable it by clicking the *Hibernate* tab of the Power Options Properties dialog box (see tip 68) and checking *Enable hibernation*.

70 All Snooze and win, part 2: Once hibernation is enabled, choose *Start>Shut Down* or *Start>Turn Off Your Computer* when you're ready to leave. If you clicked 'Shut Down', select *Hibernate* and click *OK*. If you

clicked 'Turn Off Your Computer', hold down the **<Shift>** key to change the Stand-by icon to Hibernation, and then click it.



New-Look Windows

72 All Build a bigger taskbar: If you have too many buttons crowding your taskbar and system tray, right-click the taskbar and make sure 'Lock the Taskbar' is unchecked. Now you can drag the top of the taskbar up to double its height. Move it to a screen edge and resize it to save space.

73 All Hide your taskbar: If you would like to make more room for other windows, right-click the taskbar and choose *Properties*. Check *Auto Hide* or *Auto-hide the taskbar*, and click *OK*. The taskbar will disappear, but it will slide back in place when you move the pointer to the proper screen edge.

74 All Quash giant menu icons: By default Windows uses large icons in the Start menu but small ones in all its submenus. To get rid of the supersize pics, right-click the *Start*



FIGURE 10: TELL WINDOWS Media Player what to do if it doesn't see a DVD in the drive.

button (in XP) or the taskbar (in all versions) and choose *Properties*. In XP, click the appropriate *Customize* button and select *Small icons* (if you use the XP Start menu) or *Show Small Icons in Start menu* in the 'Advanced Start menu options' list (if you use the classic Start menu). In other Windows versions, click *Show small icons in Start menu* on the first tab you see.

75 98 Clean your desktop, part 1: Tired of icons cluttering your desktop? To hide them in Windows 98, right-click the desktop and select *Properties*. Click the *Effects* tab and check *Hide icons when the desktop is viewed as a Web page*. Click *OK*. Now whenever you want to see a cleaner desktop, all you have to do is right-click it and choose *Active Desktop>View As Web Page* to send your icons into stealth mode.

76 2K ME XP Clean your desktop, part 2: Desktop icons can take up a lot of space in other versions of Windows as well. To hide them in 2000 and Me, right-click the desktop, choose *Active Desktop*, and make sure *Show Web Content* is checked. Right-click the desktop again (if needed) and choose *Active Desktop>Show Desktop Icons* to bring your icons back into view. To hide desktop icons in XP, right-click the desktop and click *Arrange Icons By>Show Desktop Icons* (to uncheck it). Then repeat the steps to bring the icons back. ■

SIZING TIP

Big Borders

71 All Make window borders easier to grab: Have you ever struggled to position your mouse over a window border *juuuust* right in an attempt to resize the window? To make resizing easier, right-click the desktop, choose *Properties*, and click the *Appearance* tab.

(In XP, click the *Advanced* button.) From the *Item* drop-down list, choose *Active Window Border* and increase the value under *Size*.



Mobility. Taken to another level.



Rise above your competition with the **Toshiba Tecra® S1 Series notebook** featuring **Intel® Centrino™ mobile technology**. With Microsoft® Windows® XP Professional, advanced wireless connectivity¹ and optimized battery life, mobile professionals can go more places and stay productive longer. Experience a boost in performance and simplify your connections with a range of features including a large 15" diagonal XGA display, ConfigFree™, hard disk drive options up to 60 GB² and a host of Slim SelectBay® options like a DVD Multi Drive. Protect all this power with a magnesium alloy casing, and you have a stable notebook that can easily make your desktop disappear. **Call 1-800-TOSHIBA, contact your local reseller or visit www.toshiba.com.**

Toshiba recommends Microsoft® Windows® XP Professional for Mobile Computing.



TOSHIBA

PC Magazine 16th Annual Reader Survey — Service and Reliability: Rated "A"

1. Wireless connectivity and some features may require you to purchase additional software, services or external hardware. Availability of public wireless LAN access points limited. 2. 1 GB = 1 billion bytes. Tecra and Slim SelectBay are registered trademarks, and ConfigFree is a trademark of Toshiba America Information Systems, Inc. and/or Toshiba Corporation. Intel, Centrino, Intel Inside, the Intel Centrino logo, and the Intel Inside logo are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States and/or other countries. Product specifications, configurations, prices, system/component/options availability are all subject to change without notice. Reseller pricing may vary. © 2004 Toshiba America Information Systems, Inc. All rights reserved.

7.6mm-22.8mm

hp photosmart

shopping.yahoo.com

YAHOO!shopping

Search: hp photosmart 935

HP PhotoSmart 935

Compare Prices | Full Specifications | Description | User Reviews | Buyer's Advice

Specifications: 5.0 Megapixel, LCD Screen Size: 1.5 in, Optical Zoom: 3 X, Digital Zoom: 7 X, Average User Ratings: ★★★★★ (6 Ratings) [Read reviews](#) | [Write a review](#)

Compare Prices from 10 merchants

Merchant	Merchant Rating	Base Price	Tax	Shipping	Total Price*	Source
hpshopping.com	★★★★★	\$449.99	\$0.00	\$0.00	\$449.99	from hpshopping.com
COMPUSET	★★★★★	\$449.99	\$0.00	\$0.00	\$449.99	from compuset.com
451TV.com	★★★★★	\$449.99	\$0.00	\$0.00	\$449.99	from 451tv.com
TheSuppliesRoom.com	★★★★★	\$449.99	\$0.00	\$0.00	\$449.99	from TheSuppliesRoom.com
B&H Photo Video Pro-Audio	★★★★★	\$449.99	\$0.00	\$0.00	\$449.99	from B&H Photo Video Pro-Audio
Plasma Video Direct	★★★★★	\$449.99	\$0.00	\$0.00	\$449.99	from Plasma Video Direct
Not Yet Rated	Not Yet Rated	\$420.40	\$10.45	\$0.00	\$430.85	from J and R
Not Yet Rated	Not Yet Rated	\$423.70	\$36.54	\$34.00	\$494.24	from ThatSuppliesRoom.com

*Calculate Tax and Shipping for ZIP Code: 10021 [Change] | Buy It

Comparison shop the new-fashioned way. **YAHOO!shopping**
Search. Compare. Save.

THE EXCLUSIVE ALIENWARE SENTIA™



"Top of the line doesn't even begin to describe this laptop."

- Newsweek

SENTIA PERFORMANCE OPTION

Exclusive Alienware Metallic Color Case

Intel® Pentium® M Processor 1.40GHz

Advanced 400MHz System Bus with 1024KB L2 Cache

256MB PC-2100 DDR SDRAM

Intel® PRO Wireless 2100

14.1" SXGA+ TFT Active Matrix LCD

Seagate® Momentus 20GB 5400RPM Ultra ATA100 Hard Drive

Removable 8X DVD-ROM Drive

AlienCare: Toll-Free 24/7 Phone Support and Depot Service

Starting at:

~~\$1,749.00~~ **\$1,699.00** (after \$50.00 online rebate)
Pay No Sales Tax¹ as low as \$51/mo.²

ACCESSID: PCW0304PS1

- Thin & light design: only 4.9 lbs³
- Longer battery life: over 5hrs⁴
- Outstanding mobile performance, value, and flexibility
- Exclusive design with illuminated alien eyes
- Available in colors like Saucer Silver, Conspiracy Blue, and Cyborg Green

Designed for a Mobile Lifestyle

The Sentia was created for the unique demands of today's mobile lifestyle, delivering flawless performance in a wide range of applications, whether it's used to work, study, or surf the web. With integrated wireless LAN capability and a longer battery life, the Sentia allows you to stay connected no matter where you are.⁵ Powered by Intel® Centrino™ mobile technology and Seagate® Momentus hard drives, the new Sentia delivers performance, flexibility, and value in an exclusive Alienware design. Sentia, the freedom to connect, create, share, and work - on the go.



**6 MONTHS
SAME AS CASH⁷
FINANCING**

To Receive a \$50 Instant Rebate on the Sentia and View the Latest Pricing and Promotions, Enter an AccessID at:

WWW.ALIENWARE.COM/PCW
1-800-ALIENWARE | 1-800-254-3692

ALIENWARE
HIGH-PERFORMANCE SYSTEMS

Award(s) and quote(s) listed do not pertain to a specific system or configuration. Prices, configurations, and availability may change without notice. Taxes and shipping charges not shown. Alienware can not be held responsible for errors in photography or typography. For complete information on warranty, support, and on-site or depot service, visit www.alienware.com. For hard drives, GB means 1 billion bytes and accessible capacity may vary depending on configuration. For CD-ROM, DVD-ROM, CD-RW, and DVD+RW/R drives, maximum data transfer rates may vary and discs created with these drives may not be compatible with all drives and players. For modems and network cards/hardware, maximum achievable data transfer rates may vary. Actual case may vary in design. Alienware and the Alienware logo are registered trademarks and trademarks of Alienware Corporation. All registered trademarks and trademarks are the property of their respective owners. (1) This applies only to purchases made direct with Alienware and shipping within the U.S., except for those shipping to Florida. Corporate purchases are not exempt from use taxes within their own states. Orders shipping to Florida must pay all state and local sales taxes. (2) Subject to credit approval. Terms subject to change without notice. See agreement for complete information. Annual Percentage Rate: 21.90%. Minimum finance charge: \$1.00. (3) Varies depending on configuration. (4) Varies depending on application. (5) Requires 802.11b wireless network coverage and access.

PC WORLD

In New Digital Format! Subscribe Now.

Why get PC WORLD in digital format?

1> Same great magazine.

Read the magazine you know in a convenient new format.

2> Immediate access.

Get your issues before they hit the newsstand, then read them anytime—even offline.

3> Keyword searchable.

Find a topic or name in seconds.

4> Live links.

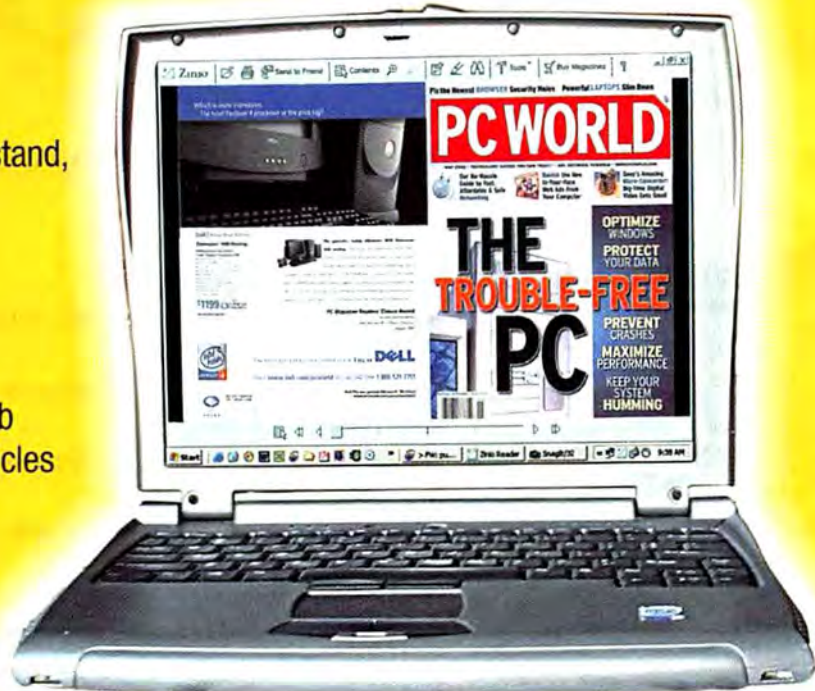
Quick hotlinks for easy navigation to Web content, advertisers' sites, and other articles throughout the issue.

5> Paperless archives.

Keep back issues on your computer for fast reference and easy storage.

6> Great savings.

Canadian and other International subscribers will save even more as postage costs are eliminated!



CALL 1-800-234-3498

Use Order Code H3DMPCD

**SPECIAL
CHARTER PRICE**

12 issues for \$19.97

No Additional Postage in Canada and Other Foreign Countries

In Canada, price includes 7% GST (#R124669680).

**Order Online and get a Bonus Issue Instantly
You'll get 13 issues for \$19.97.**

<http://www.pcworld.com/digital>



**Internet Access
that fits your life,
and your budget.**



**Better
Business
Bureau.**

Member of Better Business Bureau

DSL

HIGH SPEED INTERNET ACCESS

FAST, RELIABLE and SECURE

Monthly Service
as low as...

\$34.95[†]

DSL (Digital Subscriber Line) is the latest and best thing in Internet browsing. This translates to significantly faster, always-on connections, and no more waiting for pages to load. Experience the Internet the way it is intended to be, with full screen streaming video and sound at your fingertips. Send and receive e-mails or Instant messages immediately. Surf with confidence, and enjoy fast reliable connections.

DIAL-UP

56K INTERNET ACCESS

This is the same high quality 56k service ISPWest has offered for over 8 years now. Dial-up is the affordable solution to your Internet connection needs. Accelerated Dial-up is also available as low as \$9.95* a month.

Monthly Service
as low as...

\$8.25^{*}

FREE 15-DAY TRIAL

For a limited time, take advantage of our 15-Day Free Internet Trial. There's no obligation and no credit card required. Call today and experience the quality and reliability of ISPWest Dial-Up.



For pricing and features visit us online at <http://www.ispwest.com>



[†] The price shown for DSL is the lowest rate available. Price and availability may vary, due to geographical location. Please check website at www.ispwest.com for pricing and availability in your area.

^{*} The Dial-Up price shown is based on a 24 month pre-paid plan. Other rates and services are available. Please call us toll free at 1-866-477-9378 or check our web-site at www.ispwest.com for pricing and availability in your area. Please check web-site for additional details and information on Unlimited Service. Local Los Angeles callers - (818) 891-5941

Call Toll Free

1-866-ISP-WEST


1-866-477-9378

Flat Panel Face-Off

DELL

**Best
BUY**

DELL'S DYNAMIC DUO: The 19-inch UltraSharp 1901FP (this page) and the 17-inch UltraSharp 1703FP (right) earn Best Buys in their respective size categories. Each LCD combines solid image quality with an attractive, easy-to-use design.



With LCD screens,
big is good, bigger
is better, and both
are more affordable
than ever.
By Richard Jantz

DELL

MOVE OVER, CRTs and puny LCDs. Although 15-inch flat panels have actually gotten more expensive recently, prices have fallen a bit on 17-inchers and much more on 19-inch models in the past year. Some 17-inch LCDs sell for as little as \$450, while 19-inchers start at a couple hundred dollars more. But declining prices are just one reason why a big flat panel is an appealing choice for your next monitor purchase.

Although all LCDs will display sharp text and flicker-free images, bigger is better for several reasons. One is resolution: 15-inch panels have a native resolution of 1024 by 768 pixels, while 17-inch and most 19-inch LCDs provide a resolution of 1280 by 1024. And with each step up in size, you are more likely to find advanced panel technologies that lead to better image quality. Also, even a monstrous LCD won't dominate your desk or add to your power bill the way a CRT does. On average, the 19-inch LCDs in this review use about a third as much power as the 22-inch CRTs we reviewed last month.

To find the best large LCDs, *PC World* revised its testing methodology to better challenge today's high-performing displays. We evaluated promising panels—eight 19-inch models and eight 17-inch ►



contenders—and chose the five best in each category. Dell models top both charts. The \$679 UltraSharp 1901FP earns the Best Buy among 19-inch LCDs for its crisp text and handsome graphics, its abundant features, and its relatively low price. The 1901FP's near-identical sibling, the \$529 Ultra-

Best Buy: 19-Inch LCDs

**Best
BUY**

RETAINING THE TITLE it has held since its introduction last summer, Dell's 1901FP remains our headliner. In addition to possessing a full set of features, it produced some of the best-looking, most accurate colors right out of the box, and adjustments only make it better.

Sharp 1703FP, captures the Best Buy for 17-inch LCDs. We do have one caution: Dell has had difficulty keeping up with demand. At press time, Dell was reporting a three-week delay in filling orders.

IMAGE CONSCIOUS

TO EVALUATE SCREEN quality, we performed a side-by-side comparison of the monitors in each size category, viewing a series of images that emphasize the legibility and sharpness of text or the color, shading, and detail of graphics. We conducted our tests using each monitor's DVI (digital) input, which in our experience yields better performance than analog. The one exception was the 17-inch AOC LM729—it has only an analog port.

Our judges felt that most of the LCDs had fine quality overall, but they found notable differences on specific tests. Among 19-inch models, for example, the Dell UltraSharp 1901FP earned the top score for displaying rich skin tones and fine details in our group portrait photo screen. With the second-highest total graphics score and advanced adjustment features, the Eizo Nanao FlexScan L767 is a good choice for design pros, but its premium price of \$900 kept it off our chart. Other 19-inchers, such as the Princeton Digital SEnergy 914 and the Sharp LL-T19D1, were marginally better than the rest for displaying text. But none of the monitors we reviewed had significant problems with text; they all trump the CRTs we've evaluated.

We saw more variation in scores for 17-inch flat panels. The Samsung SyncMaster 173P scored highest for both text and graphics. It was especially good at reproducing subtle light and dark shades in our gray-scale and color-scale test screens. The IBM ThinkVision L170p took a very close second for graphics. Meanwhile, our one analog-only display, the AOC LM729, finished last in image qual-

ity. But it still reproduces darn good text compared to most CRTs. Its low price (\$449) and versatile adjustment features helped it earn a chart position.

TOOLS FOR TWEAKING

RARELY WILL A monitor's default settings provide the best quality for both text and graphics. Besides brightness and contrast, some models offer advanced controls, such as color temperature, hue, and saturation. A few—like the two Dells and the 17-inch Eizo Nanao FlexScan L557—offer color modes optimized for text-based applications, entertainment, or graphics work. Several units also allow adjustment of the individual red, green, and blue color channels. You can get even better performance by using a color-calibration kit (see "Calibration for Color Perfection" on page 108). Many LCD controls—such as horizontal and vertical position, clock, and phase—help you correct conversion problems when using an analog input; they are unnecessary for a digital connection.

A few models offer unusual controls. Samsung's SyncMaster 173P has only a power button on its bezel; you access all other controls from within Windows by using the intuitive software bundled with the display. The 19-inch units from Eizo and NEC (both of which missed our chart) let you control the monitor via their proprietary software. But they provide traditional front-panel buttons, as well.

Unlike portly CRTs, lithe LCDs are far easier to position. For example, the Samsung 173P—which is especially pliable—has a double-hinged stand to let you place the screen in a wide variety of positions for optimum viewing.

TCO Development, an international organization that certifies the ergonomic and environmental impact of office products, added tilt and height adjustment requirements—among other criteria—to its latest monitor standard, TCO'03. (The standard's predecessor, TCO'99, is less stringent; see www.tcodevelopment.com.) All of the LCDs on our charts have tiltable screens, and all but the 19-inch Cornea CT1904 permit height adjustments. You can swivel the screen left and right on any model except the 19-inch Cornea and the 17-inch Eizo.

Some LCDs allow you to pivot the screen 90 degrees from landscape to portrait orientation—handy for long documents and for vertically oriented photos and images. All of the 17-inch LCDs on the chart except the IBM TL170p and the Eizo L557 can pivot. The only 19-inch chart maker with this feature is the Dell UltraSharp 1901FP. ▶



CORNEA'S CT1904

is not only the least-expensive 19-inch LCD on the chart; it also displays gorgeous graphics.

U.S. Robotics means wireless.

U.S. Robotics means connectivity.

U.S. Robotics means security.

U.S. Robotics means business.



YOUR TOTAL SOLUTION PROVIDER

U.S. Robotics has been delivering high-performance, reliable Internet connectivity for three decades. Whatever your needs — wireless or wired networking, sharing broadband connections or securing your network — we've got what you need.

See how we do it at www.usr.com

Available exclusively at:

CDW

Fry's

Insight

MICRO CENTER
The Ultimate Computer Store

TigerDirect.com

U.S. Robotics®

Ready. Set. Connect.™

Still Logging in Manually? Let the Robot do it!



Works on
Windows PCs
with most
browsers



View your
passwords and
Address Book
on PDA



Keep your
passwords
on USB key for
extra security
and portability

DO-IT-ALL Password Manager and Web Form Filler



- Auto-saves and auto-fills passwords for you
- Logs you into online accounts automatically
- Fills long registration and checkout forms



- Stores secret text notes in Safenotes
- Generates Random Secure Passwords
- Sensitive data is 3-DES encrypted with Master Password



- Backup, restore, copy, and print your passwords
- Imports your Gator passwords
- Defeats keyloggers as you are not typing anything

"My favourite password manager... Easy to use, does not pop up ads in my face or grab information from me. Most importantly, it simply works well."

Financial Times

"Easy to use and without any hidden spyware... Innovative, lean, useful product."

Wall Street Journal

"Best of all, this program simply works well."

We have yet to see a Web-based form stump it.
PC Magazine.



WWW.ROBOFORM.COM

Download it for **FREE** today!

The 17-inch models from AOC and Samsung come with Portrait Displays' Pivot Pro software to flip the screen image from landscape to portrait. Dell relies on device drivers for the ATI- and NVidia-based graphics cards in its PCs; it also offers driver downloads for those cards in non-Dell systems. NVidia supports pivoting in its newer drivers, and ATI plans to introduce it for all cards. If your LCD lacks software for pivoting and your graphics card doesn't provide support, you'll need to buy a third-party utility for about \$40.

SLEUTHING THE SPECS

FOUR OF THE MOST common features touted by manufacturers are brightness, contrast ratio, response time, and viewing angle. Unfortunately, monitor vendors don't always use the same methods to measure these specs, and some may overstate (or understate) the results.

The LCDs we reviewed have brightness values of 250 to 300 candelas per square meter (cd/m²) and contrast ratios (the difference in brightness between full white and full black) of 450:1 to 700:1. However, these measurements are done under op-

timum conditions, in a darkened room. In normal lighting, the contrast ratio may drop by about 5 percent, according to Bruce Berkoff, vice president of LCD panel maker L.G. Philips. And even measurements under ideal conditions may vary from vendor specs, as *PC World* found in lab tests last year (see "LCD Specs: Useless?" in the June 200 issue or at find.pcworld.com/40277).

Though the numbers are not as precise as vendors make them out to be, we did see some correlation between specs and performance. For example, models claiming the highest contrast ratio of 700:1 (such as the 17-inch Samsung 173P and 19-inchers from Planar, Princeton, and Sharp) typically earned higher scores in our gray-scale and color-scale tests than units with a listed ratio of 450:1 (such as the AOC LM729 and ViewSonic VG710s).

Most of the LCDs we reviewed state a response time of 25 milliseconds; the ViewSonic VG710s, which didn't make the chart, boasts 16ms. In theory, a faster response time should allow smoother movement and less of the ghosting that occurs when the LCD's pixels can't keep up with the action they're displaying. In our lab tests using a ▶



PRINCETON'S SENERGY 914

had the top score for text quality among the 19-inch models, and its graphics displays were impressive.

FEATURES COMPARISON

TEST Center

19-Inch LCDs: Room. With a View

SOLID IMAGE QUALITY, a great price, and generous features push Dell's UltraSharp 1901FP to the front of a very competitive pack.

	19-INCH LCD MONITOR	Street price (1/9/04)	Overall rating	Quality of text/graphics	Features/ease of use	Comments
1	Best Buy Dell UltraSharp 1901FP find.pcworld.com/35777	\$679	92	Very good/ Very good	Outstanding/ Very good	FEATURES: PVA panel; 16.2 pounds; dual video inputs; tilt, swivel, height, and pivot adjustments; four-port USB 2.0 hub; TCO'99 compliant. Three-year warranty, 24-hour daily toll-free tech support. SUMMARY: Great image quality—especially in color graphics—plus supersmooth adjustments earn this model top honors. (★★★★☆ Retested Mar 04)
2	Sharp LL-T19D1 find.pcworld.com/35765	\$699	91	Very good/ Outstanding	Very good/ Good	FEATURES: Vendor does not state panel type; 15.2 pounds; dual video inputs; tilt, swivel, and height adjustments; TCO'99 compliant. Three-year warranty, 24-hour daily toll-free tech support. SUMMARY: All-around excellent image quality. But positioning adjustments are limited and not as smooth as with some models. (★★★★☆ Retested Mar 04)
3	Sony SDM-X93 find.pcworld.com/38303	\$750	91	Very good/ Very good	Very good/ Fair	FEATURES: Vendor does not state panel type; 16.5 pounds; one digital and two analog video inputs; tilt, swivel, and height adjustments; built-in speakers; TCO'99 compliant. Three-year warranty, 24-hour daily toll-free tech support. SUMMARY: Fine color, intuitive controls, and above-average stereo speakers. (★★★★☆ Retested Mar 04)
4	Cornea CT1904 find.pcworld.com/35774	\$650	87	Very good/ Outstanding	Good/ Good	FEATURES: PVA panel; 13.5 pounds; dual video inputs; tilt adjustment; built-in speakers; TCO'99 compliant. Three-year warranty, 10-hour weekday toll-free tech support. SUMMARY: Low-priced monitor offers excellent image quality but doesn't provide RGB color control in digital mode. (★★★★☆ Retested Mar 04)
5	Princeton Digital SENERGY 914 find.pcworld.com/39395	\$699	86	Outstanding/ Very good	Good/ Good	FEATURES: MVA panel; 17.5 pounds; dual video inputs; tilt and height adjustments; TCO'99 compliant. Three-year warranty, 9-hour weekday toll-free tech support. SUMMARY: Outstanding text display helped this monitor earn the third highest image-quality score among 19-inchers. Weekday support hours are a bit skimpy. (★★★★☆)

HOW WE TEST: Judges rate how well each monitor displays 13 text and graphics images at a native resolution of 1280 by 1024 pixels. Some screens are from DisplayMate for Windows (www.displaymate.com). See find.pcworld.com/34613 for testing details. Data based on tests designed and conducted by the PC World Test Center. All rights reserved. **CHART NOTES:** Overall ratings are based on text and graphics quality (20 percent each), price (15 percent), features and ease of use (20 percent), usability (15 percent), and support policies (10 percent). With LCD monitors, the entire screen area is viewable. Panel technology: TN = twisted nematic; MVA = multidomain vertical alignment; PVA = patterned vertical alignment. Some vendors decline to state the panel technology used. Dual inputs include one digital and one analog connection. See find.pcworld.com/10860 for details on PC World's Star Ratings. Visit find.pcworld.com/40019 for reviews of all 19-inch LCDs tested for this roundup.

HOT



It's hot and cool at the same time. The
in the world for under \$1000.*

Sizzling performance. Refreshing price. Not only does the Xerox Phaser 8400 deliver 24 pages per minute in black and white, but it produces brilliant color prints

at the same dazzling speed. For under \$1000! Color is consistently clear and vivid, print after print. Your first page prints out at an industry-leading 6 seconds.

Learn more: xerox.com/office/1964 Or call: 1-877-362-6567 ext. 1964

* Based on manufacturers rated speed and estimated retail price.
© 2004 XEROX CORPORATION. All rights reserved. XEROX, The Document Company, Phaser and There's a new way to look at it are trademarks of XEROX CORPORATION.

COOL



Xerox Phaser® 8400 is the fastest color printer
There's a new way to look at it.

And when it comes to convenience, nothing is cooler than the Xerox Phaser 8400's unique and reliable solid-ink technology which makes adding ink fast,

simple, and clean. In fact, our entire line of color printers is based on the hot idea that color printing should be easy. To learn more, contact us, today. Cool.

THE DOCUMENT COMPANY
XEROX®



SHARP'S LL-T19D1

posted the highest graphics quality score in its class; it also handled moving images quite smoothly.



SONY'S SDM-X93

has powerful integrated speakers and enough inputs to support video and audio from three PCs.

DVD movie, a video game, and a collection of moving patterns, we failed to detect any differences between most panels. All of the 17-inch models (including the ViewSonic) and four 19-inch monitors earned a quality score of Average, meaning that they looked fine most of the time. However, the 19-inch models from Cornea, Dell, Eizo, and Sharp earned a score of Good, meaning that we couldn't distinguish between video on them and on a CRT.

Viewing angle is an important characteristic for LCDs. With a CRT monitor, you'll see the same

color, brightness, and contrast in your image from just about any viewing angle. But with an LCD, images lose contrast and change color when you move to the side or upward or downward from the optimum angle. These shifts aren't usually a problem for basic tasks like word processing or Web surfing. But they can make graphics work, such as refining digital photos, somewhat tricky.

For viewing angle, vendors specify the arc—both horizontally and vertically—within which the contrast ratio remains above a certain value. Some ▶

Prime-Time-Ready LCD TVs

BASED ON OUR tests, a standard LCD monitor is still the best choice for optimum performance with a PC, but several new combination TV/monitor models do a pretty good job with video, and they save space as well.

We informally tested three 17-inch LCD combos: the \$649 Samsung SyncMaster 172MP, which has the same native 1280 by 1024 resolution and 4:3 aspect ratio as a standard 17-inch LCD, plus the Dell W1700 and the Sharp LL-M17W1, each a \$699 display with a native

son. The SyncMaster 172MP produced the most pleasing colors at its factory default settings. And with its 4:3 aspect ratio, the Samsung can utilize the whole screen when showing standard-

format television programs; the Dell and Sharp can display only a 14.5-inch (diagonal) picture in the middle of their wide screens. But we preferred the wide-screen models for viewing DVD movies. After tweaking settings on both models, we judged the Dell to yield slightly better color, especially in very bright and very dark shades. Motion appeared smooth on all three combo units.

The settings were also easy to adjust on all three, using their front-panel buttons or the included remote controls. For example, the Dell W1700 offers a variety of

useful presets for movies, sports, and multimedia, plus sound settings for voice, music, and theater. All include built-in stereo speakers; however, the Sharp's 3-watt duo couldn't match the deeper bass and higher trebles of the dual 5-watt speakers that both the Dell and the Samsung provided.

We also connected each LCD TV to a PC and compared its picture quality to the top two 17-inch models in the roundup—the Dell 1703FP and the Samsung SyncMaster 173P.

All three combo models provide analog D-sub ports, but the Dell also has a DVI digital connection. Although each LCD TV had good overall image quality and text was fine, the standard 17-inch monitors were noticeably better at displaying our test images, providing a broader range of bright and dark colors.

You may pay about \$100 more for a combo model than for a basic monitor, but it's a worthwhile purchase if your viewing pleasure is evenly divided between the TV and the desktop.

—Richard Jantz

Samsung 172MP (left) and Dell W1700.



1280 by 768 resolution and a 16:9 wide-aspect ratio. Besides providing a standard on-board TV tuner, these hybrids include component, S-Video, and composite video inputs for devices such as DVD players and game consoles. Thanks to their picture-in-picture capabilities, they enable you to watch TV or a movie while simultaneously using your PC.

GOOD SHOWS

STANDARD CABLE TV broadcasts looked brighter and sharper than those on a regular CRT television we used for compar-

Introducing a living room revolution.



New!

Gateway recommends Microsoft® Windows® XP Media Center Edition

The Gateway® 901 Home Theater PC: It records live TV. Stores thousands of CDs. And will change your mind about what a computer can do.

Now Gateway combines home entertainment and home computing with an all-in-one, digital media center computer like no other. Starting at just \$999.99, the 901 Home Theater PC with Microsoft® Windows® XP Media Center Edition 2004 lets you do amazing things like pause, record and store TV shows with its Digital Video Recorder and no subscription fees. It features a built-in Audio Jukebox so you can store thousands of CDs or stream music with a free month of access to Napster's 500,000 song collection*. And of course, you can store, edit and e-mail all your digital photos. Plus play games and surf the net with ease.

Upgrade to the 901X with DVD Recorder and you can create a Video Archive when you digitize your home videos to its huge 250GB hard drive², edit and burn them to DVD. Plus it features the fast Intel® Pentium® 4 Processor with HT Technology⁴ so you can do all of that at once, right from the comfort of your couch.

Enhance your Gateway Home Theater PC with one of our stunning, thin TVs, like America's best-selling 42" Home Plasma TV⁵ for under \$2800, and your living room will never be the same again.

1-800-555-2099

gateway.com

Gateway® stores

 **Gateway**

All offers subject to change without notice or obligation and may not be available through all sales channels. All other prices exclude shipping and handling charges unless otherwise noted. Applicable taxes extra. *Home Theater PC and Plasma TV sold separately. **No credit card required to activate 30-day promotional offer. The trial offer includes unlimited streaming and downloading and begins from the date of sign up. A credit card is required to continue service beyond the 30-day trial period or to purchase music during the trial. For further details log onto www.napster.com/terms.html. ²Hard drive accessible capacity varies; GB=1 billion bytes. ³Performance may vary. See www.intel.com for additional information. ⁴Source: Gateway 42" EDTV sales figures compared NPD Technology data. Copyright ©2003 Gateway, Inc. Terms and Conditions of Sale apply. Gateway.com and Gateway Country Stores, LLC are separate legal entities. Intel, Intel Inside, the Intel Inside logo, Pentium, Celeron and Centrino are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Microsoft and Windows are registered trademarks of Microsoft Corporation. Ad Code: 114422

Moving?

Don't forget your *PC World Magazine*!

- The Post Office will forward your subscriptions for only 60 days.
- With one call to OneSwitch, all your current magazine subscriptions can be forwarded to your new address at no cost to you.
- Be sure to ask about special offers on magazine subscriptions when you call.



3 Easy Steps

- Step 1** Gather the mailing labels from the magazines you need to have forwarded.
- Step 2** Have all of your address information available for your old and new addresses.
- Step 3** Make one toll-free call to **1-888-496-9392** and rest assured all your magazines will be transferred to your new address at no cost to you.

Call toll-free **1-888-496-9392** today!

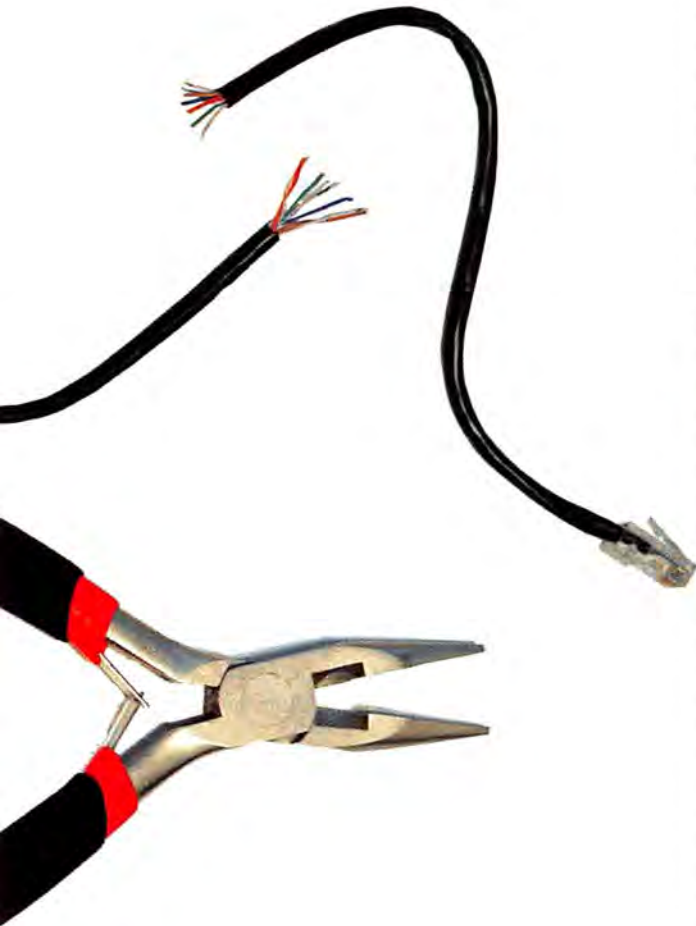
Make sure your *PC World Magazine* moves with you!

Free service provided by:



Broadband Security issues solved in two easy steps.

Off



On



Control your Broadband Internet connection with Time Lock, Session Lock, and Pass Lock.



Under \$50.00

Secure your Internet to protect
your Children, Career and PC!

Internet Security
**Broadband
LOCK** 

www.broadbandlock.com/buynow



cut it off at 10:1; others may go as low as 5:1. Most vendors quoted a 170-degree viewing-angle arc for the horizontal plane; however, our lab measurements (see find.pcworld.com/36659) found about a 50-degree variation between the widest and narrowest arcs, with the Cornea performing best

Best Buy: 17-Inch LCDs

**Best
BUY**

WITH THE SAME STELLAR DESIGN as its 19-inch sibling, Dell's 1703FP tops our roster of 17-inch panels. Besides being a strong performer, it's the best-equipped 17-inch model—with full adjustment, a four-port USB 2.0 hub, and a potent optional (\$39) speaker module.

among 19-inch models and the ViewSonic topping the 17-inchers. But even the lowest-scoring unit in our tests, the Sony SDM-X93, had a good enough range for a single user viewing graphics.

We found more-significant differences between monitors in the vertical plane—both in a comparison of vendor specs and in a basic eyeball test. While most models boasted a 160-degree vertical arc or better, several had far lower specs, such as 140 degrees for the HP L1730 (which missed the chart) and 120 degrees for the ViewSonic VG710s. We saw some differences by standing above each monitor and noting the loss of color and contrast.

The change was most dramatic for the ViewSonic. On that unit, we observed color inversion—in which the screen image resembles a film negative.

Vendor specs are unreliable, but you may obtain a good idea of a monitor's viewing angle from the type of panel technology it uses. The least-expensive, called twisted nematic, is found in most 15-inch and in many 17-inch monitors. Two 17-inch models with low graphics quality scores—the AOC LM729 and ViewSonic VG710s—have TN panels.

High-end screens use one of three technologies: in-plane switching, multidomain vertical alignment, or patterned vertical alignment. Each optimizes the position of liquid crystals to widen the viewing angle. (All panel types also use optical films to expand viewing area.)

Unfortunately, vendors don't always reveal their panel technology—Sharp and Sony, for example, do not. But they are more likely to tout IPS, MVA, or PVA than to mention TN.

You can expect to get better technology in larger monitors: We didn't find any vendors that were using TN in panels of more than 17 inches. According to Jim Muta, display engineering manager for Samsung, suppliers of 19-inch LCD glass have already achieved economical production for IPS, MVA, and PVA panels—making the use of TN ▶

FEATURES COMPARISON

**TEST
Center**

17-Inch LCDs: Good Prices. Great Features

DELL'S ULTRASHARP 1703FP WINS OVERALL, but a pricey Samsung dazzles with beautiful images and a flashy design.

	17-INCH LCD MONITOR	Street price (1/9/04)	Overall rating	Quality of text/graphics	Features/ease of use	Comments
1	Best Buy Dell UltraSharp 1703FP find.pcworld.com/39407	\$529	94	Very good/ Very good	Outstanding/ Outstanding	FEATURES: PVA panel; 15.4 pounds; dual video inputs; tilt, swivel, height, and pivot adjustments; four-port USB 2.0 hub; TCO'99 compliant. Three-year warranty, 24-hour daily toll-free tech support. SUMMARY: A smaller version of Dell's top-performing 19-inch, the 1703FP offers the same lithe design and great adjustment options. (★★★★☆)
2	Samsung SyncMaster 173P find.pcworld.com/39383	\$630	88	Outstanding/ Outstanding	Outstanding/ Good	FEATURES: PVA panel; 13.2 pounds; dual video inputs; tilt, swivel, height, and pivot adjustments; TCO'03 compliant. Three-year warranty, 24-hour daily toll-free tech support. SUMMARY: Top image quality and flexible positioning distinguish the 173P. We liked the software-based controls, but some users may miss the standard buttons. (★★★★☆)
3	Eizo Nanao FlexScan L557 find.pcworld.com/39377	\$560	88	Very good/ Very good	Very good/ Good	FEATURES: PVA panel; 12.3 pounds; dual video inputs; tilt and height adjustments; built-in speakers; TCO'03 compliant. Five-year warranty (three for backlight), 24-hour daily toll-free tech support. SUMMARY: Well suited for graphics use, the L557 has a bevy of advanced controls for refining screen images. (★★★★☆)
4	IBM ThinkVision L170p find.pcworld.com/39499	\$600	86	Very good/ Outstanding	Very good/ Good	FEATURES: PVA panel; 12.6 pounds; dual video inputs; tilt, swivel, and height adjustments; TCO'99 compliant. Three-year warranty, 24-hour daily toll-free tech support. SUMMARY: Image quality was rated second overall, thanks largely to vivid colors. Lacks some advanced image adjustments in digital mode. (★★★★☆ Retested Mar 04)
5	AOC LM729 find.pcworld.com/39371	\$449	85	Very good/ Good	Outstanding/ Very good	FEATURES: TN panel; 13.0 pounds; analog input; tilt, swivel, height, and pivot adjustments; built-in speakers; TCO'99 compliant. Three-year warranty, 12-hour daily toll-free tech support. SUMMARY: Though it trails its digital-input-equipped competitors in image quality, the LM729 is a step up from most 19-inch CRTs in text quality. (★★★★☆)

See the 19-inch LCDs chart on page 101 for testing notes. Visit find.pcworld.com/40022 for reviews of all 17-inch LCDs tested for this roundup.



3M™ Anti-Glare/
Anti-Radiation Filters



EF200

Staring at a computer screen all day
can have a similar effect.

Computer glare can cause burning, itchy, watery eyes and headaches. Help protect yourself and your screen with a 3M™ Executive Anti-Glare/Anti-Radiation Filter. Not only does it offer a double-sided anti-reflective coating for superior glare reduction, it also enhances color, improves contrast and helps protect LCD screens from fingerprints and scratches. Available in styles and sizes to fit most LCD and CRT monitors.



For more information:
800-553-9215
www.3M.com/computerfilters

ISO
COMPLIANCE

Filters tested with monitors to
ISO 9241-7 by TÜV Rheinland.

3M *Innovation*



EIZO NANA'O'S FLEXSCAN L557

displays stunning photos and has several advanced controls to adjust image quality.



IBM'S THINK- VISION L170P

displays vibrant colors, and its height adjustment is exceptionally smooth.

unnecessary. But Muta didn't rule out the possibility that a new company might enter the market by producing TN panels for low-cost 19-inch LCDs.

SATISFACTION GUARANTEED—OR NOT?

WHEN REVIEWING A vendor's warranty, check its policy regarding how many pixels or subpixels (red, green, or blue cells within each pixel) must be non-functioning in order for a panel to qualify as defective and replaceable by the vendor. With over a million pixels per 17-inch or 19-inch monitor, it is not unusual for a few pixels or subpixels to be stuck

permanently in the on or off position, and none of the vendors in this roundup guarantees a flawless monitor. In addition, a pixel defect is often nearly impossible to see, except when the image you're viewing and the defect's location align to make it glaringly obvious—a bright green spot appearing in the middle of someone's face on a photo, say.

Some companies, such as NEC-Mitsubishi and Sony, follow the ISO industry specification, which allows no more than seven subpixel faults or three whole-pixel defects on a screen with a resolution of 1280 by 1024. Other companies have different

Flat vs. Fat: LCDs Take On CRTs

LIKE VINYL RECORD lovers who turn up their noses at CDs, many of my fellow photographers and other graphics pros shun flat-panel displays because traditionally LCDs have trailed CRTs in the range and precision of color they produce. Our in-depth comparisons found, however, that flat panels have essentially closed the performance gap with CRTs.

In one test, the PC World Test Center set up side-by-side comparisons of the four best 19-inch LCDs from this roundup and the four top 22-inch CRTs from our February *Top 5 Monitors* chart. With a 20-inch viewable screen, the CRTs offer just a bit more area, and they fall into roughly the same price range as the LCDs. The lab techs set the CRTs to a resolution of 1280 by 1024, to match the LCDs' native resolution, and covered the monitors' bezels to ensure anonymity. (One advantage of large CRTs is their ability to display very high resolutions—at least 1600 by 1200 for 21- and 22-inch models.)

THE FAULT OF DEFAULT

TESTED AT default settings, the flat panels all earned significantly higher scores than the CRTs

for both text and graphics. To make certain that our jury of testers wasn't enchanted simply by the LCDs' high brightness (about twice that of a typical CRT), we brought the top CRT—the ViewSonic P220f—and two high-scoring 19-inch LCDs—the Dell 1901FP and the Eizo Nanao FlexScan L767—to my photo studio for a closer look.

Under controlled lighting, we compared a high-quality print of a test image—containing various skin tones, gray scales, and subtle color shades—with the same image displayed on the monitors. As before, at default settings the LCDs showed far more accurate colors. After we calibrated each monitor, the LCDs looked even better, but so did the CRT. (For more on calibration, see "Calibration for Color Perfection" on page 108.) In fact, the color quality differences among all three monitors became minimal.

Finally, we compared high-end monitors. Here, the one to beat is Sony's \$1800 Artisan, a 21-inch CRT with a built-in calibration system that many professionals consider the gold standard for color accuracy. Apple's \$2000, 23-inch, wide-format Cinema



Photographer Mark Rutherford found that LCDs are suitable even for pros.

HD Display and Eizo Nanao's \$2566, 21-inch ColorEdge CG21 were the two LCD challengers.

CALIBRATION IS KEY

CALIBRATED, all did very well. The Apple and the Sony were almost equally good at showing detail in shadows. The Eizo lost a tiny amount of the deepest shadow detail, but it surpassed the others in reproducing saturated colors, especially reds and yellows. We felt the Eizo did the best job overall, but differences were slight. A professional could justify the cost (and benefits) of buying any of the three. With calibration, even the 19-inch LCDs and the ViewSonic CRT deliver professional-grade image quality.

—Mark Rutherford

IT'S SHOWTIME



Talk about box office hits. Verbatim's new DigitalMovie™ DVD recordable media is so hot you can almost smell the popcorn. Available as DVD-R or DVD+R, this 4X speed DVD media looks – even feels – like a Hollywood movie reel. But don't think you need a director's chair to use them. These mini-reels are perfect for home movies, business presentations, transferring files – anytime you want to add a little fun to the show. And of course, DigitalMovie DVD has the same unsurpassed performance and reliability you've come to expect from Verbatim. So make your next show a feature presentation. DigitalMovie DVD from Verbatim. It's the reel thing. For more information, contact us at 800-421-4188 or online at www.verbatim.com.

 **Verbatim.**

PUT YOUR WORLD
ON VERBATIM



SAMSUNG'S 173P

has a breakthrough design utilizing a double-hinged arm that makes it nearly as flexible as a goose-neck lamp.



AOC'S LM729

has built-in speakers and a design that makes the panel almost as nimble as a gymnast.

policies: HP permits no more than five subpixel faults and no whole pixel defects, whereas Samsung allows up to ten defective dark subpixels.

Overall, the rate of defects was low for the monitors we reviewed. Among the 19-inch models, only the Cornea had visible defects—one dark pixel and two dark subpixels—and this falls within the company's quality-control specs. The 17-inchers were also quite good, with only the IBM and HP models having problems. The IBM had just one defective subpixel, while the HP had one dark pixel and three dark subpixels. According to company representatives, that level of defects qualifies for replacement.

NO NEED TO WAIT

NEW TECHNOLOGY that replaces fluorescent backlights with light-emitting diodes may further improve LCDs' color (see find.pcworld.com/40280). But the first—and likely pricey—LED-based models won't appear before the end of 2004. And further price drops for the panels are not a certainty, especially as demand for LCDs for desktop monitors, notebook PCs, and TV sets continues to grow. ■

Richard Jantz is a regular contributor to PC World. Mark Rutherford is a professional photographer.

Calibration for Color Perfection

AT THEIR DEFAULT settings, the LCDs in this review generally produce fine color for basic tasks. But if you need the most accurate color—say for fixing up digital photos—you should calibrate.

Calibration was once a chore requiring expensive equipment that had been designed for CRTs. But in the past year, companies have introduced simple, affordable kits that ably handle both CRTs and LCDs. We tried four of them: GretagMacbeth's \$249 Eye-One Display (find.pcworld.com/40340), Integrated Color Solutions' \$199 BasicColor Display 2.5 With Instrument (find.pcworld.com/40349), Pantone Colorvision's \$229 SpyderPro (find.pcworld.com/40352), and X-Rite's \$299 MonacoOptix XR (find.pcworld.com/40355).

Each kit comes with a USB-connected sensor called a colorimeter and software that displays a series of color screens. The colorimeter reads the color values generated by the monitor, and the software compares the readings to the actual colors it instructed the graphics card and monitor to display. The inevitable discrepancies are recorded in an

ICC or ICM profile that the video card uses to adjust its output and display more-accurate color on the screen. (Some monitor makers provide generic profiles that may improve color, but not as well as a profile tailored to your specific PC and monitor.)

HANDSOME PURCHASE

ALL FOUR KITS greatly improved the color accuracy on our test LCDs and CRTs, but we noted some differences (see "Flat vs. Fat" on page 106 for details). Integrated Color Solutions' kit was slow, and it had a confusing interface. The Pantone was good at tuning in saturated blues, but its red-yellow range was slightly limited. Both the GretagMacbeth and X-Rite products brought out a fuller color range and more detail in shadows than the other two kits. But X-Rite's exceptional performance earns it our Best Buy nod. It achieved the deepest shades of blue and the finest gray-scale transitions—allowing our LCD to match the subtleties that previously only high-end CRTs could achieve. The GretagMacbeth has the slickest and most intuitive interface of all the



MonacoOptix XR allows extremely fine tuning for monitor color accuracy.

kits, but the X-Rite is fairly easy to navigate; and it has more-advanced functions, such as the ability to calibrate for a custom color temperature or according to ambient light conditions.

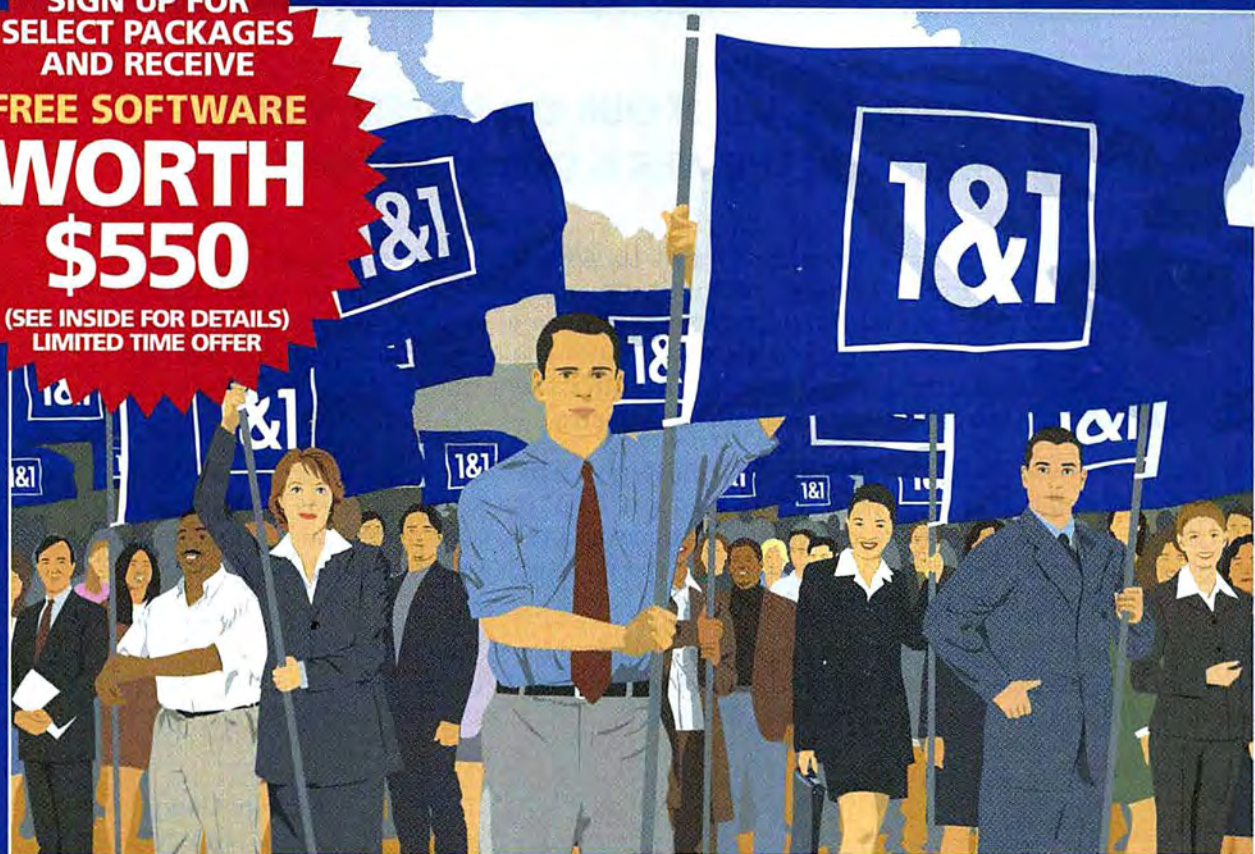
Though these kits are expensive, they will save you time and money spent on redoing print jobs that don't come out as you expected. The next logical step is to calibrate your printer. Most sensors that measure print samples remain very expensive, although less-costly models are starting to appear. Alternatively, you can improve prints by using the generic color profiles that many printer vendors provide.

—Mark Rutherford

2.8 MILLION CUSTOMERS ALREADY KNOW WHAT A WORLD OF DIFFERENCE IT MAKES TO WEB FREELY

SIGN UP FOR
SELECT PACKAGES
AND RECEIVE
FREE SOFTWARE
**WORTH
\$550**

(SEE INSIDE FOR DETAILS)
LIMITED TIME OFFER



THE WORLD'S #1 WEB HOST

.COM, .NET, .INFO, .NAME, .ORG \$0.49 PER MONTH (\$5.88 PER YEAR)	ALL-INCLUSIVE WEB HOSTING \$4.99 PER MONTH	TURNKEY ESHOPS \$9.99 PER MONTH	DEDICATED SERVERS \$49.00 PER MONTH
BEST DOMAIN PRICE IN THE COUNTRY!			

1&1

JOIN THE WORLD'S #1 \$550 WORTH OF FREE FU AND FOR A LIMITED TIME, WE'LL



**"ENABLING ALL OF OUR CUSTOMERS TO DO
MORE ON THE WEB IS OUR #1 PRIORITY."**

What exactly does it mean to WEB FREELY? It means you can web without barriers, without downtime, and without reservation. At 1&1, we firmly believe that pricing, security, reliability, and lack of features should never stand between you and maximizing the full potential of the Internet. And that's why our incredible 2004 features offer you true CRM and e-commerce.

We are a one-stop shop for all your web hosting needs from entry level to high-end sophisticated database-driven users. Not to mention, all of our 1,100 enthusiastic employees are coming in every morning to evolve our products and to deliver perfect support. Sounds too good to be true. But, the more you read on, the more you'll discover all the reasons why it's easy to believe 1&1 is the world's #1 web host.

Don't let your current web host hold you back another minute. Switch to 1&1 right now and join the 2.8 million customers who already know what a world of difference it makes to WEB FREELY.

Andreas Gauger
1&1 CEO

TABLE OF CONTENTS

WHY CHOOSE 1&1	3-5
DOMAINS	6-7
SHARED HOSTING	8-11
DEDICATED SERVERS	12-13
ESHOPS	14-15

1.877.GO1AND1

1 WEB HOST TODAY ALL VERSION SOFTWARE EVEN WAIVE OUR SET-UP FEE

SWITCH TO 1&1 AND GET MORE TO BEGIN WITH:

OVER \$550 OF THE LATEST SOFTWARE - FREE WITH ALL HOSTING, SERVERS, AND ESHOPS

- NetObjects Fusion 7.5 -suggested regular retail price \$130
 - PhotoImpact 8 SE -suggested regular retail price \$90
 - Hello Engines! Professional 4.1 -suggested regular retail price \$170
 - Ranking Toolbox 3.0 -suggested regular retail price \$128
 - Wise FTP 3.0 -suggested regular retail price \$40
- (All software is free. \$6.99 shipping and handling charge applies.)



ALL THE POWER OF THE LATEST 2004 FEATURES

- | | | |
|-------------------------|-------------------|---------------------|
| ▪ In2Site Live Dialogue | ▪ Chat & Forums | ▪ 1&1 WebStatistics |
| ▪ Newsletter Tool | ▪ 1&1 WebDatabase | ▪ 1&1 WebElements |

THE BEST GUARANTEES IN THE INDUSTRY

- Money Back Guarantee: Test drive 1&1 risk-free for 90 days
- Service Guarantee: Your questions will always be answered promptly
- Performance Guarantee: We promise over 99.9% uptime
- Reliability Guarantee: Systems continuously monitored


1&1

FOR MORE DETAILS GO TO **1AND1.BIZ**

IF A WEB HOST IS ONLY AS GOOD AS NOBODY BUT



THE MOST ADVANCED DATA CENTERS

- Our Data Center IV plus three other centers form the biggest web hosting arena in the world.
- 20,000+ servers already stationed in high-security zones with room for over 40,000 more.
- 43,000 GB of data stored and backed up. 3 million GB of traffic, 255 million emails each month.

THE MOST EXPERIENCE

- 12 years experience and one of the first companies to offer web hosting.
- Long-time profitable company, over 1,100 employees.
- Part of publicly held United Internet, an industry leader with over 3,600 employees and \$500 Million in revenue.

THE MOST COMPLETE HOSTING SOLUTIONS

- All the new 2004 features to make your website truly interactive (see page 9 for details).
- One-stop shopping and upgrading from feature-rich shared hosting to dedicated servers.
- eShop packages to start you selling online.



Just one data center alone contains 11 rooms with space for over 660 racks for a total of 26,400 servers.



Lead gel batteries guarantee continuous power without interruption.



Powerful diesel generators supply constant, reliable power.

1.877.GO1AND1

GOOD AS ITS DATA CENTER, EATS 1&1.

THE BIGGEST CONNECTIVITY IN THE INDUSTRY

- 15,000 Megabits versus the competition's limited bandwidth means more visitors get to your site faster.
- Nine fiber optic carriers piped in at different points gives us real redundancy. Multiple direct peerings.
- 1&1 Network Operations Center featuring 24/7 monitoring and administration by own team.



THE ONLY WEB HOST THAT CONTROLS ITS ENTIRE VALUE CHAIN

- Operate 4 data centers globally.
- A research and development team of over 150.
- Own backbone — We do not rely on third parties.



THE STRONGEST PARTNERSHIPS AND SUPPLIERS

- One of select Microsoft Joint Development Partners.
- Multiple Juniper M40s, Multiple Cisco Catalyst 1000's.
- Part of the global Linux developer community from the onset.



FOR MORE DETAILS GO TO **1AND1.BIZ**

DOMAINS

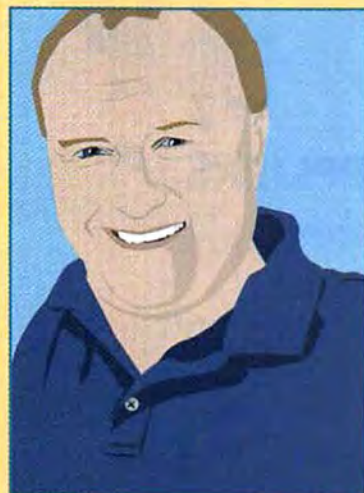
THE ULTIMATE SOLUTIONS FOR DOMAIN REGISTRATION

With 1&1 Group, registering or transferring your domain is straightforward and fast. In minutes, you will have a professional web address plus lots of extras you don't get from anyone else. When you're ready, you can upgrade to send professional email or even build your own homepage. So, if you want to take your ideas to the next level, here's everything you need to get started.

.com .net .org .info .name

- 1&1 offers the best prices in the industry
- 1&1 has already registered 4 million domains
- 1&1 gives you more features for less money
- 1&1 provides free unlimited express support
- 1&1 Group is an accredited registrar, no middlemen

**TRANSFER YOUR DOMAINS
TO 1&1 TODAY. IT'S FREE.**



RICH LOEN
WWW.ETHERWATCH.COM

"Setting up my domain was quick and painless - and very cheap. I've been paying \$25 to \$50 per year for domains in the past - and have had very little control over the domain once it was set up. With 1&1 I was able to set up my email and website, and be online that evening. And with 1&1 Instant Mail I can check my email from anywhere. It's the greatest!"



1.877.GO1AND1

THREE INGENUOUS SOLUTIONS YOU DON'T HAVE TO BE A GENIUS (OR A MILLIONAIRE) TO USE.

SECURE YOUR WEB IDENTITY WITH INSTANT DOMAIN

\$0.49
PER MONTH
(\$5.88 PER YEAR)

**BEST DOMAIN PRICE
IN THE COUNTRY!**

REGISTER YOUR NEW DOMAIN. It's fast, easy, and only the beginning of what you can accomplish online. What's more, the most affordable domains in the industry come without hidden charges and binding contracts.

ENJOY THESE GREAT FEATURES & MORE:

- 1 free email address (alias)
- Free unlimited email forwarding
- Free forwarding to any website
- Free domain parking for future use
- Masked forwarding



OR WHEN READY, UPGRADE TO INSTANT MAIL

\$0.99
PER MONTH

PUT YOUR DOMAIN TO WORK. Easily arranged through your control panel, this add-on package gives you professional email power. So, you can promote yourself more effectively, using the name of your choice instead of awkward email addresses.

ON TOP OF INSTANT DOMAIN, YOU GET:

- 5 POP3 email accounts
- 10 email aliases
- Auto responders
- Catch-all emails
- WebMail access for all POP3 email accounts



OR WHEN READY, UPGRADE TO INSTANT WEBSITE

\$2.99
PER MONTH

BUILD AND RUN YOUR OWN 12-PAGE WEBSITE in just 20 minutes. No budget and no know-how needed. And, whenever you're ready, you can upgrade to any of our Shared Hosting Packages (see p. 11) with just one click in your control panel.

ON TOP OF INSTANT DOMAIN, YOU GET:

- 12 pages with the online WebsiteCreator
- More than 100 customizable templates
- Reply form or guestbook is just a click away
- Just 5 easy steps and you're online
- 15 POP3 email accounts
- 20 email aliases
- Auto responders
- Catch-all emails
- WebMail access for all POP3 email accounts



SET-UP FEE WAIVED FOR A LIMITED TIME

FOR MORE DETAILS GO TO **1AND1.BIZ**

1&1

HOSTING

LIMITED
TIME OFFER!
FREE SOFTWARE
WORTH
\$550

ALL THE LATEST SOFTWARE AND TOOLS TO CREATE AND PROMOTE YOUR WEBSITE:

Sign up for any one of our shared hosting packages and you'll get the latest software for free (shipping and handling not included). And we're not talking free downloads, but actual software including the CDs and manuals.

FUSION 7.5



One of the most popular development programs available, makes web page production faster and easier, thanks to high performance tools like Wizards, drag and drop functions, and much more. **\$130 VALUE**



ONLINE WEBSITECREATOR



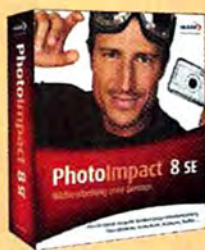
You're 20 minutes away from your own professional homepage. Created by top Web designers to the tightest specs, WebsiteCreator offers a variety of attention-getting fully customizable designs. What's more, you can create and amend your site in just 5 easy steps using a Word-like editor.



PHOTOIMPACT 8 SE



Ideal for digital photography, artistic design, and web graphics, PhotoImpact concentrates on the needs of web users and offers a wide choice of single and multiple image enhancement options. **\$90 VALUE**



HELLO ENGINES! PROFESSIONAL 4.1



Registers your website with hundreds of search engines like Google, AltaVista, and Fireball quickly and reliably. With Hello Engines! you are instantly advertising your site to the world and increasing your chances for more traffic. **\$170 VALUE**



Wise FTP



WISE-FTP is the ideal program for transferring your files and directories to the 1&1 server. This new edition of the powerful FTP tool contains all the latest functions for managing your files quickly and easily. **\$40 VALUE**

RANKING TOOLBOX 3.0



Lets you arrange the way your site is registered and develop your own assessment criteria. And the keyword database informs you of the most relevant and most frequently searched keywords. **\$128 VALUE**

NEVER DODGE THE "WHY CAN'T WE DO THAT" QUESTION, EVER AGAIN.

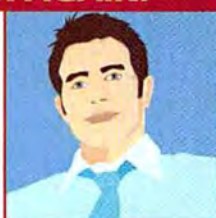


DAN "THE DODGER" NERI: BEFORE 1&1

"There were a lot of people looking to me for answers, but I had none to give. I never actually hid from them, but there were plenty of days I entertained the thought."

DAN "THE DO-ER" NERI: AFTER 1&1

"I upgraded our standard brochure-ware site to one that is completely interactive including CRM and e-commerce. Now, my site is working harder for me, which makes my job a little easier."



1.877.GO1AND1

OUR LATEST 2004 CRM AND E-COMMERCE FEATURES MAKE YOUR SITE THE ULTIMATE BUSINESS TOOL.

1&1 WEBDATABASE

Easily integrate a customized database into your website. Unlike traditional SQL databases, 1&1 has done the programming work for you – so no technical knowledge is

needed. Just click on the fields you'd like and you're ready to go! There are even ready-made templates for added ease.

Membership List

First Name	Last Name	Address	Email
Alan	Bishop	634 E. 39th Street, New York, NY 10019	alanb@myhost.com
Stephen	Bradshaw	1954 Corgin Street, Hudson, OH 44236	bradshaws@myhost.com
Catherine	Leonard	64 Stanhope Drive, Pittsburgh, PA 15237	family@myname.com
Carl	Brown	653 Liberty Avenue, Wilmington, NC 28403	brown2521@lycos.com
Tom	Stowe	26 N. Hills Road, Chandler, AZ 85226	webunited@gmx.net
Helen	McSweeney	817 Providence Hwy. Boston, MA 02116	helenmcsweeney@hotmail.com

NEWSLETTER TOOL

No special programming is needed to publish and automatically send your own web-based newsletter. Perfect for creating one-on-one relationships with customers and storing or updating mailing lists. What's



more, the tracking mechanism reports on your newsletter's performance and the archiving tool allows you to store previously published newsletters.

1&1 WEBELEMENTS

Provides automated forms enabling you to collect data from your visitors. Allows you to customize complex Q&A scenarios. Also ideal for gaining qualified leads including specific requests or information. Data is delivered to you easily by email.

Tell-A-Friend

Recommend the site to a friend:

Sender's Name
Mike Smith

Sender's Email
msmith@greathost.com

Recipient's Name
Lisa

Recipient's E-Mail
lisa@beano.com

Message

Hi Lisa,
I came across this site and
thought you'd be interested.
<http://www.ggbphotography.com>

Mike

**Invitation to: Gallery Opening
June 14, 2004**

Photo Exhibit
Hosted by: Susan Howard
Where: Impressionist Gallery
Where: 295 Oregon Avenue, Denver, CO 80216

Your Name
Stephen Bradshaw

Email Address
bradshaws@myhost.com

Will You Attend?
Yes - Gladly
No - Not interested

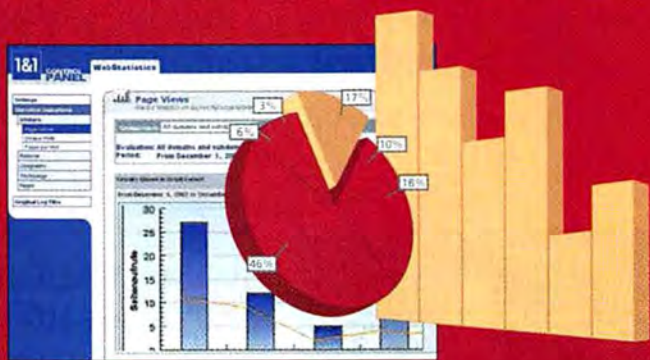
IN2SITE DIALOGUE

The closest thing to selling one-to-one, live and in person, with dialogue in real time. Offers site visitors a live consultant, at your discretion. Informs you of a new visitor by a visual indication or auditory alert.



1&1 WEBSTATISTICS

Tells you what visitors think of your site, including advanced live statistics about where visitors come from, how long they stay, and which pages they visit most often.



CHAT & FORUMS

Great for making your site a meeting place for customers and vendors. Chats in private rooms are possible. You can even trade experiences, interests, and views with a simple step-by-step forum.

1&1

FOR MORE DETAILS GO TO **1AND1.BIZ**

HOSTING

GET TRULY INTERACTIVE WITH THE LATEST 2004 FEATURES FROM 1&1.

With 1&1's feature-rich hosting solutions, you can finally realize the full potential of the Internet. Loaded with all the latest 2004 features you won't find anywhere else or for such a low price, each package is designed to help you quickly build and manage content for your own truly interactive, high-performance website.

1&1 SHARED HOSTING TAKES YOU BEYOND STANDARD BROCHURE-WARE

- Fully CRM and e-commerce enabled.
- Up to 5 domain names included free.
- \$550 worth of FREE software.
- FREE 24/7 live support by phone and email.
- Automatic free firewall, backups, anti-virus software, and hardware updates.
- Fully scalable so you can start with us and stay with us.

LIMITED
TIME OFFER!
FREE SOFTWARE
WORTH
\$550



GLORIA VAUGHN
WWW.GGPHOTOGRAPHY.COM

"We were pleasantly surprised at how quickly and easily we were able to create a professional-looking website with 1&1! All of the latest 2004 features enabled us to do more on the web than we ever thought possible. Also, our website contains several photos, and we were amazed at how fast we could upload them. And, when we had a technical question, it was answered promptly, by email, as promised."



1.877.GO1AND1

THREE FULLY-LOADED HOSTING SOLUTIONS TO UNLOCK YOUR FULL POTENTIAL.



**90-DAY
RISK-FREE
TRIAL**

100%
SATISFACTION
OR YOUR
MONEY BACK

HOME PACKAGE

\$4.99 PER MONTH

1 FREE DOMAIN

DOMAIN NAMES

- 1 domain name included free
- Handling of unlimited domain names
- Point 50 external domains to 1&1
- 5 sub domains

WEBSITE/CONNECTIVITY

- 500 MB of Web space
- 1 FTP account, unlimited access
- 5,000 MB/Month bandwidth
- Protected by up-to-date firewall
- Daily backups

APPLICATIONS

- 1&1 WebsiteCreator for 12 pages
- Full version software worth \$550
- 1&1 Control Panel

EMAIL

- 50 POP3 email accounts
- Aliases, auto-responders, forwarding
- 1&1 WebMail
- Virus scanner for 1 POP3 account

WEBSITE FEATURES

- Logfiles
- CGI library (counter, guestbook, etc...)
- FrontPage 2002 extensions
- Password protection

CRM/E-COMMERCE

- 1&1 WebStatistics
- 1 chat channel
- Customizable forums

EXPRESS SUPPORT

- 24/7 support by phone and email

BUSINESS PACKAGE

\$9.99 PER MONTH

3 FREE DOMAINS

DOMAIN NAMES

- 3 domain names included free
- Handling of unlimited domain names
- Point 100 external domains to 1&1
- 50 sub domains

WEBSITE/CONNECTIVITY

- 1,000 MB of Web space
- 5 FTP accounts, unlimited access
- 15,000 MB/Month bandwidth
- Protected by up-to-date firewall
- Daily backups

APPLICATIONS

- 1&1 WebsiteCreator for 18 pages
- Full version software worth \$550
- 1&1 Control Panel

EMAIL

- 150 POP3 email accounts
- Aliases, auto-responders, forwarding
- 1&1 WebMail
- Virus scanner for 3 POP3 accounts

WEBSITE FEATURES

- Logfiles
- CGI library (counter, guestbook, etc...)
- Own CGI programming
- FrontPage 2002 extensions
- Advanced password protection
- Perl, PHP3 and PHP4
- 1x MySQL database (100MB)
- SSH shell access
- SSI (Server side includes)
- Cron Jobs

CRM/E-COMMERCE

- 1&1 WebStatistics
- 5 chat channels
- Customizable forums
- In2Site one-on-one dialogue
- Newsletter Tool
- 1&1 WebDatabase
- 1&1 WebElements - Sophisticated Form Editor

EXPRESS SUPPORT

- 24/7 support by phone and email

DEVELOPER PACKAGE

\$19.99 PER MONTH

5 FREE DOMAINS

DOMAIN NAMES

- 5 domain names included free
- Handling of unlimited domain names
- Point 200 external domains to 1&1
- 200 sub domains

WEBSITE/CONNECTIVITY

- 2,000 MB of Web space
- 25 FTP accounts, unlimited access
- 30,000 MB/Month bandwidth
- Protected by up-to-date firewall
- No limits on simultaneous hits/bandwidth
- Server priority
- Daily backups

APPLICATIONS

- 1&1 WebsiteCreator for 25 pages
- Full version software worth \$550
- 1&1 Control Panel

EMAIL

- 300 POP3 email accounts
- Aliases, auto-responders, forwarding
- 1&1 WebMail
- Virus scanner for 6 POP3 accounts

WEBSITE FEATURES

- Logfiles
- CGI library (counter, guestbook, etc...)
- Own CGI programming
- FrontPage 2002 extensions
- Advanced password protection
- Perl, PHP3 and PHP4
- 3x MySQL databases (100 MB each)
- SSL secure server
- Cron jobs
- SSH shell access
- Advanced developer tools
- SSI (Server side includes)
- Dedicated SSL Certificate

CRM/E-COMMERCE

- 1&1 WebStatistics
- 10 chat channels
- Customizable forums
- In2Site one-on-one dialogue
- Newsletter Tool
- 1&1 WebDatabase
- 1&1 WebElements - Sophisticated Form Editor

EXPRESS SUPPORT

- 24/7 support by phone and email

▪ **SET-UP FEE WAIVED FOR A LIMITED TIME** ▪ **TERMINATION ANYTIME**

1&1

FOR MORE DETAILS GO TO **1AND1.BIZ**

SERVERS

WHATEVER YOU NEED FROM A DEDICATED SERVER, 1&1 HAS THE DEFINITIVE SOLUTION.

From our Managed Servers as convenient as Shared Hosting yet with greater power to the full flexibility of our Root Servers, both are loaded with all the features you need to do more on the web.

1&1 ROOT SERVERS FOR MAXIMUM FLEXIBILITY AND CONTROL

1&1 Root Servers give you complete command and full access to the hardware, the server and the administration software as well. You'll also get:

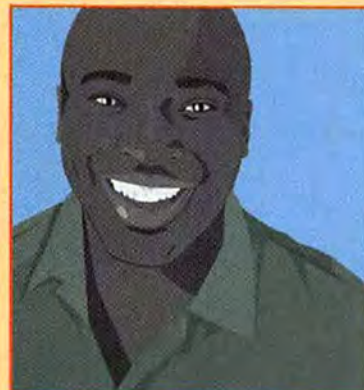
- A pre-installed PLESK 7 control panel (100 domains)
- RedHat Linux 9
- Advanced recovery tools to get you back up and running
- Full access via SSH
- \$550 worth of FREE software.



1&1 MANAGED SERVERS FOR PERFORMANCE AND CONVENIENCE

A step up from Shared Hosting, 1&1 Managed Servers enable you to benefit from more features than our Developer Package. And best of all, you leave the server administration to us.

- Total management and maintenance by us
- Server configured and installed
- Unique control panel for easy administration
- Daily automatic backups
- Continuous updated firewall protection
- All features of the 1&1 Developer Package (see page 11)
- \$550 worth of FREE software.



ROSS McDONALD
WWW.PETPEOPLESPLACE.COM

"Choosing 1&1 was the best business decision we ever made. The dedicated server packages offer an industrial-strength solution with every feature we have ever needed. High traffic? No problem! With 1&1, we have a fast, reliable website and no worries."



1.877.GO1AND1

POWER. FEATURES. AFFORDABILITY.

EVERYTHING YOU NEED FOR A SERIOUS PRESENCE ON THE WEB

15,000 MBIT CONNECTIVITY

- 150 peerings with other providers for optimized routing
- Own global backbone
- Connection to nine leading carriers for real redundancy

\$40 MILLION DATA CENTERS

- Most advanced data centers in the world
- Powered by Cisco and Juniper
- Over 99.9% uptime guaranteed
- 43,000 GB of data stored and backed up

FREE PLESK 7 WITH ALL ROOT SERVERS

- Use, create and manage your Linux based system
- Create new email accounts
- Manage entire domains and web spaces
- Become your own host by segmenting your server into shared webspace
- Go to 1and1.biz for more details

24/7 MONITORING, SUPPORT & SERVICE

- Netsaint continuously tracks 40 parameters
- Technicians on standby 24/7 to maintain operations
- 24/7 assistance over the phone or by email
- Highly specialized department of trained technicians

RELIABILITY & CREDIBILITY

- 12 years experience
- Offering dedicated hosting for 4 years
- Over 1,100 employees
- Lowest churn rates in the industry for years

SERVER I

ROOT
\$49
PER MONTH

MANAGED
\$59
PER MONTH

- Intel Celeron 2.0 GHz
- 256 MB DDR-RAM
- 40 GB IDE hard drive
- 500 GB bandwidth/month included

SERVER II

ROOT
\$69
PER MONTH

MANAGED
\$79
PER MONTH

- Intel Pentium 4, 2.4 GHz
- 512 MB DDR-RAM
- 40 GB IDE hard drive
- 500 GB bandwidth/month included

SERVER III

ROOT
\$99
PER MONTH

MANAGED
\$109
PER MONTH

- Intel Pentium 4, 3.06 GHz Processor with Hyper-Threading
- 1 GB DDR-RAM
- 120 GB IDE hard drive
- 500 GB bandwidth/month included

\$99 ONE-TIME SET-UP FEE

WE'RE THE FIRST TO OFFER PLESK 7



**EXTRA
BANDWIDTH**
ONLY **\$0.99**
PER GB

**HUGE BANDWIDTH
ALLOWANCES**

PLESK



1&1

FOR MORE DETAILS GO TO **1AND1.BIZ**

ESHOPS

SIMPLE E-COMMERCE WITH HIDDEN POWER

1&1 eShops are the easiest yet most powerful way to make money on the web. Each package starts fast and then expands with your demands so you have the freedom and confidence to lead your business to success. From the Business eShop with up to 50 products to the Developer eShop with an unlimited catalog, we have the right e-commerce solution for you.



1&1 ESHOPS COME FULLY FEATURED

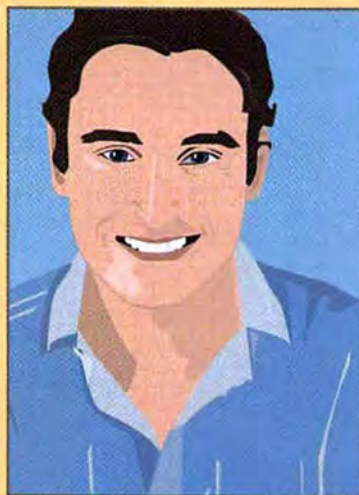
- Web hosting and sub domain included
- \$550 worth of FREE software.
- Easy Setup - 8 Wizards
- Unique control panel for easy administration, anywhere, anytime
- Choose from 30+ design templates
- Edit any kind of correlation such as colors, sizes, product lines, promotions and discounts
- Automatic order processing
- Full account management
- Newsletter administration
- Customizable payment and shipping options

**STAND ALONE SOLUTION
WORKS WITH
ALL WEBSITES**

**90-DAY
RISK-FREE
TRIAL**
100%
SATISFACTION
OR YOUR
MONEY BACK



**LIMITED
TIME OFFER!
FREE SOFTWARE
WORTH
\$550**



MARK BUTLER
WWW.SPYHEAVEN.COM

"The 1&1 eShop product is simplicity itself. Within a matter of hours we had a professional-looking, and well-organized site up and running, with the capability of taking secure online payments. The 1&1 eShop gives my customers a great deal of confidence in providing credit card details and as a result our business has benefited to no end."



1.877.GO1AND1

EASY TO HANDLE. EASY TO USE. BEING PROFITABLE HAS NEVER BEEN EASIER.

LOADED WITH 30+ TEMPLATES

If you want to start selling online without a big budget, lots of time and know-how - start off with one of our 30+ professional shop templates ready to be loaded with your products. They've been designed by experts in optimizing online results. You can even customize them to your liking by changing fonts, colors, and positioning.

EASY TO SET UP - 8 EASY WIZARDS

With eight well-designed wizards to guide you through the shopping basket, order process, delivery methods and, of course, payment settings, configuring your eShop is simple.

HOSTED SOLUTION - ALL INCLUSIVE

There's no software to install - traffic and webspace are included. We even take care of all updates and enhancements, leaving you to concentrate on your business.

FULLY CUSTOMIZABLE

eShops use PHP-based templates and rules so you can change styles, edit all text modules and even run an eShop in a different language or your completely private skin. Using PHP scripts you can even edit context-sensitive rules.

ONLINE CREDIT CARD PAYMENT BY PAYPAL AND WORLDPAY

1&1 Professional or Developer eShops make it easy to offer secure and live Credit Card Clearing via PayPal or Worldpay. And with PayPal - an eBay company - you don't even need a special merchant account. Just sign up, and without paperwork or any bank applications, you can accept all major cards from 35,000 loyal PayPal users. Act like a major player within hours.

SSL SECURED

Vital for customers who shop in an SSL-secured environment. All shop-based settings you make on the webserver are in SSL-secured pages for maximum integrity of your confidential data. Third parties cannot access these areas.

BUSINESS

\$9.99 PER MONTH

- 50 MB web space
- Full version software worth \$550
- 50 item product catalog
- 2 shipping methods
- 10 GB bandwidth/month included
- SSL (Secure server)
- Free support by mail and phone
- Money Back guarantee

PROFESSIONAL

\$29.99 PER MONTH

Features as above, in addition to:

- 300 MB web space
- Unlimited item variants
- 200 item product catalog
- 30 GB bandwidth/month included
- Product categories/sub-categories
- Product data import/export
- Multi-currency support
- Offer customer discounts
- 5 shipping methods
- Customer account management
- Newsletter administration
- Import/export customer data
- Self-administration for customers
- Customize images/color/fonts
- Shopping cart integration
- Online credit card clearing with Paypal and Worldpay (charges apply)
- Tax clearing server included (calculates taxes by state, city and country)

DEVELOPER

\$49.99 PER MONTH

Features as above, in addition to:

- 1200 MB web space
- FTP access
- Unlimited item product catalog
- 60 GB bandwidth/month included
- Discounts for customers, and specific customer groups
- Unlimited shipping methods
- Export of orders & append customer data
- Customer account management, including customer groupings
- Fully customizable templates
- 1 Dedicated SSL Certificate included

SET-UP FEE WAIVED FOR A LIMITED TIME



1&1

FOR MORE DETAILS GO TO **1AND1.BIZ**

"AFTER" 1&1, EVERY OTHER WEB HOST IS JUST A "BEFORE"

THE WORLD'S MOST ADVANCED DATA CENTERS

15,000 MEGABITS OF CONNECTIVITY

12 YEARS EXPERIENCE

1,100 EMPLOYEES

20,000+ SERVERS UP AND RUNNING

2.8 MILLION LOYAL CUSTOMERS

4 MILLION DOMAINS REGISTERED

**SIGN UP FOR
SELECT PACKAGES
AND RECEIVE**

FREE SOFTWARE

**WORTH
\$550**

**(SEE INSIDE FOR DETAILS)
LIMITED TIME OFFER**

**CALL 1.877.GO1AND1 OR
VISIT 1AND1.BIZ
AND MAKE THE SWITCH TODAY**

1&1

Member of
**united
internet**

HASSLE-FREE E-MAIL

Help for in-box overload is here: We test eight new e-mail options and find ones that squash spam, streamline searches, and more.

Let's face it: E-mail is enormously valuable, but it can be an enormous hassle too. You need a tool that can read, write, and wrangle hundreds of messages a day, that can find and help organize messages, and that can juggle e-mail from multiple accounts. And in an era when (according to UK research firm MessageLabs) half of all e-mail is spam, you need a tool that can filter out most of the junk.

We looked at eight e-mail options—four desktop clients and four Web services—to find out which ones were easiest to use, and which offered the best features and the strongest spam protection. ►

BY DAN TYNAN

ILLUSTRATIONS BY JOHN HERSEY



Each e-mail option has its advantages. Desktop apps store messages on your hard drive, so there are virtually no limits on how many you can keep. But e-mail programs can be difficult to back up, so if your hard drive dies, your e-mail may expire along with it. We have two favorites. XP users should take a look at Outlook 2003, a package that's a lot more than an e-mail application and works well in business settings. Mozilla Thunderbird is a much simpler desktop app for individuals who don't use Windows XP or who simply want e-mail without all the extras.

Web-based e-mail is far more portable: You're just an Internet connection away from your mail. Some services will even download mail from an ISP and then filter it for spam. The downside? Most limit the amount of mail you can store, and make it difficult to save messages to your hard drive. Our top pick, Mailblocks 2, provides a universal in-box for all kinds of accounts, from AOL, MSN, Hotmail, or any other ISP. And its challenge-response technology virtually guarantees that you won't get spam, though it can also stop e-newsletters and other legit mail.

DESKTOP CLIENTS

BLOOMBA

BLOOMBA, WHICH ASPIRES to be the Google of e-mail, turns your in-box into a huge, highly searchable database. At this job, the \$60 program excels. But as an e-mail client, it's too cumbersome to use.

Bloomba looks like a typical e-mail client, with folders and news feeds on the left and an optional preview pane below. But it works like a search engine: Just type a term into the search window, and Bloomba scans all messages, folders, and news feeds to find matches. To refine your

Pro, its own version of the highly regarded Spam Assassin. In our tests, Bloomba trapped 82 percent of the hundreds of incoming spam messages, with almost no false positives at its default setting—not bad, but not as good as Outlook 2003 at its high setting. Cranking Bloomba's spam settings up to a higher level involves editing an SAproxy configuration file—an undertaking not for the faint of heart.

Small interface quirks were bothersome. Unlike Outlook, Bloomba has no easy-to-fill-in templates for creating mail

AT ITS HIGH SETTING, OUTLOOK 2003 FILTERED SPAM SUPERBLY.

search and to organize your data, you can categorize and color-code messages (for example, blue for personal, red for business, and so on) and then search or group your mail by category. All good stuff.

Bloomba fights spam with SAproxy

filtering rules. You have to back up your e-mail manually by hunting down the data file on your hard drive. Importing large address books was problematic.

Bloomba is powerful, but not as user friendly as Mailblocks or Thunderbird. A

FEATURES COMPARISON

E-MAIL SOFTWARE

MICROSOFT OUTLOOK 2003 is an e-mail client with power to spare, but Mozilla's Thunderbird is the easiest program to use.

E-MAIL SOFTWARE	Basics	Spam test results	Performance and extras	Comments
Best Buy Microsoft Outlook 2003 ★★★★★ find.pcworld.com/39887	• \$109 • POP, IMAP, MSN, Hotmail accounts • Custom rules/filters • Spelling checker	• Spam identified: 99% ¹ • Legitimate mail called spam: 0%	• Ease of use: Very good • Extra features: Outstanding • Contact management; file sharing; automatic message archiving; voice input	With a full slate of groupware tools, Outlook is much more than just an e-mail client. As e-mail software, it's easy to use and the best we tested at stopping spam.
Mozilla Thunderbird 0.4 ★★★★★ find.pcworld.com/39902	• Free • POP, IMAP accounts • Custom rules/filters • Spelling checker	• Spam identified: 67% • Legitimate mail called spam: 0%	• Ease of use: Outstanding • Extra features: Good • Support for digital signatures/encryption; color coding for messages	This surprisingly full-featured open-source program is a snap to use, but the spam filter requires training. Installing updates could be easier.
Qualcomm Eudora 6 ★★☆☆☆ find.pcworld.com/38423	• \$50 • POP, IMAP accounts • Custom rules/filters • Spelling checker	• Spam identified: 82% • Legitimate mail called spam: 8%	• Ease of use: Fair • Extra features: Very good • MoodWatch flame warning; support for encryption; color coding for messages; voice input; free versions available	A full-featured but idiosyncratic package; if you're not already familiar with how Eudora works, mastering it is a challenge.
Stata Labs Bloomba ★★★★★ find.pcworld.com/35591	• \$60 • POP, IMAP accounts • Custom rules/filters • Spelling checker	• Spam identified: 82% • Legitimate mail called spam: 1%	• Ease of use: Good • Extra features: Very good • RSS reader; extensive database searching; color coding for messages	Bloomba offers powerful e-mail data storage and search capabilities, but its interface could be friendlier.

FOOTNOTE: ¹ At the software's High setting. **HOW WE TEST:** Each program downloaded and filtered our test mail sample that contained 842 messages, including 772 we identified as spam.

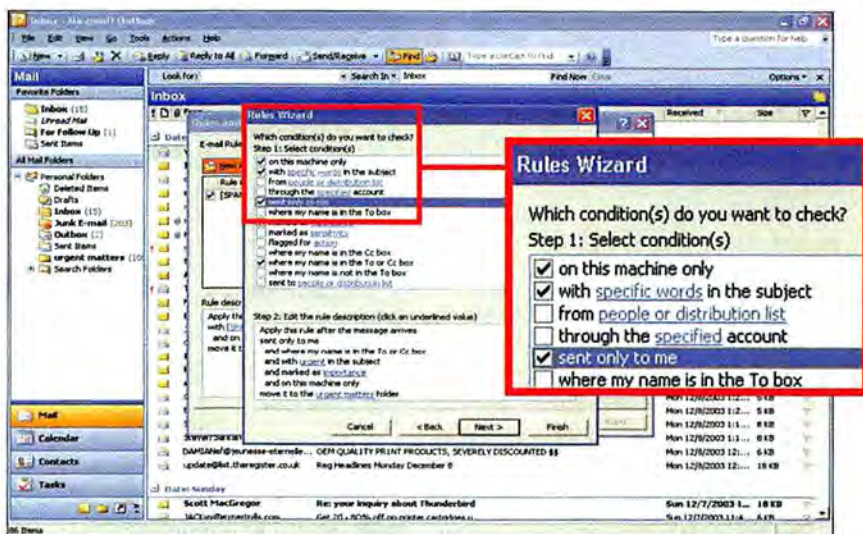
new version, scheduled to be available later this year, may address some of the usability issues. The program has great potential, so we'll keep an eye on it.

EUDORA 6

TODAY'S GRANDE DAME of e-mail software, Qualcomm's Eudora is feature-rich, eccentric—and a bit past its prime. Version 6 is available in free (ad-supported), light, and the fully functional, \$50 adless version we tested, which provides spam filtering and some tech support. In our tests, the program stopped 82 percent of spam at its default setting, with about 8 percent false positives, but we still can't recommend it: Eudora is simply too idiosyncratic and difficult to master.

Over the years Eudora has accumulated a mass of features—some as sophisticated as the ability to use Kerberos authentication for e-mail; others as whimsical as MoodWatch, which pops up a warning when you're about to flame someone.

SpamWatch, one of the key new tools, assigns a spam score to each message and funnels the ones with the highest scores into a Junk folder. Other new tools in version 6 are a content concentrator, which snips out redundant bits from long e-mail threads, and contextual filing, which lets you organize messages by keyword.



THE REVAMPED RULES WIZARD in Outlook 2003 helps you create complex filters that shuttle some types of messages to folders while making exceptions for others.

Eudora performed some large tasks erratically on our test machine (though your mileage may vary). When we tried to import a large amount of mail from Outlook Express, for instance, Eudora struggled for 20 minutes, and then crashed.

Loyal Eudora users may want to move to version 6 for the new features; but there's little reason for others to switch.

MICROSOFT OUTLOOK 2003

COMPARING OUTLOOK 2003 with most e-mail clients is like racing a Humvee against a go-kart. The \$109 Outlook 2003

is a first-class e-mail app, but it works only with 2000 or XP, and it's packed with so many collaboration features and other tools that some users may find it overkill.

Outlook is full of nice touches. A spiffy new interface places your folders, calendar, contacts, and task list into a navigation pane on the left, with your most frequently used folders in a separate pane at the top. As it downloads mail, Outlook sorts messages into groups—"today," "yesterday," or "last week"—a handy visual aid for sifting tons of e-mail. You can display the preview pane vertically or ►

COOL TOOLS FOR ENHANCED E-MAIL

YOU DON'T HAVE to dump your favorite e-mail program to gain a raft of new features. These utilities and plug-ins can spiff up your in-box in a jiffy.

All the feed you can eat: Want to read the *New York Times* alongside your e-mail? An integrated RSS aggregator, such as the \$29 Newsgator (www.newsgator.com), shuttles news headlines directly to folders in Microsoft Outlook. You can subscribe to a wide range of news feeds, including *PC World* (natch). If you're not an Outlook fan, try the Genecast News Service (www.genecast.com \$18 for 6 months), which works inside Outlook Express, Netscape Mail, and Thunderbird.

Back that thang up: E-mail is too important to leave unbacked up. The Genie-Soft \$30 Outlook Express Backup 6.5 and the \$30 Outlook Backup 6.0 (both from www.genie-soft.com) are a snap to use:



Just click along with the wizard to back up your mail files, address book, and browser favorites. You can save each of your identities separately, split huge backups across multiple discs, and schedule regular automated backups.

Get organized: Like a housekeeper for Outlook, the Nelson E-mail Organizer from Caelo Software (www.emailorganizer.com, \$29) grabs your mail and organizes it by sender, status, date, and more. Copies of messages appear in more than one place, so you don't have to remember where NEO stashed them.

Prompt attention: Got more e-mail accounts than you can keep track of? The free EPrompter utility (www.eprompter.com) checks up to 16 accounts—including AOL, Hotmail, MSN, POP3, and Yahoo Mail—and displays all your new messages in a single user interface.

horizontally, and you can choose to turn it on for some folders but not for others.

Creating rules is both simpler and more sophisticated than in previous versions of Outlook. You can choose from prefab rule templates or build rules with specific exceptions—for example, to delete all of the messages from a particular person except those that the sender has flagged for action. You can set expiration dates for each message, attach receipts for delivery and reading, and encrypt the text so that only the recipient can read it. And that's just a fraction of Outlook's many features.

Outlook 2003's integrated spam filter stopped about half of the spam messages in our tests at its default setting (low). At its high setting, however, Outlook performed superbly, stopping 99 percent of the junk, with no false positives.

No question, Outlook 2003 is a powerful e-mail app worthy of serious consideration for XP users at the corporate level. But if you don't use XP or if you want a smaller, less complex e-mail client, Thunderbird may be the right choice for you.

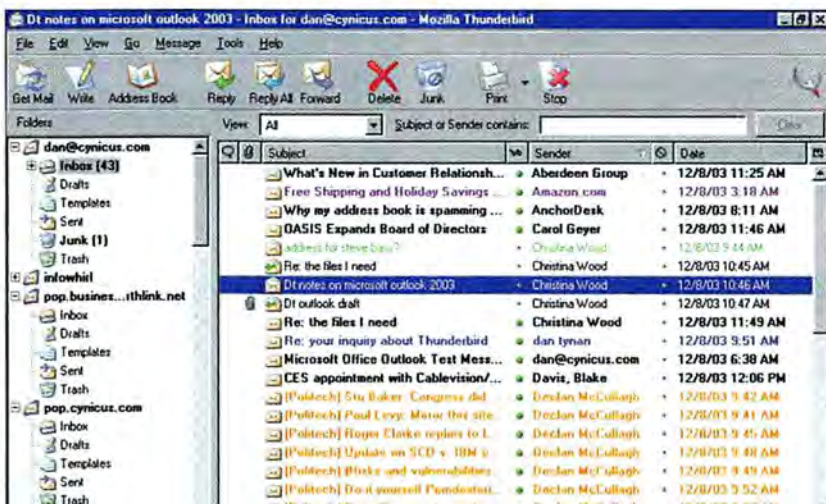
MOZILLA THUNDERBIRD 0.4

LOOKING FOR A smooth e-mail cruise? Hitch a ride with T-bird. This free program (which is part of the Mozilla open-source project, the successor to Netscape) is as easy to use as Outlook Express, and it doesn't require the security patches, but its spam filtering needs a little work.

Thunderbird's organization is simple and intuitive. In general, Thunderbird puts things where you expect them to be, one or two levels higher than Bloomba or Eudora does. Because Thunderbird does a lot less than Outlook 2003, it has fewer menus and icons, further simplifying it.

Managing accounts, for example, is extremely simple. T-bird displays all of your e-mail accounts in one easily expandable pane on the left. We could set T-bird to bcc another address on all outgoing mail with a couple of clicks; Bloomba buried that command four levels deep in menus. Tech support had to help us find it.

Like Outlook Express (and Outlook), Thunderbird lets you build filter rules by



MOZILLA THUNDERBIRD ENABLES you to view multiple accounts from a single screen and to color-code messages for easier sorting.

filling in a form, create folders on the fly, and run new rules on messages already in your in-box. It also successfully imported a large address book and a massive mail database from Outlook Express.

You must train T-bird's built-in spam filter by downloading a batch of messages and labeling them "junk" or "not junk." In our tests, the unschooled Thunderbird stopped only 15 percent of the spam we threw at it; but after training, its blocking rate improved to 66 percent. We expect that it would continue to learn over time,

but using a stand-alone spam filter (like McAfee SpamKiller 5.0) would help, too.

You'll also have to make do without an install wizard; instead, you download the file, unzip it to a directory, and create your own start menu shortcuts to launch the executable. Tech support is limited to on-line FAQs and a user forum.

But aside from its out-of-the-box spam performance, these are minor quibbles. If you're willing to pop the hood and tinker with this free application, you'll find that Thunderbird delivers an excellent ride.

WEB MAIL SERVICES

MSN HOTMAIL EXTRA STORAGE

WITH WELL OVER 145 million users, Hotmail is the largest Web mail service on the planet, but limited functionality makes it more trouble than it's worth.

Besides including 2MB of free storage as a standard offering, Hotmail lets you purchase from 10MB to 100MB of additional storage for \$20 to \$60 a year. That annual fee also pays for the ability to check up to four more POP3 accounts, to scan attachments for viruses, and to use another 30MB of online space to store digital photos and other important files.

Hotmail's strength is its ease of use. Its sleek new interface places folders on the left and a simple toolbar across the top

(though these are still sandwiched by banner ads). You can set your in-box to display up to 100 messages at once, or only those from people in your contact list; you can search messages for keywords; and you can create up to ten simple message-sorting filters and apply them to e-mail you've already received.

But try to do anything more powerful, and you'll quickly hit a wall. We couldn't import a large address book—Hotmail's contact manager maxes out at 650 names. There's no easy way to archive messages or to save them to your hard drive. The \$20 version permits only 3MB of attachments per outgoing e-mail message (a \$60 account permits you to send up to ►

SONY

There's gutsy new engineering inside the Sony VAIO® Z1 Series notebook—no strings attached. With wireless connectivity in its blood, it's the first ever specifically designed around Intel® Centrino™ mobile technology. The result isn't just a sleeker profile, but a PC that packs big performance, even when you take it on the road. Like watching DVD movies. CD burning. And photo editing. All of which are backed by up to 1GB RAM and a 60GB hard drive! Varoom! www.sony.com/vaioZ1

REMARKABLE. A PC ENGINEERED LIKE A SPORTS CAR, NOT A COMPACT CAR.

Sony recommends Microsoft®
Windows® XP Professional
for Mobile Computing.



©2003 Sony Electronics Inc. All rights reserved. Reproduction in whole or in part without written permission is prohibited. Sony, the Sony logo, VAIO, and the VAIO logo are trademarks of Sony. Intel, Intel Inside, the Intel Inside logo, Intel Centrino, and the Intel Centrino logo are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Microsoft and Windows are trademarks of Microsoft Corporation. Features and specifications are subject to change without notice. 1 Gigabyte means one billion bytes when referring to hard drive capacity. Accessible capacity will vary and a portion of hard disk space is reserved as a recovery partition.

20MB). In addition, there's a sending limit of 100 messages per day to keep spammers from abusing the service.

Microsoft has been trumpeting Hotmail's recently improved spam protection. Unfortunately, the service can't filter mail forwarded from POP accounts, and the spam filter for its native mail was only so-so, trapping slightly more than half the junk we received. In view of Hotmail's otherwise limited features, this service clearly isn't worth paying for.

MAILBLOCKS 2

MAILBLOCKS RANKED as the best of the Web-based e-mail services we tested. You can fetch and filter e-mail from up to three other accounts, including AOL, MSN, Hotmail, Yahoo, and POP3, or you can use Mailblocks to filter and retrieve mail via Eudora, Outlook, or Outlook Express. It's dirt cheap, too: \$10 buys 15MB of storage for a year; \$25 nets 100MB for a year. We looked at a beta version of Mailblocks 2 (a shipping version should be available by the time you read this).

Mailblocks offers many of the same fea-



WHEN SOMEONE NEW sends you e-mail, Mailblocks responds with a challenge—a message asking the sender to click a link to prove they're human and not a spambot.

tures as Yahoo and Hotmail, but its interface is simpler (and ad-free). You can import address books from other Web-based e-mail services, or from Outlook, with one click. Mailblocks handled our 2000-name address file without trouble.

The service does lack some features. There's no easy way to archive or back up messages to your hard drive for later read-

ing; attachments are limited to 6MB per message; and unlike Yahoo and Hotmail, Mailblocks doesn't virus-scan mail.

Unique among the e-mail packages reviewed here, Mailblocks uses challenge/response to fight spam. When someone sends you an e-mail message for the first time, Mailblocks stashes it in a Pending folder and responds to the sender, ▶

FEATURES COMPARISON

WEB-BASED E-MAIL

MAILBLOCKS 2 OFFERS THE BEST PROTECTION against spam and the broadest support for external accounts.

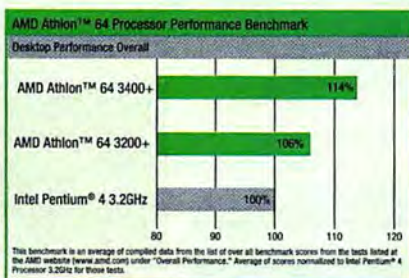
WEB-BASED E-MAIL	Basics	Performance ¹	Extra features	Comments
Best BUY Mailblocks 2 ★★★★★ find.pcworld.com/37280	• \$10, \$25 per year • 15MB, 100MB storage • 10 external accts (POP, IMAP, AOL, Hotmail) • 6MB attachments per message	• Ease of use: Very good • Extra features: Very good • Spam filtering: Outstanding	• Filters spam for all accounts • Address book import wizard • Exceptions for newsletters • Free 5MB version	Mailblock offers 100 percent spam protection for a wide range of e-mail accounts, though some senders may resent having their e-mail challenged.
MSN Hotmail Extra Storage ★★★★★ find.pcworld.com/39881	• \$20, \$30, \$40, \$60 per year • 10MB, 25MB, 50MB, 100MB storage • 4 external accounts (POP) • 3MB attachments per message	• Ease of use: Very good • Extra features: Good • Spam filtering: Fair	• 30MB additional storage • Virus scanning • Free 2MB version • Spelling checker	Hotmail is easy to use, but is burdened by ads, has limited features, and won't filter external accounts for spam.
Oddpost ★★★★★ find.pcworld.com/35600	• \$30 per year • 50MB storage • 6 external accounts (POP, IMAP, Yahoo) • 10MB attachments per message	• Ease of use: Very good • Extra features: Very good • Spam filtering: Very good (90%) ²	• RSS reader • Filters spam for all accounts • 30-day free trial • Calendar	The quirky Oddpost offers a lot—including the best integrated RSS feed we've seen—but it lacks some basic features, such as the ability to create rules.
Yahoo Mail Plus ★★★★★ find.pcworld.com/39884	• \$29, \$40, \$59 per year • 25MB, 50MB, 100MB storage • 10 external accounts (POP) • 10MB attachments per message	• Ease of use: Good • Extra features: Very good • Spam filtering: Fair	• Archiving tool • Free 4MB version • Virus scanning • Spelling checker	Feature-rich but festooned with ads, Yahoo can't keep pace with upstarts like Mailblocks and Oddpost—and its spam filtering is only fair.

FOOTNOTES: ¹ Except where noted, spam test results on this chart are based on less formal testing than the software clients received. Each service was exposed to a smaller set of forwarded and naturally received spam. ² Oddpost successfully downloaded and filtered the sample mail file from our software client spam tests. It caught 90 percent of the spam in our test.

For Whatever Your Digital Lifestyle May Be ...



The **ONLY** Windows-compatible 64-bit PC processor



- » The first 64-bit PC Processor in a class by itself designed specifically for cinematic computing.
- » Only AMD64 Technology runs today's 32-bit and tomorrow's 64-bit software.
- » Full-Throttle technology for immersive gaming and amazing digital media.



AMD Athlon™ 64 3400+ Processor

Sale Price

Regular Price
~~\$1849~~

\$1749



*Picture may be shown with Upgraded option

ABS® Ultimate M564

Microsoft® Windows® XP Home Edition

- » AMD Athlon™ 64 3400+ Processor with HyperTransport™ Technology Up To 1600MHz System Bus
- » The ONLY Windows-compatible 64-bit PC processor
- » NVIDIA® nForce™3 DDR400 AGP 8X Motherboard w/Gigabit LAN & IEEE 1394
- Corsair XMS 512MB PC3200 DDR SDRAM Memory
- » LeadTek WinFast A350 NVIDIA® FX5900 Ultra 256MB DDR Video Card
- Antec PlusView 1000AMG Case with Acrylic Window
- Antec True 450-Watt Power Supply
- Two Seagate 80GB 7200RPM Serial ATA150 Hard Drives w/8MB Cache
- Lite-On 16X DVD Player
- NVIDIA® nForce™3 SoundStorm 5.1 Surround Sound with Dolby Digital
- Ideazon Zboard™ Interchangeable Keyboard System with Crossfire Keyset
- Free Software: Microsoft® Works 7.0
- Free Software: McAfee Virus Scan 8.0 with 1 Year of Updates
- Free 1 Year Onsite Service with 24/7 Technical Support
- Free ABS® PC Organizer (3" Color Binder for Manual, Drivers, etc.)
- Add Creative Labs Sound Blaster Audigy 2 ZS PCI Sound Card @ \$94

ABS® Awesome 4300

Microsoft® Windows® XP Home Edition

- » AMD Athlon™ 64 3000+ Processor with HyperTransport™ Technology Up To 1600MHz System Bus
- » The ONLY Windows-compatible 64-bit PC processor
- » Gigabyte GA-K8NPRO Motherboard for AMD 64-bit Processor
- Corsair XMS 512MB PC3200 DDR SDRAM Memory
- » ATI Sapphire Radeon 9600XT 128MB DDR Video Card w/DVI & TV-Out
- Antec PlusView 1000AMG Case with Acrylic Window
- Fortron FSP350W Quiet Power Supply
- Western Digital 120GB 7200RPM Serial ATA Hard Drives w/8MB Cache
- Lite-On 16X DVD Player and NEC DVD +/- RW 4X DVD Recordable Drive
- On-board RTL Gigabit LAN Controller and 8-in-1 Flash Media Reader
- On-board 6 Channel Surround Sound
- » Free Leadtek TV Tuner Card - Watch TV, Listen to FM Radio, Record your favorite shows and more with an integrated TV Tuner card in your new Awesome 4300 64-bit computer.
- Microsoft Black Multimedia & Optical Mouse
- Free Software: PC Treasures Elite Suite
- Free 1 Year Onsite Service with 24/7 Technical Support
- Free ABS® PC Organizer (3" Color Binder for Manual, Drivers, etc.)



*Picture may be shown with Upgraded option

Starting at only

\$1299

- ✓ Multimedia Center
- ✓ Home Theater
- ✓ Gaming
- ✓ Home Office Solution

ABSolute Performance. ABSolute Service. Always.



http://www.abspc.com 800.876.8088

- » 1 Year Limited Parts Warranty
- » Lifetime Labor Warranty
- » Lifetime Toll-Free Tech Support
- » 30 Days Money Back Guarantee
- » Sales Hours: Mon-Fri 8:30AM-5:30PM PST
- » 24/7 Technical Support: 888.983.9988

Price, specification, and terms are subject to change without notice. Illustrations may not accurately represent exact configurations priced. ABS® is not responsible for errors in typography and/or photography. 30-day money back guarantee does not include opened software, parts, or special order merchandise. Original shipping and handling fee along with return shipping charge are non-refundable. Products returned after 30 days or in a non-refundable condition are subject to a restocking fee. Onsite service may be provided by contracted third party provider. Technician will be dispatched if necessary following phone support. © 2003 All rights reserved. AMD, the AMD Athlon, AMD Athlon logo and combinations thereof are trademarks of Advance Micro Devices. NVIDIA®, NVIDIA nForce™, and Daxim image are registered trademarks and/or trademarks of NVIDIA Corporation in the United States and other countries and are used under license to ABS® from NVIDIA Corporation.

who must click a link in the message to get approved. Junk e-mail languishes in Pending, while the desirable stuff (usually) gets through. In our tests, Mailblocks didn't miss a single spam, but our Pending folder filled up with legitimate messages awaiting responses to the challenge.

C/R systems may block nonspam messages sent by machines. To avoid this, you can assign a special e-mail address (called a "Tracker") to a newsletter e-mail; this keeps it from being challenged, but you'll have to change each e-mail subscription individually. And you may prefer not to use a C/R-based spam fighter if people resent being challenged (though you can always turn off the challenges, and put up with the spam). Otherwise, Mailblocks 2 is a worthy Web e-mail alternative.

ODDPOST

WE GIVE ODDPOST points for personality, but more important, it's a snap to use, has some neat features, and—at \$30 per annum for 50MB of storage—is relatively cheap. The service's excellent spam filter trapped nearly 90 percent of the junk, with less than 3 percent false positives. We like it a lot, but Mailblocks checks



EVEN THOUGH ITS PLUS and Premium mail services aren't free, Yahoo still packs the mail window with pulsing advertisements that take up nearly half the screen.

though it took about 15 minutes to do so.

The coolest part of Oddpost is its RSS aggregator, which enables you to subscribe to news feeds. Oddpost automatically creates a folder for each subscription and starts filling it with messages.

Oddpost suffers from odd deficiencies. There's no easy way to export messages to your local drive. There's no search function. And you can't move messages to a new folder; you have to create the folder

Plus, which lets you store up to 25MB of mail for \$29 a year (\$40 and \$59 buy you 50MB and 100MB, respectively), can check up to nine other POP3 mailboxes, and can scan mail for viruses. But since Plus can't filter spam from external ISP accounts, it's a poor choice for most users.

Yahoo Mail demonstrates considerable e-mail savvy: It can display 200 messages at a time and can assign different colors to each external account. Archiving messages was a snap. Yahoo will send reminders to your cell phone for appointments you create in Yahoo's calendar. And you can store up to 30MB of files online—a good way to stash digital photos or backups of important documents.

But Yahoo ultimately frustrated us. Unlike Mailblocks or Oddpost, Yahoo clutters its interface with advertising. We could import a small address book (200 names) but not a large one. We could create up to 50 filters for shunting mail into folders, but we couldn't apply them to mail already in our in-box. Yahoo's SpamGuard stopped only about two-thirds of the junk sent to our Yahoo account.

For a third of the cost, Mailblocks offers a cleaner interface, supports more types of external accounts, and provides much better spam protection.

THE COOLEST PART OF ODDPOST IS ITS RSS AGGREGATOR FOR VIEWING WEB NEWS FEEDS.

more types of e-mail accounts and offers better organizational tools. (Note: At press time, *PC World* was working on a content-sharing deal with Oddpost.)

Oddpost's clean interface gives it the look of a desktop e-mail client, with no advertising. You can check POP3 and Yahoo Mail accounts; all messages are funneled into a single in-box. The program has plenty of intelligent touches. Start addressing a message, and Oddpost fills in the rest; send a message to someone new, and Oddpost asks if you want to add the recipient to your address book. Unlike Yahoo or Hotmail, Oddpost successfully imported a huge (2000-name) address book,

first, then move the e-mail. Performance was occasionally sluggish, even when we used a speedy broadband connection.

Nevertheless, Oddpost has great potential. A drafts folder, virus scanning, and the ability to create rules and to access mail from Juno and Hotmail were all in the works at press time. Like Bloomba, this upstart is well worth watching.

YAHOO MAIL PLUS

YAHOO MAIL HAS always played second fiddle to Hotmail, despite having a stronger feature set and offering free e-mail users twice as much mail storage space (4MB) as Hotmail. We tested Yahoo Mail

PC World Contributing Editor Dan Tynan checks his e-mail obsessively.

WHEN YOU NEED POWER PROTECTION THINK TRIPP LITE!

Backed by an 80-year history of trusted reliability, Tripp Lite offers over 1,000 high-quality power protection solutions for protecting your valuable equipment against all power problems, including prolonged blackouts. Tripp Lite products provide a full range of premium features that allow you to customize your protection solution to suit your specific needs. Best of all, Tripp Lite products are typically priced lower than comparable competitive models!



UPS Systems

Protect Datacenters &
Mission-Critical Equipment

SmartOnline™ Intelligent On-Line UPS Systems

True on-line operation with pure sine wave output for the highest level of protection available. Models available from 1kVA – 10kVA.

Protect Workstations & Servers

SmartPro® Intelligent Line-Interactive UPS Systems

Intelligent power management and control with automatic voltage regulation. Models available from 500VA – 5,000VA.

OmniSmart™ Line-Interactive UPS Systems

Automatic voltage regulation provides constant, 120V computer-grade power. Models available from 300VA – 1400VA.

Protect PCs & All Peripherals

Internet Office® Standby UPS Systems

All-in-one units offer battery backup, surge suppression and telephone/DSL line surge protection. Models available from 300VA – 700VA.

BC Personal® & BC Pro® Standby UPS Systems

Excellent basic battery backup and surge suppression. Models available from 300VA – 1400VA.

Surge Suppressors

AC, tel/modem, Ethernet and coaxial protection with the highest UL-verified joule ratings.



Cables & Connectivity Products

Over 600 solutions available including USB/FireWire®, PC/Mac, Cat6/Cat5e, network, SCSI cables and KVM switches.



**NETWORK
PROTECTION**

for as low as

\$199⁹⁹!

Visit

www.tripplite.com/promo/pcw
for details.

And while you're on our site,
check out over 30 new Tripp Lite
UPS systems!

Hot Selling Products!

SU10KRT3U UPS System

All the benefits of the SmartOnline series plus
120 and 200-240V output.



16-Port KVM Switches

1U space-saving models can control up to
512 PCs or servers.

4-Port USB 2.0 Ultra-Mini Hub

USB 2.0 certified hub links multiple devices
to one computer with up to 480 Mbps data
transfer.



UPS Replacement Battery Cartridges

12 models compatible with all major UPS
brands to extend the life of older UPS
systems.

TRIPP-LITE
POWER PROTECTION

Tripp Lite World Headquarters

1111 West 35th Street, Chicago, IL 60609

Tel: 773.869.1234 • www.tripplite.com



Dedicated server hosting with...

“100%”

FOR A LIMITED TIME ONLY!

100% FREE SETUP*
100% MANAGED
100% DATA BACK-UP (\$459 value)

Pick out a pre-configured Advantage Dedicated Server or build your own.

Call 1-866-HOSTWAY today for details!

*Free setup offer applies to HW Advantage Dedicated Servers or higher. Ends April 30, 2004.

2004 Hostway Corporation. All Rights Reserved.

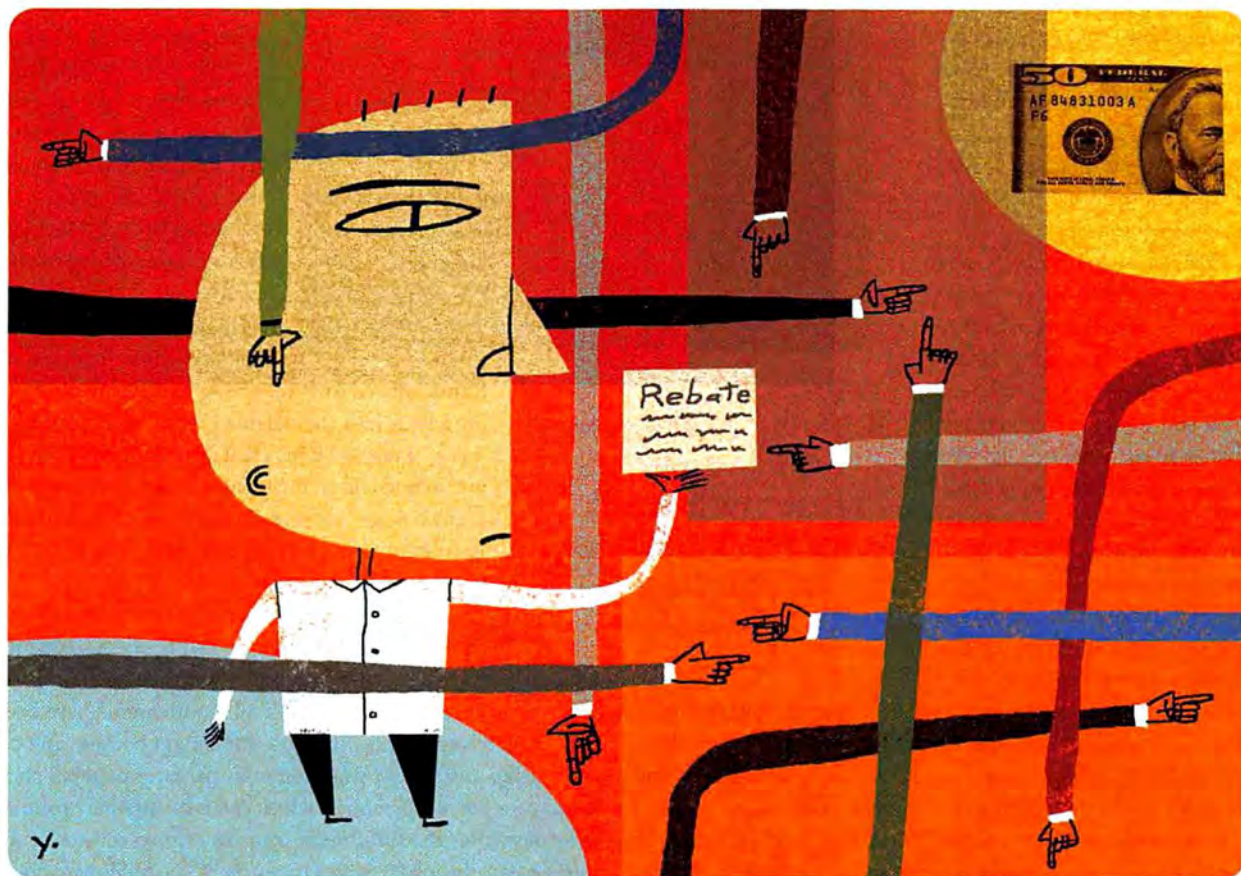
www.hostway.com/dedicatedpcw

UNITED STATES | UNITED KINGDOM | KOREA | AUSTRALIA | NETHERLANDS | CANADA

HOSTWAY
THE HOSTING COMPANY

Rebate Roulette

[By Janet Rae-Dupree and Tom Spring]



Still waiting for that check in the mail? Here's the ugly truth about rebates—and how to steer clear of the gotchas.

WHEN PAUL THEISEN, president of Unlocked Potential, a hiring consulting company in Livonia, Michigan, bought Symantec's Norton AntiVirus 2003 at his local OfficeMax, he thought he was getting the software for free—it cost \$70 with \$70 in rebates. So he filled out the forms, clipped the UPC labels, and mailed his claims.

After three weeks, a \$30 check arrived for one of the two rebates. Two and a half months later, he received a notice indicating he was ineligible for the second rebate of \$40 because he was missing ►

some paperwork. "But the note didn't specify exactly what was missing," says Theisen.

After making many calls and faxing a copy of the UPC label and the receipt, he was denied again. This time, the rebate fulfillment house for Symantec told him the promotion was over. Theisen felt he was at a dead end. "Talking to the reps is like talking to parrots," he fumes. "No matter what I said, they kept repeating that I didn't send the correct documents." (After *PC World* contacted Symantec, the company eventually sent him the \$40 check.)

Theisen's experience is only one example of what can go wrong. Another snag may involve a lack of contact information for disputing a rejection. And some rebate coupons are written in such tiny type that you might need a magnifying glass.

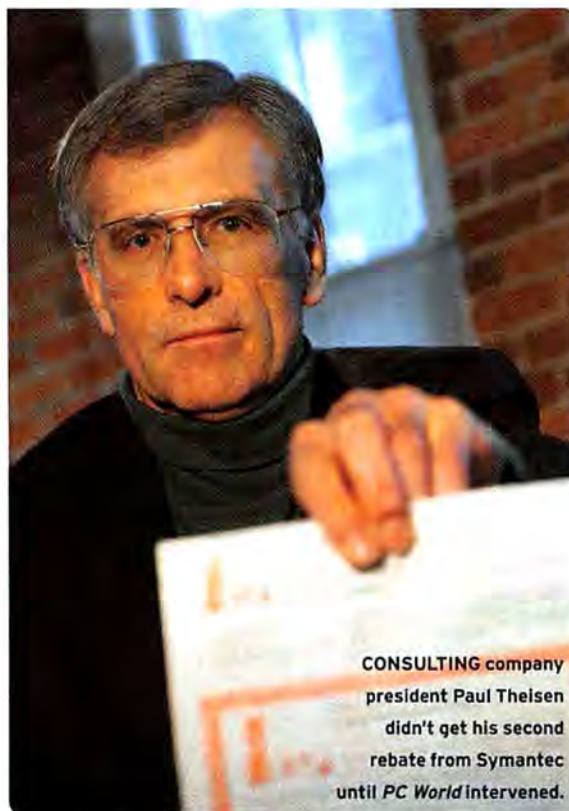
We investigated what goes on behind the scenes, talking to shoppers who collected rebates and to others who were left empty-handed. We grilled manufacturers, retailers, and fulfillment houses (which administer rebates) about the pitfalls in the process; companies sometimes point their fingers at each other, leaving buyers in a runaround frenzy. We also asked government agencies what can be done to improve the system.

In the end, we discovered that there is no magic formula. If you've decided to go the rebate route, and you need a bit of help, we recommend a few stores that make the filing process a little easier, and we also give some advice on how you can improve your chances the next time you play the rebate game.

BREAKDOWN IN THE PROCESS

REBATES ARE A HEADACHE for consumers, a tricky situation for retailers, and a major expense for manufacturers. So why are we seeing more rebate offers than ever before? Because stores and product makers want to lure shoppers into buying their products, and they know some people won't collect.

Market research firm Aberdeen Group reports that about 60 percent of buyers who could redeem computer-related rebates don't try. "That's money the store and/or the manufacturer keep," says Aberdeen analyst Peter Kastner. Of the 40 percent who give it a shot, half experience problems or don't get a check at all.



CONSULTING company president Paul Theisen didn't get his second rebate from Symantec until *PC World* intervened.

"Talking to the reps [at Symantec's rebate fulfillment house] is like talking to parrots."

—Paul Theisen

information and tools for saving money) are overflowing with gripes about denied rebate redemptions.

Part of the problem is that three parties—the product manufacturer, the retailer, and the rebate fulfillment house—are usually involved in the process. Each company ends up relying on the others to ensure that things go smoothly.

Rather than process thousands of redemptions themselves, manufacturers and retailers frequently contract with a fulfillment house to open and sort

mail, log in consumer data, and, if all requirements have been met, issue rebate checks. But those fulfillment houses can't cut any checks until the sponsoring manufacturer or retail store hands over the rebate money, which can take anywhere from 15 to 90 days after the fulfillment company's invoice date. If the sponsor pays the invoice with a paper check, the fulfillment house must wait several days for that check to clear before it can write any checks to consumers. Sometimes the manufacturer doesn't pay the invoice at all; a few fulfillment houses (which prefer to remain anonymous) told us that they have quietly gone to the Federal Trade Commission to report such a problem.

ONEROUS REQUIREMENTS

SOME REBATE OFFERS ARE SO aggressive that the products are virtually free. At Outpost.com, for example, Pinnacle Studio 8 video editing software costs \$79.99, but is -\$0.01 after an \$80 mail-in rebate. Such a deal, right? Not necessarily.

The \$80 rebate is actually two offers: a \$50 one that requires proof of upgrading from a competitor's program (a preloaded version on your PC doesn't count); and a \$30 offer that must be sent to the same address—but to a different department. An-

In addition, rebates are evolving beyond the simple \$5-back-on-a-\$50-purchase model. Many software vendors, including Symantec and Pinnacle Systems, offer "net-zero" rebates in which buyers, like Theisen, are promised all of their money back (except, of course, the sales tax). But the burgeoning number of rebate deals in newspaper ads, on store shelves, and on Web sites has resulted in a crescendo of consumer complaints. *PC World's On Your Side* mailbox (onyourside@pcworld.com) and chat boards such as those on FatWallet.com (a site that offers shopping in-



other requirement: You must send either the title page of the user manual for a full version of the older software or the old installation CD.

How can you find out about the rules before you sink your money into the product? Manufacturers often tuck the details inside the product box, which, once opened, cannot be returned. Retailers don't provide rebate rules until checkout, either, though you can ask a cashier to print out the rules before you buy. The process is a little easier online, where many merchants provide the rules.

Vendors, such as McAfee Security, have tried to be more forthcoming about the details by listing them on a little sticker on the box. Emphasize the word *little*. The McAfee Personal Firewall Plus coupon we looked at (see photo above) was barely larger than a butterfly, with letters about the size of starving fleas. The label has roughly 700 words of fine print on one side and a cramped form on the other. And if the software is shrink-wrapped, you probably can't peel off the sticker to read the details.

McAfee says its stickers are standard in the software industry, especially now that some programs come in a box about the size of a VHS video tape. "We want to offer the terms and conditions up front, and that requires a small sticker [in the new packaging]," says Michelle Jimenez, McAfee marketing manager.

If you can't read or find the rebate requirements, ask the store or call the manufacturer about the specifics.

FINGER-POINTING

SOME MANUFACTURERS say that they offer rebates partly because retailers want them to. "A retailer might say, 'We're having this sale and we want to hit a certain price with this product in

Submissions must be mailed to the address listed on this form. If you are combining this rebate with another rebate program, please include details in the same envelope and attach all terms and conditions for that rebate have been met since they may differ from this upgrade rebate. Rebate amount paid to customer for single or combined rebate offers may not exceed the purchase price of the McAfee product. McAfee, Associates, McAfee and ScanMail are registered trademarks or trademarks of McAfee Associates, Inc. and/or its affiliates in the U.S. and/or other countries. All other registered or unregistered trademarks in this document are the sole property of their respective owners. © 2003 McAfee Associates Technology, Inc. All rights reserved.

Name: _____
Mailing Address: _____
City: _____ State/Province: _____ Zip/Postal Code: _____
Daytime Phone: () _____ E-mail: _____
Product Purchased: _____
I certify by my signature that the information I have entered on the Request Form is accurate and complete, that submission of the form is in accordance with the Rebate Form Instructions and that I have read and complied with the Terms and Conditions.
Signature: _____
Date: _____

NOT ONLY is the type on this McAfee coupon tiny, it also has demanding proof-of-purchase requirements.

our ad. See what you can do," says Lewis Lustman, marketing director of logear, which makes input devices, networking hardware, and other PC peripherals. "The onus then is on [manufacturers] to come up with something."

The good news for manufacturers and retailers is that rebates can make their bottom line look good, at least temporarily. "With money in the bank, there is no hurry to pay the rebates," says Todd Fernandez, a financial analyst at Glass Lewis & Company. "Businesses can sit on consumer money [while it earns interest] for a quarter, or sometimes two—a great way to facilitate working capital."

However, some retailers aren't happy about delaying tactics. As a general rule, "if [shoppers] buy a product offering a rebate, [they] should get it, and get it on a timely basis," says Dave Bennett, vice president of pricing at Office Depot. The retail chain promises its store-sponsored rebates within eight to ten weeks.

Like many retailers, Office Depot has limited control over the company that handles manufacturers' rebates. Bennett understands shoppers' frustrations: When they find rebate rules that are unreasonable, their first reaction is to get "mad at the store they bought [the product] from," he says.

But consumers also get mad at the fulfillment house. For instance, TCA Fulfillment, which handles rebates for Brother, CompUSA, Kingston, Micro Center, Samsung, and many other stores and vendors, is described as one of the worst rebate processing companies by participants on FatWallet.com's chat boards, and it has had an unsatisfactory rating with metropolitan New York's Better Business Bureau for most of its history.

Some angry consumers have even accused TCA and other ►

Stores Make Rebates Easier

SOME LEADING RETAILERS, hoping to entice customers to make all of their rebate-eligible purchases in one place, are trying to make redemptions easier.

The warehouse club **Costco**, for example, was among the first to blaze a rebate trail by printing out a separate rebate receipt and cash-register-generated claim form along with the customer's copy of the receipt. Most rebates redeemed through Costco don't even require clipping out the

UPC, and the bulk of them can be redeemed online, saving even the 37-cent postage stamp. But beware: Wait more than 30 days to file, and you're out of luck.

Office-supply retailer **Staples** extended its filing deadline from 30 days to 60 days on most rebates. It also plans to offer online redemptions this year. But like other stores, Staples doesn't combine all of its vendors' rebates into its own program, which is processed by Parago. So be sure

you understand whether the rebate is through Staples or the manufacturer.

Best Buy, Circuit City, CompUSA, OfficeMax, Office Depot, and Walgreens don't combine all of their vendors' rebates either, but they do print separate rebate receipts. Some of them, including Best Buy, also print out claim forms at the register as Costco does, and they offer toll-free customer-service phone numbers for reporting problems.

—J. R. D.

vendors of deliberately losing rebates owed.

"That is such urban folklore," counters TCA founder and CEO Frank Giordano, explaining. "We are a service organization. We get paid for every redemption request we enter in the system.

If we don't put it in the system, we don't get paid."

The BBB reports that TCA has exhibited a pattern of not responding to consumers' complaints. "More than 90 percent of [these complaints] were from irate consumers who'd been denied [a rebate], usually for good reason," says Giordano. "We thought it was a waste of time to explain through a middle party, like the BBB, why their rebate was rejected."

New York BBB spokesperson Ronna Brown says that "if TCA told us that all complaints are related to one manufacturer not paying its invoice in time, we'd take that into consideration. [But even if] the volume of their redemptions is incredibly high, they still need to respond to complaints." Brown acknowledges that the fulfillment company has resolved hundreds of complaints in the last year.

WATCHDOGS STEP IN

IF THE RETAILERS AREN'T trying to scam the consumer and the manufacturers aren't trying to pull a fast one, and the rebate houses are cranking out checks as fast as they can, who's at fault when rebate experiences go sour? The company sponsoring the rebate is ultimately responsible. And when you can't get a rebate dispute resolved, where do you turn? That's where the FTC and the state attorneys general offices enter the picture.

Matthew Gold, a staff attorney in the San Francisco office of the commission, says that some patterns of deception are spotted when the rebate's sponsor is in financial trouble. Over the past few years, several cases have been filed against manufacturers. One of these, Prime Peripherals—also known as OKie Electronics—eventually filed for bankruptcy.

"[The FTC] hasn't seen a lot of outright fraud," Gold says. More often, he

**"Once
[the FTC steps in],
companies either
...admit they're
in financial trouble
or [send checks] to
consumers."**

—Matthew Gold, FTC attorney

adds, it's a case of a small company not anticipating the level of response to the offer, or a big company too caught up in its own bureaucracy to deposit funds into the fulfillment house's bank account. "Typically, once [the FTC] gets involved, the companies are reasonably responsive, meaning they either admit they're in financial trouble or they try to get the money out to consumers." It's rare for the FTC or a state attorney general to file suit against a company for failure to pay rebates.

"We don't disclose the companies we are investigating, but if we receive a number of complaints [about a specific vendor], we look into the situation," says Brad Maione, press officer for New York State's Attorney General. "We may also be able to mediate without taking any formal action."

Government agencies continue to help consumers learn to, as the FTC puts it, "take the 'bait' out of rebates." Read the commission's assortment of helpful tips at find.pcworld.com/40292.

And check out our list of tips in the box below. ■

Janet Rae-Dupree is a freelance technology writer in Silicon Valley.

Tom Spring is a senior reporter for PC World.

Rebate Tips

Do the math: If a product costs \$50 without a rebate and a competitor is \$60 with a \$20 rebate, consider the \$50 item and skip the hassle of filing a claim.

Check the expiration date: Some rebate offers expire faster than a carton of milk. Always check a rebate's promotion period. A merchant may have failed to update its ads or may carry leftover inventory from a promotion that has ended.

File promptly: Send the rebate claim right away. Some stores and manufacturers require that you submit a claim within 14 days of purchase—which is often shorter than a shop's return policy.

Follow all instructions: If the form says to use blue ink, do. Fill out every line.

Keep copies for your records: Copy everything before you send the claim.

Use certified mail: It proves that someone received your rebate request.

Set reminders: Mark your calendar for the check's estimated arrival. Or download the Rebate Rebate tracking freeware (find.pcworld.com/40493).

Check the status: For redemption



tracking, many rebate houses provide a URL, such as www.wheresmyrebate.com or www.rebatestatus.com.

Get in touch: No sign of a check by the due date? Begin documenting your calls.

File a complaint: Report problems to the BBB (find.pcworld.com/40286) and the FTC (find.pcworld.com/40289 or 877/382-4357). Write to your state attorney general's office, or to the office in the state where the rebate sponsor is located. Contact your local media (newspaper, TV, and radio); they may have a consumer advocacy department that can mediate on your behalf. —J. R.-D.

Introducing Affordable, Reliable, High-Capacity Storage Solutions From Gateway

Gateway SATA systems offer two TB of storage for less than \$6000.

Gateway's comprehensive portfolio of Data Storage Solutions and Services offers unprecedented value by blending price, performance and reliability. Whatever your specific storage needs are—low-cost, scalable or high-performance, enterprise-class—Gateway has your ideal storage solution.

Great Products: Gateway's storage solutions include Direct-Attached, Network-Attached SAN and backup products that offer market-leading technology at an extreme value.

Exceptional Support: Together with service industry leaders such as IBM Global Services, we deliver market-leading on-site repair service nationwide to ensure that your network is always on.¹

Call us today for a customized data storage solution quote.



Gateway Storage Solutions

Complete your network with our comprehensive lineup of Direct-Attached, Network-Attached Storage Area Network and tape backup solutions.

Protect your business-critical information and avoid operational downtime with Gateway's value-rich, scalable, high-capacity storage solutions, including the new industry-leading Serial ATA storage devices.



Gateway™ 840 Serial ATA RAID Enclosure

- The perfect option for businesses that require an affordable, reliable and high-capacity storage solution
- Comprehensive product scales to 2TB for under \$6000 or 3TB for under \$7200
- Embedded hardware RAID provides advanced data protection
- Standard SCSI interface to your server makes integration into your current environment easy
- Redundant power supply and 3-year limited warranty¹ ensure high availability

Starting at **\$3999**

Gateway 860 Serial ATA NAS Solution

- Plugs simply into any Ethernet-based network. Available in 320GB and 1TB configurations
- State-of-the-art hot-swap SATA technology priced at 30 percent less than comparable SCSI models
- Embedded hardware RAID for advanced data protection
- Runs on the latest Microsoft® Windows® Storage Server 2003 technology, making file serving easy to manage, efficient and cost-effective

Starting at **\$4799**

Call for a free SATA Technology White Paper and learn how your business can benefit from the latest in storage solutions.

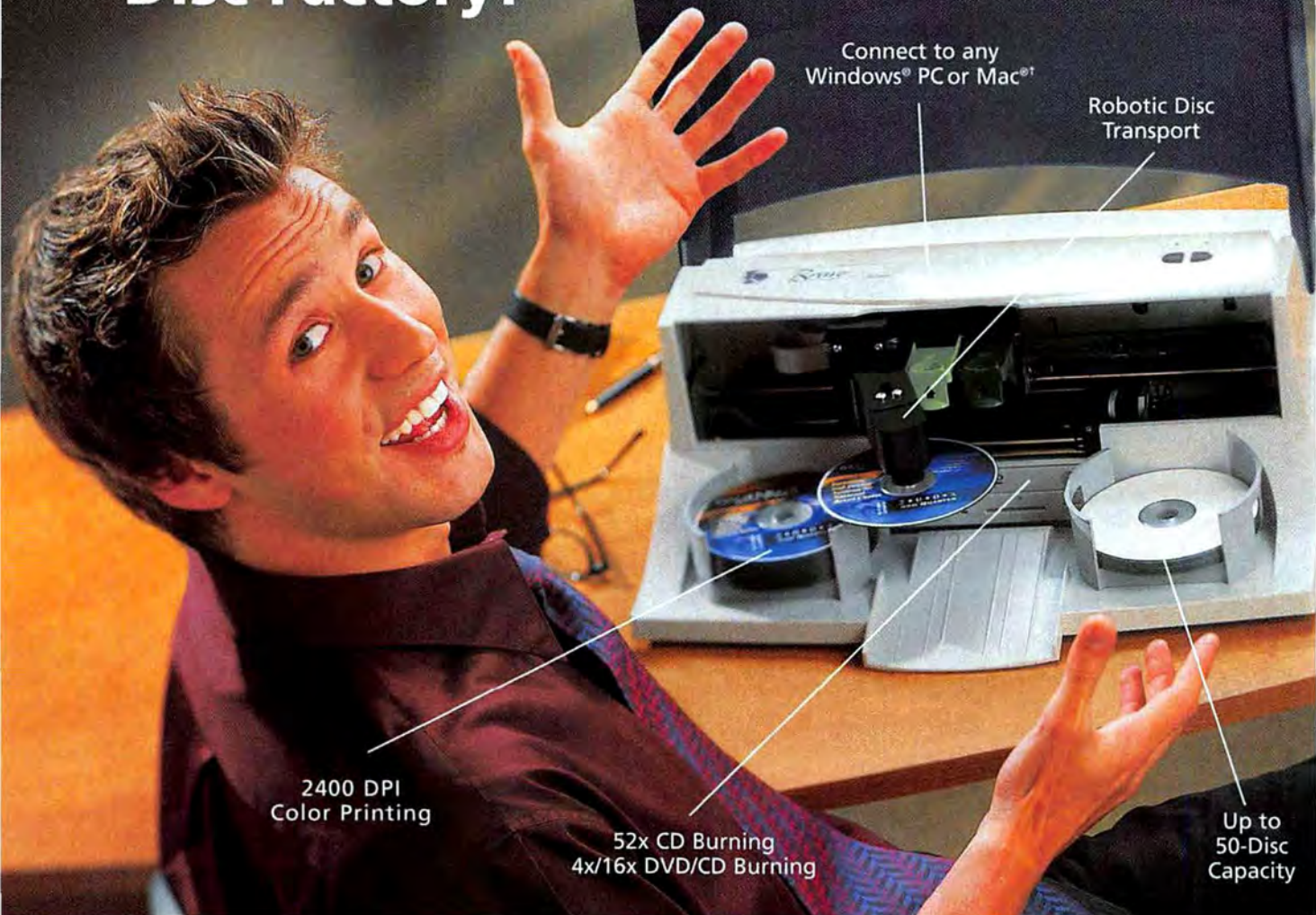
| 800-846-2788 | 877-891-7044 | gateway.com/biz/pcwd2 |
Small and Midsize Business Corporate and Enterprise

Gateway
Professional

All offers subject to change without notice or obligation and may not be available through all sales channels. Prices exclude shipping and handling. Applicable taxes extra. Not responsible for typographical errors.
¹Limited warranties and service agreements apply; visit gateway.com or call 1-800-846-2000 for a free copy. May not be available in all locations.

Copyright ©2004 Gateway, Inc. All rights reserved. Gateway Terms and Conditions of Sale apply. Gateway.com and Gateway Country Stores, LLC, are separate legal entities. Gateway, the Black and White Spot Design and Gateway Professional are trademarks or registered trademarks of Gateway, Inc. in the U.S. and other countries. Microsoft, MS, Windows, Windows NT and Bookshelf are registered trademarks of Microsoft Corporation. All other brands and product names are trademarks or registered trademarks of their respective companies. Ad Code: 114293

"Check Out My Disc Factory!"



Connect to any
Windows® PC or Mac®†

Robotic Disc
Transport

2400 DPI
Color Printing

52x CD Burning
4x/16x DVD/CD Burning

Up to
50-Disc
Capacity

Introducing the new \$1995* Bravo™ Disc Publisher

"I used to burn CDs one at a time on my PC. Then I printed sticky labels and tried to get them on straight. It took me hours to make 25 discs! Now, with my Bravo Disc Publisher, everything's automatic. It burns, prints and moves the discs back and forth all by itself. This thing is great! It really saves our company a lot of time and money!"

For details and a free sample CD-R printed and recorded on Bravo, call 1.800.486.0553 (USA and Canada) or 763.475.6676. E-mail to sales@primera.com or visit us at www.bravopublisher.com



PRIMERA
TECHNOLOGY, INC.

*Manufacturer's Suggested Retail Price in the USA; reseller prices may vary. †Windows XP/2000 or Mac OS X v10.2 or later. Bravo is a trademark and Primera is a registered trademark of Primera Technology, Inc. Windows is a registered trademark of Microsoft Corporation. Mac is a trademark of Apple Computer, Inc. registered in the U.S. and other countries. © 2003 Primera Technology, Inc. All rights reserved.

**141 DIGITAL AUDIO:
HI-FI MP3**

**144 GAME DEVICES:
4 WAYS TO PLAY**

**146 GADGET FREAK:
TIVO TAKES ON PC**

THE HIGH END (top to bottom): Yamaha MusicCast wireless client, Yamaha MusicCast MCX-1000 server, Onkyo TX-NR801 receiver, and Xhifi Xducer 2.1 speakers (background).



The new world of personal tech—for the living room and beyond

NEXT GEAR

EDITED BY ALAN STAFFORD

DIGITAL AUDIO HI-FI

THESE DEVICES LET YOU PLAY DIGITAL AUDIO THROUGH YOUR STEREO SYSTEM, AND THE ONLY FINGER YOU HAVE TO LIFT IS THE ONE ON YOUR REMOTE CONTROL. **BY JOSH TAYLOR**

FOR MOST OF US, listening to digital music is something we do when we're sitting in front of our computers, or when we're out cruising around with our portable audio players. In the living room, we're still more likely to be playing compact discs. But a new crop of digital audio devices allows

you to listen to digital audio through your stereo system.

Compressed digital audio still has a long way to go before some people will relinquish their CDs. But it's truly convenient. You can spend as little as \$100 to bring thousands of MP3, WMA, or AAC audio files from your PC into

your living room. Spend a little more, and you can play the files over a wired or wireless network. Or you can spend thousands of dollars on a full-blown digital audio server (the fact that it has a hard disk is a sign that digital audio may be edging toward respectability among audiophiles).

Several of the devices that I looked at can do more than simply play audio files. Want to listen to Internet radio on your home theater system? No problem. How about watching your vacation photos on your TV, in perfect sync with your favorite music? Can do.

You might be thinking, ►

NETWORK STREAMERS:

Slim Devices Squeezebox (left) and Creative Sound Blaster Wireless Music and its remote.



"Great, all I need is another big box in my living room." Relax: These devices come large and small, wired and wireless. Besides, think of the space you'll save once you stick your old CDs in the attic.

LOW-COST HI-FI

DOES YOUR PC rest within arm's length of your stereo receiver? You can run a \$5

The Yamaha MusicCast won't let you copy any music files you already have on your computer.

minijack-to-RCA audio patch cable from the line-out port on your PC's sound card to the analog ports on your receiver. However, you may hear interference caused by your PC's

circuitry, and you'll have to use an audio application on your computer to pick songs. You also won't hear multi-channel sound, unless you have a sound card with digital audio out, such as something from Creative's Audigy 2 line. MP3 audio can be encoded only in stereo, so you won't miss out when you play those files, but any surround-sound-encoded audio on your PC, including DVD sound and some Windows Media files, will have to be played in stereo.

If your PC is within 30 feet

to your stereo, connecting to your PC via a USB port (thus bypassing the sound card). You can use one of three included 30-foot cables: optical, coaxial, or standard RCA.

You'll get surround-sound audio with the Pro HiFi-Link only if your receiver has either a digital optical or a coaxial port; if it doesn't, consider the \$5 patch cable, or Xitel's standard HiFi-Link (\$50). The Pro HiFi-Link works with Windows, Mac OS, and Linux, and it doesn't require any additional software. But like the \$5 cable, it has no screen or remote, so you must select your songs via a computer.

MUSIC WITHOUT WIRES

CREATIVE'S SOUND Blaster Wireless Music—a \$230 device about the size of a cable modem—connects to your receiver and pulls digital audio from your computer over an 802.11b wireless network. The

FEATURES COMPARISON

LISTEN TO DIGITAL MUSIC IN YOUR LIVING ROOM

These devices bring high-quality digital audio to your stereo or home theater. However, we still haven't found one that offers the perfect combination of sound quality, storage, and copy-protection measures that don't assume all music aficionados are pirates.

DIGITAL AUDIO DEVICE	Features	Performance and extras	Comments
Creative Sound Blaster Wireless Music ★★★★☆ find.pcworld.com/39740	<ul style="list-style-type: none"> • \$230 (12/19/03) • Digital audio network device • 802.11b connection • RCA and digital optical out 	<ul style="list-style-type: none"> • Sound quality: Good • Ease of use: Very good • RF remote control with LCD panel • MP3 and WMA playback 	The setup could have been easier—Creative's software didn't detect a built-in Windows XP firewall—but once the device is installed, it's easy to use. If only it could play Internet radio. The LCD panel on the remote is a nice touch.
Onkyo TX-NR801 ★★★★☆ find.pcworld.com/39743	<ul style="list-style-type: none"> • \$999 (12/19/03) • 100-watt, 7.1-channel stereo receiver • Ethernet connection • 3 audio, 6 audio/video inputs 	<ul style="list-style-type: none"> • Sound quality: Outstanding • Ease of use: Good • Dolby Pro Logic II, Dolby Digital EX • Infrared remote control 	An excellent home theater receiver that can stream MP3, WMA, and .wav files from an ethernet-connected PC, the TX-NR801 displays artist and track info in its own interface. Being able to customize its Internet radio offerings would have been nice, though.
Slim Devices Squeezebox ★★★★☆ find.pcworld.com/39746	<ul style="list-style-type: none"> • \$299 (12/19/03) • Digital audio network device • 802.11b, ethernet connections • RCA, digital coaxial, digital optical out 	<ul style="list-style-type: none"> • Sound quality: Good • Ease of use: Good • Windows, Mac, Linux server software • Infrared remote control 	Using this small device is easy, though using the remote for some settings is a bit clunky. It supports MP3, AAC, and AIFF formats; you can play WMA files only by converting them on the fly with the included server software. Audio sounds better with ethernet.
Xitel Pro HiFi-Link Editor's Pick ★★★★★ find.pcworld.com/30338	<ul style="list-style-type: none"> • \$100 (12/19/03) • Digital audio converter • USB connection • RCA, digital coaxial, digital optical out 	<ul style="list-style-type: none"> • Sound quality: Outstanding • Ease of use: Very good • Dolby Digital, DTS Surround Sound • No remote control included 	The included cables are worth close to \$100 by themselves, though you'll use only one of them. Unlike most of the wireless products, it's capable of multichannel sound. If your PC is near your stereo, this is your best bet (assuming you don't mind an extra cable).
Yamaha MusicCast MCX-1000 ★★★★☆ find.pcworld.com/39752	<ul style="list-style-type: none"> • \$2200, plus \$599 per client (12/19/03) • Digital audio server • Ethernet connection (optional 802.11b clients) • RCA, digital coaxial, digital optical out 	<ul style="list-style-type: none"> • Sound quality: Outstanding • Ease of use: Good • 80GB hard drive • Infrared remote control 	The expensive MusicCast system rips and burns CDs slowly. Copy protection won't let you copy music from your PC, only from CDs, and you can't listen to the device's music from a PC.

included remote control has a small, integrated LCD panel—an inspired design decision that means the receiver itself doesn't need one. The Creative's remote is the only one to use Radio Frequency control; the other products in this review use infrared, which depends on a direct line of sight to the device for reliable operation. The setup wizard, while straightforward, did not offer helpful hints to ease configuration problems. Though it was my own fault for forgetting that I had Windows XP's built-in firewall activated, the software should have been able to detect that fact and offer something a little more useful than simply telling me that the setup had failed.

Nevertheless, the software that converted my PC into a wireless music server worked flawlessly, except that the music skipped occasionally owing to interruptions in the wireless signal. I appreciated the ability to program the software to scan the PC regularly for recently added music. Unfortunately, the device does not support Internet radio; Creative says it may add that as a downloadable upgrade in the future.

With minimal instructions and software that's not the most intuitive, the Slim Devices Squeezebox is definitely for the enthusiast crowd—it's based on open-source code and is supported on the Windows, Mac, Linux, BSD, and Solaris operating systems. Getting the connection up and running is pretty easy, though

using the remote control to enter a WEP (Wireless Encryption Protocol) password and, on some networks, an IP number is a bit clunky.

The hardware is a simple black box that looks rather like a radar detector. And though its vacuum fluorescent display is a touch brighter than a standard LED screen, it's still not viewable from a distance—say, if you're sitting on your couch. As with the Creative device, I heard some hiccups when using the device wirelessly, but they cleared up when I used the ethernet port.

Turtle Beach's AudioTron was one of the first network audio players. I tried out a pre-



INEXPENSIVE AND WIRED: Xitel Pro HiFi-Link.

production version of its successor, the MediaTron, which will access photos as well as music files from your host computer: Just plug the device into a TV, and you can view photo slide shows and browse cover art from your albums. The unit will come with three networking options: ethernet, 802.11b, and HomePlug. Turtle Beach says the MediaTron will be available in March.

HIGH-RENT HI-FI

THE \$999 ONKYO TX-NR801 is a sophisticated 7.1-channel home theater receiver that can

ONLINE EXTRA

DOES MP3 MEAN HIGH FIDELITY?

MP3 SIGNIFIES portability and convenience to most people. But does the format offer the same sound quality as CDs or other sources do? Read our online story at find.pcworld.com/39923 to find out.



manage high-definition video and digital audio (both optical and coaxial). Like most receivers in its class, this one decodes Dolby Pro Logic II and Dolby Digital EX audio. It outputs 100 watts per channel.

But when you're scanning the myriad inputs provided on the back, it's easy to spot what sets the TX-NR801 apart from the rest of its class: an ethernet port. Just plug the receiver into your home network, and you can listen to MP3 and Windows Media (WMA) files stored on your Windows PC, as well as to a canned selection

of Internet radio stations (if your favorite station isn't included, you're out of luck). The track and artist info is easy to read on the receiver's display, and you can specify up to 30 Internet radio presets (in addition to 40 AM/FM presets). The Onkyo is a very good receiver. But it will have to wait for "outstanding" status until the company lets us listen to any Internet radio station we like. A hard disk to let the device store its own audio would be nice, too.

Yamaha's \$2200 MusicCast MCX-1000 does have a hard

drive, an 80GB model. It's the one device I evaluated that operates independently of your PC. To download track and data information from the Internet, the MusicCast connects to your home network via ethernet. Unfortunately, the device's copy-protection scheme won't permit you to copy any music files you may already have on your computer; instead, you must re-rip all of your CDs to the MCX-1000.

The MusicCast server, about the size of a home theater receiver, will rip from other analog and digital sources, so this could be your chance to finally copy all of those old LPs and cassettes. The unit also includes a 4X CD-RW drive, so you can burn CDs (albeit slowly). You can stream music from the server to space age-looking MusicCast clients (at \$599 a pop, plus another \$150 for small matching speakers) in other rooms in your home via ethernet or the integrated 802.11b connections. However, you can't listen with any other type of device—say, a computer. In the end, while the MusicCast offers the wireless networking and storage of a computer, it lacks the flexibility of one. ■

Freelance writer Josh Taylor lives in Brooklyn.

POCKET GAMES

HANDHELD GAMING DEVICES

FOUR SMALL GAME PLAYERS TO TICKLE YOUR THUMBS.

SINCE NINTENDO unveiled the Game Boy in 1989, airplane trips have been quicker and doctor's office waits shorter for gamers. But new competition is coming from unexpected quarters—including PDA and phone makers.

Nintendo's latest Game Boy Advance, the SP, added a rechargeable lithium battery, a clamshell design, and (most important) a backlit (actually, sidelit) screen. Prior incarnations suffered terribly in anything darker than direct overhead lighting. The SP has a low price, it's cheerful, and it works with a library of thousands of games, including such superb entries as Pokémon, Super Mario Bros., and Tony Hawk Pro Skater 4. It's perfect if you want something that only handles games.



LITTLE PLAYERS (left to right): Samsung VGA-1000, Tapwave Zodiac 1, Nokia N-Gage, and Nintendo Game Boy Advance SP.

SIGNS OF THE ZODIAC

ON THE OTHER hand, Tapwave's Zodiac 1 is easy to love, too. It smoothly combines the features of a Palm-based PDA, an MP3 player, and a gaming system. The large, bright LCD screen is easy on the eyes. The two SD media card slots let you play games and MP3s simultaneously. Bluetooth con-

nectivity supports multiplayer gaming with other Zodiac 1 owners. As a Palm PDA, the Zodiac 1 is absurdly overpowered, with a 200-MHz Motorola processor and an ATI 3D chip under the hood. The wide selection of games makes the shortage of third-party software support more tolerable. If you want a multifunction device, get the Zodiac.

Nokia's N-Gage multitasks, too: It can play games, audio, and video from its MMC card slot, tune to FM radio stations, and serve as a PDA and Internet browser. But to insert a game, you must remove the case cover and the battery, and you may have to turn it off on an aircraft, because it doubles as a cell phone. You can pick from a fair number of games, among them Eidos's Tomb Raider, but the small, vertically oriented display hampers game play, and the controls feel cramped and squishy.

You can purchase an add-on digital controller pad to make the Samsung VGA-1000 (also known as the SPH-A620) cell phone more game-worthy, though it does little to counter the impression that you're playing simple Java applets on a tiny screen. The pad does solve the awful problem of controlling Ms. Pac-Man with the phone's number keys. But a grafted-on controller does not a game system make.

—Frank O'Connor ■

FEATURES COMPARISON

HANDHELD GAME PLAYERS WITH GAME

THE GAME BOY ADVANCE SP is a great, cheap gaming device. But you can't help but admire the powerful Tapwave Zodiac 1.

GAMING DEVICE	Features	Performance and extras	Comments
Nintendo Game Boy Advance SP ★★★★☆ find.pcworld.com/39926	<ul style="list-style-type: none"> • \$99 • Game pad with proprietary cartridge slot • 2.9-inch, 240-by-160-pixel screen • 5.4 ounces 	<ul style="list-style-type: none"> • Gaming performance: Outstanding • Networked gaming via Game Boy Advance Link • Stereo headphones jack (requires adapter) • Play time: 10 hours 	Built on the now-ancient Nintendo Super NES technology (albeit with a faster processor than the original model), the Advance SP is small and elegant, and runs a vast selection of games, but that's all it does.
Nokia N-Gage ★★★☆☆ find.pcworld.com/39929	<ul style="list-style-type: none"> • \$300 (without phone activation) • Tri-band GSM mobile phone/game pad • 2.2-inch, 176-by-208-pixel color screen • 4.9 ounces 	<ul style="list-style-type: none"> • Gaming performance: Poor • MP3 audio and video playback • Bluetooth connectivity • Talk time: 4 hours 	The N-Gage is packed with features, from basic PDA functions to FM radio recording. Sadly, an irritating interface and the need to remove the back and battery to change games diminish the fun considerably.
Samsung VGA-1000 ★★★★☆ find.pcworld.com/39932	<ul style="list-style-type: none"> • \$210 (without phone activation) • Dual-band CDMA phone, optional control pad • 2-inch, 128-by-160-pixel color screen • 6.8 ounces (with controller) 	<ul style="list-style-type: none"> • Gaming performance: Poor • Built-in digital camera • Games available only as downloads • Talk time: 3.4 hours 	You'll be more likely to take snapshots with this phone's integrated camera than to take potshots at aliens with its optional game pad. The vertically oriented screen is too small to provide a satisfying gaming experience.
Tapwave Zodiac 1 Editor's PICK ★★★★★ find.pcworld.com/39593	<ul style="list-style-type: none"> • \$299 • Palm 5-based PDA/game pad • 3.8-inch, 480-by-320-pixel color screen • 6.6 ounces 	<ul style="list-style-type: none"> • Gaming performance: Good • MP3 audio and video playback • Bluetooth connectivity • Play time: 6 hours 	The comparatively enormous screen is bright and clear, and shows off 3D graphics. If you want a PDA that does a little bit more, the Zodiac 1 is a no-brainer, but you won't find as many games for it as for dedicated game systems.

PC, HD, TV?



Model LT-2220 Shown

Upgrade Your World.

We believe your television should work and play as hard as you do. Mitsubishi's Platinum Series HD Upgradeable* LCD Televisions are picture perfect and double as an equally perfect monitor with a resolution of 1280 x 768. Our space efficient design with built in speakers, subwoofer, and NTSC tuner will eliminate a few cables and components. Check out a Mitsubishi and see the possibilities.

More Than Just Television.™ Mitsubishi Television.

Visit mitsubishi-tv.com to find the dealer nearest you, and check it out for yourself.

* Coupled with a high definition receiver, both models will display full 1080i uncompromised True HDTV™ performance



© 2003 Mitsubishi Digital Electronics America, Inc.

GADGET FREAK

DAN TYNAN

KEEP THE PC—I'LL TAKE TIVO



AROUND MY HOUSE, TiVo is more than just an entertainment device; it's a way of life. The ability to record shows and watch them when we want, pause a show to grab a cool libation, and fast-forward through commercials is so addictive, we never watch live TV.

Yes, there are downsides. My seven-year-old has rigged TiVo to record every episode of *Ed, Edd, n Eddy*; if I let him, he'd watch them over and over until his head exploded. But the thing is so useful and hassle-free, I can't imagine life without one.

I'm not alone. According to the Yankee Group, 3 million U.S. households have a digital video recorder—a TiVo or a Replay box that costs up to \$13 a month for the service, or a set-top box from their cable or satellite company for an extra \$5 to \$10 a month. By

the end of 2007, that number should be over 24 million.

You can also turn your PC into a DVR and avoid the extra charges. But is doing so worth it? I decided to find out.

THE LAZY WAY

INSTEAD OF installing a TV tuner card and software on my PC, I took the lazy route and got a \$1700 Sony VAIO FRV37 notebook, which uses Sony Giga Pocket DVR software. I plugged my coaxial cable into the VAIO, ran the setup wizard, and downloaded a free program guide off the Web. Within minutes I was recording *The Bold and the Beautiful* (Sally and Marvin were plotting to alter the results of Brooke's paternity test, while Bridget and Ozzy revealed their undying love).

But Giga Pocket is limited—there's no way to pause

live TV, for example. And depending on video quality, 30-odd minutes of TV can soak up 680MB to 3.6GB of the VAIO's 40GB of storage. (My TiVo, with an 80GB hard drive, can record up to 80 hours of programs.)

Things improved when I tried HP's \$1500 Media Center PC 864n—its DVR functions are part of Windows XP Media Center. The software was slick—I could record a season's worth of shows with a few clicks, similar to TiVo's "SeasonPass"—yet not as easy as TiVo. Like a TiVo, the PC let me search for programs by category (like Kids) and by subcategory (Animation); both let me jump to a show in the middle of a long program list by entering the first few letters of its title. But unlike TiVo, Media Center PCs won't analyze what I've watched and record programs it thinks I might like (though when TiVo started recording *The Nanny* for me, I got worried).

Worse, I now had a big, ugly machine connected to my TV. In a few years, faster home networks and Wi-Fi-ready TVs will let you stash the PC elsewhere and stream content to your set, says the Yankee Group's Adi Kinshore, adding that the PC is a better platform for managing content.

Trouble is, most of us don't

NEXT UP

The Time Is Geek O'Clock

FOSSIL'S \$179 WRIST Net (find.pcworld.com/40283)

is one of the first watches to offer Microsoft's MSN Direct—an FM-based wireless service that delivers news, stock prices, weather, instant messaging, and access to your Outlook calendar. (The fee: \$10 a

month or \$59 per year.) Microsoft says putting such data on a watch speeds access to it,

but in my tests of a preproduction model, the watch was hobbled by a battery that conked out after three days and a bulky recharger. Before you travel, you must change settings on MSN's Web site to access your calendar and messages. And the only fashion statement this oversized clone of a 1978 Casio timepiece makes is "I'm a geek!"

—Harry McCracken

want to manage content; we just want to watch it. I doubt that any Windows-based system will ever be as affordable, reliable, or simple to use as a comparable consumer electronics device.

Will DVRs change the way America watches TV? Why would anyone replace a \$200 set-top box with a \$1500 PC? Who is the father of Brooke's unborn child?

To find out, you'll have to tune in tomorrow. I know I will—on TiVo, of course. ■

Contributing Editor Dan Tynan is a sucker for Maverick reruns.



Next Generation DVD.



Experience the amazing detail in new high-definition DVDs (wmv format), surf the internet on your big screen, and record/edit movies, video and music with the *easy-to-use* SleekLine® 2600 AV. Compatible with all displays and speaker systems, SleekLine's audio/video outputs, *silent operation*, and AV component form-factor make it the *only* computer optimized for your home theater cabinet. You'll be glued to your chair!

Choice of Wireless Airboard
or Gyration Keyboard/Mouse



SleekLine® 2600 AV System

- 2.6 GHz Pentium® 4 (Hyper-Threading)
- 512MB DDR400 Memory (Dual Channel)
- 160GB Seagate Serial ATA Hard Drive
- SONY DVD ReWritable Drive (±R/±RW)
- 1920 X 1080 8X AGP Video (VGA, DVI)
- 5.1 Dolby Digital Sound (S/PDIF Outputs)
- Fits on a Stereo Shelf or in a 2U 19" Rack

SleekLine® Systems

www.sleekline.com 5995 Avenida Encinas, Carlsbad, CA 92008 (760) 931-5700 (800) 722-6555

Made in the USA. Includes 3-Year Warranty and Free, Professional 24/7 Support. SleekLine is a Division of PC Power & Cooling, Inc. Established 1985. Complete specifications are available on our website. SleekLine is a registered trademark of PC Power & Cooling, Inc. Other trademarks are the property of their respective owners. © 2004

Bang FOR THE Internet Buck

How important is it for small and mid-sized businesses (SMBs) today to showcase a Web presence that is the best it can possibly be? The numbers tell the story.

Online holiday shopping this past season surged 42% to more than \$12 billion in the US, according to Forrester Research—and much of that growth is being mopped up by fast-growing small businesses, says eMarketer, an Internet research firm.

But one thing is certain: Without a Web presence, no small business can leverage this tremendous growing interest in online commerce. And central to an online presence and Internet sales strategy are a personal domain along with a domain-based email address, and of course a compelling Web site, which essentially is the cyber-equivalent of a front door for online shoppers.

No company makes it easier and faster to gain all the essentials of online business than Register.com. A publicly held company with more than \$100 million in yearly sales, Register.com (www.register.com) is dedicated to helping businesses quickly establish an online presence and compete effectively in the rapidly growing world of the Internet economy.

register.com
The First Step on the Web™

Register.com's trained support professionals will guide you along an easy path to establishing your own domain as well as establishing multiple email accounts, giving even a one-person business the look and feel of the bigger guys. Using high-quality, time-tested templates and the Register.com toll-free support staff, you can quickly build a professional, appealing Web site that makes your business look great as you open up your online shop.

Now is the time to get connected to the wealth of Internet commerce, and the best first step is to click on www.register.com to see how easy and fast it can be.

Common-sense help for the SMB

And once your storefront in cyberspace is up and running, here are a few tips that will help your SMB maximize returns on its Web investments.

- **Familiarize yourself** with search engine optimization strategies. The fact is that many, if not most, of your prospects won't know your URL; instead, they'll find your site using search engines. Optimization strategies increase the chances of your site appearing on the first page of listings during a search.
- **By using pay-per-click search**, small businesses can not only get top ranking in leading search engines, but also deliver targeted advertising, paying only when a prospect clicks through to your site. There are specialized companies that can help set up such arrangements.
- **Develop Internet keywords.** These are common terms that can describe your company and its products—terms your prospects would use when doing a search. It is much easier for a customer to search for your company using keywords than by using less-familiar URLs or technical terms.
- **Don't complicate the payment process.** Customers absolutely must be able to pay online almost as easily as they would by taking cash from their pockets at the register—and feel just as safe about doing so. Investigate the great number of payment services and payment options that are available to small, growing online businesses. Test-drive them, putting yourself in the shoes of a customer.
- **Reassure customers** that information they provide you will be kept completely confidential—as it should be. Nothing will rile a customer more than paying for your products and then being “rewarded” with an endless supply of junk mail or pop-up screens.

Introducing Web Hosting



register.com

from just
\$4⁹⁵/mo*
No set-up fee!

HOSTING SOLUTIONS FROM THE COMPANY YOU TRUST.
GO TO www.register.com OR CALL 1-888-REGISTER

Register.com has all the tools you need to build, manage and promote your company's online presence:

- **Scalable solutions: from Do-It-Yourself template driven Web sites to E-commerce hosting**
- **Expert 24/7 customer support — Let Us Be Your IT Guys**
- **Launch your site in a snap**

Find out how you can benefit from Register.com's integrated Web solutions. Visit us online today — and you'll be up and running on the Web in no time!

HOSTING MADE SIMPLE FOR SMALL BUSINESS

*Price does not include domain name registration and is subject to change. All Register.com services are subject to the terms and conditions of our Services Agreement which can be found at <http://www.register.com/service-agreement.cgi> and certain web hosting services are also subject to the terms and conditions of our Website Hosting Services Addendum located at <http://www.register.com/hosting/service-agreement.cgi> ©2004 Register.com, Inc. All rights reserved.

register **com**[®]
The First Step on the Web™

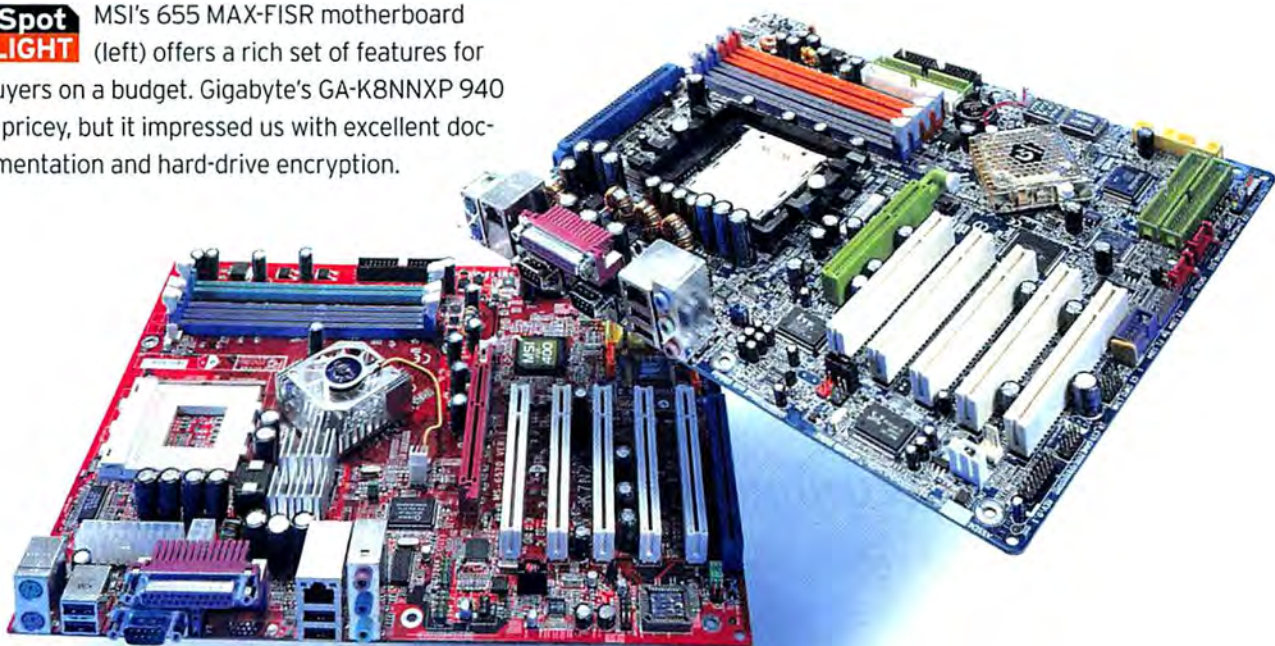
TOP 100

EDITED BY THE REVIEWS STAFF

INSIDE

- 150 MOTHERBOARDS
- 156 DESKTOP PCs
- 160 NOTEBOOK PCs
- 163 COLOR LASER PRINTERS
- 165 DIGITAL CAMERAS
- 167 MORE REVIEWS

**Spot
LIGHT** MSI's 655 MAX-FISR motherboard (left) offers a rich set of features for buyers on a budget. Gigabyte's GA-K8NXP 940 is pricey, but it impressed us with excellent documentation and hard-drive encryption.



SPOTLIGHT: MOTHERBOARDS

Building a Better System

If the idea of building your own PC intrigues you, and you've even scoped out the aisle full of snazzy components at your local computer shop, deconstructing all the specs and picking the right board can seem fraught with peril. But it's really not that tough. We evaluated eight boards with a range of features and prices, and we'll show you what to look for when you're comparing products in the store.

First, some fundamental decisions will narrow your choices: You probably know how fast you want your CPU to be and how much you want to spend on it; you probably also have a good idea of how much RAM you need. Because each motherboard works only with a specific set of processors, this is your first cut. All the boards we tested support a range of either AMD or Intel processors. (Please see the online chart at ►



Point-and-Shoot Digital Cameras

Top 10 CHART At \$400, the Nikon Coolpix 3700 is not the cheapest 3.2-megapixel camera out there. However, it turned in some of the highest image quality scores we've seen to date.

165



Notebook PCs

Top 10 CHART The \$1699 IBM ThinkPad R50 delivers a nicely laid-out keyboard, dual pointing devices, and great battery life. It earned the Best Buy on our value list this month.

160

Desktop PCs

Top 10 CHART Highlights of the E Machines T3025 include a massive 160GB hard drive, dual DVD-ROM and CD-RW drives, and a front-mounted media reader—all at a street price of just \$1148.



156

INSIDE THE TOP 100

See find.pcworld.com/15720 for details on how we compile charts for the Top 100. Freelance writers Dan Littman, Mick Lockey, and Carla Thornton and PC World editors Eric Butterfield, Tracey Capen,

Rebecca Freed, Kalpana Ettenson, Alexandra Krasne, Melissa J. Perenson, and Alan Stafford contributed to the Top 100 section this month. Ulrike Diehlmann, Julio Giannobile, Elliott Kirschling, Jeff

Kuta, Tony K. Leung, and Thomas Luong of the PC World Test Center performed testing on the products reviewed in this section, with logistical support provided by Julian Weatherby.

find.pcworld.com/40370 for more information.) But because we couldn't test every configuration, we picked a few representative ones, broken down into two groups. We chose four loaded boards and tested them with top-of-the-line CPUs and a gigabyte of RAM; we also picked four less-expensive boards with fewer features, and tested them with good second-tier processors and 512MB of RAM.

At the high end, we paired Gigabyte's GA-K8NXP 940 and Leadtek's WinFast K8NW with AMD's \$800, 2.2-GHz 64-bit Athlon 64 FX-51. We tested Intel's Desktop Board D875PBZ and Chaintech's 9PJL2 motherboards with Intel's fastest consumer CPU, the \$1000 3.2-GHz Pentium 4 Extreme Edition. In our economy

group, we set a cap of \$300 for both board and processor. We paired the MSI 655 MAX-FISR and Soyo SY-P4i865PE Plus Dragon 2 with Intel's \$200 2.8-GHz Pentium 4 CPU; we ran the Asus A7V600 and Abit VI7 motherboards with AMD's \$150 2.17-GHz Athlon XP 2700+. All of the models we tested fit into a full-size ATX tower. Mini-ATX boards that fit into smaller cases are available, but in this review we focused on full-size models.

INCREASE YOUR MEMORY

FROM OUR SMALL sample size, we can't draw comparisons on which chip set is fastest; but since the boards within each category delivered similar results in our tests, we can say that overall system per-

formance depends less on your motherboard and more on CPU and memory.

The motherboard and processor determine the speed and type of memory you must use. But there are different grades of RAM, and they can influence performance and reliability, as well. We chose to use 1024MB of Crucial DDR 400 memory on our high-performance boards, and 512MB of Crucial DDR 400 memory on the budget ones. The Athlon 64 FX-51 CPU required registered DDR memory, which contains a register chip that delays memory information for one clock cycle to help process large amounts of data. Registered memory costs about \$450 for 1GB—making it more expensive than a comparable amount of DDR SDRAM—

TOP 100

TEST Center

Motherboards: Key to an Ideal PC

WE BUILT AND TESTED several high-end and budget configurations. For full test results and more details visit find.pcworld.com/40370.

MOTHERBOARD	Processor and memory used	Street price (12/15/03) and features	Slots and ports	Ease of installation/documentation	Comments
HIGH-END MOTHERBOARD	Chaintech 9PJL2 ★★★★☆ find.pcworld.com/40184	• 3.2-GHz Intel Pentium 4 Extreme Edition • 1024MB DDR SDRAM	• \$100 • Maximum 4GB PC266/333/400-MHz DDR memory • Intel 865+IC5 R chip set	• 8 USB 2.0 ports/ 5 PCI slots • 2 Serial ATA connectors	Outstanding/ Very good This board's installation proved problem-free in our tests. Lacks FireWire ports.
	Gigabyte GA-K8NXP 940 ★★★★ find.pcworld.com/40187	• 2.2-GHz AMD Athlon 64 FX-51 • 1024MB registered DDR SDRAM	• \$229 • Maximum 3GB PC266/333/400-MHz registered DDR memory • NVidia NForce3 Pro 150 chip set	• 6 USB 2.0 ports/ 5 PCI slots • 2 Serial ATA connectors • 3 FireWire ports	Fair/ Outstanding Loaded board is the priciest we reviewed, but its 64-bit hard-drive encryption is a nifty extra.
	Intel Desktop Board D875PBZ ★★★★☆ find.pcworld.com/40190	• 3.2-GHz Intel Pentium 4 Extreme Edition • 1024MB DDR SDRAM	• \$150 • Maximum 4GB PC333/400-MHz DDR memory • Intel 875P chip set	• 8 USB 2.0 ports/ 5 PCI slots • 2 Serial ATA connectors • 3 FireWire ports	Very good/ Good The board gave us little trouble during installation, and its chip set supports gigabit ethernet.
	Leadtek WinFast K8NW Editor's PICK ★★★★★ find.pcworld.com/40193	• 2.2-GHz AMD Athlon 64 FX-51 • 1024MB registered DDR SDRAM	• \$189 • Maximum 3GB PC266/333/400-MHz registered DDR memory • NVidia NForce3 Pro 150 chip set	• 6 USB 2.0 ports/ 6 PCI slots • 4 Serial ATA connectors	Outstanding/ Good Problem-free installation and optional 64-bit hard-drive encryption are pluses; has dual LAN with gigabit ethernet.
BUDGET MOTHERBOARD	Abit VI7 ★★★★☆ find.pcworld.com/40196	• 2.17-GHz AMD Athlon XP 2700+ • 512MB DDR SDRAM	• \$75 • Maximum 2GB PC266/333/400-MHz DDR memory • Via PT800 chip set	• 4 USB 2.0 ports/ 5 PCI slots • 2 Serial ATA connectors	Good/ Good Lacks FireWire ports. We also had some problems installing the board's SATA drivers.
	Asus A7V600 Editor's PICK ★★★★ find.pcworld.com/40199	• 2.17-GHz AMD Athlon XP 2700+ • 512MB DDR SDRAM	• \$85 • Maximum 3GB PC266/333/400-MHz DDR memory • Via KT600 chip set	• 4 USB 2.0 ports/ 6 PCI slots • 2 Serial ATA connectors • 802.11b Wi-Fi slot	Very good/ Very good Provides an integrated Wi-Fi slot and supports gigabit ethernet.
	MSI 655 MAX-FISR ★★★★☆ find.pcworld.com/40202	• 2.8-GHz Intel Pentium 4 • 512MB DDR SDRAM	• \$75 • Maximum 3GB PC266/333/400-MHz DDR memory • Sis 655 chip set	• 6 USB 2.0 ports/ 5 PCI slots • 1 Serial ATA connector • 2 FireWire ports	Very good/ Very good Offers great documentation and smooth installation, plus on-board gigabit ethernet support.
	Soyo SY-P4i865PE Plus Dragon 2 ★★★ find.pcworld.com/40205	• 2.8-GHz Intel Pentium 4 • 512MB DDR SDRAM	• \$95 • Maximum 3GB PC266/333/400-MHz DDR memory • Intel 865PE chip set	• 8 USB 2.0 ports/ 5 PCI slots • 2 Serial ATA connectors • 3 FireWire ports	Good/ Fair Budget board supports gigabit ethernet. Thin documentation provided little guidance.

and it's also harder to find. Kingston supplied the registered RAM we used.

We acquired our processors, memory, and motherboards separately, but buying motherboard, CPU, and memory pre-installed eliminates the trauma of installing a processor for the first time and potentially turning a \$200 slab of silicon into a useless piece of junk. This typically costs more than stand-alone components, but getting one may be worthwhile if you're worried about frying your CPU.

We selected the Asus A7V600 and the Leadtek WinFast K8NW as our Editor's Picks, based on our evaluation of their features, ease of installation, and documentation. We had no trouble installing Leadtek's board, and its extra features—four Serial ATA connectors, 64-bit hard-drive encryption, and dual LAN—gave it an edge. Although Leadtek's printed documentation doesn't include information about installing the processor, pictures and walk-throughs for the procedure are available from the company's site. Asus's board, meanwhile, offers a nice helping of extras like an integrated Wi-Fi slot and gigabit ethernet support. Its smooth installation and comprehensive documentation were additional factors in our awarding the board an Editor's Pick. The model we tested lacks FireWire ports, but Asus sells a board with that option.

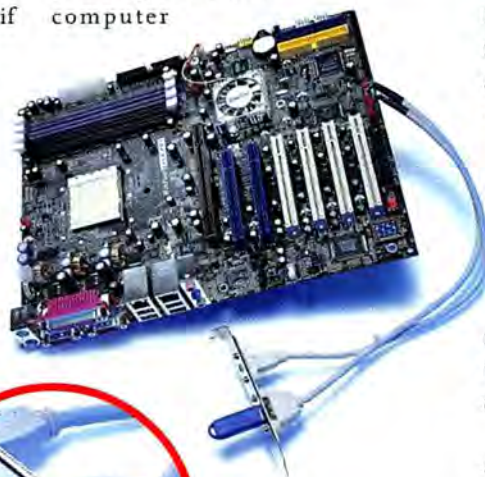
WHAT'S IN A CHIP SET?

AFTER YOU'VE SETTLED ON the CPU and amount of RAM, your next decision concerns what features you want. A motherboard's chip set provides support for integrated I/O options such as USB 2.0, FireWire, Serial ATA, and 8X AGP.

Developers are incorporating still more functions into upcoming chip sets. For instance, NVIDIA's new NForce3 250—which should be available by the time you read this—incorporates a firewall. Vendors are also working on support for Azalia, a new audio standard intended to supplant AC'97, and for PCI Express, a new technology that will eventually replace

today's PCI (and AGP) parallel buses with a fast serial connection capable of a sustained transfer rate of up to 200 gigabytes per second rather than PCI's 133 GBps.

If you're a gamer, an 8X AGP slot to accommodate the latest graphics cards will be on your wish list. We tested all eight of our boards with ATI's Radeon 9800 Pro card using the 8X AGP interface. If you're planning to use your computer



THE ASUS A7V600 motherboard offers 64-bit hard-drive encryption via the board's firewire port. You'll need the included key to unlock your data (left).

primarily for office applications and older games, integrated graphics chips will do the trick. Our previous tests of PCs with the Intel 865G and ATI Radeon 9100 IGP integrated chip sets showed that such chips hit frame rates half as high as those from even budget-level graphics cards.

On the horizon, however, are chip sets with more-powerful graphics-processing capabilities. Via's K8M800 chip set, which employs integrated graphics and supports AMD's 64-bit processor, has a low-power design that requires fewer fans to cool it.

With one exception, all of the motherboards we reviewed include on-board sound, which is sufficient for most computer tasks. For watching DVDs and listening to music, though, look for a board with a six-channel codec. The audio processing on the boards we tested ranged from Leadtek's and Gigabyte's Realtek

ALC658 Audio AC'97 six-channel codec to no sound support at all (in the case of Intel's board). Note that an add-in sound card gives better-quality audio.

SLIGHT SPEED DIFFERENCES

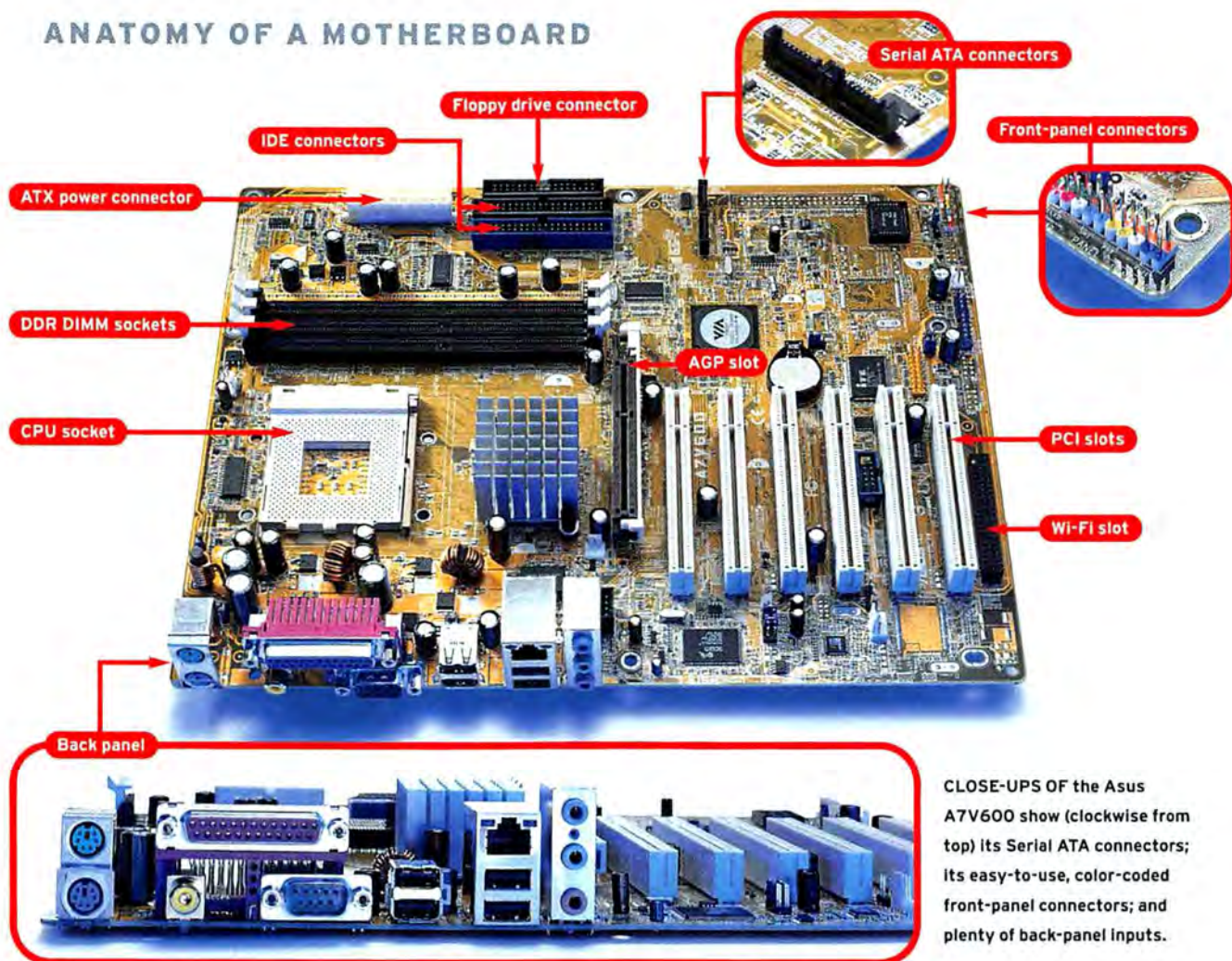
THE PC WORLD Test Center evaluated the motherboards by putting them into PCs that were identical except for their motherboard/CPU/RAM combinations. Each test PC had a 120GB Seagate Barracuda 7200 Serial ATA hard drive and an ATI Radeon 9800 Pro graphics card. Our analysts ran speed tests on each PC with a set of application scripts that simulate real-world use. As noted earlier, we found no significant performance differences that we could attribute to the motherboards within each category, although of course we saw varying results between the two categories owing to the classes of CPUs and the different amounts of RAM they used.

Predictably, the four relatively expensive motherboards—the ones carrying the Pentium 4 Extreme and Athlon 64 CPUs—did better on our gaming tests. In our test using Unreal Tournament 2003, frame rates for the configurations with the 64-bit AMD Athlon 64 FX-51 CPU hovered around 140, and the boards with the Pentium 4 Extreme Edition posted frame rates around 130. In the less-expensive category, the two boards using the 2.8-GHz Intel CPU performed somewhat better than the two with the Athlon XP 2700+, but all four budget boards produced rates below 100 frames per second. Note, however, that we tested within the classes of motherboards and didn't test high-end CPUs in low-end motherboards (or vice versa), nor did we compare mixed classes of products. You might be able to plug a high-end CPU in one of the low-end boards and get fast performance.

THE IMPORTANCE OF DOCS

GOOD DOCUMENTATION can be the difference between a smooth computer-building experience and a nightmare that ends with a fried motherboard. Experienced PC builders may not need much hand-holding, but having decent installation help available is nonetheless critical. ►

ANATOMY OF A MOTHERBOARD



CLOSE-UPS OF the Asus A7V600 show (clockwise from top) its Serial ATA connectors; its easy-to-use, color-coded front-panel connectors; and plenty of back-panel inputs.

For one thing, terms of manufacturers' warranties vary (visit our online chart for more information), and you're not covered under any of them if you damage the motherboard—for instance, by installing a component incorrectly. This is why documentation is so vital.

Ideally, your documentation should include a big setup poster with a detailed map of the motherboard (although a well-illustrated manual is an acceptable alternative). Gigabyte's color poster is among the best, with step-by-step instructions, clearly labeled jumper settings, and a handy map of the board's layout. The company lists motherboard models by name on its Web site, where you can easily drill down to find drivers, manuals, and compatible components for your board. Leadtek's manual provides a clear map of its motherboard, plus explana-

tions for each part of it, but as for step-by-step installation, you're on your own. MSI's user manual has excellent installation instructions, including illustrations and schematics of the board's parts. Finally, Soyo's thin manual offers the basics, but it doesn't provide sufficient step-by-step directions for novice PC builders.

For additional help and guidance, you can find a wealth of information online, whether in forums, on Usenet, or at vendors' Web sites. For instance, AMD and Intel provide information on their sites regarding how to install a processor.

PUTTING IT ALL TOGETHER

INSTALLING YOUR new board probably won't be hassle-free: In only half of our test cases did installation go without a hitch, and that was thanks largely to the skill of Elliott Kirschling, a senior perfor-

mance analyst in the PC World Test Center and an experienced PC builder. The other four motherboards threw up some unexpected roadblocks, but none of the problems we encountered proved catastrophic. For instance, Abit's documentation didn't specify which Serial ATA chip is on the motherboard, and we couldn't easily find the right choice on the installation screen. When we picked the wrong Serial ATA chip from the list, we had to start the installation over again.

In case you get stuck and need to talk to a human, many vendors offer phone support, but good luck finding the numbers: Most motherboard makers don't list a support number prominently in manuals or online but instead direct you to send an e-mail to tech support via their Web site or to look in their online forums.

—Alexandra Krasne ■

View Live Video From **Anywhere** in The World!

Attach our live video camera to your **Wireless-B (802.11b)** network, and view the video from anywhere in the world using your web browser! Watch the home or office while you're away, or look in on your children, pets, or property. There's even a Security Mode which automatically sends an email with a video clip when motion is detected.

Includes a free trial
of our **SoloLink™** service so you can
give your camera your own
easy-to-remember
Internet name



WVC11B
Wireless-B Internet
Video Camera

amazon.com.

COMPUSA
WHERE AMERICA BUYS TECHNOLOGY.

STAPLES
that was easy.™

Visit Linksys.com today for product
details, or call our Advice Line at:
1-800-737-7201.

Specifications are subject to change without notice. Linksys is a registered trademark or trademark of Cisco Systems, Inc. and/or its affiliates in the U.S. and certain other countries. Copyright © 2003 Cisco Systems, Inc. All rights reserved.

CISCO SYSTEMS



TOP 15 DESKTOP PCs

	POWER SYSTEM	Overall rating	Street price (12/12/03)	PC WorldBench 4 performance score ¹	Faster	Comments
1	Best BUY ABS Awesome 6300 find.pcworld.com/39152	90	Expensive \$3600	Windows XP Professional	Outstanding 142	This ABS machine is one of the fastest systems we've tested with business applications and games. (★★★★★ Jan 04)
2	MPC Millennia 920i Professional find.pcworld.com/37835	88	Average \$2592	Windows XP Home	Good 127	A dual-format DVD burner and Pinnacle's Studio 8.5 make this roomy model a good choice for video creation. (★★★★★ Nov 03)
3	Dell Dimension 8300 find.pcworld.com/39452	87	Average \$2899	Windows XP Home	Good 128	We liked the clean text on Dell's 17-inch LCD and the speakers' great-sounding audio. The model bundles Office XP. (★★★★★ Feb 04)
4	Micro Express MicroFlex 64 KB find.pcworld.com/39365	87	Inexpensive \$1999	Windows XP Home	Outstanding 141	Inexpensive 64-bit PC sped through PC WorldBench 4; top components include a 19-inch LCD and a fast graphics card. (★★★★★ Feb 04)
5	Polywell Poly 900NF3-FX1 find.pcworld.com/39149	85	Expensive \$3250	Windows XP Professional	Outstanding 142	Acing our gaming tests with sky-high frame rates in Unreal Tournament 2003, this PC ties for fastest model on our chart. (★★★★★ Jan 04)
6	Sys Technology Performance 3200+/64 find.pcworld.com/40013	85	Expensive \$3396	Windows XP Professional	Outstanding 141	High-performance system displayed bright, colorful images on the bundled monitor; chassis offers plenty of room for upgrades. (★★★★★)
7	ABS Awesome 5500 Extreme find.pcworld.com/40166	84	Average \$2799	Windows XP Home	Good 130	System uses Intel's game-centric chip. It produced top-notch frame rates in gaming tests, but the monitor was mediocre. (★★★★★)

	VALUE SYSTEM	Overall rating	Street price (12/12/03)	PC WorldBench 4 performance score ¹	Faster	Comments
1	Best BUY Dell Dimension 4600 find.pcworld.com/38510	90	Inexpensive \$1049	Windows XP Home	Good 123	This PC produced solid frame rates in our graphics tests, making it ideal for gaming. (★★★★★ Dec 03)
2	Micro Express MicroFlex 3000D find.pcworld.com/40007	84	Inexpensive \$999	Windows XP Home	Very good 130	Nicely designed tall black tower is highly expandable and functional; graphics performance is middling. (★★★★★)
3	NuTrend Kila 2 find.pcworld.com/39461	83	Very inexpensive \$899	Windows XP Home	Very good 125	Light on the extras, this sub-\$1000 budget PC is an excellent choice for the casual gamer and multimedia dabbler. (★★★★★ Feb 04)
4	Polywell Poly 900VF find.pcworld.com/40004	82	Average \$1357	Windows XP Home	Outstanding 136	Fastest PC on our value chart when running productivity applications but graphics performance was disappointing. (★★★★★)
5	HP Compaq Business Desktop D330 find.pcworld.com/39464	82	Expensive \$1636	Windows XP Home	Good 123	Business system is easy to set up, and its DVD playback and sound system performed well in our tests. (★★★★★ Feb 04)
6	IBuyPower Dream 2004 find.pcworld.com/40001	82	Inexpensive \$1203	Windows XP Home	Very good 125	Has the look of a gaming machine, with a fancy front panel and side window. It turned in low frame rates in our tests, however. (★★★★★)
7	EMachines T3025 find.pcworld.com/39998	82	Inexpensive \$1148	Windows XP Home	Very good 129	A large hard drive and solid overall performance highlight this system; the included monitor lacked vibrancy in our graphics tests. (★★★★★)
8	Tangent UltraBox Multimedia PC find.pcworld.com/39995	77	Very expensive \$1895	Windows XP Professional	Good 120	Stylish, shoe-box-size entertainment PC has a TV tuner, and an AM/FM radio and CD player that work independently of the PC. (★★★★★)

Go to find.pcworld.com/10860 for details on PC World's Star Ratings.

Go to find.pcworld.com/39209 for a breakdown of the weightings we give to the various factors that contribute to a desktop PC's overall rating in each of the two categories.

¹ Performance word scores reflect comparisons of PCs in the same category (power or value) running the same operating system. See find.pcworld.com/15720 for more details.

² Total capacity in gigabytes (may represent multiple drives).

TEST
Center

FEW COMPUTERS CAN START a conversation, but the compact Tangent UltraBox Multimedia PC is an attention getter.

About the size of miniature stereo system—the chassis measures 8 inches wide by 13 inches deep, and stands just 6 inches tall—this PC could fit as comfortably in your living room as on your desk. Besides including a dual-format DVD burner and TiVo-like video-recording software (InterVideo's WinDVR), the UltraBox has an AM/FM radio, which you can

use as a stand-alone stereo system (for CD and MP3 CD playback), without having to turn on the computer.

You'll pay more for this chic chassis than you would for a typical value system, though: Our test configuration of the UltraBox PC, which included a TV tuner card, came in at just under \$1900.

Another noteworthy debutant is Polywell's \$1357 Poly 900VF, the first value-

Visit find.pcworld.com/39317 for reviews of all products tested this month and ranked in this chart.

	CPU	RAM (MB/type)	Hard drive ²	Monitor	Graphics	Case type ³	Optical drives	Other features ⁴	Graphics quality	Setup and ease of use	Vendor's reliability/service
	2.2-GHz Athlon 64 FX-51	1024/DDR400 SDRAM	240 [RAID]	19-inch LCD	256MB Sapphire Radeon 9800 Pro	Midsized tower	4X DVD±RW and 16X DVD-ROM drives	Flash media reader (CFI/II, MS, SD/MMC, SM) ⁵ Microsoft Works Suite 2003	Very good	Good	Good/*
	3.2-GHz Pentium 4	1024/DDR400 SDRAM	250	19-inch CRT	128MB ATI Radeon 9800 Pro	Midsized tower	DVD±RW and 48X CD-RW/16X DVD-ROM drives	Pinnacle Studio 8.5	Very good	Good	Good/*
	3.2-GHz Pentium 4	1024/DDR400 SDRAM	120	17-inch LCD	128MB ATI Radeon 9800 Pro	Midsized tower	16X DVD-ROM and 48X CD-RW drives	Microsoft Office XP Small Business	Very good	Very good	Good/Fair
	2.0-GHz Athlon 64 3200+	1024/DDR400 SDRAM	120	19-inch LCD	128MB ATI Radeon 9800 Pro	Midsized tower	DVD-R/RW and 52X CD-RW drives	Flash media reader (CFI/II, MS, SD/MMC, SM) ⁵	Very good	Very good	*/
	2.2-GHz Athlon 64 FX-51	1024/DDR400 SDRAM	286 [RAID]	19-inch CRT	256MB Gainward FX PowerPack Ultra/1600 XP	Midsized tower	DVD±RW and 52X CD-RW drives	250MB removable hard drive, games	Very good	Good	*/
	2.0-GHz Athlon 64 3200+	512/DDR400 SDRAM	200	19-inch LCD	128MB ATI Radeon 9800 Pro	Midsized tower	DVD±R/RW and 16X DVD-ROM drives	Corel WordPerfect Productivity Pack	Very good	Good	*/
	3.2-GHz Pentium 4 Extreme	1024/DDR400 SDRAM	160	17-inch LCD	256MB ATI Radeon 9800 XT	Midsized tower	DVD±RW and 16X DVD-ROM drives	Flash media reader (CFI/II, MS, SD/MMC, SM) ⁵ , Gigabit NIC, Microsoft Works Suite 2003	Good	Outstanding	Good/*
	2.8-GHz Pentium 4	512/DDR400 SDRAM	80	17-inch LCD	128MB NVIDIA GeForce FX 5200	Minitower	16X DVD-ROM drives and 48X CD-RW	Corel WordPerfect Productivity Pack	Good	Good	Good/Fair
	2.17-GHz Athlon XP 3000+	512/DDR400 SDRAM	120	15-inch LCD	128MB ATI Radeon 9600 Pro	Midsized tower	16X DVD-ROM/52X CD-RW combo drive	Flash media reader (CFI/II, MS, SD/MMC, SM) ⁵	Good	Good	*/
	1.83-GHz Athlon XP 2500+	512/DDR333 SDRAM	80	17-inch CRT	128MB NVIDIA GeForce FX 5200	Midsized tower	16X DVD-ROM and 52X CD-RW drives	Logitech Z-640 5.1 speakers	Good	Good	*/
	2-GHz Athlon 64 3200+	512/DDR400 SDRAM	80	17-inch CRT	128MB NVIDIA GeForce FX 5200	Midsized tower	16X DVD-ROM and 52X CD-RW drives	Duke Nukem	Good	Good	*/
	3-GHz Pentium 4	512/DDR400 SDRAM	80	15-inch LCD	128MB NVIDIA GeForce FX 5200	Minitower	16X DVD-ROM/48X CD-RW combo drive	None	Fair	Very good	Fair/Fair
	3-GHz Pentium 4	512/DDR400 SDRAM	120	19-inch CRT	128MB NVIDIA GeForce FX 5200	Midsized tower	DVD±RW and 16X DVD-ROM drives	Gamer's case with side-panel window	Poor	Good	*/
	2.17-GHz Athlon XP 3000+	512/DDR333 SDRAM	160	17-inch LCD	Integrated NVIDIA GeForce4 MX graphics using main memory	Minitower	16X DVD-ROM and 48X CD-RW drives	Flash media reader (CFI/II, MS, SD/MMC, SM) ⁵	Poor	Fair	Good/Good
	2.8-GHz Pentium 4	512/DDR333 SDRAM	80	17-inch LCD	128MB NVIDIA GeForce FX 5200	Desktop	DVD±RW drive	Flash media reader (CFI/II, MS, SD/MMC, SM) ⁵ , TV tuner	Good	Very good	*/

² Vertical cases are towers (over 20 inches), midsized towers (15.5 to 20 inches), or minitowers (under 15.5 inches). Horizontal cases are desktops (5 inches or taller) or compacts (under 5 inches).

⁴ Unless otherwise stated, systems come with a modem and a network adapter.

⁵ CF = CompactFlash, MMC = MultiMediaCard, MS = Memory Stick, SD = SD memory card, SM = SmartMedia.

⁶ Insufficient data to give a rating.

priced system we've tested that's equipped with AMD's 64-bit Athlon chip. Ranked fourth, this machine, not surprisingly, blasted past the other systems on the value chart, posting a PC WorldBench 4 score of 136, about 5 percent better than its closest competitor—a Micro Express MicroFlex 3000D that came equipped with a 2.17-GHz Athlon XP 3000+ CPU. But to achieve its \$1357 price (low for its

feature set), the Poly 900VF arrived bundled with an inferior monitor—the AOC 7ELR, a 17-inch CRT that did very poorly in our graphics tests and wearied our eyes with its fuzzy text.

Although Micro Express's MicroFlex 3000D couldn't match the performance of the Poly 900VF, it did beat the Polywell model by several hundred dollars on price, sneaking in at under \$1000—▶



TANGENT'S STYLISH UltraBox Multimedia PC can be used as a stand-alone audio system.

and that's with a decent 15-inch NEC MultiSync LCD1560V+ monitor.

Rounding out the newcomers to this month's value chart are the sixth-ranked IBuyPower's \$1203 Dream 2004 and the number seven EMachines' \$1148 T3025. Our test configuration of the Dream 2004 included some components not usually found at this price: The 3-GHz Pentium 4 PC came with a 120GB hard disk, a 128MB NVidia GeForce FX 5200 graphics card, a dual-format DVD burner, and a DVD-ROM drive. It turned in subpar graphics performance; for example, on our Unreal Tournament test at 1280 by 1024 resolution and 32-bit color depth, the Dream 2004's frame rate dropped to a sluggish 23 frames per second (about a 33 percent drop in performance compared with the Poly 900VF on the same test).

The EMachines T3025, with a 2.17-GHz Athlon XP 3000+ processor, proved to be a very good performer, garnering a re-

spectable 129 on our PC WorldBench 4 tests—the third-highest score on this month's value chart. However, the T3025, which uses integrated NVidia GeForce4 MX graphics, didn't fare as well on our graphics tests. Though this model's sleek black minitower leaves little room for future upgrades, it does come configured with both CD-RW and DVD-ROM drives and a capacious 160GB hard disk. The matching EMachines 17-inch LCD monitor, the E17T (which accounts for about \$500 of the system's total cost), didn't wow us—colors were disappointing—but it produced clear text on our tests.

Meanwhile, this month's power chart saw only subtle changes, with several systems either holding steady or moving up a notch. New systems from Sys Technology and ABS came in at sixth and seventh, respectively. Of the two, the \$3396 Sys Performance 3200+/64's components are slightly more modest—yet that didn't

prevent our test configuration from posting a big number on our PC WorldBench 4 tests. This 2-GHz Athlon 64 3200+ system, equipped with 512MB of DDR400 SDRAM (half the amount we usually see on power desktops), nevertheless earned a score of 141, trailing the performance leaders (the ABS Awesome 6300 and the Polywell 900NF3-FX1) by just 1 point.

Debuting in seventh is ABS's \$2799 Awesome 5500 Extreme, which uses Intel's gaming-oriented processor, the 3.2-GHz Pentium 4 Extreme Edition.

Aided by 1GB of DDR400 SDRAM and a 256MB ATI Radeon 9800 XT graphics card, this ABS system ranked near the top of the heap on all of our game-centric graphics tests. And it earned a score of 130 on PC WorldBench 4, nearly 3 points better than the average mark we've recorded for similarly configured, standard 3.2-GHz Pentium 4-based systems.

—Melissa J. Perenson ■

TECH TREND

Where Has the Humble Celeron Gone?

WHEN INTEL INTRODUCED the entry-level Celeron CPU in 1998, it quickly became a mainstay of value desktop PCs. So why don't you see Celeron-based systems on *PC World* charts these days?

The Celeron has lost favor with PC vendors and buyers mainly because Intel's Pentium 4 and AMD's Athlon XP processors outperform it by a wide margin. Though Celerons now reach clock speeds as high as 2.8 GHz, they're limited by a 128K L2 cache and a 400-MHz frontside bus, while the Pentium 4 has four times the cache and twice the bus speed. (Look for our first review of a system based on the new 2.8-GHz Celeron in our May 2004 issue.)

Systems equipped with Athlon XP CPUs routinely perform better than ones using Pentium 4s in PC WorldBench 4 tests. More important, Athlon processors cost little more than Celerons—a development that has profoundly influenced the market for low-price, sub-\$600 PCs.

In retail stores, where Celeron traditionally has been a strong seller on inexpensive PCs, the Celeron continues to have clout. But its dominance at retail is feeling some heat from the Athlon XP.

According to research firm The NPD Group, which tracks U.S. sales of PCs,

Athlon XP-based systems commanded 41 percent of retail sales in October 2003, 5 percent more than Celeron-based systems and nearly double their level of retail sales a year earlier. Systems using the Celeron CPU held 42 percent of sales in 2002.

"One of the reasons [for the Athlon's eating into Celeron sales] is that AMD has been dead focused on that entry-level price," explains Stephen Baker, an analyst with The NPD Group. AMD fired its latest salvo in the pricing battle last December, when it released a low-cost version of the 2-GHz Athlon 64 3000+ that has only 512K of cache, half the cache found in the standard version of the chip (see find.pcworld.com/40169 for more details).

"The majority of retail PC [packages] are under \$1000 now," observes Gary Elsasser, vice president of technology and platform development at EMachines. "And a \$479 computer will do just about anything users need to do," except CPU-intensive tasks like video editing and gaming.

So you'll rarely find DVD burners, huge hard disks, or high-performance graphics cards in Celeron-based systems. Both of EMachines' top-selling computers in the fourth quarter of 2003 used a Celeron CPU, and both sold for under \$500 in stores.





shop.kingston.com



HOME | SPECIALS | SITE MAP | ORDER INFO | MY ACCOUNT | SHOPPING CART

FIND MEMORY

DIGITAL MEDIA

HYPERX

VALUERAM

SPECIALS

Find ValueRAM Memory

Select the memory specification you require from the list below, then click **FIND**:

DDR memory



Additional search options:

- By Motherboard
- By Part Number

SPOTLIGHT

FREE SHIPPING

on all
orders

See website
for details.



Get ValueRAM™ —
Kingston's high-quality, cost
effective generic memory solution.



\$25* **OFF**
PC2100 or PC2700
266MHz or 333MHz
512MB DDR
with mail-in rebate

\$20* **OFF**
PC3200
400MHz
512MB DDR
with mail-in rebate

Check out our specials at
www.shop.kingston.com/pcworld

*Offer valid in the United States only while supplies last. LIMIT ONE unit, per part number (ECC product not eligible), per customer for the promotional period. Product is not intended for resale. Offer valid January 31, 2004 through February 26, 2004. See rebate form for complete terms and conditions pertaining to the rebate. This offer cannot be combined with any other promotion, discount or rebate and is subject to change at any time at Kingston's sole discretion. Check web site for most current price and availability.

Kingston
TECHNOLOGY



TOP 15 NOTEBOOK PCs

DESKTOP REPLACEMENT		Overall rating	Street price (12/5/03)	PC WorldBench 4 performance score ¹	Faster	Comments
1	Best BUY Gateway 450XL find.pcworld.com/38528	81	Expensive \$2279	Windows XP Professional	Very good 125	An unremarkable exterior conceals such top-notch features as built-in Wi-Fi, very good battery life, and upgradability. (★★★★★ Dec 03)
2	Dell Latitude D600 find.pcworld.com/36077	79	Average \$1887	Windows XP Professional	Very good 122	Midweight machine has legacy ports, but unappealing sound and a springy keyboard. (★★★★★ Aug 03)
3	HP Compaq Business Notebook Nx7000 find.pcworld.com/37664	77	Average \$1975	Windows XP Professional	Very good 123	This wide-screen notebook incorporates many attractive design touches, but the keyboard feels flimsy. (★★★★★ Nov 03)
4	Toshiba Tecra M1 find.pcworld.com/37022	74	Very expensive \$3049	Windows XP Professional	Good 113	Stylish notebook boasts phenomenal battery life, powerful speakers, and many upgrade options via its multipurpose bay. (★★★★★ Oct 03)
5	MPC TransPort X1000 find.pcworld.com/40046	73	Expensive \$2308	Windows XP Professional	Good 110	All-in-one heavyweight offers desktop comfort and extra storage options, as well as a fingerprint reader for security. (★★★★★ Jan 04)
VALUE NOTEBOOK		Overall rating	Street price (12/5/03)	PC WorldBench 4 performance score ¹	Faster	Comments
1	Best BUY IBM ThinkPad R50 find.pcworld.com/40025 NEW	82	Average \$1699	Windows XP Home	Good 117	Well-rounded, affordable laptop turns in strong performance, and has long battery life and a great keyboard. (★★★★★)
2	IBM ThinkPad T41 find.pcworld.com/39476	80	Expensive \$2039	Windows XP Professional	Very good 123	Eraserhead and mouse buttons feel a bit flimsy, and the battery is awkward to remove, but the overall design is still pleasing. (★★★★★ Feb 04)
3	ABS Zensation Z3 find.pcworld.com/40028 NEW	79	Inexpensive \$1599	Windows XP Home	Very good 126	Fairly basic notebook has wireless connectivity but lacks some of the amenities of other models. (★★★★★)
4	WinBook C120 find.pcworld.com/39479	79	Inexpensive \$1499	Windows XP Professional	Very good 122	Lean budget model boasts a DVD burner, all the latest connections, and music controls—but only so-so sound. (★★★★★ Feb 04)
5	Polywell PolyNote 3015N find.pcworld.com/40040 NEW	79	Average \$1750	Windows XP Home	Outstanding 129	Strong performer loaded with RAM aced our PC WorldBench 4 tests, and offers good battery life. (★★★★★)
ULTRAPORTABLE		Overall rating	Street price (12/5/03)	PC WorldBench 4 performance score ¹	Faster	Comments
1	Best BUY IBM ThinkPad X31 find.pcworld.com/39512	80	Average \$1698*	Windows XP Professional	Good 116	This near-perfect small notebook's only flaw: The optical drive is located in a separate \$199 docking station. (★★★★★ Feb 04)
2	Toshiba Portégé M100 find.pcworld.com/38870	79	Expensive \$2099	Windows XP Professional	Good 115	Sporty notebook almost does it all, with a good keyboard, solid performance, strong audio, and a long battery life. (★★★★★ Jan 04)
3	Dell Latitude X300 find.pcworld.com/38531	76	Expensive \$2366*	Windows XP Professional	Good 116	On its own, this portable weighs just 3 pounds; its 1.9-pound media slice adds a full set of connections and great sound. (★★★★★ Dec 03)
4	Sharp Actius AV18P find.pcworld.com/38873	73	Inexpensive \$1449	Windows XP Professional	Poor 95	Basic thin-and-light offers Wi-Fi computing on the go, but only so-so typing and a hard-to-remove battery. (★★★★★ Jan 04)
5	Fujitsu LifeBook P5020 find.pcworld.com/39482	64	Average \$1899	Windows XP Professional	Fair 107	Relatively compact for a portable with a modular bay, the P5020 has a small screen and is somewhat slow. (★★★★★ Feb 04)

Go to find.pcworld.com/10860 for details on PC World's Star Ratings. Go to find.pcworld.com/40049 for a breakdown of the weightings we give to the various factors that contribute to a notebook's overall rating in each of the three categories.

¹ See "Your Guide to the Top 100" at find.pcworld.com/15720 for more details.

² All Intel CPUs listed are SpeedStep chips, which run at a slower speed on battery power. (We performance-test all notebooks plugged in.)

³ Features listings are not exhaustive.

⁴ Unless otherwise noted, all notebooks come with a lithium ion battery.

⁵ Includes computer, AC adapter, power cord, optical drive, and floppy drive (if offered).

AFFORDABLE NOTEBOOKS ARE THE BIG NEWS this month.

IBM's \$1699 ThinkPad R50 lands in the Best Buy spot on our value list, with more features than you'll find in most notebooks at this price. Highlights include dual pointing devices and the trademark comfortable IBM keyboard. The optical drive bay is modular, which

means you can swap out the notebook's DVD-ROM/CD-RW combination drive for a second battery, a second hard drive, or another optional device sold by IBM.

Two other portables for the budget-minded make their way onto the chart as well. The \$1599 ABS Zensation Z3 and

Visit find.pcworld.com/40052 for reviews of all products tested this month and ranked in this chart.

	CPU *	Screen (inches)	RAM (MB)	Hard drive (GB)	Pointing device	Bays and optical drives	Other features †	Overall design	Battery life (hours:min) ‡	Average weight (pounds) §	Vendor's reliability/service
	1.7-GHz Pentium M	15.1	512	60	Touchpad	One multipurpose bay with 8X DVD-ROM and 24X/10X/24X CD-RW combo drive	802.11g, six-in-one media card reader, Microsoft Works 7	Very good	Very good/ 4:59	Average/ 8.1	Good/Good
	1.6-GHz Pentium M	14.1	512	40	Touchpad, eraserhead	One multipurpose bay with 8X DVD-ROM and 24X/10X/24X CD-RW combo drive	802.11b, Smart Card reader	Good	Good/ 3:26	Light/ 6.5	Good/Fair
	1.6-GHz Pentium M	15.4 (wide)	512	60	Touchpad	Fixed 8X DVD-ROM and 24X/10X/24X CD-RW combo drive	Bluetooth	Good	Fair/ 3:00	Average/ 7.6	Good/Poor
	1.6-GHz Pentium M	14.1	512	40	Touchpad, eraserhead	One multipurpose bay with DVD-R/RW/RAM drive	802.11b, FireWire, SD slot, gigabit ethernet	Very good	Outstanding/ 6:42 ‡	Average/ 7.1	Good/Fair
	2.4-GHz Pentium 4	15	512	60	Touchpad	One multipurpose bay with 8X DVD-ROM and 24X/10X/24X CD-RW combo drive	Microsoft Office XP SBE	Good	Fair/ 2:02	Heavy/ 9.0	'/'
	CPU *	Screen (inches)	RAM (MB)	Hard drive (GB)	Pointing device	Bays and optical drives	Other features †	Overall design	Battery life (hours:min) ‡	Average weight (pounds) §	Vendor's reliability/service
	1.4-GHz Pentium M	14.1	256	40	Touchpad, eraserhead	One multipurpose bay with 8X DVD-ROM and 24X/24X/24X CD-RW combo drive	802.11b, S-Video-out port	Outstanding	Good/ 4:04	Light/ 6.5	Good/Good
	1.6-GHz Pentium M	14.1	512	40	Touchpad, eraserhead	One multipurpose bay with 8X DVD-ROM and 16X/10X/24X CD-RW combo drive	802.11b, Bluetooth, gigabit ethernet	Good	Good/ 4:19	Light/ 5.9	Good/Good
	1.6-GHz Pentium M	14.1	512	60	Touchpad	One multipurpose bay with 8X DVD-ROM and 24X/10X/24X CD-RW combo drive	802.11b	Very good	Very good/ 4:32	Light/ 6.4	'/'
	1.4-GHz Pentium M	14.1	512	40	Touchpad	One multipurpose bay with DVD-R/RW drive	802.11b; SmartMedia, SD, and Memory Stick slots	Good	Very good/ 4:46	Average/ 6.9	'/'
	1.6-GHz Pentium M	15	1024	60	Touchpad	One multipurpose bay with 8X DVD-ROM and 24X/10X/24X CD-RW combo drive	802.11a/b, Bluetooth, SD slot	Good	Good/ 3:58	Average/ 7.2	'/'
	CPU *	Screen (inches)	RAM (MB)	Hard drive (GB)	Pointing device	Bays and optical drives	Other features †	Overall design	Battery life (hours:min) ‡	Average weight (pounds) §	Vendor's reliability/service
	1.3-GHz Pentium M	12.1	512	20	Eraserhead	8X DVD-ROM and 24X/10X/24X CD-RW combo drive*	802.11b, CompactFlash slot	Very good	Very good/ 4:49	Light/ 6.4	Good/Good
	1.2-GHz Pentium M	12.1	256	40	Eraserhead	One multipurpose bay with 8X DVD-ROM and 24X/10X/24X CD-RW combo drive	802.11b, FireWire	Very good	Good/ 4:11	Light/ 5.3	Good/Fair
	1.2-GHz Pentium M	12.1	640	40	Touchpad	8X DVD-ROM and 24X/10X/24X CD-RW combo drive*	802.11b/g, SD slot	Very good	Fair/ 2:07	Light/ 6.0	Good/Fair
	1.53-GHz Mobile Athlon XP-M 1800+	12.1	256	40	Touchpad	One multipurpose bay with 8X DVD-ROM and 24X/24X/24X CD-RW combo drive	802.11b, FireWire	Fair	Fair/ 2:55	Light/ 5.1	'/'
	1-GHz Pentium M	10.6	256	60	Touchpad	One multipurpose bay with 8X DVD-ROM and 24X/10X/24X CD-RW combo drive	802.11b, SD and CompactFlash slots	Good	Good/ 4:15	Very light/ 4.7	'/'

* We typically test at a notebook's highest power-conserving setting, but this model's "Super Long Life" and "Long Life" options resulted in an unacceptably dim screen. Instead, we tested at the default "Normal" power setting.

† Insufficient data to give a rating.
‡ Price includes the extra-cost docking station.
§ Multipurpose bay is in docking station.

the \$1750 Polywell PolyNote 3015N are not as sophisticated as the ThinkPad R50, but both achieved higher PC WorldBench 4 scores. The Zensation Z3 includes 802.11b wireless networking and four USB 2.0 ports—two more than most laptops typically have. Polywell's portable has

a DVD-ROM/CD-RW combination drive conveniently located on the front of the case. The laptop also comes with Bluetooth, 802.11b, and 802.11a wireless technologies built-in. An SD (Secure Digital) card slot positioned below the PC Card slot is another useful extra. ■

THE POLYWELL PolyNote 3015N is speedy.



Cash Register Express Software for Windows...\$495

Computerize any type of retail store using Cash Register Express for Windows. Computerization pays for itself, saving you thousands of dollars, giving you peace of mind, and making the best use of your time. Cash Register Express



has more than 250 of the most desired point of sale features to help you leapfrog past your competition by controlling costs, reducing errors and increasing efficiency.

More Software for Your Retail Store

- ◆ Video Express
- ◆ Salon Express
- ◆ Auto Express
- ◆ RestaurantPro Express
- ◆ Barcode Express
- ◆ Label Works
- ◆ Inventory Track Express

- ◆ Credit Card Software
- ◆ All Single or Multiuser

All PC America Software requires Microsoft Windows. The software was written in Visual Basic using Microsoft Access Files. The source code is available.

CASH REGISTER EXPRESS™

More Profit!

More Sales!

More Customers!

*Save Time, Reduce Theft,
Speed Checkout, Increase Accuracy,
Reduce Costs, Make Better Business
Decisions by computerizing
your Retail Store.*

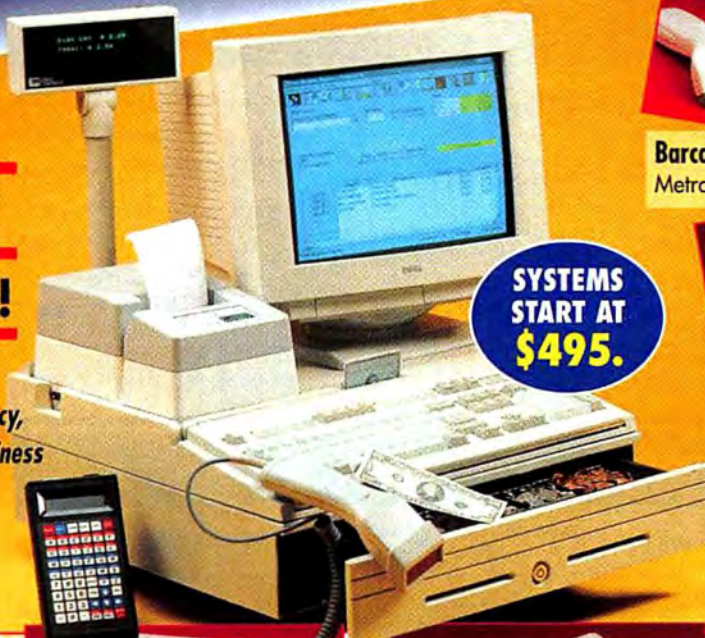


Dealers Wanted!

Join our dealer program. It's **FREE**. It's the fastest way to make money...AND we make it **EASY**.

MORE INFO?

- ◆ Call Toll Free 1-800-722-6374
- ◆ www.pcamerica.com
- ◆ Fax on Demand 1-845-267-3551



**SYSTEMS
START AT
\$495.**



Cash Drawers \$189*
MMF, Logic Controls,
Indiana, APG



Programmable Keypads \$495*
Logic Controls, Cherry, Genovation
Credit Card Readers \$189*
Unitech, Mag-Tek

*All prices depend on make and model.



Barcode Scanners \$495*
Metrologic, Symbol, NJCR, Percon, PSC



Receipt Printers \$299*
Star, Ithaca, Citizen, Epson



Barcode Printers \$799*
Cognitive Solutions Barcode Blaster



Pole Displays \$289*
Logic Controls



Portable Data Collectors \$695*
American Microsystems AMS3000

1-800-PC-AMERICA

Call Toll Free 1-800-722-6374
PH: 1-845-267-3500
FX: 1-845-267-3550

PC America
60 N. Harrison Ave.
Congers, NY 10920



TOP 10 PRINTERS

TOP 100

TEST
Center

Visit find.pcworld.com/40208 for reviews of all products tested this month and ranked in this chart.

IF YOU'RE LOOKING FOR a low-volume color laser, there's a medley of new, affordable models—some costing under \$800. The trade-off for the budget price is slower print speeds and fewer features. But you don't have to sacrifice everything: The new \$1299 Xerox Phaser 8400N, for instance, supports

PostScript (atypical for a low-priced color laser) and has a built-in duplexer. The new \$699 Samsung CLP-500, which missed the chart, has a built-in duplexer, though its network interface costs extra. Oki Data's network-ready Oki C5100n prints sharp text, but was the slowest unit on the chart.

	COLOR LASER PRINTER	Street price (12/12/2003) ¹	Overall rating	Speed for plain text/color photos (ppm)	Print quality for text/color graphics	Comments
1	Best BUY Oki Data Oki C7300n find.pcworld.com/33929	\$1990	86	16.9/5.5	Outstanding/ Fair	FEATURES: Rated 24 ppm monochrome/20 ppm color. Standard 64MB of RAM, 1200-by-600-dpi maximum resolution, 630 sheets input, 500 output. SUMMARY: The C7300n did a stellar job when printing monochrome text or line art; and especially in color, it was very fast for the price. Color images, though detailed, had a dotted texture. (★★★★☆ Apr 03)
2	Best BUY Xerox Phaser 8400N find.pcworld.com/39782 NEW	\$1299	81	9.7/5.4	Outstanding/ Good	FEATURES: Rated 12 ppm monochrome/12 ppm color. Standard 128MB of RAM, 600-by-600-dpi maximum resolution, 625 sheets input, 250 output. SUMMARY: This solid-ink printer produced very crisp text and attractive color photos. Line art and gray-scale photos, however, looked unappealing. Built-in duplexer is included. (★★★★☆)
3	Xerox Phaser 7300DN find.pcworld.com/35912	\$4100	81	22.1/6.7	Outstanding/ Fair	FEATURES: Rated 37 ppm monochrome/30 ppm color. Standard 192MB of RAM, 600-by-2400-dpi maximum resolution, 650 sheets input, 600 output. SUMMARY: Still the fastest printer on the chart, this well-designed model printed very sharp text and line art, and it comes with a built-in duplexer. Color photos looked oversaturated and grainy. (★★★★☆ Aug 03)
4	Ricoh Aficio CL5000 find.pcworld.com/33947	\$2999	80	21.3/2.6	Outstanding/ Good	FEATURES: Rated 36 ppm monochrome/10 ppm color. Standard 64MB of RAM, 1800-by-600-dpi maximum resolution, 350 sheets input, 400 output. SUMMARY: The CL5000 printed razor-sharp text at a rapid clip, and it can handle banner-size (12-by-18-inch) paper. It's slow at printing in color, however. (★★★★☆ Apr 03)
5	Oki Data Oki C9500dxn find.pcworld.com/33932	\$4765	80	19.5/5.1	Outstanding/ Fair	FEATURES: Rated 37 ppm monochrome/30 ppm color. Standard 320MB of RAM, 1200-by-1200-dpi maximum resolution, 650 sheets input, 500 output. SUMMARY: The C9500dxn has a long list of features, including lots of RAM, and it was consistently fast in our tests. It generated extremely good-looking text. (★★★★☆ Apr 03)
6	HP Color LaserJet 5500n find.pcworld.com/33941	\$3550	80	12.5/5.0	Outstanding/ Good	FEATURES: Rated 21 ppm monochrome/21 ppm color. Standard 96MB of RAM, 600-by-600-dpi maximum resolution, 600 sheets input, 250 output. SUMMARY: The 5500n turned out great text and line art, but it produced dark, muddy gray-scale images. Though it printed color photos quickly, its other times were average. (★★★★☆ Apr 03)
7	Panasonic KX-CL500 find.pcworld.com/35909	\$1199	79	13.4/3.1	Outstanding/ Fair	FEATURES: Rated 21 ppm monochrome/16.9 ppm color. Standard 64MB of RAM, 1200-by-1200-dpi maximum resolution, 630 sheets input, 250 output. SUMMARY: The KX-CL500 printed excellent text; but diagonal lines were jagged, and color photos looked splotchy and fuzzy. Control panel menus were easy to navigate. Price has dropped \$400. (★★★★☆ Aug 03)
8	Konica Minolta Magicolor 2300 DL find.pcworld.com/33926	\$799	79	11.3/2.7	Very good/ Good	FEATURES: Rated 16 ppm monochrome/4 ppm color. Standard 32MB of RAM, 600-by-2400-dpi maximum resolution, 200 sheets input and output. SUMMARY: This surprisingly capable small-office printer has a great price. It produced sharp text, though not quite up to the standard set by other units. (★★★★☆ Apr 03)
9	Brother HL-4200CN find.pcworld.com/39785 NEW	\$1999	78	13.0/2.9	Very good/ Fair	FEATURES: Rated 26 ppm monochrome/26 ppm color. Standard 64MB of RAM, 1200-by-1200-dpi maximum resolution, 600 sheets input, 250 output. SUMMARY: Text looked crisp, though a burlap-like texture marred black-and-white and color photos, both of which lacked detail in shadows. Built-in duplexer is included. (★★★★☆)
10	Oki Data Oki C5100n find.pcworld.com/39788 NEW	\$799	78	9.5/3.3	Outstanding/ Fair	FEATURES: Rated 20 ppm monochrome/12 ppm color. Standard 32MB of RAM, 1200-by-600-dpi maximum resolution, 400 sheets input, output not rated. SUMMARY: The C5100n printed razor-sharp text. Line art, however, didn't look crisp. Color photos lacked detail and had a very reddish cast. Black-and-white photos showed good detail. (★★★★☆)

FOOTNOTE: ¹ All street prices include a network interface for the printer. **HOW WE TEST:** We run time tests for text, line-art, and color and gray-scale photo samples; then a panel of judges rates image quality. Data based on tests designed and conducted by the PC World Test Center. All rights reserved. See find.pcworld.com/10860 for details on PC World's Star Ratings. **CHART NOTES:** The overall rating for color laser printers is based on print quality (25 percent), price (25 percent), features (15 percent), ease of use (15 percent), speed (10 percent), and service and support (10 percent). For all ratings, higher is better.



A movie ticket costs eight bucks, but the #1 selling website hosting solution is just \$7.95.

What's the catch?

Surprise! No catch. Just sign up for an annual hosting plan with iPowerWeb, and believe it or not, \$7.95 buys you the #1 selling website hosting solution on the face of the earth. The hosting solution featured in the *Chicago Tribune* and *New York Newsday*, and named "2002 Web Hosting Solution Of The Year" by 100 Best Web Hosting. The solution that gives you all the tools you need to easily get your site up and running fast - even if you have no experience with web hosting. Oh, and we'll even provide a complete web promotion package with the tools and ideas to drive traffic to your site.

All for less than eight bucks a month.

So, whether you're hosting your first site or managing a portfolio of hundreds, log onto www.ipowerweb.com today and find out the details. You'll be amazed at the features, the support and the bulletproof reliability iPowerWeb gives you for just \$7.95.

With absolutely no catch in sight. In fact, tell us where you saw this advertisement and we'll give you a full month's hosting free.



IPOWERWEB

The Power Behind eBusiness.

www.ipowerweb.com/pcworld
(888) 511-HOST



TOP 10 DIGITAL CAMERAS

Visit find.pcworld.com/40295 for reviews of all products tested this month and ranked in this chart.

NIKON'S COOLPIX 3700 IS PRICEY for a 3.2-megapixel camera, but it earned the highest image-quality scores of any point-and-shoot we've tested recently. It also adds features that are missing in the lower-priced Coolpix 3100 (a previous Best Buy), such as audio recording and the ability to shoot in

time-lapse mode. Offering up high, 5-megapixel resolution and impressive imaging at a low price, Toshiba's new PDR-5300 also comes with advanced creative controls. This month's last newcomer, Gateway's DC-M42, is a simple camera, suitable for the most casual of photographers.

	POINT-AND-SHOOT CAMERA	Street price (12/29/03)	Overall rating	Image quality	Ease of use	Battery life/shots	Comments'
1	Best Buy Nikon Coolpix 3700 NEW find.pcworld.com/40298	\$400	79	Very good	Good	Good/ 364	FEATURES: 3.2-megapixel resolution, 16MB SD card, 35mm to 105mm focal range, 640 by 480 video with audio, 5.8 ounces. SUMMARY: Impressive imaging and a good blend of features at a reasonable price. Includes some advanced functions, such as the ability to shoot in time-lapse movie mode. (★★★★☆)
2	Best Buy Canon PowerShot A70 find.pcworld.com/36512	\$300	79	Good	Good	Good/ 319	FEATURES: 3.2-megapixel resolution, 16MB CompactFlash card, 35mm to 105mm focal range, 640 by 480 video with audio, 11.1 ounces. SUMMARY: Bargain price for a relatively advanced point-and-shoot; model has an extensive complement of manual controls and takes optional add-on lenses. (★★★★☆ Sept 03)
3	Canon PowerShot SD100 Digital Elph find.pcworld.com/38789	\$300	78	Good	Very good	Fair/ 200	FEATURES: 3.2-megapixel resolution, 16MB SD card, 35mm to 70mm focal range, 640 by 480 video with audio, 6.6 ounces. SUMMARY: This budget-priced unit from the popular Digital Elph line is small and rugged, but a 2X optical zoom is short—most cameras in its price range come with at least a 3X zoom. (★★★★☆ Jan 04)
4	Kodak EasyShare DX6440 find.pcworld.com/38795	\$400	77	Good	Very good	Good/ 363	FEATURES: 4-megapixel resolution, 16MB internal memory plus SD slot, 33mm to 132mm focal range, 320 by 240 video with audio, 9.9 ounces. SUMMARY: The 4X optical zoom on this stylish model is longer than most point-and-shoots. The camera can connect to an included docking station or an optional printer. (★★★★☆ Jan 04)
5	Toshiba PDR-5300 NEW find.pcworld.com/40301	\$250	77	Very good	Good	Fair/ 231	FEATURES: 5-megapixel resolution, 16MB SD card, 35mm to 105mm focal range, 320 by 240 video with audio, 7.5 ounces. SUMMARY: This camera has a good set of features and a big resolution for a low price. A plus: Its rare backlight control can be an asset when you're shooting in difficult lighting conditions. (★★★★☆)
6	Sony Cyber-shot DSC-P10 find.pcworld.com/38468	\$450	75	Fair	Outstanding	Fair/ 206	FEATURES: 5-megapixel resolution, 32MB Memory Stick, 38mm to 114mm focal range, 640 by 480 video with audio, 6.9 ounces. SUMMARY: Small and fun to use, with extra features (like image editing in the camera). The photo quality is unimpressive, however. (★★★★☆ Dec 03)
7	Kyocera Finecam L3v find.pcworld.com/38057	\$250	74	Fair	Good	Good/ 349	FEATURES: 3.2-megapixel resolution, 16MB SD card, 38mm to 115mm focal range, 320 by 240 video with audio, 7.3 ounces. SUMMARY: Oversize, 2.5-inch LCD makes composing and reviewing shots on this camera especially pleasant. Bargain priced for a camera with an aperture-priority mode. (★★★★☆ Nov 03)
8	Gateway DC-M42 NEW find.pcworld.com/40304	\$250	74	Good	Good	Limited/ 70	FEATURES: 4.2-megapixel resolution, 11MB internal memory plus SD slot, 38mm to 114mm focal range, 320 by 240 video without audio, 8.5 ounces. SUMMARY: This basic point-and-shoot lacks the finesse of other models, and its battery life falls extremely short. However, it does turn out decent photos. (★★★★☆)
9	Pentax Optio 555 find.pcworld.com/38798	\$550	74	Good	Good	Very good/ 395	FEATURES: 5-megapixel resolution, 16MB SD card, 37.5mm to 187.5mm focal range, 320 by 240 video with audio, 8.8 ounces. SUMMARY: An advanced camera in a generic point-and-shoot's case, this model includes a 5X optical zoom, an optical viewfinder, and manual exposure controls. (★★★★☆ Jan 04)
10	Minolta DiMAGE G500 find.pcworld.com/38786	\$400	72	Very good	Fair	Fair/ 213	FEATURES: 5-megapixel resolution, 2MB internal memory, 16MB SD card plus Memory Stick slot, 39mm to 117mm focal range, 320 by 240 video with audio, 8 ounces. SUMMARY: High resolution, impressive images, and compatibility with two types of media; but deeply layered menus make some controls slow to reach. (★★★★☆ Jan 04)

FOOTNOTE: ' Resolutions are expressed in effective pixels, focal range is identified as 35mm equivalent, and camera weights include batteries. **HOW WE TEST:** To gauge picture quality, we take a series of shots, with and without flash, at the camera's highest resolution and default settings. We photograph a complex still life and a mannequin to see how well each camera captures details and subtle colorings such as skin tones. A panel of judges reviews the on-screen and printed photos and assigns image-quality scores; we then average those scores. Data based on tests designed and conducted by the PC World Test Center. All rights reserved. **CHART NOTES:** Each camera's overall rating is based on price (25 percent), picture quality (25 percent), ease of use (20 percent), features (10 percent), battery life (10 percent), and support (10 percent). For all ratings, higher is better.

Powered by an Unique, Thin, Light Lithium Ion SuperPolymer® Battery with a Massive 75Wh Capacity

World's Longest Running (up to 9 hours) Laptop / Tablet Combo

Scribbler™ Tablet PC

75Wh SuperPolymer® Battery
Fingerprint Recognition
Detachable Keyboard
Ultra Light (3.1 lbs)
Sleek (0.75" thick)
Intel® Dothan Centrino



From \$2299

LAPTOP

"Scribbler ... Thin Light and out of sight"

PC WORLD

"Breakthrough Battery Technology"

World's highest energy density battery (Electrovaya's unique SuperPolymer® Technology) combines with the Intel® Dothan Centrino to give the ultimate Mobile Laptop/Tablet device.



NASA's Astronauts Need Power: NASA's most mission critical application takes place the moment astronauts leave their space shuttle and have to fix the Hubble telescope or Space Station. Only the best, most reliable, thinnest and longest running battery can meet the needs of these astronauts. NASA selected Electrovaya's Lithium Ion SuperPolymer® technology to power their astronaut's spacesuits for critical space missions. A thin, unique, rechargeable battery boasting the highest energy density.

Picture for a moment what you could do with this battery installed in a Tablet PC. You could take it anywhere and everywhere. Imagine a world of freedom from wires, being untethered to an electrical outlet and the freedom to roam when and where you want. Electrovaya's unique SuperPolymer® battery is the only battery on the market that can realistically meet this growing demand. Whether making the rounds at a busy hospital, preparing for a presentation during that 8-hour flight, or relaxing in a coffee shop, the anxiety of running out of battery power disappears.

Typically, a Tablet PC uses a 27Wh battery, giving mobility for 3 hours. Electrovaya's Scribbler™ packs an incredible 75Wh battery in a super-thin module, delivering up to 9 hours of run-time. Combined with a 1.3 GHz Intel® Dothan Centrino, 512MB of RAM (upgradeable), 60GB HDD (upgradeable) and 802.11g Wi-Fi capabilities, this powerful machine is all about productivity. When you need the best, thinnest, longest-running Tablet PC on the market, the Scribbler is the only choice. It is a Tablet PC which becomes a laptop when connected to the detachable keyboard.

Consider for a moment, the plethora of wireless gadgets you own. Recall how many times they have died in the middle of a business meeting or an important lecture. Stop and ask yourself the question, "are you truly mobile?"



Electrovaya powers unique 250 miles Zero Emission Vehicle



SC 2000 Series Docking Station



Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States and/or other countries. Centrino is a trademark or registered trademarks of Intel Corporation or its subsidiaries in the United States and/or other countries. All other companies and product names are registered trademarks of their organizations in the United States and/or other countries. All specifications, software and their availability are subject to change. All rights are reserved. Scribbler is a trademark of Electrovaya Inc. Battery life may vary depending on product model, configuration, applications, power management settings and features utilized. After a period of time, the battery will lose its ability to perform at maximum capacity and will need to be replaced. This is normal for all batteries. The information, recommendations, and opinions set forth herein are offered solely for your consideration, inquiry and verification and are not, in part or total, to be construed as constituting a warranty or representation for which we assume legal responsibility. Nothing contained herein is to be interpreted as authorization to practice a patented invention without a license.

SC 2000 Series

The ultimate mobile device: Electrovaya's Scribbler Tablet PC just got thinner, lighter and sleeker. The newest member to the Scribbler family: the SC 2000 is powered by a thin, light, unique SuperPolymer® Battery with a massive 75Wh capacity. The wireless enabled Tablet PC comes with a 1.3 GHz Intel® Dothan Centrino chip, 512 MB of RAM (Upgradeable), 60GB Hard Drive (Upgradeable), automatic light sensor, Firewire IEEE 1394, USB 2.0, Built-in WIFI 802.11g card, Built in Fingerprint Recognition (Biometric device) 12.1" screen and much more. Using Microsoft® Windows® XP Tablet PC Edition along with our bundled software, the SC 2000 allows you to take notes and manage projects like you did with pen and paper. The SC 2000 also has the familiarity of a detachable keyboard. With Electrovaya's trademark battery technology, the Scribbler not only looks better than its competitors, it outlasts!! The Scribbler will operate up to 9 hours on a single charge making it the perfect mobile device.

PC WORLD

"One of the busiest booths here at Comdex features a new, lightweight, Tablet PC battery life of nine hours. That's an unprecedented amount of unplugged time that..... blows away what's available today"

NATIONAL POST

"Light 'n' lasting"

PowerPad®

Extend Laptop Mobility by attaching the PowerPad: an external battery



PowerPad® 160
12-16hrs
\$449



PowerPad® 120
8-12hrs
\$299



PowerPad® 80
6-8hrs
\$249



"Ultimate in battery Life"



"It keeps my notebook going for most of the flight from Melbourne to Los Angeles at full power"

electrovaya
www.electrovaya.com

TEL: 1 800 388 2865, 905 855 4610

MORE REVIEWS

MISSED AN ISSUE OF *PC World* or passed your copy along to a friend? Here's a recap of other *Top 100* topics from previous issues. To read reviews of the products ranked on these Top 10 charts, go online and type in the *PC World Find-It*

URL at the top of each chart. In next month's *Top 100* section, we'll review hard drive-based MP3 players, advanced digital cameras, and photo printers. Our Spotlight review for April will take a close look at several new film scanners.



LOOK THIS WAY: The Olympus C-5060 Wide Zoom digital camera comes with an LCD panel that can swivel upward as well as rotate in different directions, giving you more versatility when you're taking shots.

THE BLACKBERRY 7210/7230 phone-and-PDA hybrid delivers good telephone sound quality and has a well-designed thumb keyboard.



ADVANCED DIGITAL CAMERAS find.pcworld.com/39623	PDA's find.pcworld.com/39653	INK JET PRINTERS find.pcworld.com/39425	REWRITABLE DVD DRIVES find.pcworld.com/39113
1 Best BUY Olympus C-5060 Wide Zoom find.pcworld.com/39527	1 Best BUY PalmOne Treo 600 find.pcworld.com/38543	1 Best BUY Canon i350 Color Bubble Jet Printer find.pcworld.com/39191	1 Best BUY Memorex Dual Format DVD Recorder find.pcworld.com/36671
2 Best BUY Canon EOS Digital Rebel find.pcworld.com/38810	2 T-Mobile Sidekick find.pcworld.com/36884	2 Best BUY HP Business Inkjet 1100d find.pcworld.com/38177	2 Best BUY TDK Indi DVD 440N find.pcworld.com/36668
3 Olympus C-750 Ultra Zoom find.pcworld.com/37364	3 BlackBerry 7210/7230 find.pcworld.com/38036	3 Canon i560 Desktop Photo Printer find.pcworld.com/39194	3 LG Electronics GSA-4040B find.pcworld.com/38399
4 Canon PowerShot G5 find.pcworld.com/37358	4 Sony Ericsson P800 find.pcworld.com/36878	4 HP Deskjet 5150 find.pcworld.com/39197	4 TDK External Indi DVD 4X Multiformat find.pcworld.com/39029
5 Nikon Coolpix 5400 find.pcworld.com/37370	5 Samsung SPH-i700 find.pcworld.com/36875	5 Epson Stylus C84 find.pcworld.com/38171	5 Plextor PX-708A find.pcworld.com/38396
6 Olympus C-5000 Zoom find.pcworld.com/39530	1 Best BUY Dell Axim X3i find.pcworld.com/39005	6 HP Deskjet 5850 find.pcworld.com/39200	6 Sony DRU-510A find.pcworld.com/35495
7 Nikon Coolpix 5700 find.pcworld.com/31118	2 HP iPaq Pocket PC H4350 find.pcworld.com/39008	7 Lexmark Z605 find.pcworld.com/35342	7 HP DVD Writer Dvd300i find.pcworld.com/34454
8 Kodak EasyShare DX6490 find.pcworld.com/39524	3 Sony Clié PEG-UX50 find.pcworld.com/36902	8 Canon i475D Desktop Photo Printer find.pcworld.com/38174	8 Pacific Digital Dual Format 4X DVD find.pcworld.com/39032
9 Canon EOS 10D find.pcworld.com/34847	4 PalmOne Tungsten T3 find.pcworld.com/38030	9 Epson Stylus C64 find.pcworld.com/39362	9 Plextor PX-504UF find.pcworld.com/37448
10 Fujifilm FinePix S5000 find.pcworld.com/39533	5 ViewSonic Pocket PC V36 find.pcworld.com/39419	10 HP Deskjet 6122 find.pcworld.com/32903	10 Pioneer DVR-A06 find.pcworld.com/36692
From the February 2004 Issue	From the February 2004 Issue	From the February 2004 Issue	From the January 2004 Issue

HERE'S HOW

EDITED BY MICHAEL S. LASKY, DENNIS O'REILLY, AND ERIC DAHL



INTERNET TIPS

SCOTT SPANBAUER

A Grown-Up's Guide to Instant Messaging

AS IF YOU DIDN'T already spend enough time blocking spam, battling pop-up ads, and replying to every single e-mail message you receive, another Internet communication medium is competing for a chunk of your brain: instant messaging.

Although infamous for its use in chat rooms, where teens and virtually faithless spouses while away the hours, instant messaging is a good way to stay in touch with wired friends, coworkers, and customers. Better yet, IM is free.

As with most Internet tools, the trick to productive instant messaging is knowing how to use it and when not to use it. Here is an overview of available IM services and software, along with some commonsense advice on how to safeguard your privacy and security while you're using them.

IT'S A JUNGLE OUT THERE

TO GET STARTED in the world of instant messaging, you need a connection to the Internet, an account with one of the four

major IM services, and IM client software. The big four are AOL Instant Messenger (AIM), ICQ (also owned by America Online and run on the same network as AIM), Microsoft's MSN Messenger (Windows XP users have Windows Messenger), and Yahoo Messenger. (See "Instant Messaging Smorgasbord" on page 170 for download and account-setup information regarding these programs.)

All of the free services provide IM's basics: one-on-one (private) text chat, multiparty text chat, and the ability to transfer files. In addition, AIM, Windows Messenger, and Yahoo Messenger let you use a microphone and speakers or a headset attached to your computer to participate in telephone-like voice chats with similarly equipped IMers. Windows Messenger (though not its poorer cousin, MSN Messenger) and Yahoo Messenger enlist your Webcam for videoconferencing. ICQ, MSN Messenger, Windows Messenger, and Yahoo Messenger let you send text to SMS-capable cell phones.

Each of the four IM services hosts its own topic-oriented, multiparty chat rooms, which are a colossal waste of time and computing resources. The most popular IM service, AIM, offers chat rooms nominally devoted to music, TV, computers, family, health, and of course, dating. It matters not the topic—each and every one of AIM's unmoderated rooms is rife with the lowest form of online life, circa 2004: porn spam. Accordingly, gentle reader, please don't let your kids anywhere near an AIM chat room.

MSN's chat rooms contain less spam, and they're often moderated by human hosts or by an automated host. Microsoft has even instituted a subscription policy. For access to all chat rooms, you must

168 INTERNET TIPS

Basic and advanced tips and tricks to help you get started with instant messaging and avoid the pitfalls.

172 HARDWARE TIPS

Try these six no-cost, no-hassle tune-up ideas to keep your system purring and energetic.

174 STEP BY STEP

Make your computer whisper-quiet with a wide array of products and techniques that can cut the noise.

176 ANSWER LINE Why does a once-speedy PC slow down, and how do you get it moving again? Plus: Disable the <Insert> key, and trash CDs securely.**82 WINDOWS TIPS**

See an expanded variety of Windows tips in our cover feature.



82

subscribe to the MSN Chat service (at \$20 per year). The effect of this change, however, is that actual chat conversation has declined to zero, despite the fact that dozens of people seem to be logged on.

What is happening here? Right-clicking a name in the list of chat room members, every one of whom appears to be female, and choosing *View Profile* reveals the

answer: porn. The same thing goes for Yahoo's assortment of chat rooms as well.

Each service's free client program is designed to give you maximum control over your online IM presence and experience, including the ability to determine who can and who can't send you messages, and whether you appear to be available for chatting. They also provide a list of your contacts, enable you to transfer files, and support advanced voice, video, and mobile messaging. But the programs are far from perfect. AIM, ICQ, and MSN Messenger all manage to cram banner ads into their compact interfaces—in ICQ's case, in both the main window and the message windows (see **FIGURE 1**). Yahoo Messenger skips the ads in basic IM screens but tacks them onto its chat rooms. The other drawback to using each service's native software is the clutter: To reach friends on different services, you must run multiple IM programs.

One result of hostile competition in the instant-messaging market is that each IM service is incompatible with the others: You can't send an instant message to a



FIGURE 1: FREE IM clients let you send messages, but show you ads.

Yahoo Messenger subscriber using AIM, for example, or vice versa. (The lone exception is ICQ, which allows you to connect to members of parent AOL's other service, AIM.) Wouldn't it be great if one program let you connect to all four IM systems? One does—or rather, two do. Cerulean Studios' Trillian Basic is a free universal IM client that connects to all four systems, as well as to the noncommercial Internet Relay Chat network (see www2.irchelp.org for extensive IRC primers and guides). Like the native IM clients, Trillian Basic displays your contacts and their online status in a compact interface that minimizes to the system tray when inactive. Cerulean's \$25 Trillian Pro 2.01 adds such features as a space-saving tabbed interface, separate contact lists for each IM service account, enhanced file transfers, and support for plug-ins.

Fans of open-source software may want to opt instead for the free (referring in this case both to its price and to its ownership) Gaim client. Like Trillian, Gaim supports the AIM, ICQ, MSN, Yahoo Messenger, and IRC protocols; but it also connects to the lesser-known Jabber, Gadu-Gadu, and Zephyr IM networks. One reason I like Gaim is that its list identifies contacts with their IM network's icon, making it easier to see at a glance which system a particular friend is on (see **FIGURE 2**).

If your messaging is limited to IM's bread and butter—text—either of these universal clients is just ducky. The modifi-

cations that the major networks make in their IM protocols occasionally render both Trillian and Gaim incompatible with one or another service. But within a few days or weeks, the software makers usually succeed in reverse-engineering the new protocol, at which point they issue an updated version. For the most part, these programs work smoothly.

If you need to be able to transfer files or to perform other advanced messaging functions, Trillian and Gaim probably won't do. Though I didn't perform an exhaustive review of each program's compatibility with other IM systems, spot checks revealed several gaps. Neither Trillian nor Gaim supports voice or video chats (although Trillian claims to support video chats in Yahoo)—probably not a big deal for most people. Nor could either program receive files sent from an AIM 5.2 client, though both were able to send files to the same user. Also, Trillian had trouble receiving files from another

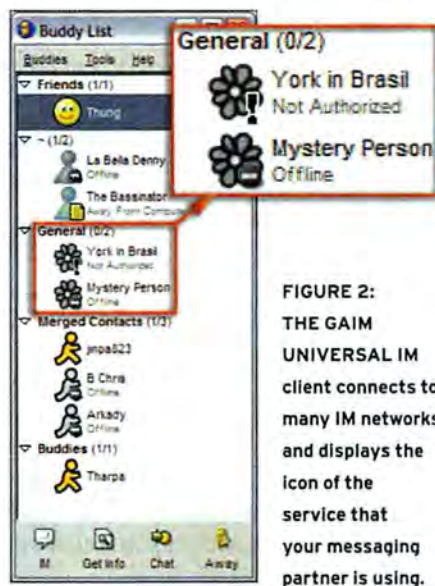


FIGURE 2: THE GAIM UNIVERSAL IM client connects to many IM networks and displays the icon of the service that your messaging partner is using.

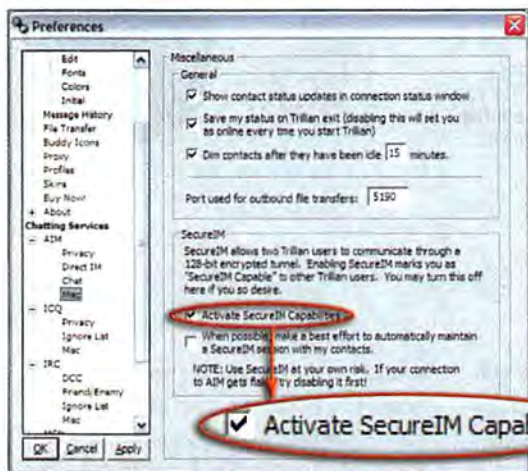


FIGURE 3: YOU CAN ENCRYPT AIM and ICQ traffic by using Trillian's built-in SecureIM feature.

Trillian user over the MSN network, and neither Trillian Basic nor Gaim supports file transfers over the Yahoo network.

Despite these shortcomings, you may still opt to use Trillian or Gaim as your consolidated, day-to-day IM interface. When you need to use a feature that your universal program doesn't support, you can disconnect from the IM system in question and then launch the native-client software required for the advanced duties.

INSTANT SAFETY

ALL FOUR MAJOR IM services allow you to create a personal profile in which you describe yourself and your interests, including your name, gender, age, home address, phone number, and e-mail address. This is information that stalkers, identity thieves, spammers, and other online wolves on the prowl can use to tar-

get you. Leave your IM profiles blank; if the fields must be filled in, enter fictitious data. To view and change your profile in AIM 5.2, choose *My AIM>Edit Profile*; in ICQ Pro and Lite, select *Main>View/Change My Details*; in MSN Messenger 6.1 or Windows Messenger, choose *Tools>Options>Personal* and click *Edit Profile*; and in Yahoo Messenger, select *Login>Edit My Contact Info*.

No matter how low an IM profile you maintain, the medium remains inherently insecure. Anyone with access to the network between your

PC and the IM service's host computer can intercept your log-in and message traffic. If your relationship with IM is easy come, easy go, that may not be a big deal. But if your IM activity is business-related, very personal, or otherwise sensitive, you may want to encrypt your transmissions for privacy. Starting with version 5.2.3211, AIM allows you to digitally sign and encrypt your chat and file transfers by using a personal digital certificate. Verisign sells these certificates (which you download to your computer as a file) for \$15 per year. To purchase a certificate in AIM 5.2, choose *My AIM>Edit Options>Edit Preferences*, select *Security* at the bottom of the Category list, and click *Add*.

None of the other native IM clients offer encryption. But Trillian Basic and Pro have a built-in encryption feature called SecureIM that works with both AIM and ICQ accounts. To enable SecureIM, click the large globe button at the bottom of the Trillian contact list and choose *Preferences*. Scroll down to the Chatting Services section in the left panel, and select *Misc* under either the AIM branch or the ICQ branch (see FIGURE 3). Select *Activate SecureIM Capabilities* and click OK. As the dialog box warns, if problems result, disable the feature.

Last, if you want to secure all of your IM activity with encryption and a host of other safeguards, consider installing Zone Labs' IMsecure util-

TALK OF THE TOWN

Instant Messaging Smorgasbord

AOL Instant Messenger 5.2: The most popular IM client doesn't do video or SMS messaging to cell phones; it does display ads. (www.aim.com)

Gaim 0.72: A free, open-source universal IM client, Gaim supports AIM, ICQ, MSN, Yahoo, and IRC; it has just basic features, though. (find.pcworld.com/39491)

ICQ Pro 2003b: This feature-rich, ad-supported client connects to both AIM and ICQ clients; it sends SMS messages but doesn't support voice or video chat. (www.icq.com/download)

ICQ Lite: The streamlined version of ICQ contains a subset of ICQ Pro's features. (www.icq.com/download)

IMSecure/IMSecure Pro Trial Version: Zone Labs' free IM security utility protects you from various threats that standard firewalls and antivirus programs miss. (find.pcworld.com/39494)

MSN Messenger 6.1: Microsoft's IM client software for Windows versions other than XP supports voice, video, and SMS chat. (messenger.msn.com)

Trillian Basic 0.74F: This free universal IM client lacks ads and supports AIM, ICQ, MSN, Yahoo, and IRC protocols; no voice or video chat. (www.ceruleanstudios.com)

Windows Messenger: This client, compatible with MSN Messenger, is available only as a component of Windows XP; it supports voice, video, and SMS chat.

Yahoo Messenger: Often overlooked, this IM client does it all—voice, video, and SMS chat—with fewer ads than other systems carry. (messenger.yahoo.com)

ity. You can switch from the free version of the program to a 15-day trial of IMsecure Pro with a single click (see FIGURE 4). Users of Zone Labs' ZoneAlarm firewall will find IMsecure's interface familiar and easy to configure.

Send your questions and tips to nettips@spanbauer.com. We pay \$50 for published items. Go to find.pcworld.com/31523 for more Internet Tips. Scott Spanbauer is a contributing editor for PC World.

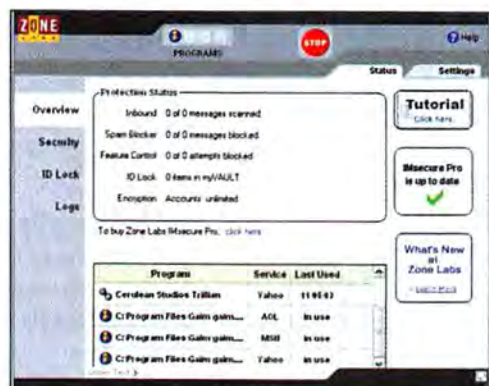


FIGURE 4: USE ZONE LABS' IMSECURE PRO to encrypt all your instant-messaging accounts.

eMachines recommends Microsoft® Windows® XP

eMachines®
eMachines is for everyone



Superior performance. Amazing value. **I want both.**

NEW eMachines T2642 featuring Intel® Celeron® technology
Delivering performance for today's most widely-used applications

*"eMachines steals
the show"*

PC World Reliability
and Service Survey,
December 2003

eMachines T2642 will take care of your computing needs at a price that fits your budget. With an Intel® Celeron® 2.60 GHz processor, a 40GB hard drive, 256 MB DDR Memory, CDRW drive and Intel Extreme 3D Graphics, you'll get everything you need to surf the web, write reports, organize your life or just listen to music. Also included is a list of essential programs such as Microsoft® Windows® XP Home Edition, Works 6.0, Money 2003 and more. Best of all, every eMachines PC is backed by our world class service and support. So, take care of all your computing needs while saving money with the T2642.

\$399.99*

visit www.emachines.com for other models,
or get yours today at your local retailer ³



* After \$50.00 Mail-in rebate. Monitor sold separately. Features, specifications, pricing, and availability are subject to change without notice. 1. New members only. To avoid paying monthly membership fees, cancel during the 3 month promotional period. Telephone access charges and/or surcharges may apply. 2. Telephone Technical Support is at no additional charge for one year from date of purchase. Long distance charges may apply, depending on your calling area. 3. Actual product specifications, model numbers, and prices may vary by retailer and/or store location. eMachines is either a trademark or registered trademark of eMachines, Inc. in the United States and/or other countries. Intel, Intel Inside, Intel Inside logo and Celeron are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States. Norton AntiVirus is a trademark of Symantec Corporation. Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. Other trademarks are property of their respective owners. Copyright © 2004 eMachines, Inc. All rights reserved.

**Upgrade to the eMachines T2882
for only \$80.00!**

Intel® Celeron® Processor 2.80 GHz
(with Intel RA5 GV chipset)
Microsoft® Windows® XP Home Edition
256 MB DDR Memory
80GB HDD
Intel® Extreme Graphics 3D
(up to 20% faster than RA5 GL using 266 MHz graphics)
48x Max. CDRW Drive
16x Max. DVD Drive
10/100 Mbps Ethernet Built-in
Microsoft Works 6.0 & Money 2003
AOL — 3 month membership included¹
Norton AntiVirus™ 2004
(90-day complimentary subscription)
\$479.99*
One year technical support²

HARDWARE TIPS

KIRK STEERS

Perk Up Your PC With Six Quick and Easy Tweaks

WITH SPRING RIGHT around the corner, it's time to give your PC its annual sprucing up. Here are six no-cost, no-hassle tune-up tips to keep your system purring.

Prevent your disks from slipping: The venerable ScanDisk utility in Windows 98 and Me is reduced to a dialog box section labeled 'Error-checking' in Windows 2000 and XP, but it's still a great tool for identifying bad sectors and gauging the disk's health. In 98 and Me, click *Start•Programs•Accessories•System Tools•ScanDisk*. Select the *Thorough* option and click *Start*. At the prompt let ScanDisk automatically fix any errors it finds. To scan a disk in Windows 2000 and XP, right-click the drive's icon in Windows Explorer or any folder window and select *Properties•Tools•Check Now*. Choose *Automatically fix file system errors* and click *Start*.

Take out the garbage: Now toss the temporary files that clutter up your system. Click *Start•Programs (All Programs in XP)•Accessories•System Tools•Disk Cleanup*. Select your drive and click *OK*. Check or

uncheck the options and click *OK* and *Yes*.

Keep your drivers up-to-date: If your PC is working well, there's no reason to install updates for your hardware drivers, with three exceptions: First, while the latest graphics driver might not perceptibly change the quality of your display, it may prevent system crashes or other conflicts. Second, update the driver for any device that was not originally installed in your PC. The driver that shipped with the product is probably out of date. And third, set Windows to check for updates automatically. (See page 82 for more on managing your Windows updates.)

Delete doppelgänger drivers: When adding new hardware or updating drivers, Windows may create two Registry entries for one device or fail to delete the entry for a removed component. To delete duplicate or unnecessary Registry entries, right-click *My Computer* and select *Properties*. In Windows 98 and Me, click the *Device Manager* tab. In Windows 2000 and XP, click the *Hardware* tab and then the *Device Manager* button. Double-click a device type to see its installed devices, and double-click a device to view its drivers. Remove duplicate or unneeded entries by selecting them and pressing **<Delete>**.

Get your data ducks in a row: Over time, Windows and various programs scatter data all over your hard disk. Your apps slow down because they must take longer to read the files they need. Windows' Disk Defragmenter reorganizes your data into contiguous, easy-to-read blocks. Click *Start•Programs (All Programs in Windows XP)•Accessories•System Tools•Disk Defragmenter*. Note: Defragmenting multigigabyte drives takes hours, so run the utility

overnight with no other apps open. Close all background programs as well, including your firewall, antivirus software, and screen saver. Deactivate hibernate or sleep mode to keep the defragmenter from being shut down before it finishes.

Speed your swap file: Your virtual memory (aka swap file) runs fastest if it's not fragmented. But Disk Defragmenter doesn't work on swap files. If you have a second hard disk or a single disk with two partitions, defragment the partition or disk not holding the swap file, and then move the file to that disk or partition. To optimize virtual memory in Windows XP, click *Start•Control Panel* (select *Performance and Maintenance* if you're in Category view).

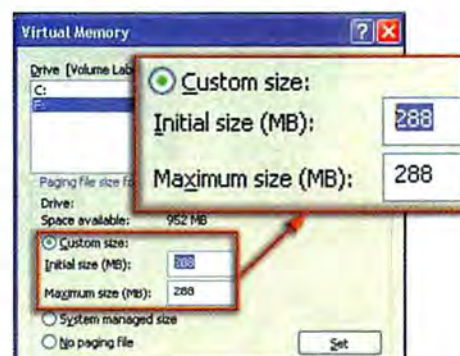


FIGURE 1: GIVE YOUR PC NEW pep by adjusting its virtual memory, or swap file.

System•Advanced. Under 'Performance' select *Settings* and choose *Advanced•Change*. Select a drive in the top box and click *Custom size* (see FIGURE 1). In Windows 2000, click *Start•Settings•Control Panel•System•Advanced•Performance Options•Change*. In Windows 98 and Me, choose *Start•Settings•Control Panel•System•Performance•Virtual Memory*. Select *Let me specify my own virtual memory settings*. Your swap file should be 2.5 to 3 times the size of your system's RAM. Enter this amount in both the 'Minimum' and 'Maximum' boxes ('Initial size' and 'Maximum size' in 2000 and XP). Click *OK* and *Yes* (if necessary) to confirm the change. ■

Go to find.pcworld.com/31511 for past Hardware Tips columns. Send your tips and questions to kirk_steers@pcworld.com. We pay \$50 for published items. Kirk Steers is a PC World contributing editor.

DISCLESS WONDER

CDs: DON'T LEAVE HOME with them! V Communications' CD Anywhere lets you create virtual CDs on your hard drive so you no longer have to carry jewel cases with you. The virtual CD on the hard drive runs exactly like the real one would in a standard CD drive, without the hassle of inserting a disc. CD Anywhere is really handy for whiling away the hours on long, cramped flights with a notebook full of tunes. The program is free to try and \$40 to keep. Visit find.pcworld.com/39119 for more information.

SUDDENLY, YOUR BIG, FAT, BEIGE MONITOR SEEMS SO EXPENSIVE.



© 2003 AOC Monitor. All rights reserved. AOC is a registered trademark.

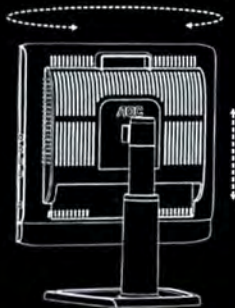
The astonishing and affordable new line of AOC flat-screen displays are here. And when you're done admiring its revolutionary design and razor sharp LCD screen, be sure to check out some other impressive features. The LM729 boasts a 17" screen, 1280x1024 resolution, 2W+2W speakers, front/back tilt, 90° screen rotation for landscape or portrait mode, 70° swivel, and height adjustment. The LM929 has all that with a 19" screen and awesome 3W+3W speakers. Put one on your desk today, it's all the office improvement you'll ever need.



90° screen rotation for landscape/portrait mode



3W+3W speakers, front/back tilt



110mm height adjustment, 70° swivel

AOC
EYES VALUE

STEP BY STEP

STAN MIASTKOWSKI

Quiet Your PC: Easy Ways to Cut Computer Noise

DOES THAT PC sitting next to you sound like a Learjet revving its engines for take-off? Okay, it's probably not that bad, but many PCs are loud enough to be distracting or just plain annoying, especially if your workspace is otherwise tranquil.

To their credit, PC makers are beginning to consider acoustics when they design systems. But too many PCs are still built with inexpensive cooling components that can create a noisy system.

The main sources of noise are motors and spinning components such as the hard drive, CPU fan, case cooling fans, and power supply fan. The power supply fan and CPU cooling fan are usually the biggest culprits. Fans and hard drives also produce vibrational noise that's magnified by the PC case or the surface it's sitting on (see step 1 on the next page).

As processors, hard drives, and graphics boards get faster, they produce more

THE TOP DOWN

Benefits: Less noise from your PC

Cost: Free to \$150-plus, depending on combination of components

Expertise level: Beginner to intermediate

Time required: 15 to 60-plus minutes

Tools required: Phillips screwdriver, anti-static wrist strap (recommended)

Vendors: Antec (www.antec-inc.com), Directron.com (www.directron.com), PC Power & Cooling (www.pcpowerandcooling.com), Quiet PC (www.quietpc.com), Silicon Acoustics (www.siliconacoustics.com)

heat, so more cooling is necessary, and cooling tends to beget noise. But there are ways to reduce the cacophony while achieving adequate cooling. The steps here start with the simple and move up in complexity and expense.

Stan Miastkowski is a PC World contributing editor. Contact him at stan_miastkowski@pcworld.com. Visit find.pcworld.com/31676 for past Step-By-Step columns.

SILENCE IS GOLDEN—WITH THE RIGHT PARTS

A WIDE RANGE OF PC-quieting products are available. They can be used singly or in combination. See the vendor list in "The Top Down" for sources. Note that Quiet PC (www.quietpc.com) also sells all-in-one kits that contain combinations of PC-quieting components.

1 Acoustic insulation (\$40 to \$85): Sound-absorbing foam, installed inside the case, turns your PC into an almost-soundproof miniature room, though it can make your PC run a bit hotter. (Shown: AcoustiPack Deluxe version 2.)

2 Hard-drive enclosure (\$32): Dampen the whine of your PC's hard drive by enclosing it in an isolation chamber. Note: This requires a free 5.25-inch drive bay for installation. (Shown: Molex SilentDrive.)

3 Silent case (\$100): If you're building your own PC, consider a case designed with a quiet power supply, quiet fans, and large air vents. (Shown: Antec SLK3700-BQE.)

4 Case fans (\$7 to \$25): Specially designed and thermostatically controlled case cooling fans can move enough air to keep your system cool, while keeping noise to a minimum. (Shown: Antec SmartCool Plus and Fortron 9cm fan.)

5 Quiet power supplies (\$45 to \$150): The power supply may be the noisiest component of your PC. Quiet power supplies can dramatically reduce the clatter. (Shown: Fortron Source 300-watt power supply with 120mm fan.)

6 Gasket kits (\$10 to \$15): Gaskets and insulated mounting washers for power supplies and fans can help reduce vibration. (Shown: Antec PC NoiseKiller Kit.)



7 CPU coolers (\$20 to \$50): If your existing CPU cooling fan sounds like a miniature vacuum cleaner, consider fans with larger heat sinks and quiet rotary blades; these can virtually eliminate CPU cooling noise. (Shown: Fortron Source Pentium 4 CPU Cooler.)

1 Move the PC. First, try a simple solution. If your system is sitting on the desk next to you, move it onto the floor (assuming that its case is designed to sit vertically rather than horizontally). The vibration from the PC often sets up a sympathetic vibration with the desk surface, turning the case into a soundboard. Moving the computer under your desk can eliminate this problem.

You'll get the best results if the PC sits on a carpeted surface. If you have a tile or hardwood floor, try putting the system on a carpet scrap or a piece of packing foam. For a really "far out" solution, purchase keyboard, mouse, and monitor extension cables (available from any computer dealer) and move the PC farther away. This will, of course, make the CD or DVD drives harder to access.

2 Tighten up to reduce rattling. Sometimes, the biggest contributor of PC noise isn't so much the direct sound of fans and motors as it is the vibration of PC components. It can be as annoying as a rattle somewhere in your car. You can often solve these problems by unplugging your PC, removing its cover, and methodically tightening the mounting screws of parts such as the power supply, drives, motherboard, and cooling fans. Be careful, though: Overtightening screws is worse than leaving them too loose, since you could damage components. Some noise-reduction kits include screws with polymer or rubber washers to reduce vibrations further.



3 Install gaskets. Inexpensive polymer gasket kits can isolate vibrating fans and parts from the case, reducing noise. NoiseMagic's No-Vibes hard-drive suspension kit can do the same for your hard drives. Follow the manufacturer's instructions.



4 Install heat-sensitive case fans. Because of the heat generated by fast processors and other components, almost all PC cases have one or more fans dedicated to exhausting heat. The inexpensive fans that many manufacturers use can be noisy, but fans don't always have to work at full speed, since a PC produces much less heat when it's idling.

Thermostatically controlled fans use temperature sensors that slow the fans down when the internal case temperature drops. Alternatively, some manufacturers supply single-speed fans that are designed to be quiet. Installing them is usually simple, though you may need to remove drives or add-in boards to take out the old fan and insert the new one. Note whether the fan power is connected on the motherboard or to a power-supply connector. If your new fan has an external temperature sensor, follow the manufacturer's directions to place the sensor in the optimum location.



5 Upgrade to a quiet power supply. Your computer's power supply may be one of the primary sources of noise. Many rely on two built-in fans to move large amounts of air. Switching to a power supply that is designed to be quiet can dramatically reduce your PC's overall noise level. Designs vary,

but most units simply employ larger fans that can turn more slowly while delivering the same amount of cooling air. Some also use thermostatic controls to slow down or speed up the fans depending on the case temperature. For instructions on upgrading your power supply, see "Keep It Powered, Keep It Cool" (find.pcworld.com/10863). Be sure to buy a power supply that has sufficient wattage to handle all of your PC's components.



6 Install a new CPU cooler. Today's processors run very hot—often from 145 to 175 degrees Fahrenheit. At these temperatures, effective and continuous cooling is essential. In fact, an uncooled CPU can grow hot enough to damage itself in a matter of seconds. The CPU heat sink and fan that came with your PC are probably louder than you realize. You can lower the noise by installing a specially designed CPU cooler. Most coolers include a larger, more efficient heat sink that can be paired with a much quieter fan. Buy a cooler that's designed for your processor, and follow the manufacturer's directions for installing it.

7 Install acoustic insulation. If your PC still isn't quiet enough after you've taken the preceding steps, try some more-extreme measures. Acoustic insulation kits let you add a layer of special sound-absorbing foam on the inside of your case. Installation is relatively easy:

You cut the foam to size, peel off a backing, and stick it in place. The SilentDrive enclosure isolates your hard drive in a sound-deadening box. You'll need a free 5.25-inch mounting space for each SilentDrive. Follow the manufacturer's directions to install it.



ANSWER LINE

LINCOLN SPECTOR

SIMPLER CD-BASED
DATA BACKUPSOVERCOME OE 6'S
ATTACHMENT BLOCKCD SHREDDERS
KEEP DATA PRIVATE

Why Is My Speedy PC S-l-o-w-i-n-g D-o-w-n?



ALL OF A SUDDEN my once-fast computer behaves as if a ton of molasses took over its innards.

How can I get my speed back?

Oded Degani, Calabasas, California

THERE ARE SEVERAL possible causes for your PC slowdown—and as many solutions. First, back up your Registry as a

grams load automatically when your PC boots. To see a list of your autoloading apps, select **Start•Run**, type **msconfig**, press **<Enter>**, and click **Startup**. (Windows 2000 lacks the msconfig program, but users of that OS can go to find.pcworld.com/39128 to download Mike Lin's free Startup Control Panel utility.)

If a program needs to be running at all times (a firewall, for example), leave it checked; otherwise, uncheck it. Chances are it will start

automatically when it's needed, or you can open it manually. (In last month's *Full Disclosure*, Stephen Manes recommends a more cautious approach—for more, go to find.pcworld.com/40016.)

Uninstall programs you don't use, even if they don't load automatically. Unloaded programs shouldn't slow your PC, but with the Registry, you never know.

New software on old hardware: Any program you have—especially a major application or a version of Windows—that is newer than your computer by at least 18 months could be more than your system can take. Try switching to an older version of the program, if one is available. Also, the application itself may have an option to revert to features of an earlier version, though selecting this is certainly no guarantee of a performance boost.

Windows XP's Prefetch folder: Go to **C:\Windows\Prefetch** and delete all the

.pf files. The Prefetch folder was added to XP to improve the operating system's performance, and over the short term it succeeds. But if the folder gets overloaded, it can slow your machine down.

The Registry: Windows' collection of settings, instructions, and mistakes grows more unwieldy over time, increasing your PC's processing overhead (a bloated Registry also raises the likelihood of other system problems). Cleaning it out every so often is a good idea—although an imperfect one. No Registry cleaning program I know of gets every nook and cranny.

Microsoft no longer supports its free RegClean utility, but it still works. Visit find.pcworld.com/39131 to download the tool. Though RegClean doesn't support Windows XP, I've used it on that OS without trouble, and between RegClean's Undo feature and your Registry backup, there's no harm that you can't fix. You can also try a shareware Registry cleaner such as Iomatic's \$20 Registry Medic (find.pcworld.com/39134; see **FIGURE 1**).

BACKUPS TOO BIG FOR CD



YOUR SPECTOR Backup System (find.pcworld.com/39137) won't back up more data than will fit on a single CD. What can I do?

John Phillips, Colorado Springs

THAT IS DEFINITELY a flaw in my backup system—caused by WinZip's inability to see a CD-RW as a removable disc.

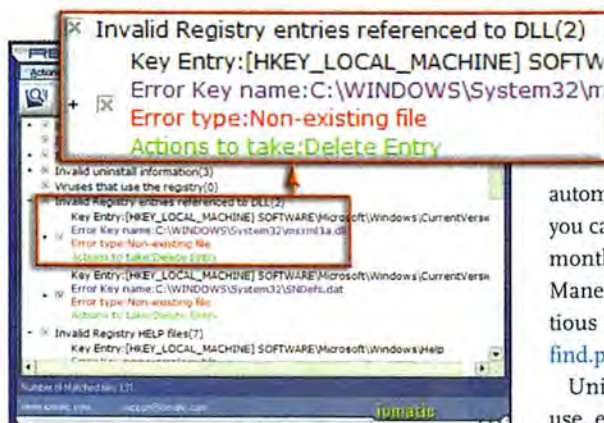


FIGURE 1: FIND AND DESTROY unneeded Registry settings with Iomatic's \$20 Registry Medic program.

safety precaution; browse to find.pcworld.com/39122 for instructions. Here are the leading performance-robbing suspects:

Spyware: Besides violating your privacy, these activity-monitoring programs can also slow down your machine. Visit find.pcworld.com/39125 to download one (or both) of the top spyware spotters: Patrick M. Kolla's Spybot Search & Destroy and Lavasoft's Ad-aware. They're both free.

Too many active apps: Every program running on your system slows it down, and you'll be amazed to learn how many pro-

FREE UNDELETER

LAST DECEMBER I recommended DTI Data's Fast File Undelete for recovering accidentally deleted files ("Recover Lost Files That Aren't in the Recycle Bin," find.pcworld.com/39485). Reader Filip Semey of Gent, Belgium, pointed me to a program with a significant advantage over Fast File Undelete—it's free. You can run Brian Kato's Restoration from a floppy disk, so you don't have to install it on your hard drive. The program can restore a lost file to a removable medium or to another drive, thus letting you avoid writing the file to a potentially bad hard disk. Go to find.pcworld.com/39488 to download Restoration.

Sorry about not making that clearer.

However, the more data you have to safeguard (and the more disc swapping required to protect it), the less likely you are to back up. If a data folder grows too large to back up conveniently, separate your current data (which you regularly change and should back up daily) from your archival data, which doesn't change.

First, create an archive folder: Open Windows Explorer or any folder window and select your C: drive (listed under My Computer in the folder tree). If you get a message about hidden files, click *Show the contents of this folder*. Right-click in the pane to the right, and select *New>Folder*. Name your new folder **Archive**.

Every month or so, move the files you no longer use from My Documents and your other data folders into your Archive folder. Don't archive your digital photos until you've decided to keep them and after you've finished touching them up.

Once you've moved files to the archive, protect them so that you won't accidentally edit or delete them. Right-click your desktop and select *New>Shortcut*. In the 'Type the location...' field, enter the command line `attrib.exe +r "c:\archive*.*" /s` (be sure to get the spacing and punctuation right). Finish the rest of the wizard, and when you launch the shortcut, all of the files stored in C:\Archive will become read-only.

Burn the just-moved files to a CD with whatever software you use for that purpose (if you don't have a CD-RW drive, use your backup media). Use a CD-R disc rather than a CD-RW—you want these backups to be permanent. And be sure to make two copies on separate CDs for safety's sake.

MAKE OUTLOOK EXPRESS LESS PROTECTIVE



I USE OUTLOOK EXPRESS 6, and I can't open any e-mail attachments. Is there a way around this block?

Stephen Brown, Waynesboro, Pennsylvania
TO PROTECT against e-mail-borne viruses, Outlook Express 6 blocks many (sometimes it seems like most) attachments by

default. To alter this, open OE and select *Tools>Options>Security*. Uncheck *Do not allow attachments to be saved or opened that could potentially be a virus*, and click OK.

Never open any suspicious e-mail attachments, even if you recognize the sender's address. Always keep your anti-virus software up-to-date. There's a good reason why Microsoft blocks those types of file attachments.

SECURE CD DISPOSAL



WITH ALL THE TALK about privacy and identity theft, how should I dispose of unneeded old CD-Rs that contain sensitive information?

Nicole Michalke, Schulenburg, Texas

YOU CAN BUY a device that destroys the data on a CD, or you can do it manually. A gadget is best for a lot of discs, but manual destruction is fine if you have only a handful of discs to annihilate.

For about \$50, you can buy either Alera Technologies' DVD/CD Shredder (www.aleratec.com) or Royal's MD80 CD/Disk Media Destroyer.



FIGURE 2: OBLITERATE CD data by running discs through Royal's MD80 CD/Disk Media Destroyer.

aleratec.com) or Royal's MD80 CD/Disk Media Destroyer (www.royal.com; see FIGURE 2). Both of these products punch tiny holes into the surface of the CD, obliterating the data. The "shredded" CD is still in one piece, suitable as a coaster or child's art project, but it's unreadable.

Royal's MD100 CD/Media Destroyer & Paper Shredder costs about twice the MD-80, but it chops up CDs, DVDs, floppies, credit cards, and even sheets of paper. The MD100 is a good choice if you're looking to demolish more than just CDs.

The most obvious ways to destroy a CD manually aren't necessarily the best ones. Breaking the disc in half with your hands

can send dangerous shards flying. Burning discs or toasting them in a microwave can release toxic fumes. Cutting a CD with scissors is safe enough, but it's not all that secure because cut-up discs have been successfully reassembled and read.

I recommend a combination of techniques. Start by bringing the disc outside, dropping it onto concrete, and rubbing it vigorously into the ground with your foot. Then turn the disc over and rub again. With both sides heavily scratched, cut the disc into as many separate pieces as patience allows. If you're really paranoid, make like the young Vito Corleone in *The Godfather: Part II* and dump the shards in various garbage cans around town.

It sounds like a lot of work, but I have to admit I've never had so much fun testing a tip. In fact, this might make good PC therapy: Every time your system does something to tick you off, go outside and take your frustrations out on an old CD. And if the disc happens to have a certain corporate logo, all the better.

BLOCK THE INSERT KEY



IS THERE A WAY to disable the <Insert> key on my keyboard? For me, it's nothing but a nuisance.

Joel Hall, San Jose, California

YOU COULD PHYSICALLY remove the key with a flat-blade screwdriver, but I advise this only if you have a cheap keyboard you can easily replace. Luckily, there are some less dramatic solutions.

You can alter what <Insert> does in Microsoft Word, but this doesn't affect other programs. Select *Tools>Options>Edit*. Use the *INS* key for *paste*, and click OK to make <Insert> paste from the clipboard.

If you want to turn the key off in every Windows program, try BrainSystems' free CapsUnlock (find.pcworld.com/39140). By default, CapsUnlock disables CapsLock as well as Insert, but changing the setting is easy enough. ■

Send your questions to answer@pcworld.com. Answer Line pays \$50 for published items. See find.pcworld.com/31577 for more Answer Line columns. You can find Contributing Editor Lincoln Spector's humorous writing at www.thelinkinspector.com.

FOR ADVERTISING INFORMATION
CALL TOLL FREE:

888/254-0711

Senior Vice President of Sales
Neal Mandel 212/655-5157

Southeast/Midwest Northwest
Shirley Nixon 212/655-5114 Michelle Tonzi 212/655-5201

Sales Manager/Northeast/West Coast
Debra Robbins 212/655-5111

SHOP
HERE

PCWORLD MARKETPLACE

INTERNET / ISPs

AIT 800/397-8320

Blue Genesis 866/258-3351

OLM 800/741-6813

Timehost Network 888/598-1772

XStream Software xstreamsoftware.com

PRODUCTIVITY

BenQ 888/777-9100

Inkfarm 800/INKFARM

Projector People 888/228-9865

Storagemedia.com storagemedia.com

Susteen 800/282-3678

TRAINING/ENTERTAINMENT

Academic Superstore 800/580-9237

Journey 800/874-9001

SYSTEMS/PERIPHERALS

Compuvest 888/644-7017

Orange Micro orangemicro.com

SERVICES/SUPPLIES

ESS Data Recovery 800/237-4200

Internetishop 866/650-7400

ATTENTION WEB DEVELOPERS



Server Appliance

Host Unlimited Domains

P4 Processor from
Ensim Pro **\$139**
512 MB Ram per month
80 GB EIDE HDD

ALL PLANS INCLUDE:

FREE SET-UP
24 / 7 Customer Support
99.9% Network Uptime

Dedicated Hosting

I-MHIP Enterprise
Unlimited Domain Hosting
80 GB of Disk Space
Data Transfer 100GB
Free Control Panel
Free Shopping Cart
\$199⁹⁵
per month

Colocation

Free Unlimited Reboots from
100 Mbps Fast Ethernet
Bandwidth Packages **\$79**
per month

AIT
 **Inc.** an **Inc500**
Company
HOSTING 190,000 DOMAINS
World Wide

www.AIT.com/pcworld
sales@AITcom.net

CALL TOLL FREE 1-800-397-8320

**Simulations & Performance Support Authoring**

RapidBuilder™ - SCORM & Section 508 compliant, interactive Simulation & content authoring



Linux Simulator™ - Interactive Simulations for Linux applications



RapidGuide™ - Step-by-step 'live' in-application guidance



RapidSVG™ - SCORM compliant Scalable Vector Graphic authoring

**Exam & Performance-based Assessment Authoring**

RapidExam™ - SCORM & Section 508 compliant interactive, on-line exam authoring



Performance Analyzer™ - SCORM & Section 508 performance-based assessment authoring for Software Simulations

**Learning Management System (LMS)**

RapidManager™/RapidPortal™ - SCORM compliant, web-based, front/back-end performance tracking & reporting system

**Communication & Collaboration**

RapidShare™ - Web-based, communication & collaboration technology including free web conferencing

www.xstreamsoftware.com**TIMEHOST.COM**

Don't get tied up
with big setup fees.

\$0 Down**Dedicated Servers**

Up to:

**3.0GHz Pentium IV
1G RAM
120 GB HD**

\$99

PER MONTH

FREE Setup**Virtual Hosting**

**25 MB Disk Space
Unlimited Traffic
1 POP Email Account**

\$7.95

PER MONTH

Each Dedicated Server Package includes free support & consulting, of which you may use to get advice, direction, or advanced technical tutoring of the Server itself.

Call Now (888) 598-1772

It's a Fact:

Your website can be online for less than it costs to jump-start your mornings. You can take advantage of our virtual dedicated server technology, **24/7 support**, 200 MB of space, 75 POP email accounts, and **more**.

For just \$7.95 a month

Wake up to www.olm.net/pcworld
to see our eye-opening specials.

800.741.6813 (U.S.A. and Canada)
203.445.7700 (International)



OLM.net
Web Hosting Solutions @ Your Service

© 2003 OLM, LLC

Web Hosting

E-Commerce

Server Solutions

Domain Registration

KICKASS SERVERS

FOR \$69.99!



FREE 30-DAY TRIAL:
VM Server

**Host from 10 to 100
Windows & Unix sites!**

Enjoy the freedom to manage your own server and the comfort of knowing that your websites are running on our award winning clustered architecture. Let us take care of all the hardware and software while you concentrate your effort on what matters most: building websites and making more money!

Single domain hosting available for as low as \$6.99!

Call TODAY! 1-866-258-3351

Blue Genesis

- Award Winning Technology
- 24X7 Outrageous Support
- 99.9% Uptime guarantee
- NO SETUP FEES!

Check out our free demo at BlueGenesis.com

ink & toner

WHILE SUPPLIES LAST!

Qty 2+:

\$9⁹⁹!

Qty 1: \$10.99



Remanufactured HP 51645a

No, there is nothing wrong with this product.

We're just selling 'em at this price to get your business! Shipping is a flat \$3.85 for **any** order size.

While supplies last at these prices.

more great deals at...

1-800-INKFARM

inkfarm.com
the ink & toner supersite.™

HP, 51645a and No. 45 are trademarks of Hewlett-Packard.



The Nature Conservancy®
Saving the Last Great Places

Together with communities, businesses and people like you, we preserve precious places around the world. As they were. As they are. As they will be. Forever.

1-888-2 JOIN TNC | nature.org



The Perfect Solution for the Office, Road or Home!



**Keep all your data in one place
...your cell phone!**

- Quickly transfer numbers from an old phone to a new one in seconds!
- In the office or on the go easily manage your contacts.
- On the road access the Internet or e-mail anywhere, anytime!
- Personalize your phone with pictures and ring tones is a snap!
- New Universal Kit supports the most popular phones all-in-one kit.
- New Calendar feature transfers your Outlook® or Palm® instantly to your phone.



Phone Book Manager



*Internet Connect



*Ringtone Composer



*SMS Manager



*Image Editor



*Calendar - NEW!

* Features other than Phone Book Manager are based on phone model and cell phone provider

Shop online at: www.datapilot.com
Call us at 800.282.3678



COMPUSA
WHERE AMERICA BUYS TECHNOLOGY



"Have your people call our people."



NEC DT20

Ultimate Presentation Flexibility.
Projector with flatbed document camera and zoom allows you to project just about anything. XGA (1024 x 768), 2800 lumens.

Call for Today's Low Price ~~\$3995.00~~



InFocus LP120

Revolutionary Mobility.

XGA, 1000 lumens, 2000:1 contrast, 1.98 lbs.

Call for Today's Low Price ~~\$2699.00~~

Shown with optional InFocus LiteShow wireless presenter.



EPSON PowerLite 74c

The Ideal Solution.

XGA (1024 x 768), 2000 lumens, 6.4 lbs.

Call for Today's Low Price ~~\$1999.00~~

Small Detail Okay Room Lights On Super Warranty
Travel Friendly High Contrast Home Theater Network Ready
*Prices at time of printing - call for latest deals and discounts!

ProjectorPeople.com
Call 888-228-9865

M-F 8-8 EST. or order online at
www.projectorpeople.com

BENQ HITACHI proxiMA SHARP

Smart Technology at a Smart Price.

PB6100

~~\$899**~~



Home Theater
1500 Lumens, 2000:1 Contrast Ratio
Optical Zoom Lens, 10x Digital Zoom
HDTV Compatible, 720p, 1080i, 480p
4:3 / 16:9 Screen Ratio Selectable
3000 Hours Lamp Life***

PB2120

~~\$999~~



Personal / Home
1200 Lumens, 2000:1 Contrast Ratio
Compact Letter Size and Only 2" High
Super Light Weight Only 3.8lbs.
HDTV Compatible, 720p, 1080i, 480p
Optical Zoom Lens, 10x Digital Zoom

PB6200

~~\$1599~~



(Free Extra Lamp)*
Office/Home
1700 Lumens, 2000:1 Contrast Ratio
XGA(1024x768), SXGA Compression
HDTV Compatible, 720p, 1080i, 480p
3000 Hours Lamp Life***

PB2220

~~\$1899**~~



Personal/Business/Home
1700 Lumens, 2000:1 Contrast Ratio
XGA(1024x768), SXGA Compression
Compact Letter Size and 2" High
Super Light Weight Only 3.8lbs.
HDTV Compatible, 720p, 1080i, 480p

PB7200

~~\$1999~~



(Free Extra Lamp)*
Conference Room
2200 Lumens, 2000:1 Contrast Ratio
XGA(1024x768), SXGA Compression
Optical Zoom Lens, 10x Digital Zoom
HDTV Compatible, 720p, 1080i, 480p
2 PC Inputs, PC/MAC/Video, PIP

TigerDirect.com

www.tigerdirect.com/BenQ
888-777-9100



BENQ

* Promotion period from 3/1/04 - 3/31/04, free lamp redeemed through mail - in rebate.
** Price after \$100 Mail in Rebate. Rebate valid from 3/1/04 - 3/31/04.
*** Economy Mode: 3000 hours, Standard 2000 hours.

Copyright 2004 BenQ America Corp. - Specifications subject to change without notice.

Upgrade Your Laptop with New Technologies

USB 2.0 & FireWire 4 port

OrangeCombo
FireWire/USB 2.0
for Notebooks



Add both of the two latest technologies to your notebook with a single card!

FireWire 3 port USB 2.0 4 port

OrangeLink
Video Editing Kit
for Notebooks

Add FireWire to your laptop. Includes software to edit movies from your FireWire port on your DV camcorder.



OrangeUSB
USB 2.0 for Notebooks

Add four USB 2.0 ports to your notebook's existing USB ports. Eliminates a need for a hub, and works with USB 1.1 and USB 2.0 devices.



FireWire 800 2 port

OrangeLink
FireWire 800
for Notebooks

World's fastest external connection: FireWire 800 outperforms standard FireWire, USB 1.1 and USB 2.0.



FireWire 800/USB 2.0

Hard Drive Enclosure

The enclosure that will turn any IDE hard drive into a high performance portable device by using the fastest technologies of FireWire 800 and USB 2.0 in one drive enclosure.



- 23 Years in Business
- Lifetime Guarantee
- Unlimited Telephone Support

Available at:
www.shipitforyou.com/orangemicro/
www.amazon.com

Orange Micro inc.
www.orangemicro.com



CompuVest.com



888.644.7017

Home

Government
Education

Resellers

International
Orders

Customer
Service

Access to
My Account

View Basket

Product
Search

30 Month 0% Interest TOSHIBA Lease Program!

Chose any **TOSHIBA** product found in our catalog including accessories.
Approval time is just 2 hours only!
This is one in a lifetime opportunity you can't miss!

30 Month 0% Interest Lease for Any TOSHIBA!

The CompuVest.com Advantage

- * 97% of all orders ship the same day
- * Real time inventory
- * International shipping
- * 50,000+ unique SKUs in stock every day
- * Large selection of "Hard to Find" and obsolete hardware
- * Same day processing time for Government and Educational orders

If you cannot find the products you looking for, we will locate them for you !!!

Manufacturer	Capacity	Rotational Speed
Fujitsu	under 10GB	under 5400 RPM
IBM	11GB - 40GB	5400 RPM
Maxtor	41GB - 100GB	7200 RPM
Quantum	101GB and up	
Seagate		
Western Digital		

Our award winning search engine will help you find your product in seconds!

GRAPHIC CARDS

32mb NVIDIA Riva TNT2 AGP	\$18/21
16/32mb MATROX G450 AGP	\$24/65
64mb ATI Radeon 7000 AGP	\$39
32mb PNY Quadro2 MXR/EX AGP	\$39/45
64/128mb NVIDIA GF4 MX440 AGP	\$39/49
64/128mb ATI Radeon 9200 AGP	\$47/67
64mb MSI Geforce3 Ti500 DVI TV	\$52
16/32mb MATROX G450 PCI	\$65/79
128/1256mb NVIDIA GF FX5200 AGP	\$69/99
64mb PNY Q4 NVS 200 Dual H AGP	\$91
64mb ATI FIRE GL2/GL4 AGP	\$97
128/256mb NVIDIA GF FX5600 AGP	\$119/142
128/256mb ATI Radeon 9600 AGP	\$120/138
128mb ATI Radeon 9800/9800 Pro	\$198/338
32mb MATROX G200 Quad PCI	\$287
128/256mb NVIDIA GF FX5900 AGP	\$316/382

OPTICAL DRIVES

16x SAMSUNG 616 DVD IDE	\$31
16x SONY IDE Internal	\$34
54x32x52 Mitsumi CDRW Internal	\$33
52x32x52 Sony CDRW IDE	\$37
4x4x6 HP 8210E Plus CDRW USB	\$39
8x4x32 HP 9210E SCSI CDRW Ext	\$55
24x10x32 BENQ Slim CDRW USB Ext	\$61
52x24x52 +16 CDRW+DVD Combo	\$64
54x24x54 BusLink CDRW USB Ext	\$69
PANASONIC DVD-RW DRIVE	\$71
TOSHIBA DVD-R/RW SD-R5112	\$89
MEMOREX DVD+RW 2x	\$88
TOSHIBA DVD-RW SD-R5002 2x	\$88
HP DVD 300i DVD+RW IDE	\$120
HP DVD 200i/200xe DVD+RW	\$131/182
44x24x44 YAMAHA SCSI Internal	\$144

SCSI HARD DRIVES

18GB Seagate SCSI 10K	\$38
18GB QUANTUM SCSI 10K	\$62
36GB QUANTUM SCSI 10K	\$115
73GB QUANTUM SCSI U320	\$240
73GB SEAGATE SCSI U160 10K	\$320

IDE HARD DRIVES

8.6 GB Seagate IDE	\$33
20GB MAXTOR IDE	\$45
40GB MAXTOR IDE	\$51
60GB MAXTOR IDE	\$61
80GB SEAGATE IDE	\$69
160GB MAXTOR IDE	\$125
250/300 GB Maxtor IDE	\$244/284

DIGITAL CAMERAS

HP PhotoSmart 320 Docking Station	\$46
HP PhotoSmart 320 2.1MP USB	\$99
FUJIFINEPix 2800 2.1MP 6X Opt	\$179
FUJIFINEPix 40i + MP3 USB	\$215
HP PhotoSmart 812 4.1MP	\$219
CASIO Exlim EX-M2 2.0MPX USB	\$236
CASIO Exlim EX-Z3 4.0MPX USB	\$362

CONTROLLERS IDE&SCSI

Adaptec AAA-133U2 3-ch raid SCSI PCI	\$250
Adaptec AHA-2930U SCSI PCI	\$45
Adaptec AHA-2940U2W Kit SCSI PCI	\$69
Adaptec 29160/29160N PCI	\$141/115
Adaptec 39160 U160 LVD SCSI PCI	\$170
PROMISE U133TX2 IDE PCI	\$37

CPU

We Carry Full Line CPU and Memory	
AMD K6-2/500MHZ SOCKET-7	\$16
INTEL P3-450MHZ 100MHZ bus Slot-1	\$29
INTEL P3-550 100/512K Slot-1	\$45
INTEL P3-750 100/256K Slot-1	\$94
INTEL P3-1000 133/256K SOCKET-370	\$97

WEB CAMERAS

Logitech QuickCam Express USB	\$17
Logitech QuickCam Pro 4000 USB	\$63
Logitech QuickSmart 510 USB	\$65
Logitech QuickSmart CordeLess 2.4MHz	\$110

MP3 PLAYERS

SonicBlue Rio300/500 32/64mb	\$26/45
SAMSUNG YP-N30S 64mb	\$49
Creative Labs NOMAD IIC 64/128mb	\$64/89
BUSLINK 128MB MP3 PLAYER	\$65
SAMSUNG YEPP YP-35H 128mb	\$80
Creative Labs NOMAD JukeBox 6/10gb	\$111/147

PCMCIA NETWORKING & MODEMS

COMPAQ MICROCOM 420 56K V90	\$24
3COM 3CCM156B 56K GLOB Modem	\$25
3COM 3CCFE574BT 10/100	\$27
3COM 3CCFEM556B 10/100+56K	\$27
3COM 3CXFE575BT 10/100	\$29
3COM CP003056 56K V90 Modem	\$32
3COM 3CXM756 56K V90 Modem	\$32
3COM 3CXM656 56K V.90 Modem	\$33
3COM 3CCFEM656B 10/100+56K	\$37
XIRCOM REM56G-100BTX 10/100+ 56K	\$43
3COM 3C3FEM556C 10/100+56K	\$48

PC HEADSETS

LABTEC CONTACT 501 cellular wireless	\$6
LOGITECH cordless FREEDOM PC	\$10
LABTEC PC headset AXIS 711 USB	\$16
LABTEC DIALOG 301	\$39

NETWORKING / MODEMS

3COM 3C905B-TX 10/100 PCI	\$11
INTEL PILA8460B 10/100 PCI	\$14
3COM 3C905CTXM 10/100 PCI	\$17
INTEL PILA 8470C3 10/100 PCI	\$39
3COM 3C996BT RJ45 10/100/1GB PCI	\$88
INTEL PWLA8490XT 10/100/1GB PCI	\$97
3COM 3C985-SX Fiber 1GB PCI	\$115
INTEL PWLA8490SX Fiber Ethernet	\$250
3COM 3C996SX Fiber 1GB PCI	\$310
USROBOTICS 56K 5687 Internal ISA	\$39
USROBOTICS 56K USR5610B V92 PCI	\$47
USROBOTICS 56K USR5686D External v92	\$63
3COM OfficeConnect 3293 56K External	\$68

KEYBOARD & MOUSE

LOGITECH IFEEL Mouse Optical	\$13
LOGITECH Opt MouseMan Traveler	\$14
Microsoft Wireless Wheel Mouse	\$18
LOGITECH cordless FREEDOM PRO	\$39

GSA contract GS-35F-0097M

TOP SERVICE



VeriSign
Secure Site



888.644.7017

Prices and availability are subject to change without notice. Not responsible for typographical errors

MARKETPLACE

Shop Here! Systems • Peripherals

STORAGEmedia.COM

BUY CARDS & TAPES ONLINE



STUDENTS!



Adobe
Microsoft
Discreet
Avid
Macromedia
AliasWavefront
Softimage
Autodesk
Extensis
Alien Skin
Mathsoft
Symantec
Corel
Bentley
Wacom
Many More!

Save up to 75% OFF
popular software titles!

Thousands Of Titles Available!!

FREE CATALOG!

Serving Students, Faculty and Schools Since 1990

1-800-874-9001

www.JourneyEd.com

Proof of student status required
with order. Offer for U.S. & Canadian
degree-seeking students only.

JourneyEd
Education Marketing

Find it **fast.**
Buy it now.

SERVICES/SUPPLIES

Hard Drive Problems?



Call ESS at 800-237-4200

- Affordable & reliable.
- State of the art data recovery technology.
- Clients include Harvard, NASA, & Lockheed.

ESS DATA RECOVERY LABS

www.savemyfiles.com



ACADEMIC DISCOUNTS

Save Up To 80%
on Name Brand Software



FULL-VERSION ACADEMIC PRICES:

Adobe®
Acrobat 6 Professional.....Save 70%
Creative Suite Premium.....Save 69%
Video Collection Pro.....Save 33%
Microsoft®
Office 2003 Pro.....Save 66%
FrontPage 2003.....Save 55%
Project 2003 Pro.....Save 82%
Visual Studio.Net 2003.....Save 85%

Adobe®

PHOTOSHOP CS

Call!

You Save! 57%

Macromedia®

STUDIO MX 2004

\$189

You Save! 79%

Discreet®

3ds max 6

\$599

You Save! 80%

Macromedia®
Contribute 2.....\$75
Dreamweaver MX 2004.....\$95
Flash MX 2004.....\$95
Sony Pictures Digital®
Sound Forge 7.....\$159
Vegas+DVD.....\$259
ACID Pro 4.....\$149

ALL MAJOR MANUFACTURERS... ALL AT
HUGE DISCOUNTS!

Order Online and Receive a
Discount on Shipping!

PW.AcademicSuperstore.com

CALL US TODAY!

1-800-580-9237



**ACADEMIC
SUPERSTORE**

www.internetishop.com

Your One Stop Solution for All Your PC Needs!

15 Years of Customer Satisfaction
from **Manufacturer Direct**
Savings up to 50%!!!



Product No. 732EC24F

Price: \$ 1469 & up

- Intel® Pentium® 4 2.4GHz (533MHz FSB) Processor
- 512MB DDR 333 Memory
- 40GB ATA 100 Hard Drive
- ATI Radeon 9000 M9 64MB DDR AGP
- 16.5" UXGA (16.1" Viewable) TFT LCD
- 24x8x12x24 DVD+CDRW Combo Drive

INTERNET i SHOP CORP.

Call Us Toll Free **1-866-650-7400**

We are A Government Certified Vendor
(DUNS No.098489144)

Product No. MBKP28U

Price: \$ 1169 & up

- P4-2.8GHz (800MHz FSB) Processor
- Gigabyte DDR 400 Motherboard w/ 8X AGP
- 512MB PC3200 DDR 400 RAM
- 120GB (7200RPM) ATA 133 H.D
- 16X DVD (48X CD-ROM) Drive
- Pioneer 4X DVD-RW Drive
- 4X/8X AGP - GeForce FX 5600
- 256MB Video



NO RISK!! 30 Days Money Back Guarantee!!
Life Time Tech Support!!

Mon-Fri: 7:00AM-7:00PM PST

Sat-Sun: 8:00AM-5:00PM PST



PCWORLD

PHONE:
415/243-0500

FAX:
415/442-1891

E-MAIL:
letters@pcworld.com

WWW.WIDE WEB:
www.pcworld.com

MAIL:
PC World
501 Second St. #600
San Francisco, CA
94107

PRESIDENT, CEO Jeff Edman
EXECUTIVE ASSISTANT Patricia Owen

ADVERTISING SALES

PUBLISHER
Bob Ostrow (508/370-0844)

ASSOCIATE PUBLISHER
Wayne Silverman
(201/634-2318)

SALES ASSOCIATE (201/634-2317)

EAST

EASTERN ADVERTISING DIRECTOR
*New York City/Long Island/
New England*

Thalia M. Karakitsios
(646/215-9395)

*Mid-Atlantic/New York State/
New Jersey/Southeast*

Judy Sutter, Senior Account
Manager (404/845-2884)

Midwest/Eastern Canada
Kathy McKay, Senior Account
Manager (847/759-2723)

SALES ASSOCIATE
Tammy O'Sullivan
(847/759-2722)

WEST

WESTERN ADVERTISING DIRECTOR
*Orange County/San Diego/
Washington*

Susan Green (949/442-4021)

*San Francisco/Los Angeles/
Southwestern U.S./Texas/
Western Canada*

Sean Murphy, Account Manager
(415/267-1766)

SALES ASSOCIATE Sheila Morales
(949/442-4014)

Silicon Valley/Oregon

Alicia Langer, Senior Account
Manager (415/267-4578)

SALES ASSOCIATE
Vanessa Grenfell
(415/978-3317)

Duane Hampson, Senior Sales
Development Manager
(415/978-3133)

CUSTOM PUBLISHING/EVENTS

**ASSOCIATE PUBLISHER, MARKET
DEVELOPMENT** Michael Carroll
(508/370-0842)

SALES ASSOCIATE
Angela Beaudoin
(508/370-0841)

PC WORLD MARKETPLACE/ PC WORLD ACTION CARDS

Neal Mandel (212/655-5157)

PC WORLD REPRINTS

Joan Elizabeth Culp
(717/399-1900 x135)

PCWORLD.COM AD SALES

ASSOCIATE PUBLISHER
Michael Carroll (508/370-0842)

Northwest

Melissa Gruber, Regional
Manager (415/974-7373)

Southwest
Cindy Crow, Account Manager
(949/442-4005)

East
Mark Barreca, Account Manager
(732/544-2006)

PCWORLD.COM AD OPERATIONS

ONLINE AD OPERATIONS MANAGER
Brian Bui (415/267-1722)

**ONLINE AD OPERATIONS
COORDINATOR** Regina Rebello
(415/975-2673)

MARKETING

SENIOR DIRECTOR OF MARKETING
Sandy Wong

**SENIOR MARKETING
COMMUNICATIONS SPECIALIST**
Heidi Tanakatsubo

RESEARCH

RESEARCH MANAGER
Lisa Huck

CONSUMER MARKETING

**VICE PRESIDENT, CONSUMER
MARKETING** Shawne Burke Pecar

ASSOCIATE CIRCULATION DIRECTOR
David Cobb

SINGLE COPY SALES DIRECTOR
Holly Drawbaugh

DIRECTOR, RETENTION MARKETING
Lisa Radler

**SENIOR SUBSCRIPTION MARKETING
MANAGER** Linda Trinh

**SUBSCRIPTION MARKETING
MANAGER** Simon Thaler

MANAGER, RETENTION MARKETING
Robyn Patty

**ASSISTANT MANAGER,
RETENTION MARKETING**
Christine C. Chapman

PRODUCTION

**DIRECTOR, PRINT AND ONLINE
PRODUCTION** Nancy Jonathans

PRODUCTION MANAGER
Lisa S. Mireles

TRAFFIC MANAGER
Eliza Wee

PCWORLD.COM STAFF

GENERAL MANAGER
Ulla McGee

**ONLINE PRODUCT DEVELOPMENT
MANAGER** R. Bruce McCurdy

SENIOR MARKETING MANAGER
Rafael Sosa

CUSTOMER SERVICE SPECIALIST
Michael E. England

DIRECTOR, SOFTWARE ENGINEERING
Newton Bailey

LEAD SOFTWARE ENGINEER
Jim Hutson

SENIOR APPLICATIONS DEVELOPERS
Arturo Flores, Blossom Woo,
Kayan Wong

**TECHNOLOGY TRANSFER PROGRAM
MANAGER** Wei Ming Xu

**EDITORIAL APPLICATIONS
DEVELOPMENT MANAGER**
Matthew Newton

ADMINISTRATION

HUMAN RESOURCES AND TECHNOLOGY

VICE PRESIDENT, HUMAN RESOURCES
Kate Coldwell

HUMAN RESOURCES MANAGER
Julie McKie

HUMAN RESOURCES COORDINATOR
Jenny Steele

**DIRECTOR, TECHNOLOGY &
INFRASTRUCTURE** Mary Zones

DIRECTOR, INFORMATION SYSTEMS
Norman Noble

SENIOR NETWORK ANALYST
Walter Clegg

CLIENT SERVICES MANAGER
Mariaelena Robles Quale

NETWORK MANAGER
Rodney Barnes

IT DEVELOPER/ANALYST
Stan Erhart

SYSTEMS ANALYST
Eileen Chaney

INFORMATION SYSTEMS SPECIALIST
Gabe Ramos

SENIOR SYSTEMS ADMINISTRATOR
Geoff Sturm

SYSTEMS ADMINISTRATOR
Justin Hunter

FINANCE

SENIOR VP, COO/CFO Vicki Peilen

DIRECTOR, FINANCE
Diane Ryczek-Rae

DIRECTOR, ACCOUNTING
Michelle Reyes

BUSINESS MANAGER Thomas Pena

ACCOUNTING ADMINISTRATION
Tina Chen, Jason Villeneuve

**DIRECTOR, ADVERTISING ACCOUNT
SERVICES** Kevin Greene

**SENIOR MANAGER, FINANCIAL
ADVERTISING SERVICES**
Diane Hacker

PC World is a business unit of International Data Group (IDG). Headquartered in Boston, IDG is the world's leading technology media, research and event company, with annual revenues of \$3.01 billion. IDG publishes more than 300 newspapers and magazines in 85 countries, led by the *Computerworld/InfoWorld*, *Macworld*, *Network World*, *PC World*, and *Channel World* global product lines. IDG offers online users the largest network of technology-specific sites around the world, with 330 Web sites in 80 countries. IDG is also a leading producer of 168 computer-related expositions in 35 countries, and research arm International Data Corporation (IDC) provides computer industry research and analysis through offices in 43 countries worldwide. Company information is available at www.idg.com.

THE COMPANY: IDG is the world's leading technology media, research and event company. Founded in 1964, IDG had 2001 revenues of \$3.01 billion and has more than 12,000 employees worldwide. IDG offers the widest range of media options which reach more than 120 million technology buyers in 85 countries representing 95 percent of worldwide IT spending. IDG's diverse product and services portfolio spans six key areas including: print publishing, online publishing, events and conferences, market research, education and training, and global marketing solutions.

PUBLICATIONS: More than 100 million people read one or more of IDG's 300 magazines and newspapers in 85 countries each month. IDG's five global publication product lines—*Computerworld/InfoWorld*, *CIO*, *Macworld*, *Network World*, and *PC World*—account for more than 175 of these titles, delivering a consistent audience of buyers throughout the world.

ONLINE: IDG's online network includes 330 Web sites in 80 countries, reaching more technology buyers with the broadest network of technology content online. Supported by more than 2000 journalists, IDG's Web sites provide focused, useful content that meets the needs

of distinct communities around the world. Diverse advertising opportunities are available to advertisers on IDG's global ad network that offer enhanced web marketing programs including custom webcasts, e-mail newsletters and micronetworks. IDG's online network is also supported by the world's only 24-hour global technology news organization, the IDG News Service, reporting the latest technology news and analysis in multiple languages around the world.

RESEARCH: International Data Corporation (IDC) is the world's leading provider of global marketing intelligence. With research centers in 43 countries and more than 575 research analysts worldwide, IDC is uniquely positioned to provide a global perspective on IT market and technology trends, serving more than 3,900 clients worldwide. IDC is the leading provider of worldwide market research in consumer computing, including personal computing, interactive entertainment, and online services.

EVENTS: IDG is the leading producer of more than 168 globally branded conferences and events in 35 countries. Industry leading international events include LinuxWorld Conference & Expo, Macworld Conference & Expo, and BioITWorld Conference & Expo. Leading conferences include Agenda and Demo, in addition to hosting and creating customized online events and webcasts on ITworld.com. IDG produces 17 conferences and events in China alone, and was first to offer expos in emerging markets throughout Asia, Eastern Europe and Latin America.

GLOBAL SOLUTIONS: IDG Global Solutions helps the industry's leading IT companies build international brand recognition by developing globally integrated marketing programs via IDG's print, online and event products worldwide. IDG's diverse portfolio of global partnership services includes customized research, customized publishing, targeted conferences and seminars, and direct response tools.

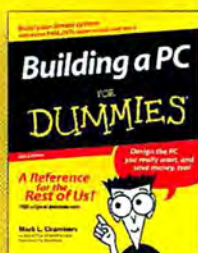
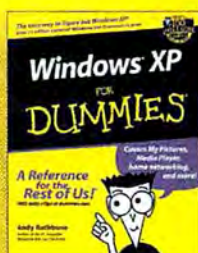
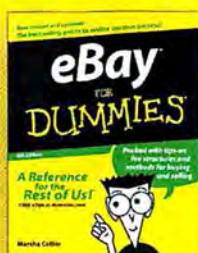
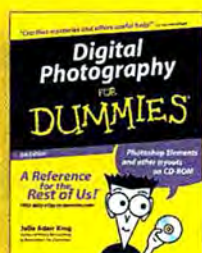
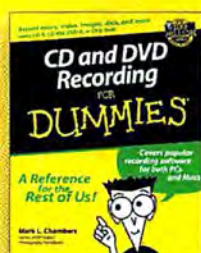
Further information about the company can be found at www.idg.com.

INDEX

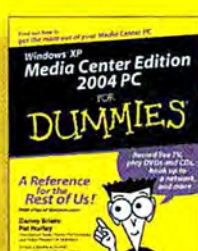
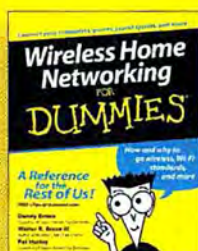
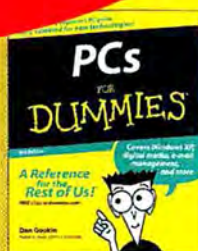
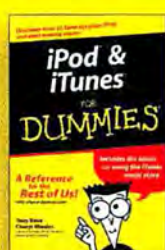
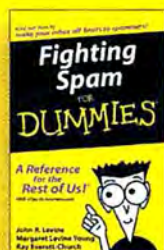
WWW.PCWORLD.COM

Visit find.pcworld.com/37637 for links to these advertisers.

Advertiser	URL	Page number	Advertiser	URL	Page number
1&1 Internet Inc.	www.1and1.com	109-124	Kingston Technology	www.kingston.com	159
3M Optical Systems	www.3M.com/computerfilters	105	LaCie, Ltd.	www.lacie.com	58
ABS Computer Technologies, Inc.	www.abspc.com	89, 131	LG Electronics USA Inc.	www.lgeus.com	18-19
Activision	www.activision.com	76	Linksys	www.linksys.com	155
Ahead Software	www.nero.com	79	Microsoft Office	www.microsoft.com	8
Alienware	www.alienware.com	97	Microsoft Tablet	www.microsoft.com	20, 21
Anthro Corporation	www.anthro.com	43	Mitsubishi Digital Electronics America	www.mitsubishi-tv.com	145
AOC Monitors	www.AOCmonitor.com	173	MSN	www.msn.com	14
Apple Computer, Inc.	www.apple.com	C2-1	NEC-Mitsubishi Electronics Display of America, Inc.	www.necmitsubishi.com	33
Avocent	www.avocent.com	74, 75	NEC Solutions	www.necvisualsystems.com	63
BenQ America Corp.	www.BenQ.com	4-5	NewEgg.com	www.newegg.com/pcworld	46-47
BenQ America Corp.	www.BenQ.com	29	Oki Data Americas, Inc.	www.okidata.com	69
Brother International	www.brother.com	31	PC America	www.pcamerica.com	162
Canon USA	www.usa.canon.com	2-3	PC Power & Cooling Systems	www.pcpowercooling.com	147
CDW Corporation	www.cdw.com	10-12	Primera Technology	www.bravopublisher.com	140
Cisco Systems	www.cisco.com	16-17	Register.com	www.register.com	149
Computer Associates Int'l	www.ca.com/smb	60	Samsung Electronics America Inc.	www.samsungusa.com/printer	48
DarkMatter Software	www.broadbandlock.com	103B	Samsung Electronics America Inc.	www.fourseasonsofhope.com	77
Electrovaya	www.electrovaya.com	166	SanDisk Corporation	www.sandisk.com	93
eMachines, Inc.	www.emachines.com	171	Siber Systems	www.siber.com	100B
Epson America, Inc.	www.epson.com	73	Sony Electronics	www.sony.com	129
Fujitsu Computer Systems Corporation	www.fujitsu.com	71	Sony VAIO Direct	www.sonydirect.com	35-40
Gateway	www.gateway.com	103, 139	Sony VAIO Direct	www.sonydirect.com	C5-C8
Hewlett-Packard	www.hp.com/solutions/pcworld	80-81	Toshiba America	www.toshiba.com	95
Hewlett-Packard	www.hp.com	91	Tripp Lite	www.tripplite.com/promo/pcw	133
Hostway	www.hostway.com	134	U.S. Robotics	www.usr.com	100A
IBM	ibm.com/shop/m118	54-57	Verbatim	www.verbatim.com	107
IDC Directions 2004	www.idc.com/directions04	42	ViewSonic Corporation	www.ViewSonic.com	44
In Focus Systems	www.infocus.com	65	Visioneer	www.visioneer.com	22
IOGEAR Inc.	www.iogear.com	53	Xerox Office Group	www.xerox.com/office/1964	101A-101B
IPOWERWEB, Inc.	www.ipowerweb.com	164	Yahoo!, Inc.	www.yahoo.com	96
ISPWest	www.ispwest.com	97B	ZT Group	www.ztgroup.com	6
John Wiley & Sons	www.dummies.com	187			



**Do Anything.
Just Add Dummies.™**



**Buy any Dummies
book and get \$5.00
with a mail-in rebate!**
Get details wherever books are sold.

Visit dummies.com to sign up for eTips, win prizes, and more!

\$5 MAIL-IN REBATE!*

To receive your \$5 rebate: Complete and submit one rebate form for each purchase. Send completed rebate form(s) with your receipt with Dummies item(s) circled to: **Dummies Winter Offer, Dept. OWLE8, P.O. Box 8037, Walled Lake, MI 48391-8037**

BUY ANY DUMMIES BOOK and get a \$5 manufacturer's MAIL-IN REBATE.

*Begins March 1, 2004 and ends March 31, 2004. Good on any Dummies book.

Name

Address

City State Zip

E-mail address

Store name(s) and city

☐ Check here if you want to find out about new Dummies books and special offers.
Visit www.dummies.com

Titles of Dummies book(s) purchased

TERMS: All requests must be received by 12:00 A.M., April 15, 2004. Cash register receipt must be dated March 1, 2004 to March 31, 2004. \$5 rebate limited to two per name, address, or household. Use of multiple addresses to obtain additional funds constitutes fraud. Incomplete or incorrect submissions will not be honored. Offer good in Continental U.S.A., Alaska, Hawaii, and Puerto Rico. Void where prohibited by law. All submissions and receipts become the exclusive property of Wiley Publishing, Inc. This offer may not be published in any refunding magazine or elsewhere without Wiley's prior written permission. Allow 6–8 weeks for delivery. Wiley is not responsible for lost, late, illegible, or incomplete orders or postage-due, damaged, or separated mail.

For questions regarding the shipment of your rebate, visit www.expressgroup.com

FOR
DUMMIES
dummies.com



The Memory Card Game: Everyone Loses

LAST YEAR I BOUGHT A "UNIVERSAL" memory card reader. A month later Sony announced its Memory Stick Pro. All of a sudden my reader wasn't universal anymore. Pick a stick, any stick: Memory Stick, Memory Stick Select, Memory Stick Duo, MagicGate Memory Stick, or Memory Stick Pro Duo. Now tell me whether it works properly with the devices you own or want. Can't hear you....

As more and more devices support new forms of memory, figuring out what works with what has become a major irritation. SD mires you in a similar who's-on-first routine. A slot that isn't SDIO-enabled can't handle input/output devices such as SD cameras and Wi-Fi cards. But finding a slot's SDIO status requires you to bury yourself in spec sheets.

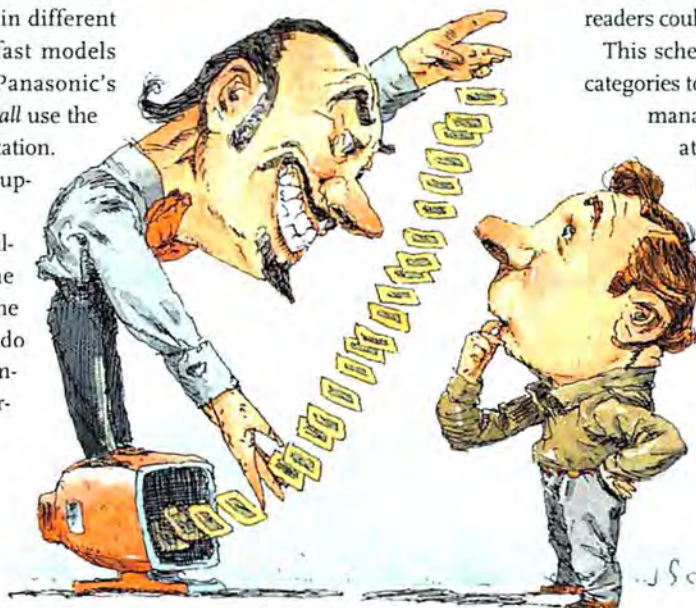
Confine yourself to memory, and you still need to distinguish among SD cards, the identical-looking MMC cards, and the new, even tinier Mini SD format. And SD cards 256MB and up come in different speeds. SanDisk calls its fast models "Extreme" and "Ultra II"; Panasonic's cards of the same capacities *all* use the fast design, without any indication. Exactly how are customers supposed to figure this out?

Determining the compatibility of media gets tricky the minute engineers improve the breed—which they usually do the day after you buy an example of it. Even with mature formats like CompactFlash and recordable DVD, you need a cheat sheet, and even then it's not always perfectly clear.

You'd think that find-

ing information on media and compatible products would be easy. But media manufacturers' sites are surprisingly reticent about acknowledging and enumerating the differences; they often leave the worry to you. And so do device makers. Sony's very nice DSC-T1 camera can shoot 640 by 480 video at 30 frames per second—but only with Memory Stick Pro Duo. Kyocera's Finecam SL300R can shoot pictures at its best resolution 3.5 times per second—but only if you use high-speed

Pick your media—and cross your fingers.



SD media. What kind of card comes with each camera? A slow one that can't show off the device's advanced features.

You might expect that clicking Properties for a DVD or CD writer listed in Windows' Device Manager would give you a clue about its speed. Nope, and the drive itself won't either. But now that we've seen cases where fast media can damage a slower drive, it might make sense for new PCs to include a guide so that you're not left puzzling out the capabilities of your machine when it's two years old.

What we need is a standard nomenclature that clearly states at least three things about media: its capacity, its physical size, and its speed. Put the first in megabytes, the second in roman numerals (Size I, II, III), and the third in Arabic ones (1X, 2X, 3X). Devices like cameras could put a compatibility page in ROM. PCs could list such information in a standard file. Card readers could have the details on the base.

This scheme isn't perfect—we'd need categories to tell us whether digital rights management or I/O worked—but at least it would give users a fighting chance to avoid buying incompatible media or overpaying for fast media they don't need. Anything would be better than the chaos we have now. ■

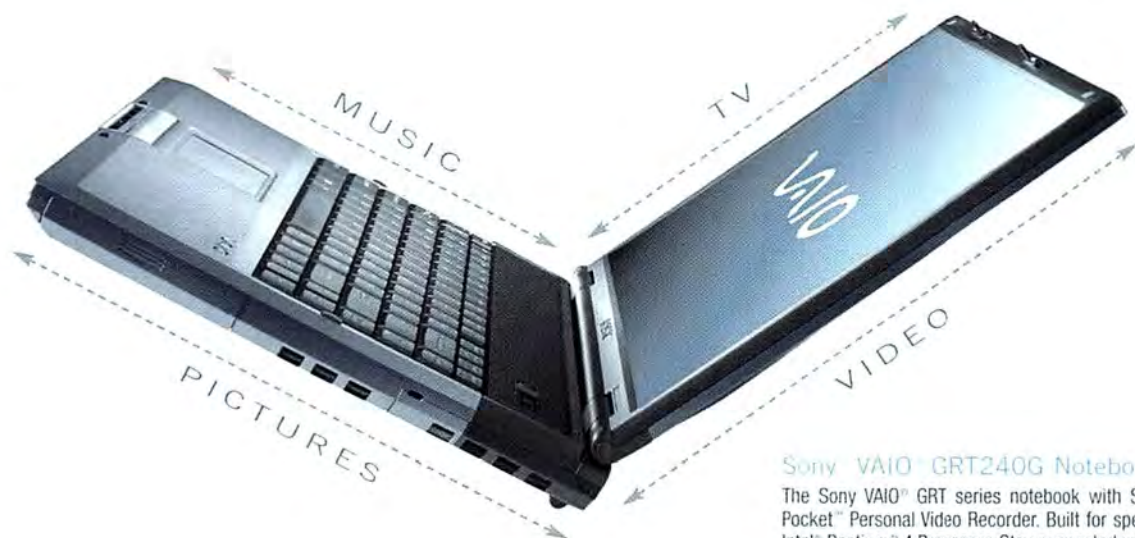
Visit find.pcworld.com/31595 to see additional columns by Contributing Editor Stephen Manes. He has been writing about technology for two decades.



Volume 22, number 3. PC World® (ISSN 0737-8939) is published monthly at \$24.95 for one year (12 issues), \$49.90 for two years (24 issues), \$74.85 for three years (36 issues) by PC World Communications, Inc., 501 Second Street #600, San Francisco, CA 94107. Foreign orders must be prepaid in U.S. funds with additional postage. Add \$12 per year for Canada; add \$30 per year for airmail for all other countries. Canadian GST Registration #R124669680. Periodicals Postage Paid at San Francisco, California, and at additional mailing offices. Canada Post Publications Mail Agreement #2493993. Returns: 4960-2 Walker Road, Windsor ON N9A 6J3. POSTMASTER: Send address changes to PC World, Subscription Dept., P.O. Box 37571, Boone, IA 50037-0571. Editorial and business offices: 501 Second St., #600, San Francisco, CA 94107, 415/243-0500. Copyright © 2004, PC World Communications, Inc. All rights reserved. The trademark PC World is owned by International Data Group and used under license by PC World Communications, Inc. Technology Advice You Can Trust®, PC World Top 10®, Top 10®, PC World Top 100®, Top 100®, and Consumer Watch® are trademarks of International Data Group, Inc., and used under license by PC World Communications, Inc. Printed in the United States.

SONY

Sony recommends Microsoft® Windows®
XP Professional for Mobile Computing.



Sony VAIO® GRT240G Notebook PC

The Sony VAIO® GRT series notebook with Sony's Giga Pocket™ Personal Video Recorder. Built for speed with an Intel® Pentium® 4 Processor. Stay connected with 802.11g wireless LAN.¹⁷ Enjoy an extra-bright LCD with XBRITE™ technology. Record and watch TV. Burn DVDs. It even comes with a remote control. This is a serious notebook PC that also knows how to have fun.

The only PC made like a Sony is a Sony.

For years Sony has been defining and redefining mobile entertainment. For music. For video. And for computing. Around the world. Sony is synonymous with innovation and quality. Now we've raised the bar again with our line of Sony VAIO® desktop and notebook PCs, peripherals and other accessories. All designed and built with the same Sony quality you've come to expect. Call today and our trained specialists can help you create the system that's just right for you—we'll even help with the financing.¹² Sony VAIO® GRT Series Notebook with Intel® Pentium® 4 Processor.



CALL
VISIT

1-877-405-SONY [7 6 6 9]

www.sonymstyle.com/pcworld5

Call or visit us online to discover a universe of entertainment, inspiration and innovation—only from Sony.

VAIO

A world of entertainment possibilities.

SONY VAIO® DESKTOPS

Sony VAIO® Desktop PCs with Intel® Processors are designed to fulfill all of your entertainment passions. With all the features you crave—and nothing you don't. From the sleek V Series to the ultra-functional RS and RZ Series. Whatever you're into—DVD burning, downloading music, even recording TV content—Sony can help you do it all.

Sony recommends Microsoft®
Windows® XP Media Center Edition.



Display sold separately.

RS Series

The Affordable Entertainment PC

- PCV-RS530G
- Intel® Pentium® 4 Processor with HT Technology at 3.2GHz¹
- Microsoft® Windows® XP Home Edition
- 160GB Hard Drive* (7200 rpm)
- 512MB DDR at 400MHz
- DVD+RW/DVD-ROM Drives²
- 128MB ATI® RADEON 9200 Graphics Card
- Giga Pocket™ Personal Video Recorder
- Sony VAIO® Creation Suite Standard software package
- 1-Year Limited Warranty³

\$100
mail-in
rebate⁴

~~\$1,449⁹⁹~~
\$1,349⁹⁹

After \$100 mail-in rebate.
Rebate offer expires March 31, 2004.
See www.sonymstyle.com for coupon/terms
and conditions.
As low as \$37 per month for qualified
customers.¹¹

SONY CLIE® HANDHELD

Transfer data from your desktop and take it on the road with you.



PEG-UX50

Features dual wireless integration in a compact and lightweight design. Powered by Palm OS® 5 software, the UX50 is powerful, portable and easy to use.

- Integrated Wireless LAN (802.11b)¹
- Integrated Bluetooth® Wireless Technology²
- 310,000 pixel digital camera
- Video playback (MPEG-4, 30 fps)
- Built-in MP3/ATRAC3™ player
- Built-in voice recorder
- Built-in QWERTY-layout keyboard
- 480x320 high-resolution TFT color display—SwivelScreen™ design
- Palm OS® v5.2 software³
- FREE shipping⁴

\$599⁹⁹

As low as \$15 per month for
qualified customers.¹¹



FREE SHIPPING/FREE PRINTER

GET FREE SHIPPING* AND A FREE EPSON® PRINTER* (AFTER EPSON MAIL-IN REBATE) WHEN YOU BUY AN ELIGIBLE PC DIRECT FROM SONY BY 3/31/04.

V Series

Ultimate TV & PC Solution

- PCV-V100G
- Intel® Pentium® 4 Processor 2.40GHz¹
- Microsoft® Windows® XP Home Edition
- 80GB Hard Drive²
- 512MB DDR at 333MHz
- CD-RW/DVD-ROM Combo Drive³
- 15" LCD display
- Wireless keyboard, wireless mouse & remote control
- Built-in stereo speakers
- Giga Pocket™ Personal Video Recorder
- 1-Year Limited Warranty⁴
- Free wireless LAN PC card⁵ when purchased from www.sonymstyle.com.⁶ While supplies last.

\$1,499⁹⁹

As low as \$38 per month for
qualified customers.¹¹



Display sold separately.

RS Series

The Entry-Level Entertainment PC

Build-to-Order

PCV-RS500C

- Intel® Celeron® Processor at 2.4GHz¹
- Microsoft® Windows® XP Home Edition
- 80GB Hard Drive² (7200 rpm)
- 256MB DDR at 400MHz
- DVD-ROM/CD-RW Drives³
- 128MB ATI® RADEON 9200 Graphics Card
- Sony VAIO® Creation Suite Standard software package
- Stereo speakers
- 1-Year Limited Warranty⁴

\$699⁹⁹

As low as \$18 per month for
qualified customers.¹¹

UPGRADES

- Upgrade to a 200GB Hard Drive* for \$50
- 3-Year Limited Warranty* for \$199

Enhance your VAIO® PC experience with these other great Sony products. After all, they're made to work seamlessly together so you can easily create and share your music, photos and video.

It's never been easier to share your digital video with your family, friends in the world. Sony continues to improve and simplify the video capture experience with its MiniDV Handycam® camcorders.

DCR-PC109 MiniDV Handycam® Camcorder



- 1.0 Megapixel Advanced HAD™ CCD Imager
- Includes a Handycam Cradle for charging and connecting it to a TV or PC
- 2.5" SwivelScreen™ Hybrid LCD display
- Includes new "Easy Handycam" feature
- Features a Memory Stick Duo™ slot
- NightShot™ Plus infrared system
- Free shipping⁸

\$899⁹⁹ As low as \$23 per month for
qualified customers.¹¹

Sony's MDR-NC11
Noise Canceling
Ear-Bud Headphones
offer you peace and quiet
wherever you go.

SRS-MDR-NC11 Noise Canceling Headphones



- Reduces noise by 70% (10dB) when noise canceling circuit is switched on
- Volume control
- Miniature connection box for AAA battery
- Noise Canceler on/off switch
- Battery DC1.5V, 1 size AAA battery
- Frequency response 10-22,000Hz

\$149⁹⁹

Get unmatched imaging capabilities, creative flexibility and compact designs with Sony's Point and Shoot lineup of digital cameras.

DSC-T1 Digital Still Camera



- 1/2.35" 5.1 Megapixel Super HAD™ CCD
- Compact, slim body
- 3X optical/2X digital Carl Zeiss® Vario-Tessar® lens
- 2.5" Hybrid LCD Monitor
- MPEG Movie VX Fine Mode to capture VGA audio/video clips
- FREE shipping⁹

\$549⁹⁵ As low as \$14 per month for
qualified customers.¹¹

100
FREE
printer¹⁰

CALL
VISIT

1-877-405-SONY [7 6 6 9]

www.sonymstyle.com/pcworld5



SONY

SONY VAIO® NOTEBOOKS

Sony recommends Microsoft® Windows®
XP Professional for Mobile Computing.

Z1 Series Elegance and Mobility

- Featuring Intel® Centrino™ mobile technology
- Intel® Pentium® M Processor 1.60GHz²
- Integrated Wireless LAN—Intel® PRO/Wireless Network Connection 802.11b³
- Intel® 855 Chipset
- Microsoft® Windows® XP Home Edition
- 60GB Hard Drive²
- 14" SXGA+ TFT display
- 512MB DDR SDRAM
- Integrated CD-RW/DVD Combo Drive¹
- Amazing battery life up to 6.5 hours¹
- Integrated Bluetooth® Wireless Technology¹
- USB 2.0
- Stylish and sophisticated design in a 4.7-lb.-light¹ and 0.9–1.5"-thin body
- Included software: PictureGear Studio™, SonicStage™, DVgate Plus™
- 1-Year Limited Warranty¹

\$100
mail-in
rebate¹

~~\$2,199⁹⁹~~
\$2,099⁹⁹

After \$100 mail-in rebate.
Rebate offer expires March 31, 2004.
See www.sony.com for coupon/terms
and conditions.
As low as \$55 per month for qualified
customers.¹

UPGRADES

- Sony VAIO® Port Replicator for \$199.99
- Sony VAIO® Double-Capacity Lithium Ion Battery¹ for \$499.99

A style all your own.

You're unique. Shouldn't your PC reflect your individuality, as well as your interests? Sony VAIO® Notebook PCs with Intel® Processors have wireless capability and interconnectivity wrapped in sleek designs that proclaim your independence. And, we can help you build your very own to your exact needs and specifications. So whether your passion is music, pictures, spreadsheets, video, games or graphics, you can combine your own style with the substance that's Sony.

V505 Series Powerful Mobile. Slim Design.

- Featuring Intel® Centrino™ mobile technology
- Intel® Pentium® M Processor 1.40GHz²
- Integrated Wireless LAN—Intel® PRO/Wireless Network Connection 802.11b³
- Intel® 855 Chipset
- Microsoft® Windows® XP Home Edition
- 40GB Hard Drive²
- 12.1" XGA TFT display
- 256MB RAM
- Integrated CD-RW/DVD Combo Drive¹
- Sony VAIO® Creation Suite Standard software package
- 1-Year Limited Warranty¹

\$1,729⁹⁹ As low as \$44 per month for
qualified customers.¹

UPGRADES

- Upgrade to a 60GB Hard Drive² for \$50
- Sony VAIO® Double-Capacity Lithium Ion Battery¹ for \$200

GRT Series Transportable TV Entertainment Center

- PCG-GRT280ZG
- Mobile Intel® Pentium® 4 Processor 3.06GHz²
- Microsoft® Windows® XP Home Edition
- 80GB Hard Drive²
- 16.1" UXGA (1600x1200) with XBRITE™ technology
- 1024MB RAM
- DVD±RW/CD-RW drive¹
- Record and watch your favorite TV programs with Sony's Giga Pocket™ Personal Video Recorder and remote control
- Convert your old analog videos to digital and record to DVD
- Integrated 802.11g Wireless LAN¹
- 1-Year Limited Warranty¹

\$2,999⁹⁹ As low as \$75 per month for
qualified customers.¹

UPGRADES

- Sony VAIO® Port Replicator for \$199.99
- Sony VAIO® Standard Lithium Ion Battery¹ for \$249.99

TR Series

Sony's Smallest PC. Packed with Features

PCG-TR2A

- Featuring Intel® Centrino™ mobile technology
- Intel® Pentium® M Processor 1GHz²
- Integrated Wireless LAN—Intel® PRO/Wireless Network Connection 802.11b³
- Intel® 855 Chipset
- Microsoft® Windows® XP Home Edition
- 40GB Hard Drive²
- 10.6" widescreen XBRITE™ LCD display
- 512MB RAM
- Integrated CD-RW/DVD Combo Drive¹
- Amazing battery life up to 7.0 hours (the longest battery life available in a Sony VAIO® PC)¹
- Integrated swivel camera
- Sony VAIO® Creation Suite Standard software package
- 1-Year Limited Warranty¹

\$2,199⁹⁹ As low as \$55 per month for
qualified customers.¹

UPGRADES

- Privacy Screen for \$79.99
- Sony VAIO® Standard Lithium Ion Battery¹ for \$299.99
- Sony VAIO® Double-Capacity Lithium Ion Battery¹ for \$349.99

Memory Stick® Media
From Peripheral to PC.
Now Your Memory
Goes Where You Do



Memory Stick PRO Duo™ Media¹

Offering MagicGate™ copyright protection, high-capacity storage and fast transfer capabilities, this 256MB (220MB usable) Memory Stick PRO Duo™ media is ideal for mobile applications (convenient adapter included).

MSX-M256A Memory Stick PRO Duo™ Media

\$114⁹⁹



MOBILE
TECHNOLOGY

Call or visit us online to find out about going mobile—and wireless—in style.

