

DIGITAL CAMERA & SCANNER SUPERGUIDE, P. 76

S E P T E M B E R 1 9 9 9

# Macworld

THE ESSENTIAL MACINTOSH® RESOURCE  
www.macworld.com

CELEBRATE!

**THE  
FUN  
IS  
BACK**

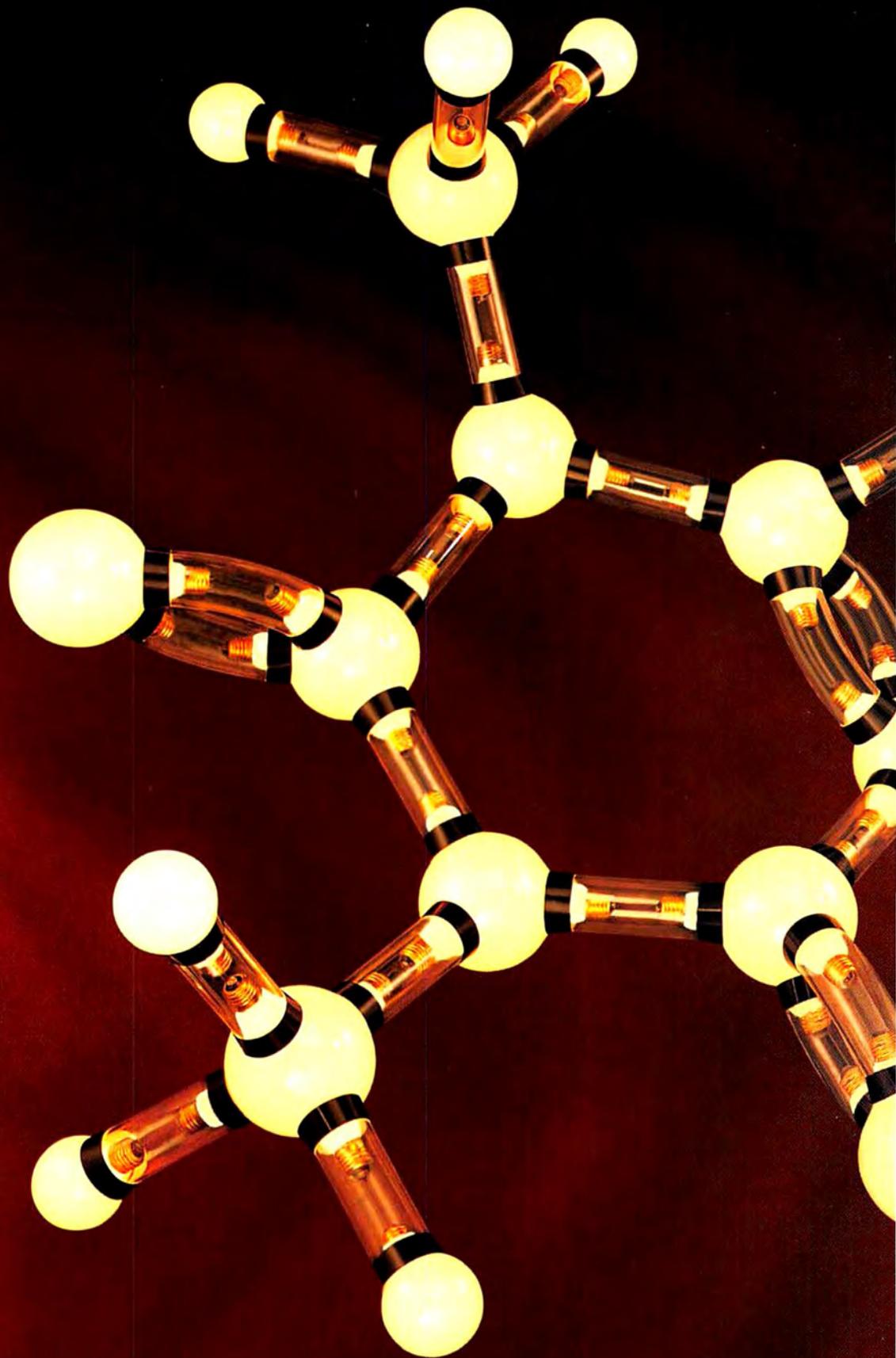
Macworld celebrates the iMac's one-year anniversary with 31 fabulous, funky, and freaky Mac add-ons, page 68

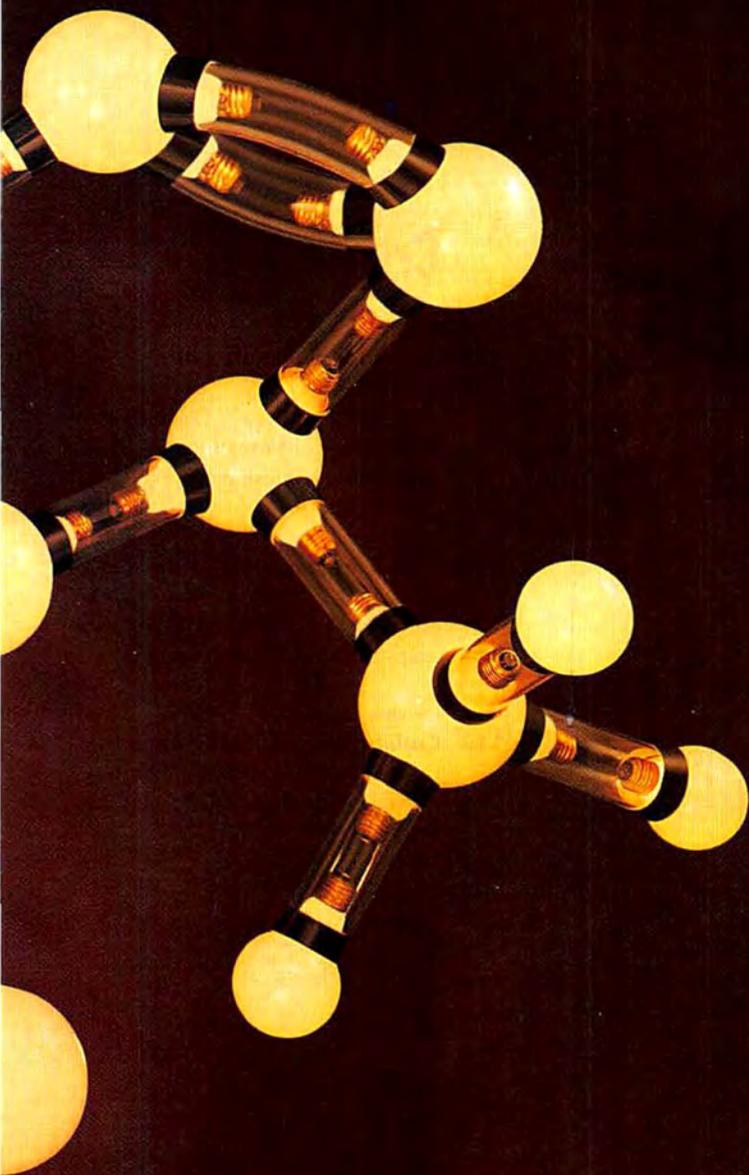
\$7.99 U.S./\$8.99 Canada





[www.lacie.com/mwfw.htm](http://www.lacie.com/mwfw.htm) FireWire Hard Drive™ and the Lacie logo are trademarks of Lacie, Ltd. ©1999 Lacie, Ltd. All rights reserved.  
FireWire and the FireWire logo are trademarks of Apple Computer, Inc., registered in the U.S. and other countries.  
The caffeine molecule. If, instead of atoms, it were made of light bulbs.





CONNECTED.

Get faster access to your ideas with the LaCie FireWire Hard Drive.™ It can send data along its FireWire™ connector at 400 Mbps while linked to up to 63



FireWire enabled peripherals. And it's still hotswappable. Plus, it's available up to 36GB. All of your peripherals working together as one. Now who'd have thought of that?

**LACIE** Made for ideas.

# Macworld

Incorporating MacUser

## Features

### Cover Story

#### 68 The Fun Is Back!

BY CHRISTOPHER BREEN It's a great time to be a Mac user, ain't it? So celebrate by taking a spin through our colorful roundup of wacky Mac products for every occasion. Discover all the fun and freaky goodies that await you!



Frolic through our carnival of fun Mac goodies, page 68.

## Create

### Graphics

#### 105 Avoid Photoshop's Color Calamities

BY BRUCE FRASER Defend your scans from Photoshop 5's RGB color-space confusion.

### Graphics

#### 110 Fast, Filmless Photo Collages

BY MIKE WOOLDRIDGE Make quick and easy photo collages with snaps from your digital camera.

### Workflow

#### 113 Collaborate Long-Distance

BY JIM HEID Learn the best ways to work with clients and colleagues across the miles.

Picture Perfect:  
Macworld's  
Pro Imaging Guide, p. 76

78

LAB TEST

#### Digital Cameras Develop

BY DEKE MCCLELLAND Still searching for the perfect digital camera? Macworld Lab tested 14 megapixel cameras to help you get a better picture.

86

LAB TEST

#### Slide Scanners Show Off

BY BRUCE FRASER Need to digitize your high-quality slides or film? Macworld Lab put 7 slide scanners through their paces to help you pick a winner.

#### ON THE COVER

Photograph by Mark Jobann



Create cool collages from digital photos, page 110.



Fun shareware games that won't break the bank, page 65.

## Opinion

### 17 Letters

### 23 The Vision Thing

BY ANDREW GORE Amazing MP3: the music revolution is digitized.

### 65 The Game Room

BY CHRISTOPHER BREEN Cool shareware games for the budget conscious.

### 184 The Desktop Critic

BY DAVID POGUE What Apple and Microsoft should steal from each other.

### 10 How to Contact Macworld

## News

### 27 Web Sites as Design Tools?

New Web-based applications from Extensis and other developers will soon let you preflight PDF files and retouch photos without leaving your Web browser.

### 28 MP3 Audio Tunes Up on the Mac

New software products nudge the MP3 audio format to center stage on the Mac.

### 28 Photoshop Gets Web Savvy

Adobe Systems rolls the Web-graphics features of ImageReady into a new version of Photoshop.

### 29 Deneba Canvas Adds SpriteEffects

Deneba's integrated graphics software package now lets you apply Adobe Photoshop filters to vector illustrations.

### 29 Product Watch

New products for your Macintosh, including flatbed scanners from Umax and digital cameras from Ricoh and Epson.



Practically perfect new PowerBook G3s, page 34.

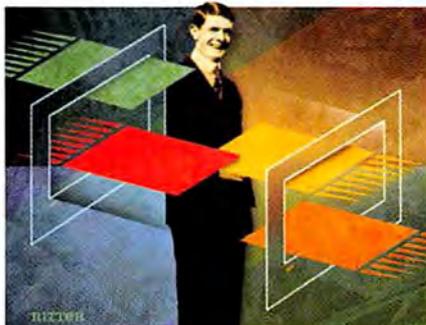
## Secrets

### 95 Files without Borders

BY JOSEPH SCHORR Meet the magical control panel that lets files slide seamlessly from Mac to PC.

### 99 Quick Tips

BY LON POOLE Tips, tricks, and shortcuts.



Get intimate with the control panel that lets Mac and PC files cross the border, page 95.

## Reviews

- 34 **★★★★½** PowerBook G3/333;  
**★★★★** PowerBook G3/400  
High-end portable systems
- 36 **★★★★** Canon BJC-6000;  
**★★★★** Epson Stylus Photo 750;  
**★★★★** Epson Stylus Photo 1200;  
**★★★★** HP DeskJet 882C;  
**★★★★** HP DeskJet 895C  
Color ink-jet printers
- 38 **★★★** LaCie 226 CDRW-USB;  
**★★★★** QPS Que;  
**★★★★½** Sony Spressa USB CRX100E/X  
USB CD-RW drives
- 40 **★★★★½** Jam 2.5;  
**★★★★½** MasterList CD 2.1;  
**★★★★** WaveBurner 1.0  
Audio CD-writing software
- 42 **★★★** Peak 2.03  
Audio editor/processor
- 43 **★★★★** Hyperprism Plug-in Pack;  
**★★★★** Native Power Pack II  
Audio plug-ins
- 44 **★★★★** Commotion 2.0  
Video-painting tool
- 47 **★★★★** Apple Power Macintosh G3/450  
High-end system
- 49 **★★★★** MonacoEZcolor  
Color-management software
- 51 **★★★★½** AppleTalk to IP Migration Suite  
Networking utilities
- 52 **★★★★½** Palm VII  
Handheld personal organizer
- 54 **★★★★** Adobe Type Manager 4.5  
Font manager
- 56 **★★★★** On Guard 3.2  
Security utility
- 58 **★★★** MacTuner 2.0.5  
Database of streaming stations
- 60 **★★★★½** LANsurveyor 5.0  
Network-management software
- 62 **★★★★** SoftRouter Plus 6.0.1  
Routing software



**NO LINES. NO PARKING-LOT GRIDLOCK.  
INSTANT SERVICE. 24-HOUR SUPPORT.**

**WHAT KIND OF STORE IS THIS?**

The shopper-friendly kind: a Virtual Printer Store. You don't get here by car or bus. You come by phone or mouse instead. And you couldn't stand in a line, get lost in a crowd, or be ignored by a store clerk if you tried.

At the Virtual Printer Store you buy your printer direct from the people who made it. So you pay only for what you need (the printer), and not what you don't (the middleman).

And there's another important difference after you leave. At conventional stores you get demoted from customer to stranger. At ours you become a virtual client.

We offer free technical support 24 hours a day, 7 days a week — for the entirety of the one-year warranty. And if

you run up against a problem we can't solve, our Platinum Exchange Warranty Program guarantees you a replacement printer by the next business day. (All our printers come with a thirty-day, money-back guarantee as well.)

Finally, we offer printers good enough to sell themselves — because they have to. Printers that turn out vivid halftones, poster-sized graphics, printshop-quality text, and perform various other noteworthy feats noted here.

Now, what are your chances of finding a conventional store that offers all that? Virtually nonexistent.



New Product

### ELITE 12/600 USB

12 pages per minute  
600 x 600 dpi resolution  
Maximum Print Area 8.5" x 14"  
Letter, legal, envelope  
250-sheet Universal Tray  
PostScript® Level 2 compatible, PCL 5  
35 PostScript fonts, 15 PCL fonts,  
45 downloadable fonts  
RAM expandable to 64 MB  
1st year Platinum Exchange  
USB (cable included),  
Bi-directional Parallel

2nd Paper Feeder<sup>1</sup>  
(includes 500-sheet Universal Tray) Add \$299

2nd year Platinum Exchange<sup>3</sup> Add \$ 89

\$699



### ELITE XL 20 Series

20 pages per minute  
600 x 600 dpi resolution  
Maximum Print Area 12.6" x 35.1"  
Letter, tabloid, legal, envelope, poster  
500-sheet Universal Tray  
PostScript Level 2 compatible, PCL 5  
35 PostScript fonts, 15 PCL fonts,  
250 downloadable fonts  
RAM expandable to 64 MB  
1st year Platinum Exchange  
EtherTalk®, LocalTalk®, NetWare®, TCP/IP  
Ethernet (10 BaseT, AAUI),  
Bi-directional Parallel

2nd or 3rd Paper Feeder<sup>2</sup>  
(includes 500-sheet Universal Tray) Add \$299

2nd year Platinum Exchange<sup>3</sup> Add \$179

\$1599

Lease \$56 Month/36 months<sup>4</sup>

\$1899

800 dpi version  
Lease \$67 Month/36 months<sup>4</sup>

\$2199

1200 dpi version  
Lease \$77 Month/36 months<sup>4</sup>



New Product

### ELITE 12N Series

12 pages per minute  
600 x 600 dpi resolution  
Maximum Print Area 8.5" x 14"  
Letter, legal, envelope  
250-sheet Universal Tray  
PostScript Level 2 compatible, PCL 5  
35 PostScript fonts, 15 PCL fonts,  
45 downloadable fonts  
RAM expandable to 64 MB  
1st year Platinum Exchange  
EtherTalk, TCP/IP  
USB, Ethernet (10 BaseT),  
Bi-directional Parallel

2nd Paper Feeder<sup>1</sup>  
(includes 500-sheet Universal Tray) Add \$299

2nd year Platinum Exchange<sup>3</sup> Add \$ 99

\$849

\$949

1200 dpi version



Also available in LocalTalk versions



### ELITE XL 8 Series

8 pages per minute  
600 x 600 dpi resolution  
Maximum Print Area 11" x 17"  
Letter, tabloid, legal, envelope  
250-sheet Universal Tray  
PostScript Level 2 compatible, PCL 5  
35 PostScript fonts, 15 PCL fonts,  
45 downloadable fonts  
RAM expandable to 64 MB  
1st year Platinum Exchange  
EtherTalk, LocalTalk, TCP/IP  
Ethernet (10 BaseT, 10 Base2),  
Parallel

2nd year Platinum Exchange<sup>3</sup> Add \$ 139

\$999

Lease \$50 Month/24 months<sup>4</sup>

Visit us at  
MacWorld Expo  
Booth #555

TO ORDER 1.800.422.7777 OR WWW.GCCTECH.COM



# THE VIRTUAL PRINTER STORE™

Choose 43 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)



GCC Technologies is a registered trademark of GCC Technologies, Inc. All other trademarks or registered trademarks are trademarks of their respective companies. <sup>1</sup>Supports one additional paper feeder. <sup>2</sup>Supports two additional paper feeders. <sup>3</sup>Platinum Exchange pricing is at point of purchase only. <sup>4</sup>Leasing provided by independent leasing companies to qualified customers. Lease payments based on 24-month and 36-month terms. Lease terms subject to change without notice or obligation. <sup>5</sup>All GCC printers are Mac OS compatible. <sup>6</sup>NetWare is supported on all 20 Series & Elite 12/1200N printers. <sup>7</sup>Windows certification is for the 20 Series printers only.

Keycode 909MWD1



**iCart™**  
from  
Anthro



**ANTHRO**  
www.anthro.com

Short iCart: \$149; Tall iCart: \$199; Great accessories. Call us at 800-325-3841.

# Macworld

EDITOR IN CHIEF

Andrew Gore

EXECUTIVE ASSISTANT TO THE EDITOR IN CHIEF

Savraj Benedict

## EDITORIAL

EDITOR

Michael Penwarden

SENIOR EDITOR/NEWS AND REVIEWS

Stephen Beale

SENIOR EDITOR/DEPARTMENTS

Nancy Peterson

SENIOR EDITOR/FEATURES

Jason Snell

SENIOR ASSOCIATE EDITORS

Allyson Bates,

Linda Comer,

Scholle Sawyer

ASSOCIATE EDITOR

Brooke C. Wheeler

ASSISTANT EDITORS

Michael Gowan,

Jonathan Seff

## CONTRIBUTING EDITORS

Henry Bortman, Christopher Breen, Bruce Fraser, Ted Landau, Deke McClelland, Rik Myslewski, Tom Negrino, David Pogue, Lon Poole, Stephan Somogyi, Franklin N. Tessler

## INTERNATIONAL EDITORS

Steven Noble, Australia; Bernard Le Du, France; Andreas Borchert, Germany; Enrico Lotti, Italy; Yoshio Moriya, Japan; Tomasz Bitner, Poland; Daniel de Blas, Spain; Lennart Håkansson, Sweden; Fred Jame, Taiwan; Bahattin Apak, Turkey; Simon Jary, United Kingdom

## LAB

TECHNICAL DIRECTOR

Jeff Pittelkau

LAB DIRECTOR

Kristina De Nike

SENIOR LAB ANALYSTS

Jeffy K. Milstead,

Kevin Mitchell

ASSOCIATE LAB ANALYST

Gil Loyola

INVENTORY COORDINATOR

Ulyssis Bravo

## COPY EDIT

MANAGING EDITOR

Claire H. Breen

ASSISTANT MANAGING EDITOR

Paul-Michael King

COPY CHIEF

Jon Zobenica

## ART AND DESIGN

DESIGN DIRECTOR

Eleanor Leishman

ART DIRECTOR

Sylvia Chevrier

ASSOCIATE DESIGNERS

Martha Katt,

Michael Rattary

DESIGN ASSOCIATES

Jackie Goodman,

Jonathan Woolson

## ONLINE

VICE PRESIDENT, SALES, & PUBLISHER

Matt Sweeney

DIRECTOR OF CONTENT

Matthew Rothenberg

SENIOR ONLINE EDITOR

Philip W. Dyer

CONTENT ENGINEER

Jeff Cheney

ASSISTANT CONTENT ENGINEER

Ron Neal

DIRECTOR, BUSINESS DEVELOPMENT FOR ONLINE

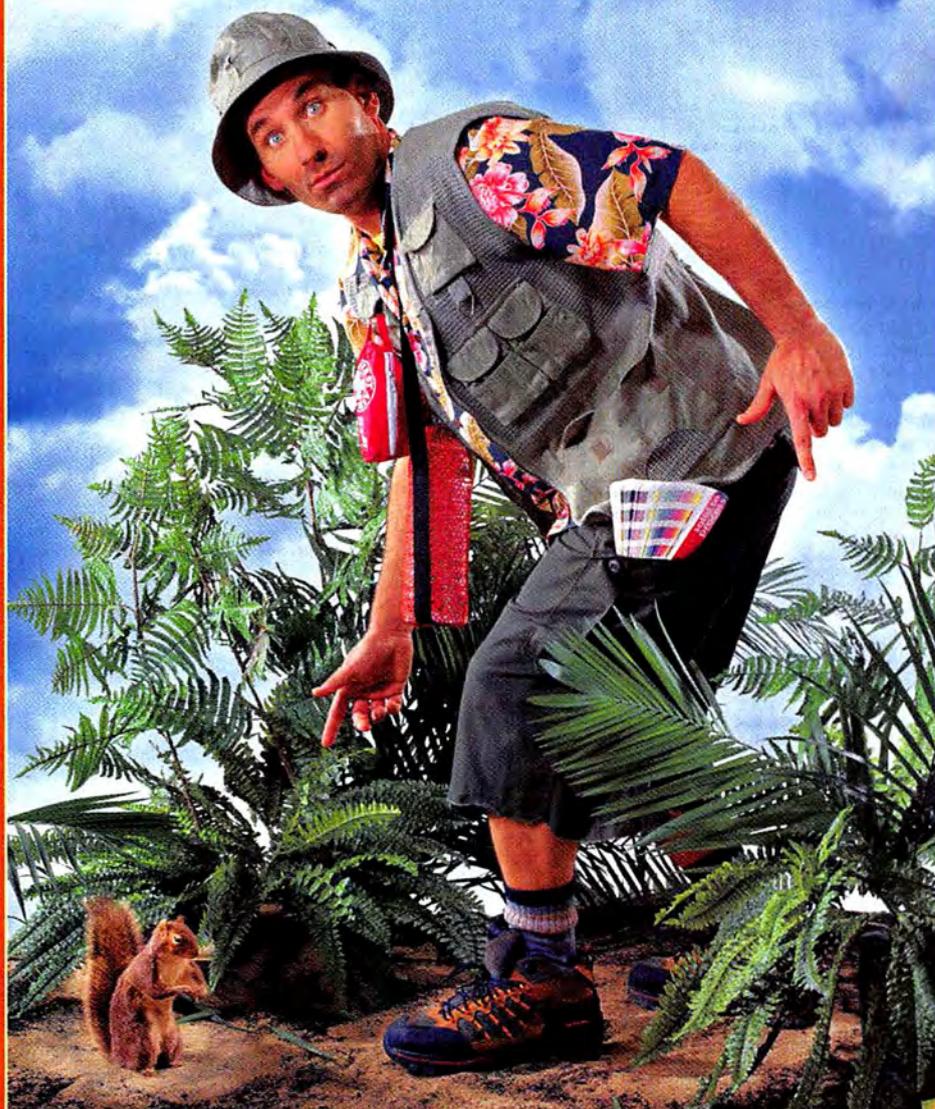
Nicholas Harvey

ONLINE AD PRODUCTION MANAGER

Steve Spingola

# Field Guide

## NORTH AMERICAN DESIGNER



### (*Graphicus nocturnis*)

**Description:**  
5' to 6'4"; (100-300 lbs).  
Large eyed, nocturnal,  
clothes hip; thin skinned  
frequent chin scratching.

**Habitat:**  
Art Openings, Dive Bars,  
Design Retrospectives,  
Awards Dinners,  
Art Supply Stores.

**Comments:**  
Appears in muted tones,  
paradoxically attracted to  
colors. Highly unadaptable  
to design changes.

### Life Cycle:

PANTONE ColorSuite® for Graphics is critical during all stages of development:

### Hatching

*Graphicus* is highly threatened in the nascent concept stage; instinctively avoids color selection danger using the PANTONE Color Survival Kit (PANTONE Color Formula Guide, PANTONE Process Color System® Guide and PANTONE Solid To Process Guide) stored in belly pouch.

### Courtship

Flamboyant plumage precedes the mating ritual. Shows off colors on-screen with PANTONE ColorReady™ plug-in for QuarkXPress™, Adobe® Illustrator® or Macromedia® FreeHand®, to compare output of printer, proofer and on-press. Feathers nest with color palettes built in ColorReady™. Culminates in frenetic approval dance with client.

### Reproduction

Reproduction insures the species' future. Note how the designer creates an accurate, predictable reproductive environment using PANTONE Personal Color Calibrator™, to match monitor and printer color output.



See *Graphicus* adapt to the predatory *Clientus unreasonableis* at [species.pantone.com](http://species.pantone.com)

or call 888-PANTONE, press 2, mention "FD"

# PANTONE®

All trademarks used herein are either the property of Pantone, Inc. or other companies. Adobe® and Illustrator® are registered trademarks of Adobe Systems, Inc. QuarkXPress is a trademark of Quark, Inc. and all applicable affiliated companies. Reg. U.S. Pat. & Tm. Off. and in many other countries. © Pantone, Inc., 1999

★ Ranked TOP 1% of 1998 Software Reviewed ★

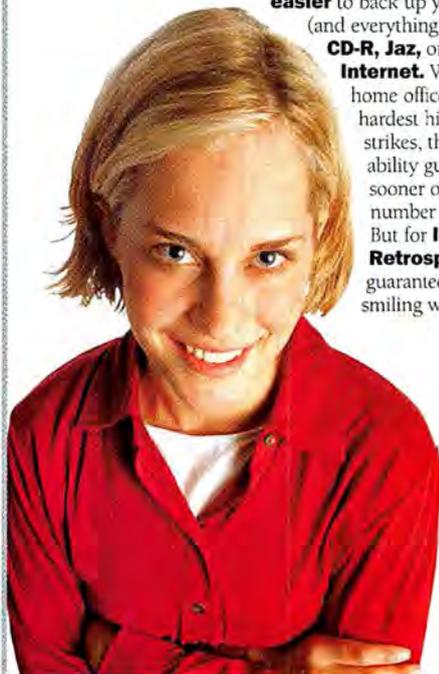


**\$49** or less!  
available everywhere

Sometimes bad things do happen to good computers. Your screen freezes. (Along with the blood in your veins.) Or your 6-months-and-almost-done project is accidentally thrown out with the trash. (Hello?) Or files are mysteriously "corrupted." I just don't have the time to reconstruct my docs, files, bookmarks, fonts, preferences, financials, reports, and e-mail. Do you?

## My hard drive just crashed.

**Retrospect Express** provides automatic protection for everything on your Mac at a no-brainer price. **It's never been easier** to back up your hard drive (and everything on it) to **Zip, CD-R, Jaz,** or even to the **Internet.** With small and home offices among those hardest hit when disaster strikes, the laws of probability guarantee that sooner or later, your number will come up. But for **less than \$49, Retrospect Express** guarantees that you'll be smiling when it does.



[www.dantz.com/saveyourworld](http://www.dantz.com/saveyourworld)

**dantz**

**Save Your World:**

Choose 26 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

# Macworld

PRESIDENT AND CEO	Colin Crawford
ASSISTANT TO THE CEO	Sharon Sanderson
CHIEF FINANCIAL OFFICER	Stephen Daniels
BUSINESS MANAGER	Eos de Feminis
ACCOUNTING COORDINATOR	Ronda Bitner
DIRECTOR OF HUMAN RESOURCES	Sue Murphy
HUMAN RESOURCE MANAGER	Marisa Chow

#### DISPLAY ADVERTISING SALES

VICE PRESIDENT, SALES, & PUBLISHER	Matt Sweeney
ASSOCIATE PUBLISHER	Steve Plevin (415/243-3509)
SALES & MARKETING COORDINATOR	Karla Kyrias (415/278-8542)
SALES ASSISTANT	Jennifer Russell (415/243-3577)
NATIONAL ACCOUNTS MANAGER	Jessica Ross (415/243-3583)
ACCOUNT EXECUTIVE	Coretta Wright (415/243-3615)
NATIONAL ACCOUNTS MANAGER	Sara Culley (970/327-4499)
ACCOUNT EXECUTIVE	Margaret Level Green (415/243-3582)
EASTERN ADVERTISING DIRECTOR	Cynthia Ramsey (973/243-1197)
NATIONAL ACCOUNTS MANAGER	Paul Bonarrigo (508/533-4020)
ACCOUNT EXECUTIVE	Jo Zottarelli (516/277-4134)
SHOPPER ACCOUNT MANAGER	Niki Stranz (415/243-3664)
SHOPPER ACCOUNT MANAGER	Carol Johnstone (415/243-3691)
SHOPPER ADMINISTRATIVE ASSISTANT	Alissa Mach (415/243-3628)

#### RESEARCH

SENIOR RESEARCH ANALYST	Phillip Hibbert
-------------------------	-----------------

#### MARKETING

MARKETING MANAGER	Francesca Kloe
TRADE SHOW/EVENTS MANAGER	Nancy Galanty

#### MACWORLD GLOBAL PRODUCT SUPPORT CENTER

COORDINATOR	Sharon Sanderson
-------------	------------------

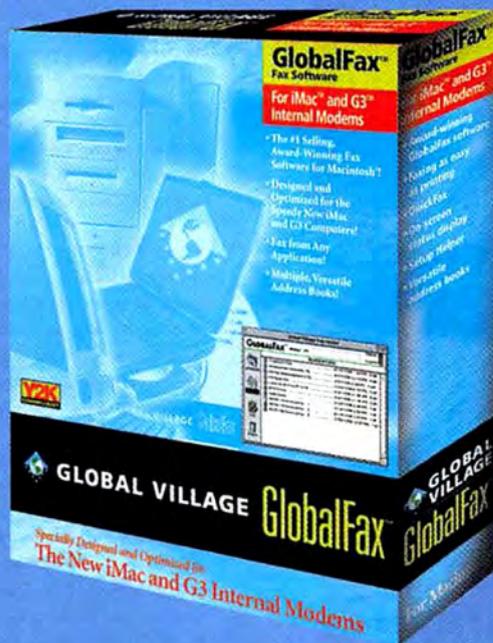
#### PRODUCTION

VICE PRESIDENT OF MANUFACTURING	Anne Foley
PRODUCTION DIRECTOR	Cynthia Neustadt
MANUFACTURING TECHNICAL DIRECTOR	Clayton Haberman
DIGITAL AD COORDINATORS	Russ Nordmeyer, Mac Scott
AD SALES COORDINATOR	Rick Sandoval

Macworld is a publication of Mac Publishing, L.L.C. Macworld is an independent journal not affiliated with Apple Computer, Inc. Macworld, MacUser, MacWeek, Macworld Interactive, Macworld Shopper, MW, MW Lab, MW Shopper, The Desktop Critic, Expert Graphics, Quick Tips, Star Ratings, Buyers' Tools, Streetwise Shopper, and Conspicuous Consumer are registered trademarks of Mac Publishing, L.L.C. Apple, the Apple logo, Mac, and Macintosh are registered trademarks, and MacLetter and PowerBook are trademarks, of Apple Computer, Inc. Printed in the United States of America. Copyright © 1999 Mac Publishing, L.L.C. All rights reserved.

File	Edit	Style	Item	Page	View	Utilities	Help	Connected
New								
Open...								⌘O
Close								⌘W
Save								⌘S
Save as...								⌘⇧S
Revert to Saved								
Get Text/Picture...								⌘E
Save Text...								⌘⇧E
Append...								⌘⇧A
Save Page as EPS...								⌘⇧⌘S
Collect for Output...								
Document Setup...								⌘⇧⌘P
Page Setup...								⌘⇧P
Fax...								⌘P
Quit								⌘Q

# Only GlobalFax Faxes as Easily as Printing from Any Program on Your iMac or G3.



Global Village®, winner of nine Macworld® Editors' Choice and MacHome Readers' Choice Awards.

"I've been a happy GlobalFax user for years. It's been indispensable for me."

-- Guy Kawasaki, CEO, garage.com  
author of Rules for Revolutionaries and The Macintosh Way

With GlobalFax™, you get all of these cool features:

Fax, as easily as printing, directly from any application

Receive, view, print and manage faxes

On-screen call-status display

The exclusive QuickFax Fax Center

Multiple, versatile personal address books

GlobalFax is made exclusively for the internal modems in...



the iMac™...



the G3 desktop...



and the G3 PowerBook®.

**GLOBAL VILLAGE**

www.globalvillage.com  
(800) 336-2009

Now available at Mac dealers nationwide.

**COMPUSA**  
(800) 294-4727

MacConnection®  
(800) 800-0009

macZone®  
(888) 211-5032

MacWAREHOUSE®  
(800) 397-8508

MacMall®  
(800) 328-2790

Choose 106 at www.macworld.com/getinfo

Project Scheduling Made Easy!

# DON'T TELL MY BOSS

I'm not a project management expert, but everyone thinks I am. Most of my time is spent completing tasks, so I need a scheduling tool that's easy, fast, and flexible.

FastTrack Schedule 6.02 fills the bill. It keeps me organized and in control displaying all my project details in rich, colorful timelines. FastTrack Schedule provides just the right amount of power because it's more sophisticated than day-planners, but *easier to use and half*

**\$199\*** *the price of traditional, high-end project managers.*

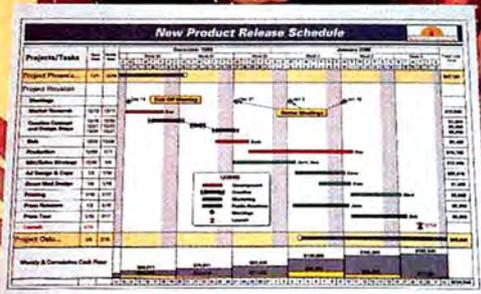
The presentation-quality schedules clearly illustrate project objectives and deadlines keeping team members and clients informed and up-to-date.

In a single schedule, I can outline multiple projects, make assignments, track cash flows, set-up dependencies—even add graphics. Whether I use it once a week or every day, FastTrack Schedule makes project scheduling easy.

For the free Demo CD, more info, or to place an order call **800-450-1982**.

## NEW Version 6.02

- ExpressDate™ • FastSteps™
- Open/Export MS Project MPX files
- Full AppleScript Support
- Histograms • Hyperlinks
- and much more...



# Macworld

## HOW TO CONTACT MACWORLD

### Subscription Services

Phone 800/627-2247 or  
303/665-8930, North America only  
303/604-7445, outside North America

U.S. Mail Macworld Subscription Services  
P.O. Box 54529, Boulder, CO 80322-4529

World Wide Web [www.zdnet.com/zdsubs/macworld/service](http://www.zdnet.com/zdsubs/macworld/service)

### Subscription Rates

The one-year (12-issue) subscription rate is \$34.97 in the United States and \$54.97 for all other countries (send \$104.97 for air mail). The rate for a one-year (12-issue) subscription with the monthly CD-ROM is \$49.97 in the United States and \$69.97 for all other countries (air mail not available at this time). Checks must be made payable in U.S. currency to Macworld. Please allow 6 to 8 weeks to receive your first issue.

### Back Issues of Macworld

Back issues (subject to availability) are \$8 per issue for U.S. delivery (\$12 outside the United States); prepayment in U.S. currency to Macworld is required. Send check or money order to Back Issues Department, Ziff-Davis Inc., P.O. Box 53131, Boulder, CO 80322-3131.

### Reprints and Permissions

You must have permission before reproducing any material from Macworld. Write to Macworld, Reprints and Permissions, 301 Howard St., 16th Fl., San Francisco, CA 94105; include a phone number. To order reprints of your company's editorial coverage, call Reprint Services at 800/217-7874 or 651/582-3800; fax 651/633-1862.

### Mailing Lists

We periodically make lists of our customers available to mailers of goods and services that may interest you. If you do not wish to receive such mailings, please write to us and include a copy of your mailing label.

### Macworld on Microfilm

Macworld is available on microfilm and microfiche from UMI, 300 N. Zeeb Rd., Ann Arbor, MI 48106-1346; 734/761-4700.

### Macworld Editorial

The editors of Macworld welcome your tips, compliments, or complaints. Stories and product reviews from past issues can be located at [www.macworld.com](http://www.macworld.com). We are unfortunately unable to look up stories from past issues; recommend products; or diagnose your Macintosh problems by phone, e-mail, or fax. Contact Apple toll-free at 800/538-9696, ext. 500, for information on user groups in your area.

Our offices are located at 301 Howard St., 16th Fl., San Francisco, CA 94105; 415/243-0505, fax 415/442-0766.

**LETTERS TO THE EDITOR** Direct all comments and suggestions regarding any aspect of the magazine to [letters@macworld.com](mailto:letters@macworld.com). Due to the high volume of mail received, we can't respond personally to each letter. We reserve the right to edit all submissions. All letters published in Macworld or Macworld Online become the property of Macworld.

**QUICK TIPS** Send your questions or tips on how to use Mac computers, peripherals, or software to Macworld, Quick Tips, 301 Howard St., 16th Fl., San Francisco, CA 94105; fax 415/442-0766; e-mail [quicktips@macworld.com](mailto:quicktips@macworld.com). Please include your name, address, and telephone number.

# FastTrack Schedule

Version 6.02

Schedule Tomorrow's Success Today.™ AEC SOFTWARE

TRY IT & BUY IT!

Download the demo and order online today at [www.aecsoft.com](http://www.aecsoft.com)

© 1999 AEC Software Inc. All rights reserved. Corporate names and trademarks stated herein are the property of their respective owners. \*Estimated Street Price is \$199; prices may vary at individual retailers. Outside the United States, please call (703) 450-1980 for information.



Choose 203 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)



**RICOH**  
Image Communication

eye candy ▶



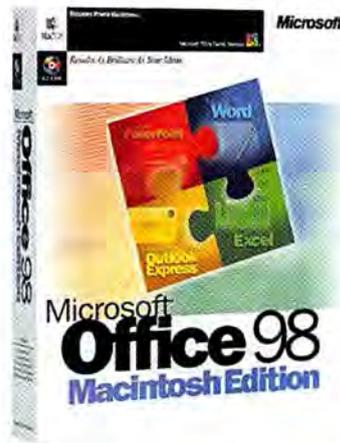
The power of color to entice. To mesmerize. To make presentations more involving. You know the use of color is as unlimited as the imagination itself. From paper sizes up to 12 x 18, to handling heavy paper stock, no color is more accurate than the full line of Aficio Color digital imaging systems. *[those who know demand Ricoh]*<sup>™</sup> **Aficio Color**<sup>™</sup>



800 63 RICOH  
ricoh-usa.com



jet.



# fuel.

Now that you've got that hot, new computer, wanna really make it go? Get Microsoft® Office 98 Macintosh Edition.

Office 98 is the productivity suite that's right for everyone. With it, you'll zip through tasks, dash through data, and create stunning documents, presentations, and spreadsheets faster than you can say, "fasten your seatbelt."

That's because Office 98 includes the kinds of features that make getting off the ground easy. Like drag-and-drop installation. Automatic spelling and grammar checking. An interactive Office Assistant that offers suggestions as you work and stands at the ready to answer any question. And—get this—a self-repair feature that automatically replaces necessary files if they accidentally get deleted.

Best of all, Office 98 was built from the ground up for the Mac. From the interface, to the icons, to the sophisticated ease of use, even the experts agree we *finally got it right*. Which means with Office 98 you can make good on all the reasons you bought that powerful new iMac in the first place. To really go places. Faster and more easily than ever before.

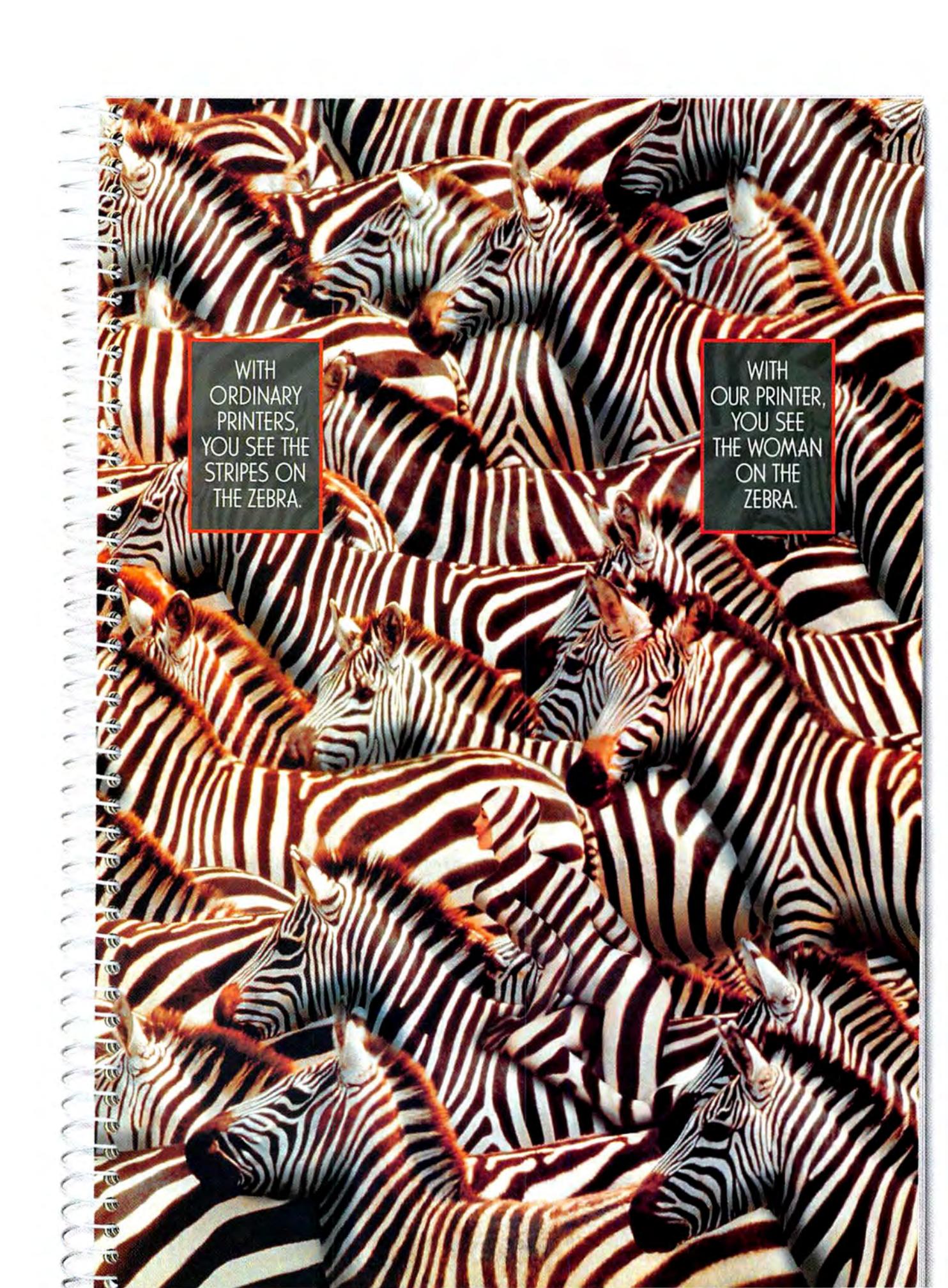
Microsoft Office 98 Macintosh Edition. **Prepare for take-off.**

*"This software suite demonstrates that, for the first time in its history, Microsoft truly understands what 'Macintosh elegance' means." —David Pogue, Macworld*



Where do you want to go today?®

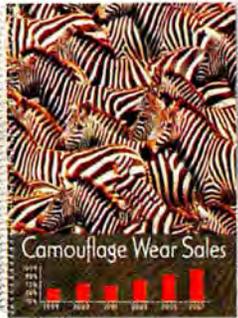
**Microsoft®**  
[www.microsoft.com/mac](http://www.microsoft.com/mac)



WITH  
ORDINARY  
PRINTERS,  
YOU SEE THE  
STRIPES ON  
THE ZEBRA.

WITH  
OUR PRINTER,  
YOU SEE  
THE WOMAN  
ON THE  
ZEBRA.

YOU'VE GOT TO SEE IT IN **EPSON** COLOR.



Can you spot the hidden rider among all these zebras? As you may know, it's our 1440 dpi that reveals her every detail. So when the company that made the amazing camouflage gear she's wearing had to create a sales report – and had to do it quickly – the printer they selected was the new EPSON Stylus® Color 900. Aside from capturing the incredible resolution you see here, it also prints sharp text at up to 12 PPM and color up to twice as fast as competitors at comparable dpi. That's the kind of performance that sets this printer way ahead of the herd. Which, in business, is exactly where you want to be.

### INTRODUCING THE EPSON STYLUS COLOR 900 BUSINESS PRINTER WITH 1440 DPI.

Only Epson® color ink jet printers have the exclusive PerfectPicture® Imaging System for: 1440 x 720 dpi • A 3-picoliter dot – the smallest in the industry, for the sharpest detail • Fast print speeds – up to 12 PPM black/10 PPM color • Fast Ethernet and LocalTalk options • PC/Mac/USB compatibility. To learn more, just call 1-800-GO-EPSON or visit us at [www.epson.com](http://www.epson.com).



Epson Stylus Color

Price may vary. The National Software Testing Laboratory, Inc. (NSTL) found that the EPSON Stylus Color 900 outperforms the average print speeds of competitive printers – up to twice as fast. The NSTL report is available by calling 1-800-GO-EPSON. The NSTL testing uses typical software applications and conditions. Actual results may vary according to applications, print settings and conditions. Epson, Stylus and PerfectPicture are registered trademarks of Seiko Epson Corporation. PerfectPicture is a registered trademark of Epson America, Inc. ©1999 Epson America, Inc.



# 74% OFF

ANNUAL COVER PRICE	YOUR ONE-YEAR RATE	BONUS STATUS
\$95.88	\$34.97	FREE CD-ROM

As a new subscriber, you are entitled to a reduced rate on Macworld – 74% off the cover price. **BONUS:** Maximize your desktop publishing power with the *Macworld Clip Art CD-ROM* – FREE with your paid subscription.

**PLUS A FREE CD-ROM!**



**BONUS:**  
Clip art  
images,  
digital stock  
photos,  
fonts and  
more!

- 1 year (12 issues) just \$34.97. YOU SAVE 64%.  
 2 years (24 issues) just \$49.97. YOU SAVE 74%.

Name \_\_\_\_\_ (please print)

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

E-mail \_\_\_\_\_

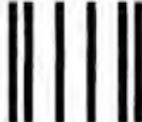
Check box if you would like to receive periodic e-mail offers from carefully screened providers of quality goods and services.

Payment enclosed.  Bill me later.

4SNN6

Annual newsstand price \$95.88. Non-U.S. orders, please add US\$20 postage; Canadian GST included. This offer does not include monthly CD-ROMs.

Check us out on the Web —  
<http://www.macworld.com>



NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES

**BUSINESS REPLY MAIL**

FIRST-CLASS MAIL PERMIT NO. 66 BOULDER, CO

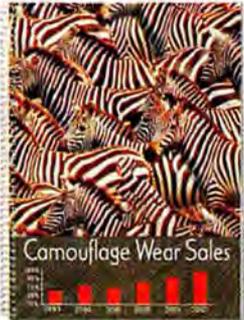
POSTAGE WILL BE PAID BY ADDRESSEE

**Macworld<sup>®</sup>**

Subscription Department  
PO Box 54506  
Boulder, CO 80323-4506



YOU'VE GOT TO SEE IT IN **EPSON** COLOR.



Can you spot the hidden rider among all these zebras? As you may know, it's our 1440 dpi that reveals her every detail. So when the company that made the amazing camouflage gear she's wearing had to create a sales report – and had to do it quickly – the printer they selected was the new EPSON Stylus® Color 900. Aside from capturing the incredible resolution you see here, it also prints sharp text at up to 12 PPM and color up to twice as fast as competitors at comparable dpi. That's the kind of performance that sets this printer way ahead of the herd. Which, in business, is exactly where you want to be.

### INTRODUCING THE EPSON STYLUS COLOR 900 BUSINESS PRINTER WITH 1440 DPI.

Only Epson® color ink jet printers have the exclusive PerfectPicture® Imaging System for: 1440 x 720 dpi • A 3-picoliter dot—the smallest in the industry, for the sharpest detail • Fast print speeds—up to 12 PPM black/10 PPM color • Fast Ethernet and LocalTalk options • PC/Mac/USB compatibility. To learn more, just call 1-800-GO-EPSON or visit us at [www.epson.com](http://www.epson.com).



**\$449**

Epson Stylus Color 900. Ultrafast business printer.

Price may vary. The National Software Testing Laboratory, Inc. (NSTL) found that the EPSON Stylus Color 900 outperforms the average print speeds of competitive printers — up to twice as fast when printing in color applications. The NSTL report is available by calling 1-800-GO-EPSON. The NSTL testing uses typical software applications and conditions. Actual results may vary according to applications, print settings and computer configuration. Epson and EPSON Stylus are registered trademarks of Seiko Epson Corporation. PerfectPicture is a registered trademark of Epson America, Inc. ©1999 Epson America, Inc.



Use it



or lose it.



Introducing AIWA's USB Backup Tape Drive for iMAC™ and G3. With up to 8 GB<sup>1</sup> of capacity and an MSRP of only \$249, you've got absolutely nothing to lose. Look us up at [www.aiwa.com/csd](http://www.aiwa.com/csd) for more information.

Choose 299 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

See Us At Macworld Expo Booth #1937

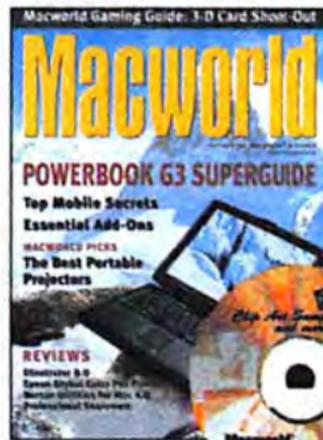
**aiwa**  
COMPUTER SYSTEMS DIVISION

# 74% OFF

ANNUAL COVER PRICE	YOUR ONE-YEAR RATE	BONUS STATUS
\$95.88	\$34.97	FREE CD-ROM

As a new subscriber, you are entitled to a reduced rate on Macworld – 74% off the cover price. **BONUS:** Maximize your desktop publishing power with the *Macworld Clip Art CD-ROM* – FREE with your paid subscription.

**PLUS A FREE CD-ROM!**



**BONUS:**  
Clip art  
images,  
digital stock  
photos,  
fonts and  
more!

- 1 year (12 issues) just \$34.97. YOU SAVE 64%.  
 2 years (24 issues) just \$49.97. YOU SAVE 74%.

Name \_\_\_\_\_ (please print)

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

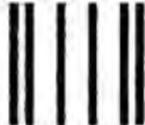
E-mail \_\_\_\_\_

Check box if you would like to receive periodic e-mail offers from carefully screened providers of quality goods and services.

Payment enclosed.  Bill me later. **4SNN6**

Annual newsstand price \$95.88. Non-U.S. orders, please add US\$20 postage; Canadian GST included. This offer does not include monthly CD-ROMs.

Check us out on the Web —  
<http://www.macworld.com>



NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES

**BUSINESS REPLY MAIL**

FIRST-CLASS MAIL PERMIT NO. 66 BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

**Macworld<sup>®</sup>**

Subscription Department  
PO Box 54506  
Boulder, CO 80323-4506



# Letters

## Going All the Way

THE *MACWORLD* WEB MERCHANT'S Companion" (June 1999) didn't go quite far enough in discussing e-commerce site development. Sure, you can set up the best site on the Web using Tom Negrino's suggestions, but if you don't market it, few people will ever see it.

While the Internet offers a way to level the playing field for our niche food business, getting eyeballs to view our Web site has been our single biggest challenge. Banner ads, print ads, public relations, and other devices are essential—and often expensive—components in addition to the creation and maintenance of the site.

ELLIE MACDOUGALL  
Wells, Maine

## Left-Out LaserWriters

SINCE I JUST BOUGHT AN iMAC, I was very interested to see your recent article on USB products ("USB from A to Z," June 1999).

I ran down the list of USB-to-serial adapters, hoping I could find one that would allow me to use my Apple Personal LaserWriter LS. However, I found that none of the products listed in the roundup support serial LaserWriters like mine. Do you know of any products on the market (or in development) that do?

ELIZA GALLO  
New York, New York

*You are not alone in wanting to save your LaserWriter, and at least one adapter manufacturer has heard your plea. Keyspan (510/222-0131, www.keyspan.com) says it plans to ship a new USB-to-serial adapter that supports LaserWriters by the time you read this.—Ed.*



## Sanity for Service Bureaus

THANKS FOR BRINGING MUCH needed service-bureau submission guidelines to the forefront for all designers ("Don't Sabotage Your Professional Print Job," *Create*, June 1999). The top ten were dead-on but only put a dent in the diatribes of everyday prepress troubleshooting. I was so relieved to find it isn't just my department that encounters these problems. I can now prove they are not anomalies that we randomly make up as an excuse for not getting a job out on time.

I passed along the information to our clients and our front office in hopes that it will ease our troubled workplace. We feel like an unlimited source of free software training, often allowing our clients to use us in fixing their files just as they flee to another vendor. I keep dreaming of a total cure, but thanks for treating some of the symptoms.

CALLIE HOUSEHOLDER  
Atlanta, Georgia

I READ STEPHEN BEALE'S ARTICLE "Don't Sabotage Your Professional Print Job" with great enthusiasm. I found it to be pretty much on the money. However, I would like to mention a problem we come across too often on the job: stylized fonts. For example, a job will come in where the bold or italic box for a font is selected in QuarkXPress. These fonts may print fine on a laser printer, but if the actual printer fonts are missing, the italic or bold will print in roman on high-end output devices, instead of the way the client intended.

AARON KROUN  
Woodside, New York

## GoMac, Go!

IT WAS NICE TO SEE ACTION GoMac 2.0 get some worthwhile press (*Reviews*, June 1999). I've been a GoMac devotee since version 1.0. And while it was hard to make the leap from \$15 shareware, when Proteron owned it, to a \$40 application under Power On Software, I've found the improvements are well worth the cost.

Christopher Breen's review left out a couple of GoMac's more endearing features and conveniences. To manage items in the Start menu, just click on the Start button while holding down the option key, and the window pops open. Also, you can add control-strip modules to the Clock Tray at the right side of the task bar. Simply click anywhere on the task bar and hold down the mouse button, and you get a pop-up menu that includes Add Module and Remove Module commands. So in addition to launching and managing applications easily, you can handle features such as

*continues*

# What's Your Outlook? On E-mail?



## Still Using Freebies?

Those free E-mailers are fine if E-mail isn't all that important to you. But if your business depends on E-mail, QuickMail Office is the smart move.

Feature-packed and easy to use, QuickMail Office gives you the power that comes only with a professional's E-mail program. You can settle for crippled freeware or you can get serious. QuickMail Office 2.0. E-mail for people who need to get things done.

### Get Serious About E-Mail! QuickMail Office Gives You Everything You Need For REAL E-mail!

- ▶ Clients and server all in one box
- ▶ Low-maintenance — no need for high-price experts or consultants
- ▶ Easy mail management
- ▶ Delay and unsend messages
- ▶ Contact manager
- ▶ Custom forms
- ▶ Powerful search
- ▶ Built-in directory server

ALL-NEW  
VERSION  
2.0

**Priced From  
\$35-\$69/User**  
**ORDER NOW!**



CE SOFTWARE

**1-800-579-8956**  
**Mention M2304**  
**www.cesoft.com**

Choose 170 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

18 September 1999 MACWORLD

## LETTERS

resolution or sound—even Internet connections—on the fly.

STEVE GREENBLATT  
*Brooklyn, New York*

### Palm's Poor PIM

FRANKLIN TESSLER WAS WAY TOO kind in giving a 3½-mouse rating to MacPac 2, the new Mac desktop software for Palm handhelds (*Reviews*, June 1999). As he points out, MacPac 2 sends notes attached to calendar items into limbo, and simply ignores some repeating calendar items.

That violates the fundamental idea that has made the Palm devices so successful—having one body of information available whenever and wherever you want to access it, on a variety of platforms. Now we're back to the days where we have to say "except on a Mac." After having had the Mac fully connected to the Palm, we're back to playing second fiddle to PCs, or maybe we're playing first violin with only three strings.

Palm designers have been so smart until now. What happened?

JEFF BYERS  
*San Francisco, California*

*Mac users are divided on whether these shortcomings constitute a fatal flaw. Despite its problems, I find that MacPac 2 offers much more functionality than its poky predecessor; but it still falls short of my favorite PIM, the defunct Now Up-to-Date and Now Contact bundle.—Franklin Tessler*

I HAVE BEEN USING MACPAC 2 WITH a PalmPilot and found a good workaround for the main problem described in the review of this product (not being able to attach notes to tasks or events on the desktop that will appear on the Palm). All you need to do is this: first, create the task or event. Then create a note and name it Handheld Note. Drag and drop the note onto the task or event. The note will be shown as an attached item on the desktop and will also appear as an attached note on the Palm.

VICTOR LESSER  
*New York, New York*

*3Com/Palm Computing, maker of MacPac 2, admits this solution might work but doesn't recommend it, as it may lead to trouble down the road.—Franklin Tessler*

### Opening a Can of Worms?

I COULDN'T HELP BUT EXPERIENCE déjà vu when I read about Apple's decision to open part of the OS X Server source code ("Apple Goes Open Source with Mac Server," *News*, June 1999). I thought Apple would come to its senses and give up or at least revamp its strategy. But now that I see it in *Macworld*, I know this cannot be.

Remember Mozilla, Netscape's open-source spin-off that never really amounted to anything? Apple is following exactly the same approach, and I hope for its sake that it doesn't end up in the same place.

Open source seems to be all the rage these days with software manufacturers. As Apple's product manager for Mac OS X Server said in the article, "It's as if we had hired a huge bunch of programmers for free." Haven't we seen the results of this type of corporate greediness and laziness before? Apple, there's no such thing as a free lunch.

JEFFREY PAUL  
*via the Internet*

### Supporting Sherlock

I ENJOYED ANDREW GORE'S COLUMN "Where's Sherlock?" (*The Vision Thing*, June 1999). When I first saw ads for Sherlock, I thought it was just more Web-related hype and brushed it off.

Then I installed OS 8.5 and started to take a closer look. I was very impressed. It greatly simplifies Web searches, and indexing my drives by content and searching for files based on keyword content is really fantastic. It has saved me so much time.

Sherlock is one of those how-did-I-ever-live-without-it tools. I completely agree that Apple should aggressively support and market Sherlock. If only the Web sites that maintain the search databases would get rid of stale URLs, the efficiency and effectiveness of Web searching would *really* improve!

Apple, don't flush a good thing!

SAM GASSTER  
*Los Angeles, California*

ANDREW GORE CORRECTLY asserts that Sherlock is "the most easy-to-use search technology on any platform." Not only that, but it renders virtually instant, on-target results every *continues*

© 1999 Macromedia, Inc. All rights reserved. Macromedia, the Macromedia logo, Flash and Freehand are trademarks or registered trademarks of Macromedia, Inc. All other trademarks or registered trademarks are the property of their respective owners.

# Flash helps millions of hearts race daily.

When the world met the sleek  
new TT at AudiUSA.com,  
Flash made the introductions.

Engaging. Responsive.

Performance-driven.

And, of course, so is the TT.

If you want your website  
to quicken millions of pulses,  
take Flash for a spin.

[www.macromedia.com](http://www.macromedia.com)



add life to the web

  
macromedia®

DIRECTOR SHOCKWAVE DREAMWEAVER FIREWORKS **FLASH** **FREEHAND** GENERATOR

# PowerBook® or Desktop VST has the portable solutions you are looking for.

 Stop by Booth #561 and you could win a new VST FireWire® Hard Drive!



2, 4, 6, 8, 10 & 14GB  
FireWire Hard Drives

**FireWire Hard Drive  
Giveaway!**

Fill out your badge at  
Macworld Expo, drop it  
by our booth and you  
could be a winner!

Check out our FireWire Full Height  
Drives in 10, 14 and a whopping 22GB.

VST Products are available at  
[www.vsttech.com](http://www.vsttech.com)

Apple, Macintosh, iMac, and PowerBook are registered trademarks of Apple Computer, Inc. Zip is a registered trademark of Iomega Corp. SuperDisk is a trademark of Imation, Corp.



Choose 73 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

time. I love asking my PC-challenged friends to find their own name. Invariably the final choice is an Internet site that mentions them, since none of them has registered with any search engines. To their amazement, newfound respect, and envy, I have located multiple sites in mere seconds in every case. Sherlock is continued proof that Macs rule!

DAN AUGSBURGER  
Berrien Springs, Michigan

## Don't Hold Back Now

I AM SICK OF THE NAMBY-PAMBY whiners out there in Macdom who cannot grasp the necessity of change, focus, radical ideas, and direction in Apple. I've been reading letters in *Macworld* criticizing Apple for the new G3 and the iMac, and I have heard enough. Thankfully, Steve Jobs has the chutzpah to take the Mac in radical new directions—forcing needed change in what was a comatose, under-achieving platform. You complained when Apple was in the red for years, offering no inspiring technologies and no real OS direction—and now you complain because that's all history. Number one—selling computers, flexible and efficient new technologies, radical designs, and even a bit of humor. Oh, yeah—this is bad!

The Mac is back in fact and in spirit. It's time to embrace the radical changes and get on board with the brightest future Apple has seen in years.

There—I feel better now.

RON TAVALLIN  
Palatine, Illinois

Letters should be sent to *Letters*, Macworld, 301 Howard St., 16th Fl., San Francisco, CA 94105; via fax, 415/442-0766; or electronically, to [letters@macworld.com](mailto:letters@macworld.com). Include a return address and daytime phone number. Due to the high volume of mail received, we can't respond personally to each letter. We reserve the right to edit all letters. All published letters become the property of *Macworld*.

## CORRECTIONS

The viewable area for Eizo Nanao Technologies' FlexScan T960 is 19.6 inches ("Think Big," June 1999).

Contrary to our assertion, Macromedia's Fireworks 2.0.2 does have tweening capabilities (Reviews, July 1999). **m**

# FireWire® Solutions! HotLink™ FireWire Series

**HotLink FireWire/PCI Card** ..... \$169  
Ideal FireWire interface for PCI slots of your Beige G3 & Power Mac. Compatible with Adobe® Premiere®, Apple Final Cut Pro™ and new VST® hard drives.

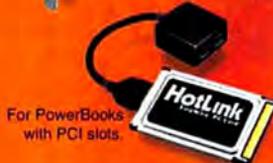
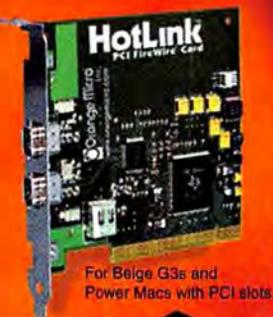
**HotLink FireWire PC Card** ..... \$229  
Perfect add-on for your PowerBook PC Card slot. Compatible with Adobe® Premiere®, Apple Final Cut Pro™ and new VST® hard drives.

**HotLink Hub** ..... \$99  
6 port FireWire expansion hub. Includes cable and power supply. Enhances "Hotplug" by eliminating daisy-chain.

**HotLink Repeater** ..... \$59  
Allows additional 15 ft. extension for any FireWire peripheral. Up to 236 feet with multiple repeaters.

**HotLink FireWire/SCSI Adapter** ..... \$99  
External adapter allowing users to connect Fast SCSI devices through a FireWire port. Save a slot on your "Blue and White" G3. Includes cable.

**FireWire 15 ft. Cables** ..... \$19

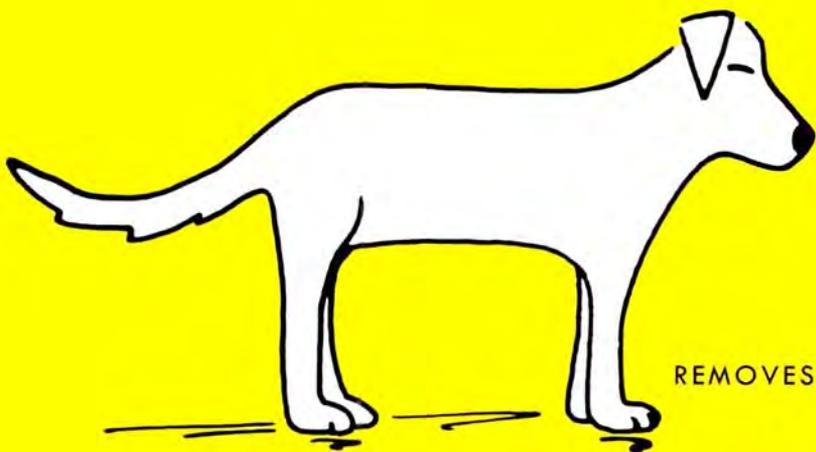
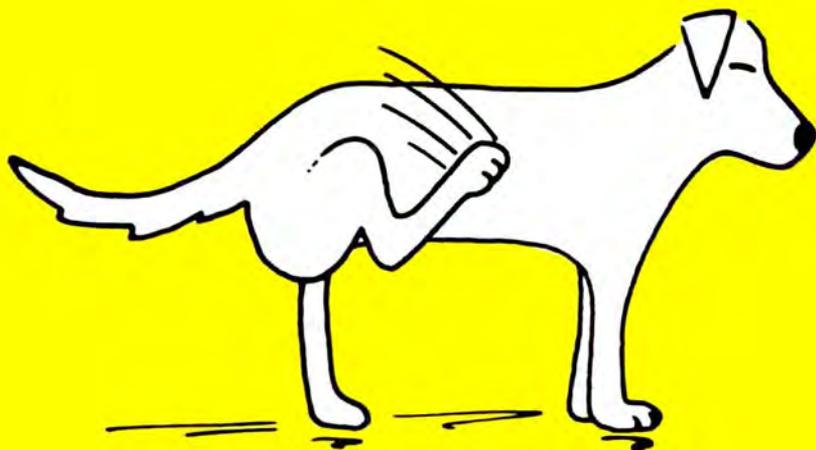


**Orange Micro Inc.**

"19 Years of Innovation and Excellence"  
(714) 779-2772 • [www.orangemicro.com](http://www.orangemicro.com)  
e-mail: [sales@orangemicro.com](mailto:sales@orangemicro.com)

Visit us at booth #735 at Macworld Expo

Choose 60 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)



REMOVES SCRATCHES.

One second your photo has a scratch. The next, it doesn't. That's the power of Digital ICE™ revolutionary technology that instantly removes scratches, dust and fingerprints from scans. If you're looking to save a great photograph, look no further than Nikon. Because no one else has Digital ICE. Call 1-800-52-NIKON or visit our Web site at [www.nikonusa.com](http://www.nikonusa.com).

©1999 Nikon Inc. Digital ICE is a trademark of Applied Science Fiction.

Nikon Coolscan® film scanners  
with Digital ICE



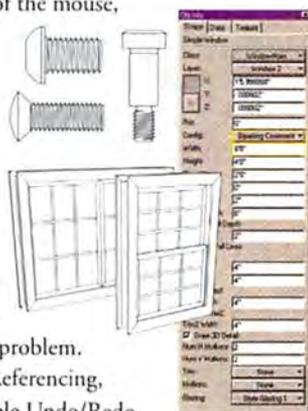
**Nikon**

Choose 59 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

After 14 years of constant research and development, Diehl Graphsoft is proud to introduce VectorWorks—the next generation of MiniCAD. VectorWorks improves MiniCAD's proven CAD technology and merges new state of the art Object-Based design philosophy. This integration makes you more productive without sacrificing flexibility and control.

Increased Productivity with Object-Based Design

VectorWorks' state of the art Object Technology helps streamline the design process by making it easy to create common design elements. Now, Objects like doors, windows, nuts and bolts, can be created and edited with a click of the mouse, making it easy to explore design alternatives, consider "what if" scenarios, and handle last-minute client changes.



The Strength of a Proven CAD Technology

VectorWorks offers a solid foundation based on proven CAD technology—giving you the power and flexibility to tackle any design problem. New features such as Workgroup Referencing, DWG (v.14), Round Walls, Multiple Undo/Redo and an improved scripting language, strengthen VectorWorks' core CAD capabilities. And, with RenderWorks, VectorWorks' new photo-realistic rendering plug-in, you can bring your designs to life with textures, shadows and dramatic lighting.

The VectorWorks Advantage

With VectorWorks, you get it all—the flexibility and control of proven CAD technology and the productivity benefits of Object-Based design. VectorWorks ships FREE solutions for Architecture, Landscape Design, DTM and HVAC among others. Best of all, you aren't limited to the solutions we provide. VectorWorks is completely customizable, allowing you to create your own custom business solutions.

Special Offer to Readers of Macworld

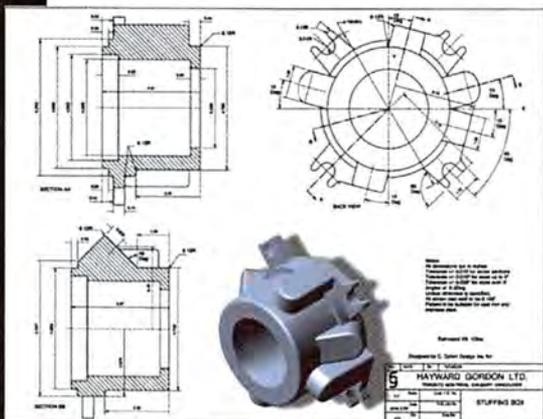
Save \$279 by purchasing VectorWorks with photorealistic rendering direct for \$820 or, without rendering for only \$595. Includes FREE Tech Support and a 90-Day Money-Back Guarantee.



Diehl Graphsoft Inc

Software for Today's Professional

1-888-646-4223



Carlos Cohen, C. Cohen Designs Inc., Toronto, Canada. Rendered with RenderWorks

# Introducing VectorWorks

## The Next Generation of MiniCAD

Charles Duncan, Pty. Ltd.



Roberto Candusso, Arquiteros Asociados, Sao Paulo, Brazil



## Music for the Masses

WHY MP3 AND THE MAC WILL REVOLUTIONIZE THE MUSIC WORLD

CONVERGENCE IS THE bogeyman of media megacorporations. In the music industry, where so much is made by so many for doing so little, the idea that artists can now eliminate the middleman and deliver their content directly to their admirers is a frightening thing indeed.

These music publishers should be afraid—very afraid. Because MP3 has finally arrived on the Mac. And once this emerging standard for encoding and distributing high-quality audio combines with Mac users' creative zeal, the resulting tidal wave will be big enough to swallow media moguls whole.

### Special Delivery

In the last couple of months I've finally had the opportunity to tinker with MP3, an extension of the MPEG multimedia file format now famous for housing extremely good-sounding music in fairly small sound files. And while audiophiles are practically frothing at the mouth over claims that MP3 sound quality is as good as that of compact discs, one thing that can't be challenged is that MP3 files are much smaller, about one-tenth the size of the equivalent data on an audio CD. MP3 files can be downloaded over the Internet, or you can create your own from your personal CD collection by using MP3-encoding software. Best of all, you can download your own custom mixes to pager-size portable MP3 players, in addition to playing them on your Mac.

Diamond Multimedia recently announced the \$269 USB-based Rio PMP 500, the latest version of the leading MP3-player hardware. The new Rio works with any Mac with a USB port, can store two hours of music on its built-in RAM, and has a slot that can use removable SmartMedia cards to add another hour of music to the mix (see *News*, elsewhere in this issue).

Because MP3 players like the Rio store music in RAM, they're the tops in terms of stability. There are no moving parts, so there's nothing to bounce, jog, or otherwise disrupt the playback of your favorite tunes.

The only thing holding back MP3 on the Mac has been software. Around the *Macworld* offices, we've been testing the first two commercial Mac MP3-encoding programs: Xing Technology's \$30 AudioCatalyst (already in version 2.0) and Casady & Greene's \$49 SoundJam MP, which should be available by the time you read this.

With MP3 encoders like these, copying an audio CD to your hard drive is about as easy as sticking it in your

### Revolution 10

Copying your favorite CDs to your hard drive is great. But the real power of MP3 will be in the sounds you tune in over the Internet.

Ever wonder why a CD can cost upwards of \$18 when the cost of materials is about a buck? Distribution. Marketing. Advertising. Corporate profits. By the time everyone's done getting their share of that price tag, the artist is left with only a modest percentage of the take.

With MP3, suddenly the infrastructure disappears from the equation. Musicians can charge a couple of dollars for an entire CD's worth of music, keep most of

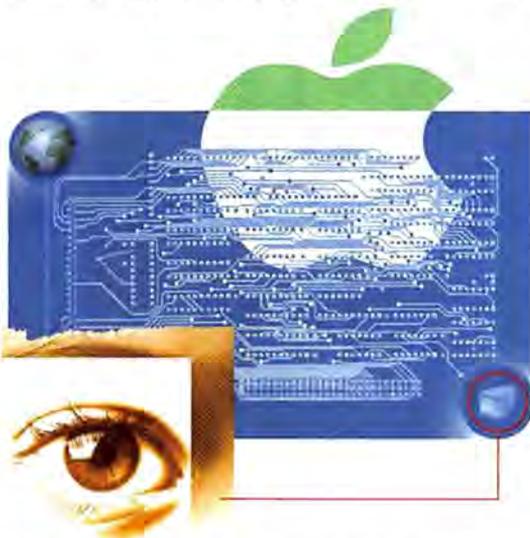
the proceeds (considerably more than they'd see from the sale of a CD), and you, the consumer, save a bunch and get your music in easily managed files. Ever try to mix a custom MiniDisc or audiotape? Let's just say the interfaces were designed by the same folks who invented VCRs. With MP3, you get to use your Mac as your audio dashboard. You can even use plug-in "skins" to completely customize your MP3 player's interface. How cool is that?

Now that MP3 is finally on the Mac, the revolution it embodies will only accelerate.

The Mac is already the platform of choice for many musicians. And with MP3, those musicians will be able to encode their works for distribution over the Internet with ease.

Just add a few digital groupies who will breathlessly follow a musician's files around the Web, and the record companies won't have any enticements left to offer the aspiring rock virtuoso. **m**

*Editor in Chief Andrew Gore is a co-author of My iMac (IDG Books Worldwide, 1999). E-mail questions and comments to Andy at [visionthing@macworld.com](mailto:visionthing@macworld.com).*



CD-ROM drive. In both SoundJam and the shareware MacAmp, you can create custom song sequences (or *playlists*) by clicking on and dragging tracks from the CDs you've recorded and from MP3 tracks you've downloaded from the Net.

Then there's the issue of sound quality. I'm here to tell you that at higher sampling rates—say, 144kHz—I simply can't tell the difference between songs recorded in MP3 and those on a conventional audio CD. I'm sure there is a difference—I just can't hear it. And truth be told, I'm not that concerned about what I can't hear.

**STOP BY AND WE'LL  
SHOW YOU HOW TO BUY  
A COMPUTER.**

**STAY LONG ENOUGH  
AND WE'LL SHOW YOU  
HOW TO BUILD ONE.**

CNET: Hardware

Desktop computer  
reviews and features

How to buy your first PC

1: Know what you need

Under the hood:  
What makes a PC fast?

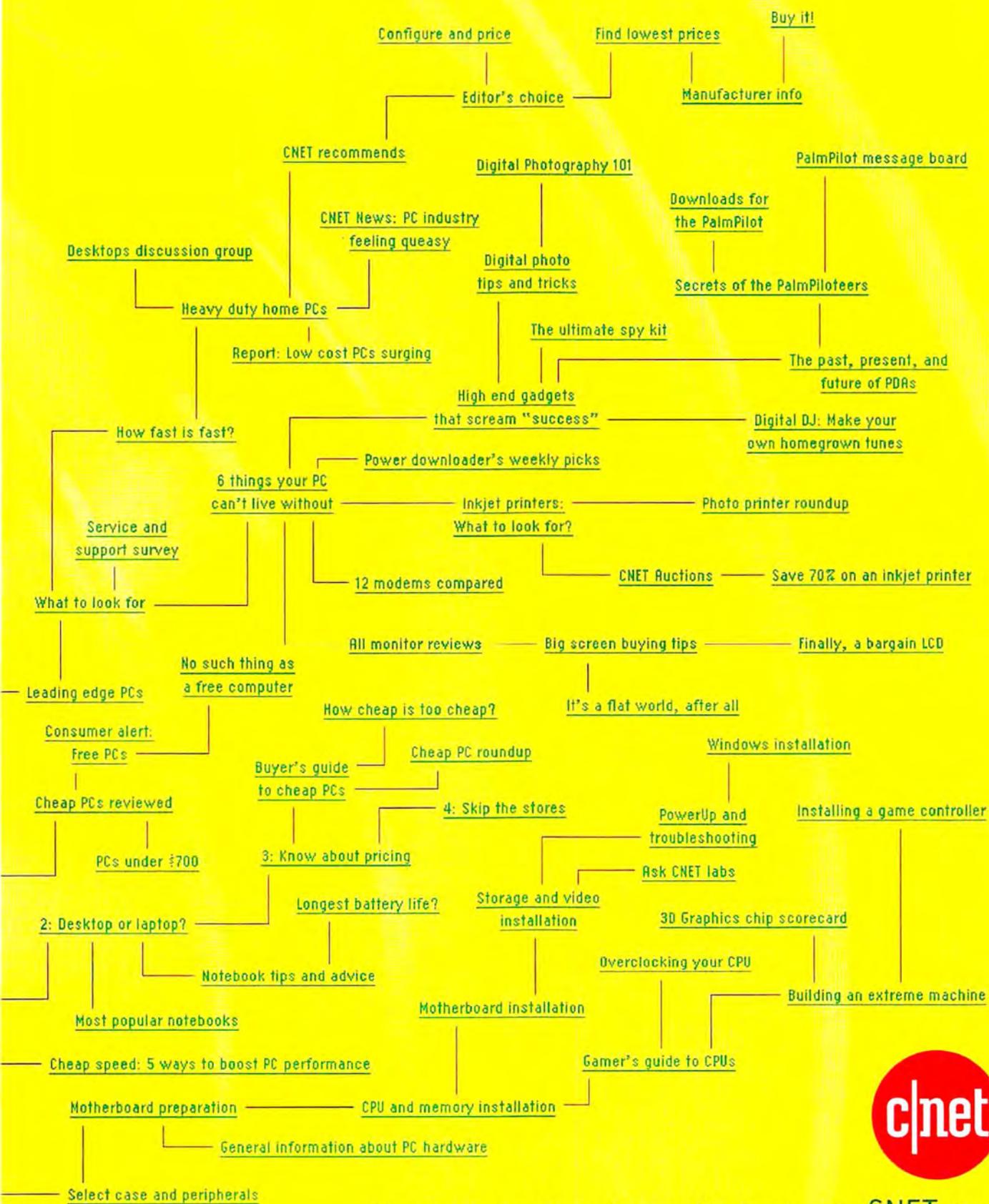
Build your own  
computer

Hardware: Do it yourself

Before you begin

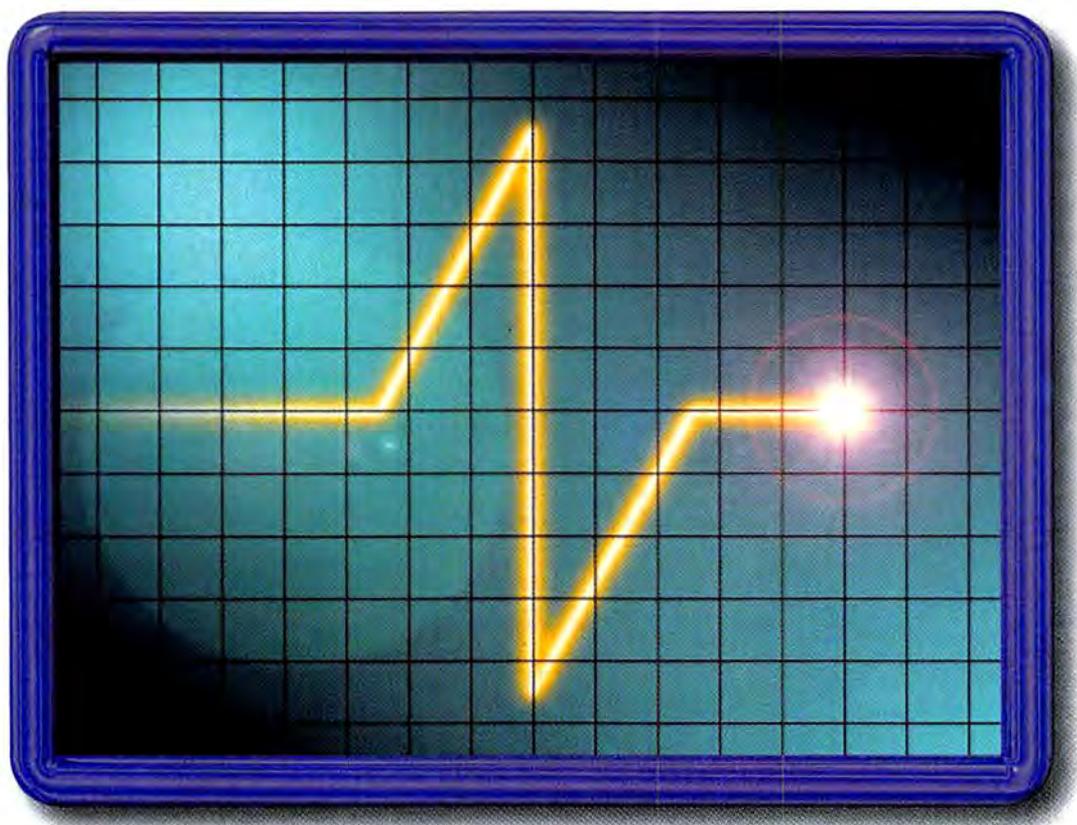
Select CPU and  
motherboard

©1999 CNET, Inc. All rights reserved. CNET and The eZ logo are trademarks and service marks of CNET, Inc. All other trademarks are the property of their respective owners.



The source for computers and technology.™ CNET.com

There's only one utility in the world that does more for your Macintosh than TechTool Pro 2...



## Introducing TechTool Pro 2.5

MicroMat's disk repair and Macintosh troubleshooting utility just became a whole lot better. Loaded with new features like Trash Cache™, which allows you to resurrect files you've accidentally deleted. Or our new Automated Diagnostic feature that checks your drives at the time intervals you specify, so you're always sure your drives are in top shape. TechTool Pro 2.5 even now supports new technologies like FireWire drives, USB floppy drives, System 8.6, all of the latest Macs and much more. But the real power of TechTool Pro 2.5 isn't in the features

you can see, it's in the features you can't see. Like a multitude of new drive repair routines that can save data that other utilities would simply abandon. An improved recovery system that will find lost files in the darkest caverns of a damaged drive. You'll also find improved performance on key features like disk optimization. But maybe the feature you'll find most interesting about this version is the price: FREE\*. If you own any version of TechTool Pro 2, just go to our web site and grab the updater. You'll be glad you did.

MicroMat Inc.  
800-829-6227  
707-566-3831  
FAX: 707-566-3871  
info@micromat.com  
www.micromat.com



# Fix different.™

See us at MacWorld Expo New York at Booth #1707



\*Version 2.5 is available at no charge to registered TechTool Pro 2 users as an updater application directly from the MicroMat web site. If you do not wish to download the updater or would prefer a new CD, they can be purchased for \$25 plus tax, shipping and handling by calling the phone number above. Please have your serial number ready when calling. Prices subject to change without notice. ©1999 MicroMat Inc. All rights reserved. TechTool is a registered trademark of MicroMat Inc. Fix Different is a trademark of MicroMat Inc. Macintosh is a trademark of Apple Computer, Inc. Choose 67 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

# News

graphics

## Web Sites Take On Application Roles

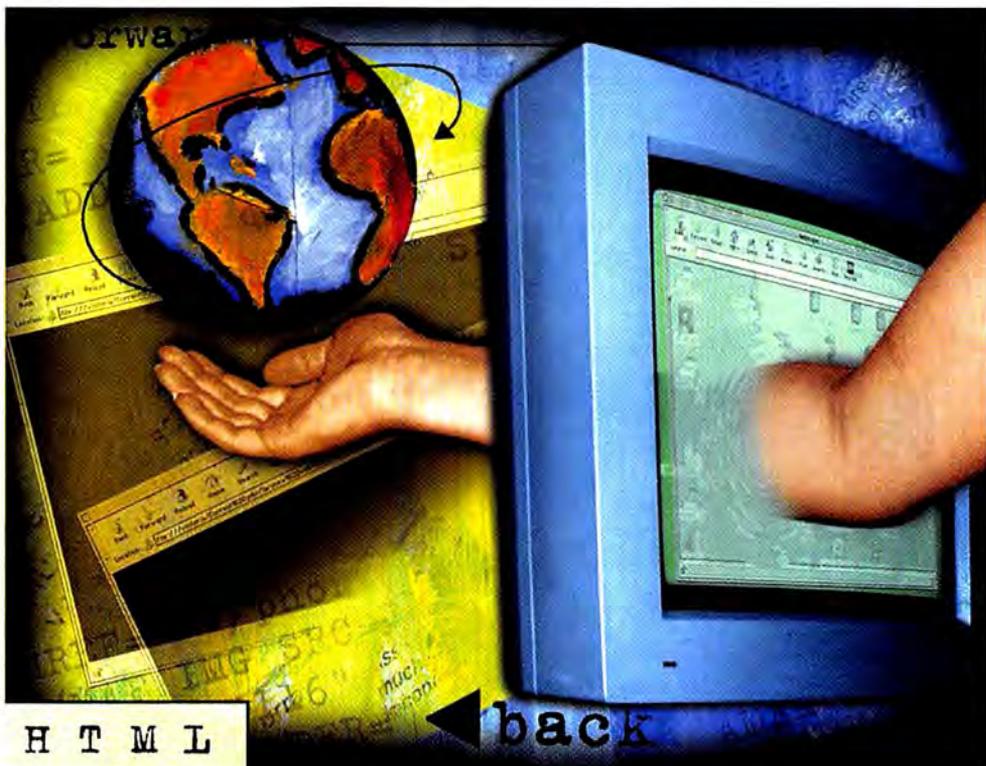
CREATE AND MODIFY  
GRAPHICS THROUGH  
YOUR WEB BROWSER

by Stephen Beale

**T**he next time you need to touch up a photo or convert an image file, you may have an extra software tool at your disposal: your Web browser. A handful of developers, including Extensis (800/796-9798, [www.extensis.com](http://www.extensis.com)) and a new company called Avivo (415/242-0400, [www.atomz.com](http://www.atomz.com)), have introduced Web sites that let you perform graphics operations that would otherwise be handled by stand-alone software. As Internet bandwidth increases and developers look for new sources of revenue, such Web-based graphics apps could become commonplace.

Web sites that duplicate commercial software's features are nothing new. For example, [Netstudio.com](http://Netstudio.com) offers tools for creating simple Web graphics. However, these sites are largely geared toward casual users. The new Web application sites target graphics professionals.

**Creative Pros** Extensis, best known as a developer of graphics plug-ins, has launched a Web site called [Creativepro.com](http://Creativepro.com) that offers discussion forums, service directories,



links to industry news sources, and information about software products from Extensis and other companies. Nothing unusual—but Extensis has ambitious plans to offer a variety of graphics services via the site, including PDF-to-HTML file conversions, digital photo enhancement, and portfolio hosting. Extensis plans to offer its first Web-based application—a PDF preflighting tool based on its Pre-

flight Pro software—shortly after [Creativepro.com](http://Creativepro.com) goes public in July. Extensis won't charge for basic PDF preflighting but eventually will offer a more fully featured version of the service for a fee.

**Atomic Power** Avivo, a new company founded by ex-Macromedia employees, has launched a Web site—[www.atomz.com](http://www.atomz.com)—that will offer free software applications for Web developers. The first app,

Atomz Search, lets you quickly produce search engines for your Web site. Using tools on [Atomz.com](http://Atomz.com), you can create customized results pages that conform to your site's design.

The free service is limited to Web sites with fewer than 500 pages, and you must include a "Powered by Atomz.com" logo on the search page. The company offers a premium service, beginning at \$30

*continues*

H T M L

back

per month, for larger Web sites or those that don't want to display the logo. The premium service also provides automatic reindexing of your site; with the free service, you must periodically hit a reindex button accessed through Atomz.com.

Avivo plans to offer other server applications, including workflow management and dynamic generation of data and graphics.

**Extra! Extra!** Targeting the newspaper business, B-Linked (800/254-6533, www.b-linked.com) and iPrint (www.iprint.com) have teamed up to offer the Virtual Ad Design Studio (VADS), a service that allows advertisers to create and customize print ads using a Web browser. An advertiser can take an ad created for one newspaper, modify the copy, fonts, graphics, and other elements, and then redistribute the ad to other publications.

**Other Vendors** Although they have not announced plans for Web-based applications, most of the leading graphics vendors have substantially stepped up their Web presence.

In May, Macromedia announced Shockwave.com, a new business venture that will manage an entertainment-oriented Web site of the same name (see "Macromedia Bets the Store on Flash 4," *News*, August 1999). MetaCreations offers direct links to online interest groups through menu commands in its software packages. For example, the BryceTalk command in Bryce 4 accesses an online forum for Bryce users. And Adobe, as part of an ongoing restructuring, says it will beef up the electronic-commerce features on its Web site, making it easier for customers to buy the company's software.



## Wacom Tablets Get USB Interface

USERS OF IMACS AND BLUE POWER MAC G3 SYSTEMS can now enjoy the benefits of pressure-sensitive graphics tablets. Wacom (800/922-6613, www.wacom.com) has announced USB versions of its Intuos pens and tablets (see *Reviews*, January 1999). Five models are available: 4 by 5 inches, \$200; 6 by 8 inches, \$384; 9 by 12 inches, \$510; 12 by 12 inches, \$510; and 12 by 18 inches, \$820. All tablets ship with one pen; the 9-by-12 and 12-by-18 models also include the Intuos 4D Mouse.—MACWORLD STAFF

## multimedia

# MP3 Audio Tunes Up on the Mac

NEW SOFTWARE LETS YOU CREATE MP3 TITLES

by Macworld Staff

**M** P3, the audio format that has gained a huge following on the Web, is tuning up to occupy center stage on the Macintosh. Apple's QuickTime 4 software, which shipped in June, lets you add MP3 audio to QuickTime movies, and Macromedia's recently announced Flash 4 software puts MP3 in Flash animations. Now Casady & Greene (800/359-4920, www.casadyg.com) has taken MP3 a step further by offering a \$49 program that lets you encode MP3 audio in addition to playing it back.

Sound Jam MP, scheduled to ship by the time you read this, will include a customizable player with controls similar to those found in AppleCD Audio Player. An application programming interface for the player will allow developers to create different looks, including players with large buttons or irregular shapes. Casady & Greene also plans to offer a collection of MP3 songs. A version of the software will be bundled with Diamond Multimedia's forthcoming Rio PMP 500 digital-audio player, the first MP3 player to offer Mac support.

MP3 has become a popular music format for the Web, thanks to its compact file sizes and near-CD-quality audio. You can store as

many as 2,300 MP3 titles on an 8GB hard drive. MP3 has raised concerns in the recording industry because it makes it easy to pirate copyrighted music. However, some musicians have embraced the format because they can offer samples of their recordings directly to potential fans, bypassing the music industry's conventional distribution channels.

Along with Sound Jam MP, Casady & Greene has released upgrades to Conflict Catcher and Spell Catcher, as well as two new products, iLiner and Speed Startup. iLiner is a \$49 outlining tool that lets you take notes while viewing QuickTime content; it also provides access to the automatic document-summarization features in Apple's Sherlock software. Speed Startup, a \$19.95 utility available exclusively through the Casady & Greene Web site, speeds system boot-ups, especially on PowerBooks or Macintosh systems with large amounts of RAM.

## graphics

# Photoshop Upgrade Gets Web Savvy

IMAGEREADY ROLLED INTO PHOTOSHOP 5.5

by Stephen Beale

**W** hen Adobe Systems (800/685-3612, www.adobe.com) released Photoshop 5.0 last year, many users thought the company had made a big mistake. Rather than add enhanced Web-graphics capabilities to its image-editing powerhouse, Adobe chose to

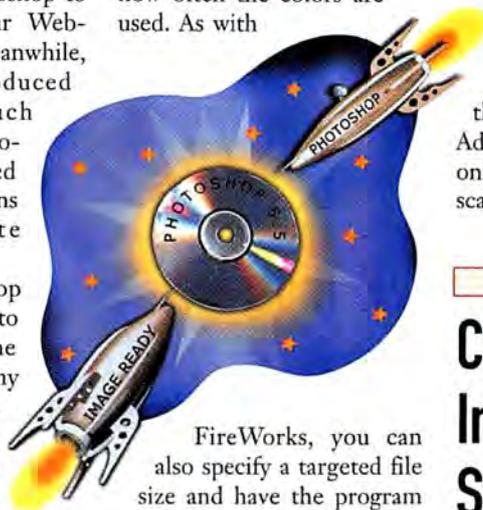
place those features into a new program called ImageReady. The problem—aside from weaknesses in ImageReady itself—was that you still had to use Photoshop to begin many of your Web-graphics projects. Meanwhile, Macromedia introduced FireWorks, a much more successful program that integrated most of the functions needed to create images for the Web.

With Photoshop 5.5, Adobe appears to have recognized the error of its ways. Many of the Web-graphics features previously found in ImageReady have been incorporated into Photoshop. Other functions, such as animation, image slicing, and JavaScript rollovers, are available in a new version of ImageReady that is bundled with—and tightly integrated with—the image-editing package. Instead of using separate programs to create Web animations and other graphics, you can now do it all in Photoshop. Adobe will no longer offer ImageReady as a separate program.

**Web Features** Photoshop's new Web savvy is apparent in many areas. For example, in addition to displaying an out-of-gamut warning when you specify an unprintable color, Photoshop 5.5 can display a warning when you specify a color outside the 216-color Web-safe palette. If you're working on a transparent GIF image, Photoshop can now display the transparency.

The color-reduction and optimization features previously available in ImageReady have been rolled into the big program: a new Save For Web dialog box lets you experiment with different color palettes and visually compare

up to four versions of an image. You can lock colors, so they are not affected by palette-reduction operations, and sort the palette based on how often the colors are used. As with



FireWorks, you can also specify a targeted file size and have the program apply whatever compression is needed to achieve it. A gamma preview lets you see images as they appear in Windows or the Mac OS (images look darker in Windows).

If you want to slice or animate the image, you can launch ImageReady 2.0 from within Photoshop.

**Going to Print** The upgrade includes other enhancements, most notably new masking functions that duplicate many features found in Extensis MaskPro, Chroma-Graphics MagicMask, and Ultimate Knockout. A new Background Eraser makes it easier to remove backgrounds, and you can create complex masks by drawing inner and outer boundaries along an object's edge.

New Actions in Photoshop 5.5 automate the creation of Web photo galleries, complete with thumbnails and HTML links to full-size photos. You can also produce photo packs that include multiple sizes of a single image.

Adobe plans to ship the \$610 package by the time you read this. Upgrades from Photoshop 5.0 or ImageReady 1.0 will cost \$129;

upgrades from earlier Photoshop versions will cost \$199. Adobe also plans to offer a retail version of Photoshop 5.0 LE for midrange users.

The software, which lacks CMYK, color-management, and channels functions, will sell for less than \$200. Previously, Adobe offered Photoshop LE only as bundled software for scanners or digital cameras.

## graphics

# Canvas Update Introduces SpriteEffects

UPGRADE APPLIES IMAGE  
FILTERS TO VECTORS

by Stephen Beale

**D**eneba Canvas 6, introduced in 1998, implemented a new technology called SpriteLayers that lets you create sophisticated masking and transparency effects using bitmapped images and vector graphics. Now, less than a year later, Deneba Software (305/596-5644, [www.deneba.com](http://www.deneba.com)) is preparing to ship Canvas 7, an upgrade to the integrated graphics software that adds another new technology, called SpriteEffects.

**Vector Filters** Canvas combines image-editing and vector-graphics capabilities, and the new SpriteEffects function thus borrows from both Adobe Photoshop and Macromedia FreeHand. As with Photoshop's Adjustment layers, you can apply filters such as Blur and Sharpen to a layer that affects any underlying graphic. But SpriteEffects also work much like FreeHand lenses: you can use

*continues*

**More Pixels** Now that digital cameras have broken the megapixel barrier, manufacturers are racing to offer two-megapixel models (see "Digital Cameras Develop," elsewhere in this issue). The \$699 **RDC-5000**, from Ricoh (800/742-6410, [www.ricohcpg.com](http://www.ricohcpg.com)), captures images at up to 2.3 million, or 1,792 by 1,200, pixels. The camera includes 2.3X optical zoom and a USB connection for easy download to iMacs and blue G3s. The \$699 **PhotoPC 800**, from Epson (800/463-7766, [www.epson.com](http://www.epson.com)), features a 2.14-megapixel sensor, for a maximum resolution of 1,600 by 1,200 pixels. For the consumer crowd, Epson's \$349 **PhotoPC 650** captures 1.09 million, or 1,252 by 864, pixels. Both Epson cameras can download images through USB or serial ports.

**Astral Scans** Expanding its Astra line, Umax (800/562-0311, [www.umax.com](http://www.umax.com)) has released two new flatbed scanners for home-office Mac users. The \$129 **Astra 2000U** and \$169 **Astra 2100U** both offer 36-bit color and 600-by-1,200-dpi resolution, with USB ports for connection to iMacs or blue G3s. The Astra 2100U features three programmable push buttons to automate scanning, direct copying to a connected printer, or other operations. Umax also announced it will bundle SCSI cards with its PowerLook and Mirage series scanners to allow connection to blue G3 systems, which lack a built-in SCSI port.

*continues*

**Project Your iMac** Let your iMac's inner beauty shine on the wall or through another monitor. The \$99 **iPresenter**, from Power R (800/729-6970, [www.powerr.com](http://www.powerr.com)), is a video adapter that lets iMacs drive a multimedia projector, external monitor, or television. The adapter connects to the monitor cable inside the iMac.

**Illustrator 8 Update** Adobe (800/833-6687, [www.adobe.com](http://www.adobe.com)) released **Illustrator 8.0.1**, a free update to the popular drawing software. The patch fixes several bugs, including one that causes crashes under Mac OS 8.5.X. Download the update at [www.adobe.com/prodindex/illustrator/update801.html](http://www.adobe.com/prodindex/illustrator/update801.html).

**PDF for OS X** Stone Design (505/345-4800, [www.stone.com](http://www.stone.com)) has announced **PSstill**, a PostScript-to-PDF file-conversion program that runs under Mac OS X Server software. The \$129 package, scheduled to ship by the time you read this, converts PostScript and EPS files to Adobe's Portable Document Format.

**FileMaker Fix** FileMaker (800/325-2747, [www.filemaker.com](http://www.filemaker.com)) has released a free FileMaker Pro update that fixes bugs and adds a new data-validation feature. The latter allows you to set up data fields that validate whether entries are numeric, date, or time values. You can download the **FileMaker Pro 4.1v2** updater from [www.filemaker.com/support/41v2release.html](http://www.filemaker.com/support/41v2release.html).—EDITED BY MICHAEL GOWAN

Bézier drawing tools to modify the size and shape of the SpriteEffect—the area affected by the filter—and you can detach a SpriteEffect from one object and apply it to others.

SpriteEffects have another property unique to Canvas: they let you apply Photoshop filters—including third-party plug-ins—to vector graphics, as long as the filters support Photoshop's Actions palette. When you apply the filter, the lens displays a rendered version of the vector graphic at a resolution you define. However, you can still edit the drawing in its vector form, and you can detach the lens and apply it to other vector objects.

**Other Goodies** Along with the SpriteEffects technology, Deneba has spruced up the Canvas interface. The program's many palettes are consolidated in a single menu, and Canvas now includes a Photoshop-style Navigator window that makes it easy to move around a document in magnified views. You can also modify vector objects while viewing their stroke and fill characteristics; previous versions let you edit objects only in a wireframe mode.

The program's Web capabilities have been spruced up as well. You can create GIF animations, experiment with color-reduced palettes, and

preview up to four versions of each image to see which settings offer the best trade-off between file size and image quality. Deneba has junked Colada, the Java-based Web export component of Canvas 6, and now provides direct export of Dynamic HTML. Deneba expects to ship the \$375 package this September.

## multimedia

# VR Toolbox Prevails in QTVR Suit

ROUNABOUT LOGIC

PULLS COMPETING TITLES

by Macworld Staff

**V**R Toolbox (877/878-6657, [www.vrtoolbox.com](http://www.vrtoolbox.com)) has won a legal battle with Roundabout Logic over the rights to QuickTime VR (QTVR) authoring programs sold by the former as VR PanoWorx and VR ObjectWorx. Under the terms of a recent settlement, Roundabout Logic, which offered the same software under the respective names Nodester and Widgetizer,

will no longer offer either of those programs. VR Toolbox will assume technical-support responsibilities for Nodester and Widgetizer and also plans to offer upgrades to its own versions.

Nodester, used to create QTVR panoramas, and Widgetizer, used to make QTVR object movies, were originally written by Econ Technologies, a Florida programming shop, and published by Panimation and later Roundabout Logic. In 1998, Econ sold the rights to both programs to a new company called VR Toolbox. Roundabout Logic sued, claiming that it had exclusive rights to the software; VR Toolbox and Econ countered that Econ was free to sell the rights to another publisher. VR Toolbox is a subsidiary of Emery Manufacturing and Equipment, a manufacturer of QTVR object rigs. In addition to VR PanoWorx and VR ObjectWorx, VR Toolbox offers VR SceneWorx for creating multinode QTVR movies, and The VR Worx, a bundle of all three programs.

Roundabout Logic has issued a statement acknowledging VR Toolbox's ownership of the software. The company failed to return calls seeking additional comment.



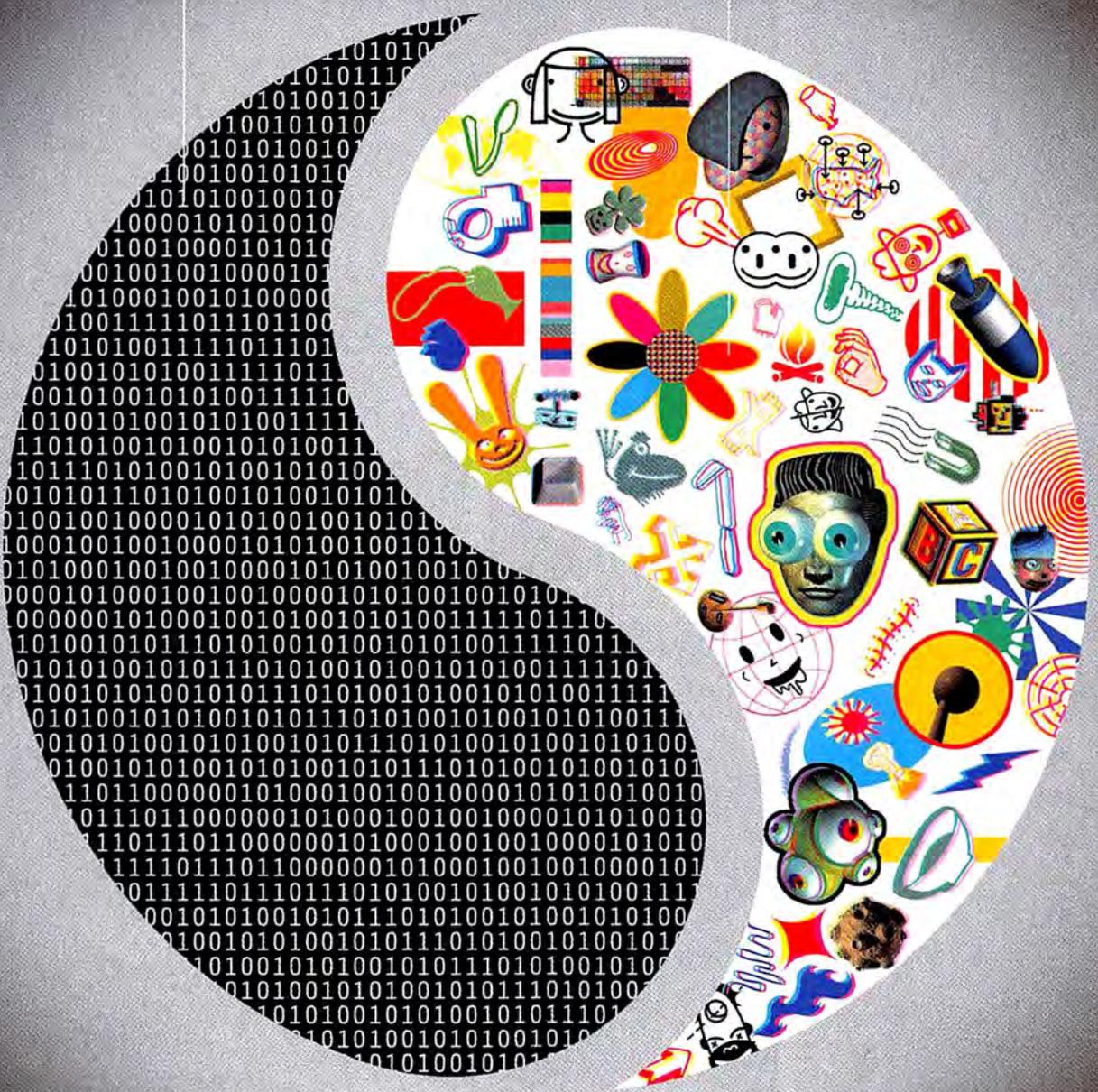
## Epson Joins MFP Fray with Stylus Scan

A SCANT TWO MONTHS AFTER CANON INTRODUCED THE first Mac-based multifunction peripheral, Epson America (800/289-3776, [www.epson.com](http://www.epson.com)) is getting into the act. Epson's new Stylus Scan series incorporates a scanner and ink-jet printer—comparable to the Stylus Color 740—in one unit. Three models are available. The \$349 Stylus Scan 2000 features a sheetfed

scanner; the \$499 Stylus Scan 2500 and \$699 Stylus Scan 2500 Plus include a flatbed scanner equivalent to the company's Perfection 636 model. The Plus unit also sports an automatic document feeder. All three have USB ports but no serial connections.—MACWORLD STAFF

WEB GEEK

ARTISTE



Adobe Systems Incorporated. All rights reserved. Adobe, the Adobe logo, and GoLive are trademarks of Adobe Systems Incorporated. Mac is a trademark of Apple Computer, Inc. registered in the United States and other countries. Windows is either a registered trademark or a trademark of Microsoft Corporation in the United States and/or other countries. All other trademarks are the property of their respective owners.

## Adobe GoLive



There are two sides to every Web designer. The artistic design side and the esoteric HTML side. Now you're the master of both with Adobe® GoLive™. GoLive lets you create stunning Web designs without having to write one line of HTML. Just start designing and let GoLive do the coding. No matter how outrageous your ideas, GoLive ensures they look exquisite and work seamlessly when posted. GoLive even gives you instant interactivity with JavaScript™ features to bring your ideas to life. Best of all, it's available for both Mac® and Windows® platforms. So prepare to master a whole new side of your personality. To download a free trial version, go to [www.adobe.com/golive99](http://www.adobe.com/golive99)



Think Faster!

Macworld  
**EXPO**

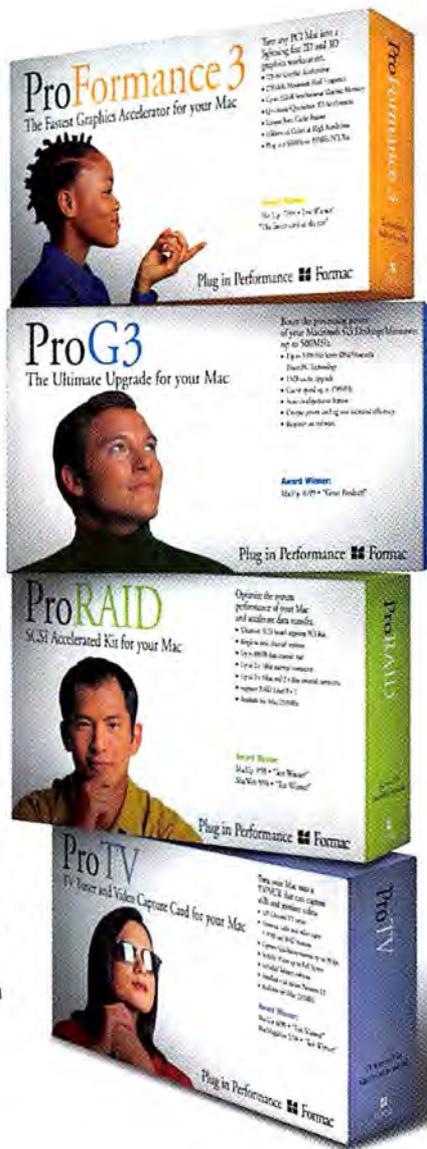
See us at MacWorld Expo'99 NY, Booth #149

## ProG3

The Ultimate Processor Upgrade for your Mac can boost the processing power of any Macintosh G3 up to 500MHz - at a fraction of the cost of a new system.

## ProTV

Turn your Mac into a full function TV/VCR that can capture still frames and full motion video.



## ProFormance 3

The Fastest Graphic Accelerator for your Mac will turn any PCI Mac into a lightning fast 2D and 3D graphics workstation.

## ProRAID

This SCSI Accelerator Kit is the ultimate I/O solution to optimize high-speed data transfer between your Mac and SCSI peripherals up to 80MB/s data transfer rate.

Designed specifically for the Mac, our products will turn your friendly Mac into a lightning fast, incredibly powerful media creation computer. Formac's Performance Suite is the ultimate, cost-effective upgrade package. Don't wait. With Formac you don't have to. Get your Mac to think as fast as you do, just visit [www.formac.com](http://www.formac.com) and learn how easy it can be.



# Reviews

## PowerBook G3s

NEW SLIM POWERBOOKS

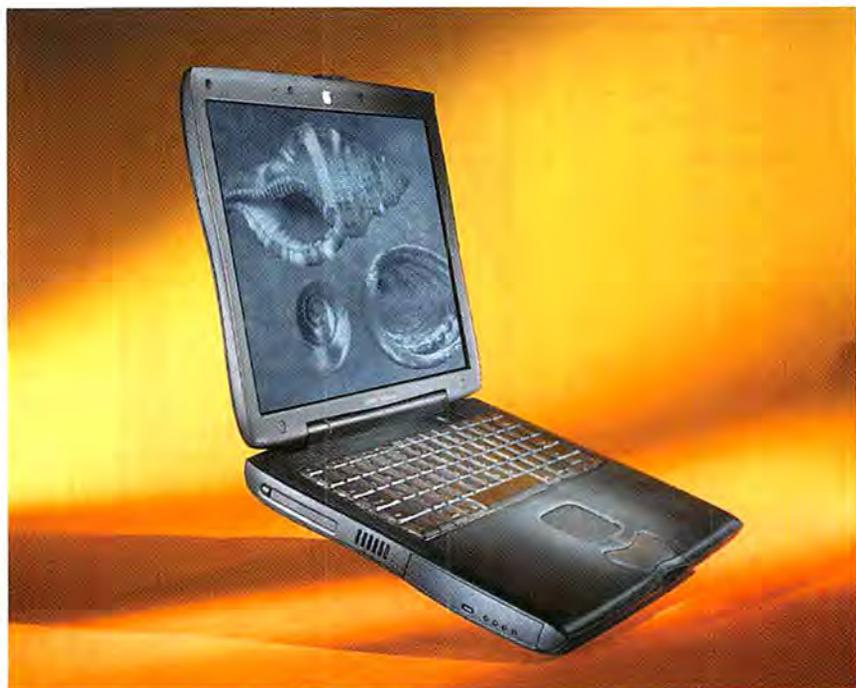
OFFER MORE AND LESS

**A**S MOST PORTABLE USERS WILL tell you, the three most important considerations in a notebook computer are size, size, and size. Luckily for Mac road warriors, Apple's latest PowerBook line offers major improvements in all three. Apple's PowerBook G3 notebooks have distinguished themselves as performance leaders among laptop computers. But users have paid a heavy price for that power—literally—as they lugged the bulky 8-pound portables through airports and hotel lobbies. No more. With the latest Mac laptops, Apple has engineered out some two pounds of bulk while adding more features, boosting speed, and extending battery life.

### Passing the Weight Test

From the moment you pick up one of the "bronze" PowerBooks (the nickname comes from the translucent bronze keyboard), you can tell that Apple has given—and taken away. The design generally resembles that of the previous PowerBook models, with a sleek black chassis; smooth, rounded corners; and a pair of expansion bays for storage devices and batteries. But it's just 1.7 inches thick—about a third of an inch thinner than its predecessor—and weighs in at 5.9 pounds with CD-ROM drive and battery.

Thanks to its crash diet, the new PowerBook is light and easy to handle,



but it still has a solid and resilient feel. However, with the slimmer expansion bay, storage devices and batteries designed for Apple's previous PowerBooks won't fit in the new one. Aside from VST Technologies' Zip and SuperDisk drives, there are few products available at press time that work with the new bay.

Macworld Lab tested standard configurations of both new PowerBook models. One model features a 400MHz G3 CPU, and the other a 333MHz chip. Both models include 64MB of RAM, an ATI Rage LT Pro graphics controller

with 8MB of video memory, a 14.1-inch active-matrix display, a 10/100BaseT Ethernet connection, and a 56-Kbps modem. The 400MHz model also features a 1MB L2 cache, a 6GB hard drive, and a DVD-ROM drive. The 333MHz model sports a 512K L2 cache, a 4GB hard drive, and a 24x CD-ROM drive.

At press time, you couldn't order the 333MHz model with a DVD drive. Apple says it will offer DVD as a build-to-order option for the 333MHz model, but you won't be able to upgrade to DVD after you've purchased the machine.

REAL PRODUCTS  
REAL RATINGS

Reviews you can trust: Macworld rates only final shipping products, not prototypes. What we review is what you can actually buy.

OUTSTANDING: ★★★★★

VERY GOOD: ★★★★

GOOD: ★★★

FLAWED: ★★

UNACCEPTABLE: ★

As you can see in the benchmark, "Bronze PowerBooks," the 400MHz PowerBook G3 far outpaced the 300MHz reference system in processor performance and also earned the top scores in our Disk and Graphics tests. The 333MHz model was less impressive, lagging slightly behind the reference system in processor performance, slightly ahead in graphics performance, and about even in disk performance. The likely culprit for the low Processor score is the model's smaller L2 cache. But keep these numbers in perspective: this is still a wicked-fast laptop.

### A Longer Life?

Thanks to the lower power consumption of the latest G3 chips, along with new power-management features in Mac OS 8.6, Apple claims that you can run these laptops up to five hours on a single battery, or ten hours when using two batteries. To achieve such long battery life, you need to step down the CPU speed, using the Energy Saver control panel. When testing at full speed, we found that the 400MHz model lasted for three hours running a standard suite of business-application tasks; the 333MHz version kept its charge about a half hour longer. When we ran this same suite on the previous-generation 300MHz PowerBook G3, also at full speed, we got three hours of battery life under Mac OS 8.6 and 2 hours, 50 minutes under Mac OS 8.5.1.

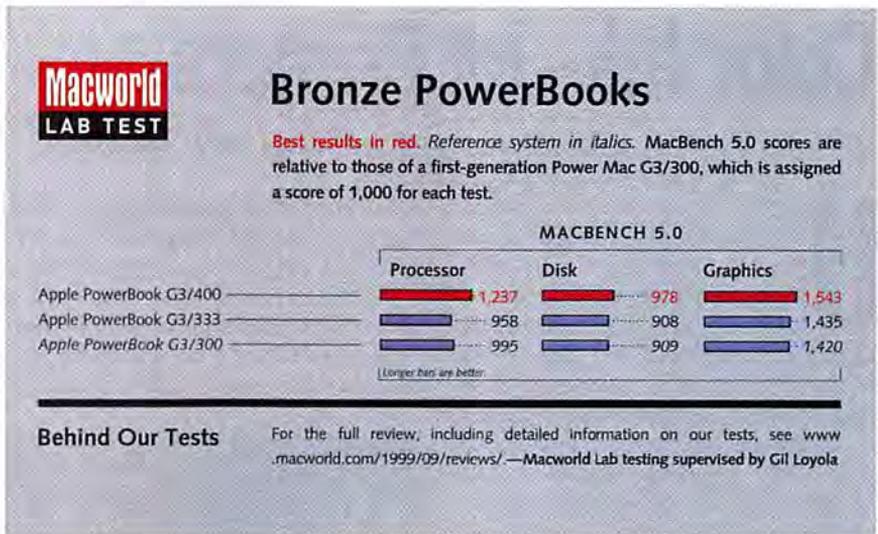
Apple says that you can watch a DVD feature movie (namely, *Austin Powers*) twice on a single battery's power. Again, this claim is based on running the CPU at a slower speed. At full speed, we ran out of power with about 30 minutes left to the end of the second showing. Fortunately, running at the slower CPU speed has no effect on DVD performance.

Our conclusion? While the bronze PowerBooks offer a modest improvement in battery life, the 400MHz unit also offers considerably greater speed, making the aggregate a good step forward in battery life versus CPU performance.

### Other Goodies

Portable users cannot live by battery life alone. And here, the new PowerBooks offer some nice improvements.

These are the first PowerBooks to include built-in USB ports (two) and FireWire connectivity, although the latter is available only through Newer Technology's FireWire2Go PC Card. And



unlike Apple's desktop models, which have done away with older hardware interfaces, the new PowerBooks still include a SCSI port as well as a 4-Mbps IrDA port. However, the ADB port is gone and you get only one PC Card slot instead of the traditional two. The new PowerBooks also return a feature missing from the previous generation of Apple laptops: the ability to drive the internal display and an external monitor simultaneously. Earlier G3 models required a separate graphics adapter to do this.

Along with these major additions, the new models offer a host of small-but-useful improvements. It is now easier to remove the keyboard if you want to access internal components. Before, you had to remove any devices in the expansion bays; now you simply release two latches and remove a keyboard-locking screw. Apple also improved the design of the expansion-bay latches, making it more difficult to accidentally eject a drive or battery.

The keyboard's translucence, while adding a nice design flair, occasionally tricked us into thinking the caps lock key was engaged. And if you use PC-emulation software, you may lament the loss of dedicated Delete, Insert, Print Scrn, Scroll Lock, and Pause/Break keys, previously available through the PowerBook's function keys. Also missing are dedicated controls for ejecting PC Cards and controlling mute, volume, and contrast, although the latter three controls are available through function keys.

The biggest problem we encountered in our testing related to the PowerBooks' USB implementation. The USB drivers that shipped with the laptops don't seem to

recognize the PowerBook Sleep function, so putting the machines to sleep with an attached, unpowered USB device (such as a keyboard or mouse) caused a variety of minor problems, including the occasional system crash. We expect that Apple and peripheral developers will provide updated drivers that address this problem.

### Macworld's Buying Advice

Despite the \$1,000 price difference, we recommend the 400MHz PowerBook G3 over the 333MHz model due to the G3/400's built-in DVD-ROM drive and impressive performance numbers. However, the slower model still delivers plenty of laptop power for a mere \$2,499. Either PowerBook will satisfy those hankering for a light load but unwilling to give up features—or the Mac OS—to achieve it.—ANDREW GORE

### PowerBook G3/333

**RATING:** **PROS:** Respectable battery life; good value. **CONS:** Must order DVD at time of purchase; possible stability problems related to USB. **COMPANY:** Apple Computer (800/795-1000, [www.powerbook.apple.com](http://www.powerbook.apple.com)). **COMPANY'S ESTIMATED PRICE:** \$2,499.

### PowerBook G3/400

**RATING:** **PROS:** Fast; DVD built-in. **CONS:** May have some stability problems related to USB. **COMPANY:** Apple Computer (800/795-1000, [www.powerbook.apple.com](http://www.powerbook.apple.com)). **COMPANY'S ESTIMATED PRICE:** \$3,499.

# Color Ink-Jet Printers

HP AND CANON CHALLENGE EPSON WITH NEW MODELS

UNTIL RECENTLY, EPSON AMERICA had the Mac ink-jet-printer market pretty much to itself as rivals focused their efforts on PC users. But now that Apple is back on its feet, Epson finally has some serious competition, in the form of new printers from Hewlett-Packard (HP) and Canon.

Macworld Lab tested Canon's \$320 BJC-6000, Hewlett-Packard's \$300 DeskJet 882C and \$400 DeskJet 895C, and Epson's \$299 Stylus Photo 750 and \$499 Stylus Photo 1200. The DeskJet 895C is a faster, network-ready version of the four-color DeskJet 882C; both target general business applications. The BJC-6000, which lets you choose from four- or six-color output, is another general-purpose printer. The Epson printers, sporting six-color printing capabilities, target photo output. Epson also offers two general-purpose Mac printers, the Stylus Color 740 (★★★★; *Reviews*, January 1999) and Stylus Color 900 (★★★★; *Reviews*, June 1999).

The results? If you have an older, pre-USB Macintosh, Epson is still your only option, because it's the only manufacturer that continues to offer a serial port. But if your Mac is USB enabled, all these printers offer top-notch output for reasonable prices.

## Output Quality

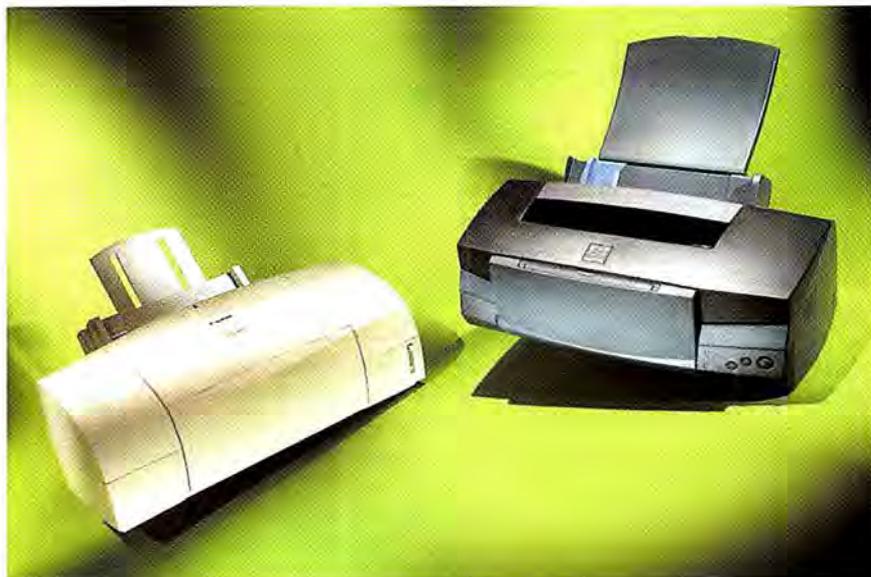
To test image quality, Macworld Lab produced a set of output samples from each printer and submitted them to a jury for evaluation. The samples included text, photos, and line art. Jurors compared each sample with the original print.

The HP printers feature four-color output, while the other models offer six-color output. Nevertheless, all five printers scored high for photo quality. The HP printers especially impressed us—their output quality on glossy paper rivaled the six-color photos of the other tested models. However, we noticed some striping when printing photos on plain paper.

Although the Canon BJC-6000 uses an optional six-color cartridge for photos, our jury thought its default photo output was slightly dark. In our first pass with the Epson printers, magenta was too

strong and yellow too weak, but we were able to correct this using Apple's Color-Sync 2.6.1 and Epson's device profiles.

When printing black text from a Microsoft Word document on plain bond paper, the HP and Canon printers produced excellent results, although the HP



The Canon BJC-6000 (left) and the Epson Stylus Photo 750

models printed bold text a little heavily. The Epson printers generated thin spider lines in bold text, but when printing on photo ink-jet paper, they exhibited excellent output quality.

One often overlooked issue with ink-jet printers is the durability of the prints. Epson claims that photos produced on its ink-jet printers will last two to three years in normal sunlight. HP claims that the carbon pigment in its black ink allows documents to last substantially longer than that in sunlight.

## Print Speed

Print speed can be deceptive, because most manufacturers quote the speed you get at the printer's lowest resolution, not at the higher resolutions required for the best-looking output. In Macworld Lab's print tests, we timed output from two programs—Microsoft Word and Adobe Photoshop—at each printer's maximum resolution and at lower resolutions of

300 dpi (HP) or 360 dpi (Epson and Canon). (The HP models print black ink at up to 600 dpi, but HP doesn't quote the maximum color resolution. The Epson and Canon models print black and color at 720 by 1,440 dpi.)

As we expected, the higher-quality pages took dramatically longer to print—in some cases, ten times longer—than the low-resolution versions. But the performance champ was clearly the HP 895C. In our high-resolution Photoshop test, it produced an image in 7 minutes, com-

pared with about 10 minutes for the other printers. When printing the Word document at low resolution, the HP 895C cranked out 6.6 pages per minute (ppm) versus 4.9 ppm for the Canon, 4.3 ppm for the HP 882C, 1.8 ppm for the Epson Stylus Photo 750, and 1.2 ppm for the Stylus Photo 1200. The latter speed translates into a 6-minute wait for 10 pages.

## Paper Handling

All five printers can handle a variety of paper sizes, from 4-by-6-inch cards up to banner-length paper. The Epson Stylus Photo 1200, the large-format version of the Stylus Photo 750, can print full-bleed on tabloid stocks. All of the models can print on 110-pound paper stock, but the BJC-6000 can handle up to 143-pound stocks. As with all ink-jet printers, you get the best output quality, especially for photographs, when printing on glossy photo paper.

The HP printers feature a front-loading paper path, reducing the amount

of desk space they take up. HP's design also protects the input tray, making the printer more child resistant than the models from Canon and Epson.

### Consumables

Among the printers reviewed here, Canon's BJC-6000 has the most flexible ink system. The box includes a black print head with a black-ink tank, and a color print head with tanks for cyan, magenta, and yellow inks. Each print head lasts 5,000 to 6,000 pages; the tanks themselves last 500 to 840 pages. You can replace individual tanks as they run out—a great feature, because sometimes you'll run out of one color long before the others are depleted. For six-color printing, you need to buy a \$42.95 photo print head with tanks for black, light cyan, and light magenta inks. You install this next to the three-color print head, replacing the black-ink cartridge.

The BJC-6000 also features a useful low-ink warning that shows up in your Mac's Print Progress dialog box.

The Epson Stylus Photo printers feature two ink cartridges, one for black and one for the other five colors. A software utility informs you if ink levels are low, but you get less warning than the Canon printer provides.

Although some HP printers offer a six-color printing option, the 895C and 882C are limited to four colors: one cartridge for black and one for cyan, yellow, and

magenta. Neither printer, nor the included software, features a low-ink warning.

### Connectivity

Epson's printers are the clear winners here, because each provides a serial connection for older Macs, in addition to a parallel port for PCs and USB for iMacs and blue G3s. You can also print directly from Epson's PhotoPC 750Z digital camera.

The Canon and HP printers limit their Mac connectivity to USB. Worse, Canon's USB connection kit is available only as a \$70 option; the printer itself costs \$250. All three companies offer Ethernet options for their printers, except HP's DeskJet 882C.

### Software

Epson's longtime commitment to the Mac community shows in its software. Of the printers reviewed here, only Epson's models include bundled software for the Mac. The Stylus Photo 750 includes Polaroid Photomax Pro for image editing, ArcSoft Photoprinter 2.0 for creating photo layouts, and ArcSoft Photobase 2.0 for keeping image databases. The Stylus Photo 1200 includes Adobe Photoshop 5.0 LE, Vivid Details' Test Strip 2.0, and a trial version of Altamira's Genuine Fractals 2.0.

Epson's printer driver isn't too shabby, either, offering extensive color-management and image-adjustment features. However, it would be nice if the software included a Return To Default button.

Canon's printer driver offers simple adjustments in its basic operating mode but includes an advanced option that lets you tweak individual colors. And it sports that elusive Return To Default button we wish other manufacturers would offer. Canon's software also permits two- and four-up printing.

HP's driver is also simple: just choose your paper and desired output quality, and you're set for great output. HP's software also puts a printer icon on the desktop, permitting drag-and-drop printing. However, some features HP offers on the Windows side, such as its cartridge-alignment utility and Web-Smart printing software, are not available for the Macintosh.

### Macworld's Buying Advice

All of the printers reviewed here offer excellent output quality, so the decision boils down to what you want to do with them. For home users, the low price and child-resistant design of HP's DeskJet 882C make it a good choice. For small businesses, the versatility and large ink supply of Canon's BJC-6000 make for a winning combination, although HP's DeskJet 895C, along with Epson's Stylus Color 740 and Stylus Color 900, are also worth considering. Budget-minded photographers and graphics professionals should consider the Epson Stylus Photo 1200 for its tabloid prints and color-adjustment capabilities.—KEVIN MITCHELL

## Battling Ink-Jet Printers

Company	Product	Mouse Rating	Company's Estimated Price	Contact	Pros	Cons
Canon USA	BJC-6000	★★★★	\$320*	800/652-2606 www.ccsi.canon.com	Excellent output quality; flexible ink system.	No serial port; USB available only in separate kit; photo ink cartridge costs extra.
Epson America	Stylus Photo 750	★★★★	\$299	800/463-7766 www.epson.com	Excellent photo quality; serial and USB interfaces; good software.	Mediocre text quality on plain paper.
	Stylus Photo 1200	★★★★	\$499	800/463-7766 www.epson.com	Excellent photo quality; serial and USB interfaces; good software; can print tabloid size.	Mediocre text quality on plain paper.
Hewlett-Packard	DeskJet 882C	★★★★	\$300	800/752-0900 www.hp.com	Excellent output quality; quiet.	No serial port; no low-ink indicator.
	DeskJet 895C	★★★★	\$400	800/752-0900 www.hp.com	Excellent output quality; quiet; fast.	No serial port; no low-ink indicator.

\* Includes the optional \$70 USB connection kit.

# USB CD-RW Drives

NEW OFFERINGS FROM LACIE, QPS, AND SONY PLAY WELL WITH USB

**W**HEN YOU THINK ABOUT IT, it's amazing that CD-rewritable (CD-RW) drives work at all with USB. Although the bus offers a respectable throughput of 12 Mbps, various devices share that bandwidth. A printer may not care if another device is using the bus and causing a delay, but CD-RW drives must burn all the information at a steady rate; if they run out of information before completing the session, the disk becomes useless.

To see if CD-RW drives could function in the world of USB, Macworld Lab tested QPS's Que, Sony's Spressa USB CRX100E/X, and LaCie's 226 CDRW-USB. We found that all three drives delivered consistently, differing primarily in price, speed, and backup ability.

All three drives can record on CD-R (write-once) media and CD-RW (rewritable) media and can read from both CD-R and CD-RW. Using the standard notation—CD-R recording speed, followed by CD-RW recording speed, then reading speed—the QPS is rated at 4x2x8x, the Sony at 4x2x6x, and the LaCie at 2x2x6x.

The Sony and QPS drives burned 600MB onto a CD-R in 18 minutes, while the LaCie took 37 minutes. (By comparison, the fastest SCSI recorders can burn the same data in 9 minutes.) All three recorders burned the same data onto a CD-RW in 37 minutes. To increase the odds of a successful recording, the QPS stores information in a 2MB buffer; the Sony and LaCie use a 1MB buffer, standard for SCSI recorders. In our tests,



QPS's Que (top) and Sony's Spressa

buffer size didn't affect performance.

Copying a 600MB CD to the iMac's hard disk took 14 minutes (the fastest you can transfer data over USB) for the Sony, 15 minutes for the LaCie, and 18 minutes for the QPS. Read speed isn't as critical as write speed, however, since most people will use the iMac's faster (24x) internal CD-ROM drive.

## The Software Edge

The QPS and LaCie drives ship with Adaptec's Toast 3.8 for recording, while the Sony comes with the significantly less intuitive Discrite 2.4.1 from CharisMac. You can't simply drop data on Discrite and record, as you can with Toast; you must first decide whether this is a new recording or one you've already saved, specify a format (HFS, ISO, or audio), choose your files, confirm your selection, and then *finally* begin recording.

On the other hand, Dantz Development's Retrospect backup software supports only the Sony Spressa. Dantz says the next version of Retrospect (due later

this year) should support the LaCie, while support for the QPS is pending based on further testing.

Apple recommends that iMac users update their firmware to version 1.2 to ensure proper operation of USB devices. Conveniently, both the QPS and LaCie drives provide this update on CD; Sony plans to include the update with recorders that ship in August.

## Outward Appearances

You can tell from a distance what the QPS drive is up to—the large LED on the front is green when the drive is attached and ready to go, orange when the drive is reading, and red when it's writing. The LaCie's small LED simply turns red to signal recording, while the Sony Spressa is even less informative—whether the drive is reading or writing, the light is always amber and always blinking. All three drives have audio-out and headphone jacks with volume controls, but those features work only on PCs—not on Macs.

## Macworld's Buying Advice

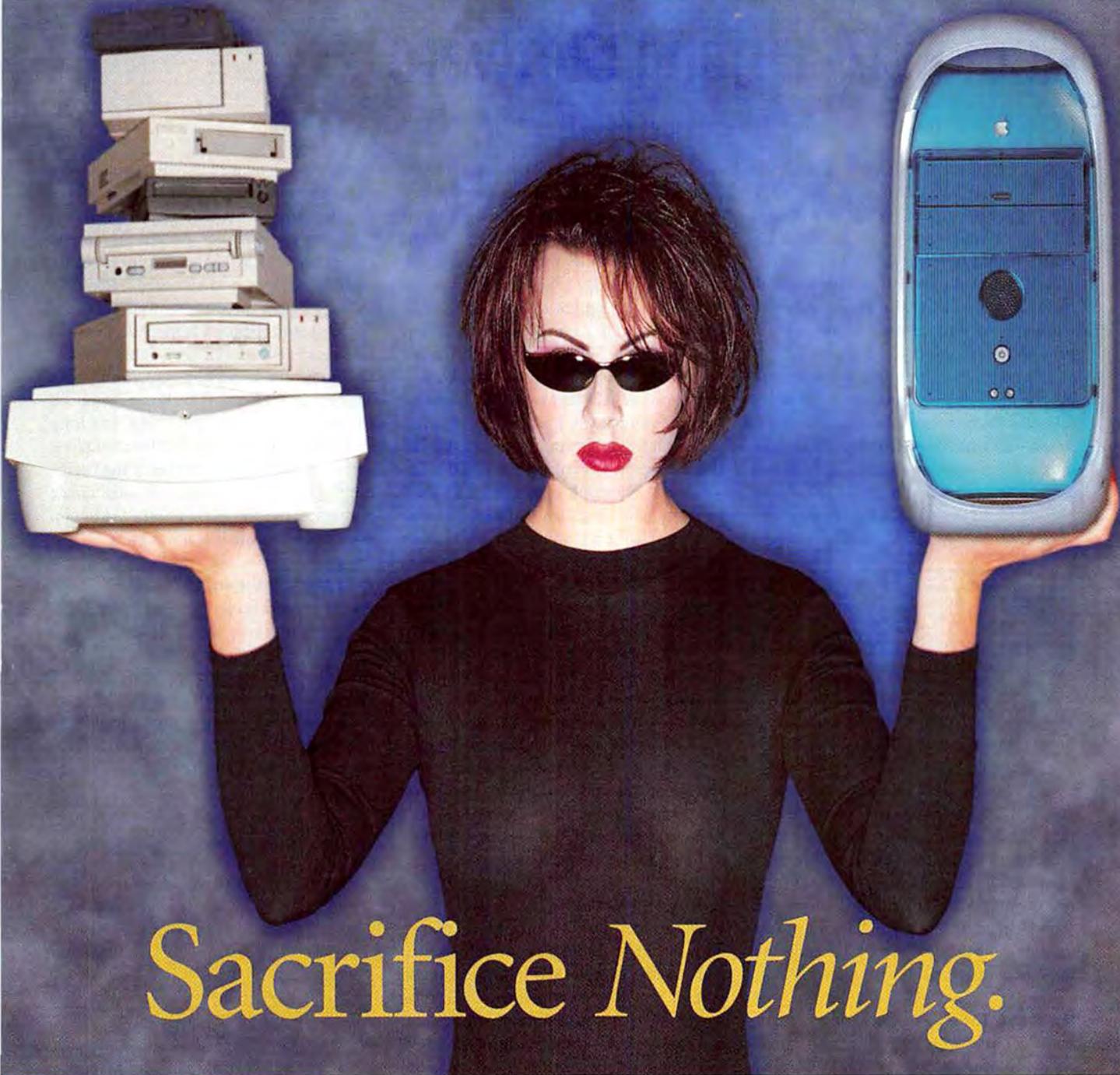
If you can live without backup for the moment, choose the QPS Que; it's the least expensive of the three and by far the most colorful. If backup is a priority, go with the Sony Spressa CRX100E/X (the only drive Retrospect supports at press time) and get a copy of Toast 4.0 for more-intuitive recording. Both drives are a better deal than the LaCie 226 CDRW-USB—it's almost as expensive as the Sony drive, yet its writable speed is only half that of the other two.—KEVIN MITCHELL

## CD-RW Drives Compared

Company	Product	Mouse Rating	List Price	Contact	Write/Rewrite/Read Speed	Buffer	Pros	Cons
LaCie	226 CDRW-USB	★★★	\$379	503/844-4500 www.lacie.com	2x2x6x	1MB	Updatable firmware.	Slower at recording; no Retrospect support.
QPS	Que	★★★★	\$299	800/559-4777 www.qps-inc.com	4x2x8x	2MB	Lowest price; largest buffer; color-coordinated.	No Retrospect support.
Sony	Spressa USB CRX100E/X	★★★★½	\$399	800/352-7669 www.sony.com	4x2x6x	1MB	Retrospect support.	Nonintuitive software.

We move the information that moves your world.™

**adaptec®**



# Sacrifice Nothing.



**G**o ahead, upgrade to that new G3 without sacrificing the SCSI peripherals you depend on. And in case you didn't know, Adaptec® SCSI cards support Apple's old SCSI Manager and newer SCSI Manager 4.3 devices so you can connect to whatever SCSI peripheral you might be using. But it gets even better. Adaptec SCSI significantly outperforms Apple's previous built-in SCSI, enabling your Jaz, scanner, and other peripherals to operate at peak performance. So if you want to upgrade to a new blue G3 without sacrificing anything, get an Adaptec SCSI card. For more information visit [www.adaptec.com/mac](http://www.adaptec.com/mac).

© 1999 Adaptec, Inc. All rights reserved. Adaptec, the Adaptec logo, the Adaptec tagline, and PowerDomain are trademarks of Adaptec, Inc., which may be registered in some jurisdictions. Apple and Mac are registered trademarks of Apple Computer, Inc., used under license. All other trademarks are property of their respective holders.

# Audio CD-Writing Software

PROFESSIONAL CD-MASTERING APPLICATIONS MIND YOUR P'S AND Q'S

**C**REATING CUSTOM AUDIO CD-ROMs is no longer an exotic pastime practiced by those blessed with more money than sense. CD-ROM writers, or *burners*, are now widely available and affordable enough for us common folk, and they come with software so simple that a reasonably bright chimpanzee could burn a CD.

As easy and economical as this process may be, the software that ships with today's CD-ROM burners—usually Adaptec's Toast—isn't full-featured enough to produce truly professional audio CDs. If you

audio cards, which output sound at higher bit rates than Apple's 16-bit Sound Manager. WaveBurner offers similar support for Emagic's Audiowerk cards, but the version we tested doesn't yet support Digidesign cards. Likewise, MasterList CD won't recognize the Emagic cards. Jam is content to route sound through any card that has a Sound Manager driver.

Another consideration is the kind of work you do. MasterList CD is intended for professional users who prepare reference CDs for duplication. Unlike the other applications, it lets you set up to 100 reference points within a CD track list; you can compare the volume among several tracks by calling up different locations in the playlist.

Complete though MasterList CD may be, its interface is anything but friendly. There are very few graphical elements here—mostly number fields and dialog boxes. Also, unlike Jam and WaveBurner, MasterList CD doesn't support drag

and drop; you must add tracks via a dialog box rather than simply dragging sound files into a track list. And, regrettably, MasterList CD is copy protected.

## Riding the Wave

WaveBurner's interface is a different story. This program looks very much like an audio editor, complete with waveforms and graphic handles that you drag to adjust the length and shape of crossfades. You can also increase or decrease the gap between tracks by dragging; simply click on the track and drag it left or right. Like Jam, WaveBurner has a preview feature that plays all the transitions from track to track sequentially—helpful when you want to review the pacing of your CD. And WaveBurner lets you record audio directly into the program; the other two applications require that you first record audio into a separate program.

## Sticky Jam

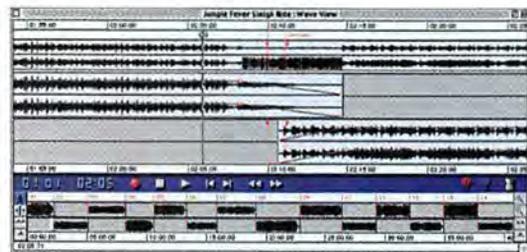
Jam's interface is much like Toast's. To create a track list, you drag and drop files into Jam's main window. From there you can create crossfades using the MasterList

method: choose a crossfade type; set the duration of the crossfade in a numeric box; and determine whether it occurs presplice, centered, or postsplice. As with Toast, you can adjust the RAM cache, preventing underrun errors, and test each track individually before committing to the burn.

One annoyance I hope Adaptec will address in a future version is Jam's inability to impose track markers, something both MasterList CD and WaveBurner support. In other words, you can't take one long audio file—the side of an LP, for example—and then place a track marker at the beginning of each cut. Instead, you must create regions in the file using another program and then bring the file into Jam.

## Macworld's Buying Advice

Audio-mastering engineers who own Digidesign audio cards should ignore MasterList CD 2.1's rough interface and stick with the best tool for their trade. Jam 2.5 is also perfectly capable, but WaveBurner 1.0 costs \$100 less and is more flexible. In this case, I'll take my Toast with WaveBurner instead of Jam.—CHRISTOPHER BREEN



**Doing the Wave** With its waveform interface, Emagic's WaveBurner 1.0 makes it easy to create crossfades.

want to create discs without audible gaps between tracks, tracks that crossfade into each other, or an audio master CD for a CD-mastering house, you need Adaptec's Jam 2.5, Digidesign's MasterList CD 2.1, or Emagic's WaveBurner 1.0. The one you select depends on your hardware, the intended purpose of your CD, and your tolerance for an unintuitive interface.

## Hold the Toast, Please

Unlike Toast, which produces both data and audio CDs, the three applications we reviewed create only audio CDs that conform to the Red Book standard. All three let you work with the minutiae of Red Book audio—the P and Q subcodes that control such aspects of audio CDs as copy protection and index numbering. The apps also let you create crossfades between tracks and tweak the volume of individual tracks.

Although none of the three requires special audio cards (you no longer need an add-on audio board to use MasterList CD), hardware is still a consideration. MasterList CD, for example, lets you monitor your tracks through Digidesign's

## Jam 2.5

**RATING:** ★★★½ **PROS:** Drag-and-drop support; individual track testing. **CONS:** Can't impose track markers. **COMPANY:** Adaptec (800/442-7274, <http://cdr.adaptec.com>). **LIST PRICE:** \$299.

## MasterList CD 2.1

**RATING:** ★★★½ **PROS:** Autolocate function; support for Digidesign hardware. **CONS:** No drag-and-drop support; unintuitive interface; expensive; copy protected. **COMPANY:** Digidesign (800/333-2137, [www.digidesign.com](http://www.digidesign.com)). **LIST PRICE:** \$495.

## WaveBurner 1.0

**RATING:** ★★★ **PROS:** Intuitive waveform editing; direct recording into program. **CONS:** No autolocate function. **COMPANY:** Emagic (530/477-1051, [www.emagic.de](http://www.emagic.de)). **LIST PRICE:** \$199.



# Trouble mounting?

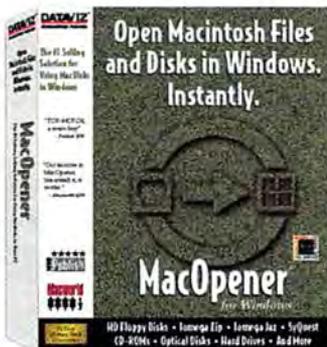
**In a world where Windows and Macintosh incompatibility causes endless problems, DataViz offers a little help. MacOpener®. A convenient utility that surmounts all obstacles when your PC needs to read, write and format Macintosh disks.**

With MacOpener installed on your PC, reading and writing files on a Mac-formatted disk, cartridge or CD is a breeze. MacOpener lets you open the disk on your PC just as if it were formatted for Windows. You can then view the contents and copy files to and from the disk from any Windows application. MacOpener automatically adds the right PC extension to Macintosh files, so you can launch a Windows application by simply clicking on the file. It even lets you format the Mac disk just as if it were a PC disk. How's that for trouble free performance?

At DataViz, solving PC to Mac compatibility problems is our business. As well as MacOpener, we offer Conversions Plus®, the premier file conversion program that translates hundreds of different file formats between PC applications or Macintosh and PC applications. Quickly and accurately. And offers over 1,000 file translation combinations, to solve almost any file conversion needs.

**So discover for yourself that with DataViz, no file compatibility problems are insurmountable.**

For answers to all your Mac to PC disk and file compatibility needs, call us at **1-800-270-0030 Ext 173** or visit our web site at **<http://www.dataviz.com/momacw>**



**DATAVIZ®**  
Compatibility. Instantly.

Available at

**COMPUSA**  
The Computer Superstore

**MICRO CENTER**  
THE COMPUTER SUPERSTORE

**Fry's**

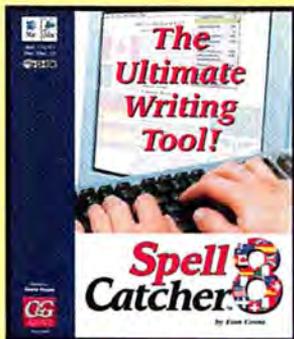
Runs on Windows 3.1, Windows 95 & 98, Windows NT.

Choose 142 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

All product names are trademarks of their respective holders.

# Peak 2.0

BUGS MAR OTHERWISE POWERFUL AUDIO EDITOR



## Spell Catcher 3

The best comprehensive set of writing tools ever!

- ✓ Multi-Lingual—8 different language spelling dictionaries.
- ✓ Customize your dictionary by importing words from other programs.
- ✓ Use our Speak feature to hear the word pronounced with your Mac's voice in English or Spanish.
- ✓ Universal—works in all programs, utilizing a single set of reference files.
- ✓ One of the largest integrated spell checking, thesaurus, & definitions dictionaries available.
- ✓ Includes powerful supplemental resources; medical, legal, scientific/technical, computer, biological/geological, HTML dictionaries and more!

Now coming to a store near you!

See us at Macworld  
Booth #641!

[www.spellcatcher.com](http://www.spellcatcher.com)



Casady & Greene, Inc. 22734 Portola Dr.  
Salinas, CA 93908-1119  
Web Site: [www.casadyg.com](http://www.casadyg.com)  
PH: 831.484.9228 FX: 831.484.9218

Choose 116 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

**A**UDIO EDITORS ARE THE Photoshop of the sound world, letting you “retouch” sound files to remove flubbed words, to rearrange the verses of a song, to create special effects, and to convert one sound format into another. The long-awaited update to the popular audio editor Peak, from Berkeley Integrated Audio Software (BIAS), has the potential to take Mac digital audio editing to new heights. But although Peak 2.03 sports a variety of interface enhancements and new features, bugs mar its power.



**Take a Peak** Peak 2.03 lets you open a QuickTime movie to edit its soundtrack.

Peak's editing features are complete and well designed. You can zoom in to make edits at the single-sample level and set markers to navigate a large document quickly. Peak 2.03 adds tape-style scrubbing—the ability to play a sound forward and backward slowly.

Like all audio editors, Peak displays a waveform window that graphically depicts the sound you're manipulating. On-screen volume meters dance as a sound plays, while a counter ticks off elapsed time. The program also offers unlimited undo's and lets you undo one operation without affecting others.

Peak 2.0's audio-processing features are also dramatically improved. With its DSP (digital signal processing) menu, you can change the sample rate, create fades, remove clicks, change a sound's pitch while retaining its duration, and much more. Unfortunately, Peak lacks high-quality bit-depth reduction.

Third-party plug-ins expand Peak's processing repertoire. The new version

adds support for TDM-format plug-ins, the mainstays of professionals who use high-end Digidesign audio hardware. For the rest of us, Peak supports Adobe Premiere-format plug-ins (see the accompanying review). You can create envelopes that gradually apply a Premiere plug-in, or apply a plug-in in real time—that is, get the effect without actually modifying the sound file.

Many of Peak's other new features will appeal to audio and video professionals. For example, you can open QuickTime movies and modify their soundtracks, and a new batch processor lets you automate format-conversion and DSP chores without scripting. Peak's playlist feature lets you define regions that play back sequentially. And if you have Adaptec's Toast, you can burn audio CDs directly from Peak, using the playlist to define each track.

Finally, musicians with sampling keyboards and modules can use Peak to edit samples and transfer them among instruments. The handy new Loop Surfer command makes it easy to locate the ideal loop points for samples.

Peak's keyboard- and tool-bar-customizing features are terrific, but the tool-bar icons are too small and cryptic. It's also worth noting that Peak uses a copy-protection scheme: to install the program on an iMac or a blue-and-white Power Mac G3, you must contact BIAS for a text key.

Peak's documentation is thorough, but the manual's index is abysmal. Worst of all, Peak crashes now and then.

### Macworld's Buying Advice

Peak 2.03 is an exceptionally powerful, versatile program. It could be more reliable, but BIAS has a solid track record of delivering free bug-fixes, so there's hope that Peak will stabilize over time. If you need Peak's power now, don't hesitate to buy—just be sure to save often.—JIM HEID

**RATING:** ★★★ **PROS:** Versatile; innovative plug-in support. **CONS:** Copy-protected; buggy; no high-quality bit-depth reduction. **COMPANY:** Berkeley Integrated Audio Software (800/775-2427, [www.bias-inc.com](http://www.bias-inc.com)). **LIST PRICE:** \$499.

## Peak Plug-Ins

FILTERS ADD PIZZAZZ TO PEAK

**L**OOKING TO EXPAND YOUR collection of audio-processing tools? A plug-in library might be just the ticket. Two recent entries, Waves' Native Power Pack II and Arboretum Systems' Hyperprism Plug-in Pack, work in any program that supports Premiere-format plug-ins—including BIAS's Peak.

Native Power Pack comprises just four plug-ins, but each is exquisite. Renaissance Compressor boosts volume during quiet parts and lowers it during loud parts. Renaissance Equalizer lets you boost or lower certain frequencies with a streamlined interface. MaxxBass creates harmonics that fool the ear into hearing more bass than is actually present, while DeEsser attenuates *s* sounds. Unfortunately for iMac users, the plug-ins require an ADB hardware key.

Hyperprism Plug-in Pack is a grab bag of more than two dozen plug-ins—everything from workaday tools such as reverbs, compressors, and equalizers to wacky wonders guaranteed to make your dog cock its head. The workaday tools do a fine job—the HyperVerb reverb is notably impressive—but Native Power Pack's compressors and equalizers make my ears happier.

### Macworld's Buying Advice

Native Power Pack II is best suited to well-heeled audio engineers who need classic sweetening and top sound quality. Hyperprism Plug-in Pack is ideal for musicians who need solid basic effects—but who also crave the stuff that makes dogs howl.—JIM HEID

### Hyperprism Plug-in Pack

**RATING:** ★★★★★ **PROS:** Superb sound quality; easy interface. **CONS:** No printed documentation. **COMPANY:** Arboretum Systems (800/700-7390, www.arboretum.com). **LIST PRICE:** \$349.

### Native Power Pack II

**RATING:** ★★★★★ **PROS:** Superb sound quality; easy interface. **CONS:** Hardware copy protection; expensive. **COMPANY:** Waves (800/264-0109, www.waves.com). **LIST PRICE:** \$500.

# Conquer Disk Damage



Introducing DiskWarrior™,  
a revolutionary new way  
to restore damaged disks!

DiskWarrior is a revolutionary new utility that combats disk damage. It quickly rebuilds, recovers and optimizes your HFS and HFS Plus disk directories, eliminating all directory errors and recovering lost files. Other utilities attempt to repair disks by patching the damage. Patching can result in more damage and permanent loss of files.

### 100% Recovery Assurance

Only DiskWarrior builds a new optimized directory using data recovered from the damaged directory. You have 100% assurance that DiskWarrior will always restore your disks and recover your files when directory damage is your enemy.\* You'll also have 100% confidence that you're getting the desired results. DiskWarrior's exclusive Preview ability lets you preview the restoration. You can examine your damaged disk in the Finder as it will appear after the directory is restored but before any changes are made to your disk.

### Routine Maintenance

DiskWarrior is your first line of defense against unseen disk damage. Running DiskWarrior regularly prevents small unseen problems from becoming large ones by keeping your directories error free. You'll also keep your directories optimized to speed up overall disk performance.

©1998 Alsoft, Inc. PO Box 927, Spring, Texas 77383-0927 USA. 281-353-4090 or fax 281-353-9868. DiskWarrior is a trademark of Alsoft, Inc. \*Visit our web site or call for requirements. DiskWarrior is not a magician. No utility can restore directories that have been written over.



THE UTILITY COMPANY

ALSOFT

www.Alsoft.com 800-257-6381

Choose 140 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

# Commotion 2.0

BRUSHES BOOST INDISPENSABLE VIDEO-PAINTING TOOL

**F**EELING SOMEWHAT INSPIRED BY the summer's effects-laden movies? You'll be happy to know that you can create your own special-effects extravaganza on your Mac with the same tools the professionals use. One of those tools is Commotion 2.0, the latest upgrade to Puffin Designs' excellent rotoscoping and painting program. Building on its predecessor's facilities for creating mattes, painting on moving images, and touching up videos, this version includes new effects brushes, support for Adobe After Effects filters, and a new text filter.

## FX Painting

As in earlier versions, Commotion 2.0's strength lies in its ability to work with movies in real time. The program loads QuickTime movies into RAM, so you can preview short video clips (or long clips, if you have enough memory) at their full size and frame rate. Because most single shots in a movie tend to be short—and effects sequences are even

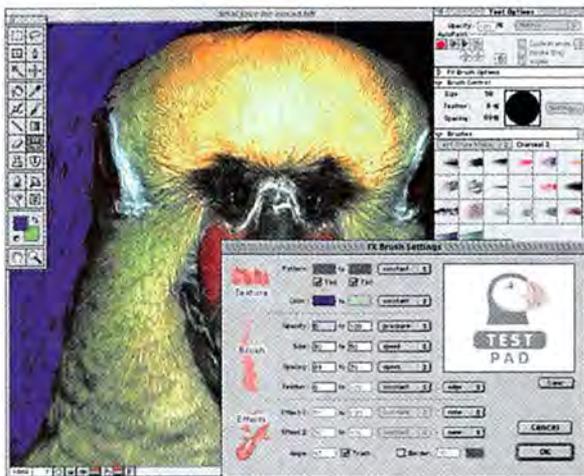
shorter—a few seconds of video are usually all you need for the kinds of effects you create in Commotion.

Commotion's powerful spline tools let you create mattes by outlining shapes using an Adobe Illustrator-like pen tool; you can then animate these rotospines

twists to version 2.0's rotospine features are that you can now simply grab the pen tool and start drawing—you no longer have to go to the Rotospines palette first—and you're allowed up to 100 undo's per document.

Version 2 retains its predecessors' assortment of brush and clone tools for painting. It also adds some new FX Brushes—really just small paint-on texture files—for creating everything from subtle highlights and halos to big, gaudy brushstrokes. The program offers a wealth of brush parameters, including spacing, opacity, and feather; each has a range of values, depending on the brush's speed, pressure, tilt, and bearing (you'll need a drawing tablet for the last three). You can create your own brushes, but Commotion ships with such a huge assortment of prebuilt brushes that you may never need to create your own.

In addition to flexibility, the brushes



**The Brush-Off** Commotion 2.0's new FX Brushes give you a wealth of parameters and controls for creating and modifying brushes.

over time and combine them with the program's motion-tracking features to create animated mattes. The only new

ment of prebuilt brushes that you may never need to create your own.

In addition to flexibility, the brushes

## PowerBook® or Desktop VST has the portable solutions you are looking for.

**Stop by Booth #561 and you could win a new VST FireWire® Hard Drive!**

The full VST product line for the New 1999 Version Macintosh® PowerBook G3 Series

Zip®100 Drive



SuperDisk™ Drive



6, 8 & 10GB Hard Drive

Also available: Chargers, Auto Adapters, AC Adapters and Li-Ion Batteries.

Visit Booth #561 at Macworld Expo

VST Products are available at [www.vsttech.com](http://www.vsttech.com)

Apple, Macintosh, iMac, and PowerBook are registered trademarks of Apple Computer, Inc. Zip is a registered trademark of Iomega Corp. SuperDisk is a trademark of Imation, Corp.



Introducing MacBuy.com. The first and only comprehensive buyer's guide from the editors of Macworld magazine. **MacBuy.com** gives you authoritative reviews of the most important Mac products available, and state-of-the-art testing from Macworld Lab. With MacBuy.com, you'll know...

...which products to buy.  
**And which to avoid.**  
 Great deals on the Web.  
**And where to find them.**  
 How much it costs.  
**And is it worth it.**

From the publishers of  
 Macworld magazine

**MacBuy.com**

Review, Compare, Price and Buy.

Choose 73 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

offer impressive speed and performance. Even complicated brushes paint smoothly, and the program has no trouble keeping up with the speed of your brushstrokes. The addition of FX Brushes to Commotion 2.0 should appeal to effects creators who have been relying on MetaCreations' Painter for natural-media video painting. Although Commotion lacks Painter's full suite of extraordinary paint tools, it offers a much better interface for painting on moving video.

#### FX Filters

Commotion 2.0 not only supports After Effects plug-ins but also adds a timeline interface that lets you animate plug-in parameters just as you would in After Effects. The timeline lists the filter's properties in a column and lets you define multiple, separate keyframes for each property. To set a keyframe, you simply drag the current time marker to a new location on the timeline and change the value of the property you want to animate. Although the timeline lacks velocity and function curves, its simple linear and ease-in, ease-out interpolations between frames offer all the control you'll need for most effects.

New users should note that filters in Commotion are destructive. Applying

the effects alters the movie's frames; you can't go back and tweak a filter's settings without reverting to the last saved version and reapplying the filter.

If you've used an earlier version of Commotion, you'll notice that the current version replaces many of the basic filters with equivalent (but faster) filters from ICE. In addition to offering improved performance, the new filters support hardware acceleration using BlueICE hardware.

One of the new filters, Motion Text, lets you create and animate type. Unfortunately, its controls aren't as interactive as they could be. To add a title to a movie, for example, you select the Motion Text filter and enter your text in a somewhat clunky modal dialog box. In addition, you can have only one font and type size per title.

From the Motion Text dialog box, you set parameters and see the results in a tiny preview window. In addition to the usual size, color, and position parameters, Commotion lets you specify horizontal and vertical scaling, feathering, drop shadows, and curve (as defined by two points of a spline). Instead of using interactive controls to specify position or spline points, however, you control these parameters numerically. A simple inter-

face that lets you click within the preview window to define position and curve would be a nice addition.

The ability to animate text within Commotion rather than After Effects is very handy and saves time you would otherwise spend switching between the two programs. Because it's so much faster to animate text in After Effects, however, you'll probably want to use the Motion Text plug-in for only the simplest jobs.

#### Macworld's Buying Advice

Commotion 2.0 isn't a huge upgrade over the last version, but its animatable filters, Motion Text filter, and FX Brushes are handy and well implemented. They're also a promising sign that Puffin is aiming to expand the program's range beyond simple rotoscoping. Whatever the future holds, Commotion 2.0 is an indispensable tool for motion-effects professionals.—BEN LONG

**RATING:**  **PROS:** Rotosplines and RAM playback for creating mattes; supports After Effects filters. **CONS:** Motion Text interface could be more interactive. **COMPANY:** Puffin Designs (800/401-0009, www.puffindesigns.com). **LIST PRICE:** \$2,495.



## SoundJam MP

Digital Audio System

The FIRST full-featured Mac player/encoder with real-time streaming over the net!

- Convert your music quickly between high quality MP3, CD's, AIFF, WAV, QuickTime, & other formats.
- Compress your music collection to a fraction of the size.
- Organize your music by artist, track, song and genre.
- Create your own customized music collections.
- Adjust the sound of your music manually or by using preset music styles: jazz, rock, classical & more.
- Includes a variety of Skins.

From the publishers of  
**Conflict Catcher 8!**

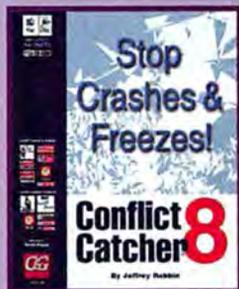
See us at Macworld  
booth #641



Casady & Greene, Inc.  
22734 Portola Dr.  
Salinas, CA 93908-1119  
Web Site: www.casadyg.com  
PH: 831.484.9228 FX: 831.484.9218

Coming to a  
store near you!

www.soundjam.com



Conflict Catcher 8 Awards:



Conflict Catcher 4 Awards:



www.conflictcatcher.com

Immerse yourself in a whole new realm of graphic possibilities. The Accel-a-Writer® 3G lets your creativity run wild. Show off your graphics work with output so near imagesetter quality that you won't notice the difference. Perfect for final output or film.

Consider the possibilities with the Accel-a-Writer 3G:

- Highest resolution available of any printer in its class – up to 2400 x 2400 dpi
- Superior halftones with line screens up to 150 lpi
- Precision output with XANTÉ's exclusive Graphics Software Package
- Greater flexibility with oversized output up to 13" x 35.5"
- Desktop film capabilities generated with the Accel-a-Writer 3G and processed using XANTÉ's FilmStar 2™

Call today for sample output and more information on the XANTÉ Accel-a-Writer 3G and FilmStar 2. As a graphics pro, you'll soon be right in your element.



 **XANTÉ**.com  
*Innovations in Printing Technology*

1-800-926-8839 ext. 2161  
Fax: 334-342-3345  
[www.xante.com/m3g1.html](http://www.xante.com/m3g1.html)



Adobe PostScript 3™

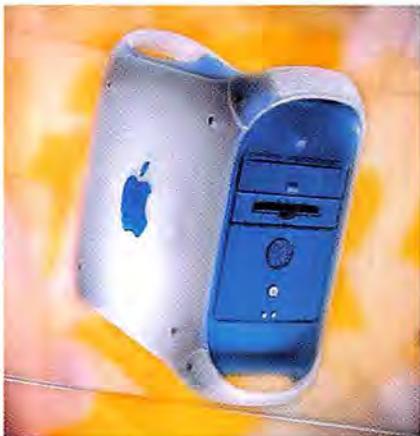
©1999 XANTÉ CORPORATION. XANTÉ, Accel-a-Writer, and FilmStar are trademarks or registered trademarks of XANTÉ CORPORATION. Adobe, PostScript, PostScript 3, and the PostScript logo are trademarks or registered trademarks of Adobe Systems, Incorporated. Other brands and product names are trademarks or registered trademarks of their respective holders. XANTÉ CORPORATION, 4621 Spring Hill Avenue, Mobile, AL 36608, tel: 334-342-4840, fax: 334-342-3345.

Choose 112 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

# Power Macintosh G3/450

MODEST SPEED BOOST FOR APPLE'S HIGH-END SYSTEM

**A**PPLE'S LATEST POWER MAC G3 configuration has the same trendy design—and the same basic hardware components—as its predecessors. But underneath that blue-and-white exterior sits a new 450MHz G3 CPU, offering a modest performance boost at the same price as that of previous high-end models (see *Reviews*, April 1999).



GIBSON

Macworld Lab tested a configuration with a 1MB backside cache, 64MB of RAM, an ATI Rage 128 graphics accelerator with 16MB of video memory, a 9GB Ultra2 Wide SCSI hard drive, and a 32x CD-ROM drive (this is similar to Apple's Better configuration, except for the RAM allotment). As with previous blue G3 models, the system ships with a 10/100BaseT Ethernet connection but no modem, although you can add an

internal 56-Kbps modem for \$100. You also get two USB ports and two FireWire ports, which will come in handy now that more FireWire peripherals are available. The system includes four PCI slots, but with the graphics accelerator and Ultra2 Wide SCSI card installed, only two slots are available.

New G3 systems ship with Mac OS 8.6, but our chosen reference system, a Power Mac G3/400, ran Mac OS 8.5.1. To isolate any OS-related performance differences, we tested the new G3 under both versions. The results were generally predictable (see "Faster by a Nose"). However, the new system running Mac OS 8.6 scored slightly lower than its counterpart running OS 8.5.1 on the Graphics test, which appears to be a consequence of the new version of QuickDraw in Mac OS 8.6.

### Macworld's Buying Advice

Apple's Power Macintosh G3/450 retains an under-\$3,000 price tag while offering a modest performance boost. If you frequently perform such hardware-intensive tasks as digital-video creation, 3-D rendering, or high-resolution photo retouching, give it a close look.—STEPHEN BEALE

**RATING:** **PROS:** Fast; good price; easy to add expansion hardware. **CONS:** Unergonomic mouse; no serial port; limited PCI slots. **COMPANY:** Apple Computer (800/795-1000, www.apple.com). **LIST PRICE:** \$2,859.



## Faster by a Nose

Best results in red. Reference products in italics. MacBench 5.0 scores are relative to those of a first-generation Power Mac G3/300, which is assigned a score of 1,000 in each test.

	MACBENCH 5.0		
	Processor	Disk	Graphics
Apple Power Macintosh G3/450*	1,484	1,306	2,875
Apple Power Macintosh G3/450**	1,472	1,330	3,092
Apple Power Macintosh G3/400**	1,323	1,277	3,151

Longer bars are better.

\* Running Mac OS 8.6. \*\* Running Mac OS 8.5.1.

### Behind Our Tests

For detailed information on our tests, see the full review online, at [www.macworld.com/1999/09/reviews/](http://www.macworld.com/1999/09/reviews/).—Macworld Lab testing supervised by Kristina De Nike

# GUTS



# GLORY



"ATI RAGE 128 technology offers Mac gamers absolutely state-of-the-art acceleration, as good as you can get anywhere."

- John Carmack, Quake creator, id Software

Powered by ATI RAGE 128 and 16MB of memory,

RAGE ORION



gives your Mac the guts for all the glory it can handle

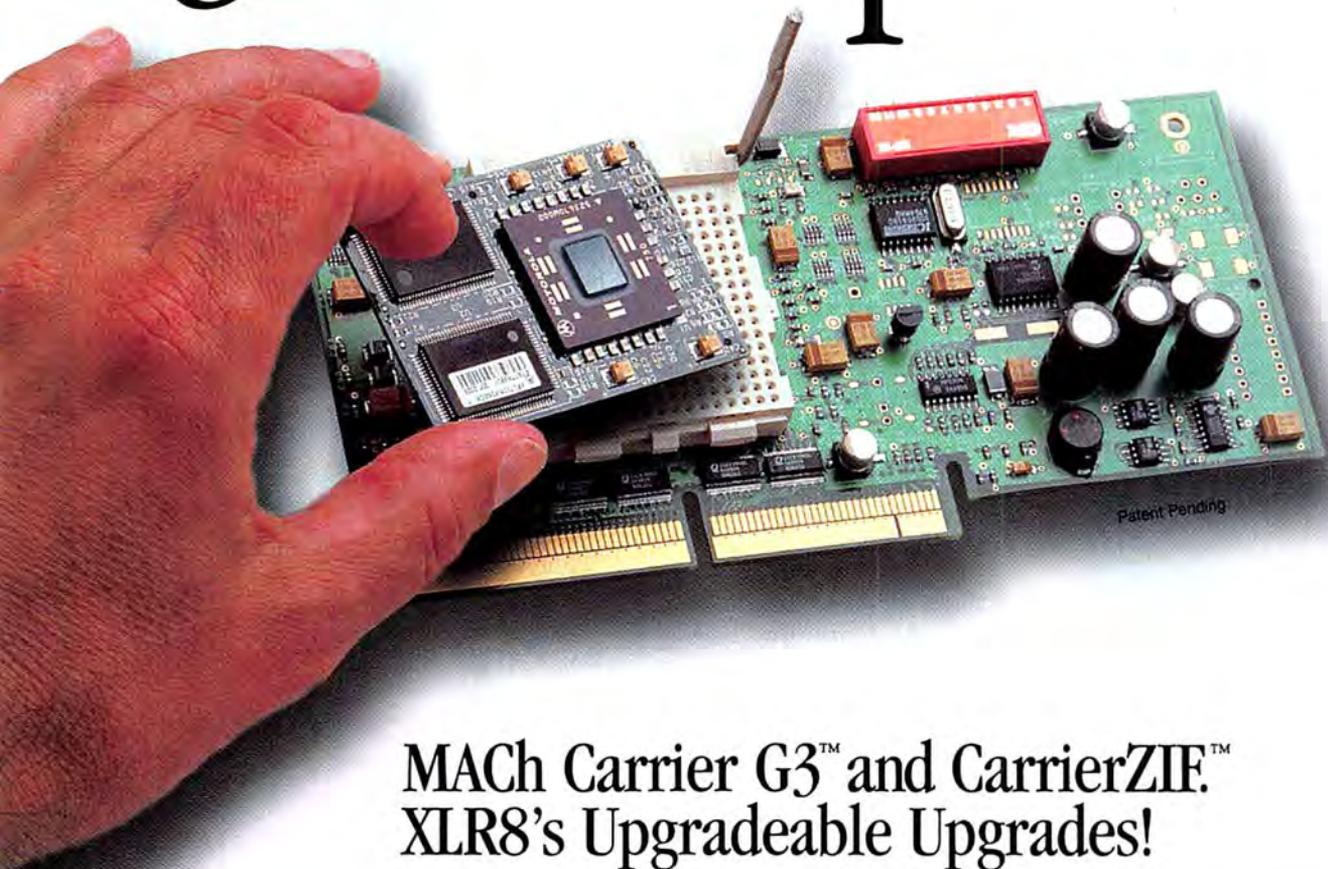


[www.atitech.com/ad/mac](http://www.atitech.com/ad/mac)

© Copyright 1999 ATI Technologies Inc. Quake III Arena™ is a trademark of id Software, Inc. Quake III Arena™ character screenshots and images © 1999 id Software, Inc. All rights reserved. Features, performance and specifications may vary by operating environment and are subject to change without notice.

Choose 256 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

# Y3K Compatible.



## MACH Carrier G3™ and CarrierZIF™ XLR8's Upgradeable Upgrades!



*MACH Carrier G3 utilizes our exclusive Smart Control™. Just plug in the MACHCarrier and it configures automatically!*

With the MACH Carrier G3™ and CarrierZIF™, upgrading your pre-G3 Macs and most clones is a no-brainer. The ultra-compatible XLR8 Carrier™ daughtercard uses the latest ZIF (zero insertion force) technology. Simply pull out the old ZIF-based processor chip itself and drop in the latest processor onto that same modular daughtercard – for much less than an entirely new card. You can work faster today... and upgrade forever.

Upgrade two Macs the price of one! Put the daughter card in your Power Mac G3, then use the Power Mac's CPU with the carrier card in your older PCI machine. Also included is toll-free technical support, Virtual Firmware, XLR8's MACH Speed Control Software, and much more. And, for a limited-time, XLR8 is offering valuable trade-in rebates for your old daughtercard, reducing your cost even more.

Now that you've seen the new possibilities, call 888-XLR8TOR or visit [www.xlr8.com](http://www.xlr8.com) today for more information on the MACH Carrier! Available from distributors and resellers worldwide.



[www.xlr8.com](http://www.xlr8.com)  
1-888-XLR8TOR



**MacsOnly!**  
PERFECT RATING!!!!

XLR8 by Interex, Inc. • 8447 E. 35th St. N. • Wichita, KS 67226 • 316-636-5544 • 316-636-4639 fax

Other brand and product names are trademarks or registered trademarks of their respective holders. Product specification subject to change without notice. ©1999 Interex, Inc.

Choose 59 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

# MonacoEZcolor

EASY COLOR-MANAGEMENT SOFTWARE

ONE OF THE BIGGEST OBSTACLES to the widespread use of Apple's ColorSync color-management software has been the expense and difficulty of building output profiles. Typically, you need costly profiling software, as well as a measurement device, such as a colorimeter or spectrophotometer, that can set you back thousands of dollars. Monaco Systems' \$299



**EZ Interface** MonacoEZcolor guides you through the process of creating device profiles.

MonacoEZcolor offers an innovative and inexpensive approach to color management by using a profiled scanner to measure printer output. Monaco Systems isn't the first company to try this technique, but it's the first to make it work.

## Triple Threat

MonacoEZcolor creates profiles for monitors, scanners, and printers. To create a monitor profile, you follow a series of visual cues, similar to those in Apple's Default Calibrator utility. For more-demanding users, the company offers a \$199 hardware device that provides much more reliable monitor calibration. To create a scanner profile, you scan a standard reflective IT8 target, included in the package. If you want to profile a scanner used for transparencies, you can buy a 35mm transparency target for \$80 or a 4-by-5-inch target for \$160.

These functions are useful, but it's the printer-profiling capability that sets the program apart. To create a printer profile, you simply print a target and then scan it on a profiled scanner. EZcolor does the rest of the work for you, building a ColorSync-compatible printer profile.

EZcolor actually lives up to its name.

The application has a wizard-style interface that steps you through the process of creating profiles. The on-screen instructions are clear, concise, and complete, including warnings about unseen gotchas, such as automatic exposure correction on scanners and hidden printer color-management features. Unlike most profiling tools, MonacoEZcolor doesn't require any specialized knowledge.

The big question, of course, is "Does it work?" The answer is a qualified yes. EZcolor has two main limitations. First, it can generate only RGB profiles for printers. This makes it well suited to most ink-jet printers but not to printers that expect CMYK data. You could feed RGB to a CMYK PostScript printer and have the PostScript RIP perform the conversion, but this doesn't always work. If you're dealing with a CMYK workflow, EZcolor isn't for you.

Second, the quality of EZcolor profiles depends on your scanner. If your scanner doesn't allow you to turn off automatic corrections, you're stuck, because profiling requires that the scanner use consistent settings every time. If your scanner doesn't have enough dynamic range to capture your printer's black comfortably, the resulting profile will probably block up your shadows. Finally, scanners are designed to scan photos, and the software assumes you're using some kind of photo paper. If you're scanning from something else, the results will be less reliable.

We obtained good results for ink-jet printers using relatively inexpensive flatbeds, but don't even think about profiling a dye-sublimation printer using this technology.

## Macworld's Buying Advice

MonacoEZcolor is ideally suited to profiling ink-jet printers, including the current generation of six-color photo printers. If the lack of good profiles has prevented you from trying some of the new third-party inks and papers, EZcolor offers a great solution at a reasonable price, and you don't have to be a rocket scientist to make it work.—BRUCE FRASER

**RATING** **PROS:** Easy to use; relatively inexpensive. **CONS:** Creates only RGB profiles; results depend on scanner quality. **COMPANY:** Monaco Systems (978/749-9944, www.monacosys.com). **COMPANY'S ESTIMATED PRICE:** \$299.

# GUTS



# GLORY



- **ATI XCLAIM VR 128** adds multimedia muscle to your Mac with a full range of capabilities including 2D, 3D, and video acceleration

- Capture video or still images and add them to emails or web pages

- Watch TV on your Mac with really cool features you won't find on any TV

- Powered by  the revolutionary new graphics chip that gives your Mac the guts for all the glory it can handle



[www.atitech.com/ad/mac](http://www.atitech.com/ad/mac)

© Copyright 1999, ATI Technologies, Inc. All product names are trademarks and/or registered trademarks of their respective manufacturers. Features, performance and applications may vary by operating environment and are subject to change without notice.

Choose 256 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

Thank God, he can still scan.

One touch scanning  
to e-mail, printer,  
file or fax

Great scans every  
time with Agfa  
ScanWise™ software

36-bit, 600x1200 dpi

USB interface

Only \$129\*

Comes with seven  
colored handles

The new SnapScan Touch™ scanner



[www.agfahome.com](http://www.agfahome.com)

\*Agfa MSRP 6/99 ©1999 Agfa Corporation. AGFA and the Agfa rhombus are registered trademarks of Agfa Gevaert AG.

Choose 158 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

**AGFA** 

# AppleTalk to IP Migration Suite

PRODUCT BUNDLE SMOOTHS THE PATH TO TCP/IP

**A**PPLETALK HAS BEEN THE mainstay of Macintosh networking for a decade, but it's time to stick a fork in it: it's done. Anyone building a Macintosh office network today bases it entirely on TCP/IP for Internet-wide accessibility, improved performance, and compatibility with third-party networking products. Alas, migrating an *existing* AppleTalk net-

work to TCP/IP can be a painful process. Open Door Networks' AppleTalk to IP Migration Suite eases your pain by giving you tools to make the AppleTalk-to-TCP/IP transition gradually.

work to TCP/IP can be a painful process. Open Door Networks' AppleTalk to IP Migration Suite eases your pain by giving you tools to make the AppleTalk-to-TCP/IP transition gradually.

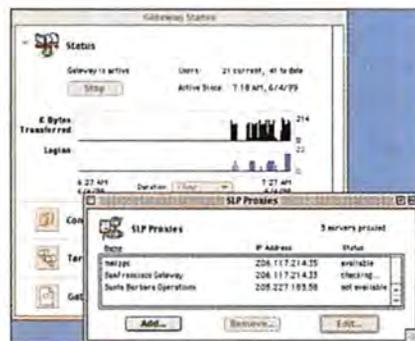
work to TCP/IP can be a painful process. Open Door Networks' AppleTalk to IP Migration Suite eases your pain by giving you tools to make the AppleTalk-to-TCP/IP transition gradually.

work to TCP/IP can be a painful process. Open Door Networks' AppleTalk to IP Migration Suite eases your pain by giving you tools to make the AppleTalk-to-TCP/IP transition gradually.

## Macworld's Buying Advice

If you're still running a multizone AppleTalk network, you need to make the move to TCP/IP. AppleTalk to IP Migration Suite simplifies the process by letting you gradually shift services from AppleTalk to IP and gives you a great education in the process. Migrating an AppleTalk network to IP will never be fun, but with this suite it can be painless.—MEL BECKMAN

**RATING:** **PROS:** TCP/IP gateway for multiple AppleTalk AFP servers; SLP proxy; real-time traffic graphing. **CONS:** Weak component integration; no centralized security. **COMPANY:** Open Door Networks (800/480-3667, www.opendoor.com). **LIST PRICE:** \$599.



**Location, Location, Location** AppleTalk to IP Migration Suite's ShareWay IP Pro component makes non-TCP/IP AFP servers visible across the Internet.

work to TCP/IP can be a painful process. Open Door Networks' AppleTalk to IP Migration Suite eases your pain by giving you tools to make the AppleTalk-to-TCP/IP transition gradually.

The Migration Suite bundles four Open Door products—ShareWay IP Professional Edition 2.0, DoorStop 1.0.1, LogDoor 2.2, and AFP Engage 2.0.1—with a Web-based tutorial that explains migration strategies. The package also gives you templates that help you organize and plan your move, along with helpful tutorials on IP printing and TCP/IP security. Following the three-step plan outlined in the migration tutorial, you first establish concurrent AppleTalk and TCP/IP routing throughout your network. You then use ShareWay IP Pro to make existing AppleTalk Filing Protocol (AFP) servers visible on the TCP/IP network, and finally minimize or eliminate AFP altogether by replacing existing AFP server software with IP-capable software.

ShareWay IP Pro is the central component of the suite, giving AFP servers TCP/IP access by mapping individual servers to a single IP address. The program supports the Service Location Pro-

# GUTS



# GLORY



- **ATI NEXUS 128** delivers fast, true color, ultra high res graphics when using Photoshop or other 2D and 3D design applications

- **32MB** of memory lets you manipulate 3D objects with realistic textures and lighting in resolutions up to 1900 x 1200

- Powered by ATI RAGE 128, the revolutionary new graphics chip that gives your Mac the guts for all the glory it can handle



[www.atitech.com/ad/mac](http://www.atitech.com/ad/mac)

© Copyright 1999, ATI Technologies Inc. All product names and trademarks are either registered trademarks of their respective manufacturers. Features, performance and specifications may vary by operating environment and are subject to change without notice.

Choose 256 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

## Palm VII

WIRELESS, ONE-PIECE INTERNET ACCESS

**A**DD A WIRELESS MODEM TO the wildly popular Palm IIIx (see *Reviews*, June 1999), and you've got the Palm VII. When you lift this 2MB, 6-ounce gadget's flexible antenna, the device instantly turns on; you're ready to go online wirelessly from wherever you happen to be. This kind of convenience can be heaven-sent when you're mobile—but it comes at a price.

Sending and receiving standard Internet e-mail (minus attachments) is easy and convenient, even when you're trapped in a taxi. Unfortunately, although you can *cc* outgoing messages to your Mac's e-mail account, incoming messages are forever confined to the Palm VII, which has its own @palm.net address.

Because of bandwidth and HTML issues, you can't freely surf the Web with the Palm VII; instead, you load miniature search engines onto the device from your Mac. Each of these Palm query applications, or PQAs, can grab data from a particular Web site in about 10 seconds. The 22 starter PQAs include those for Etrade (for stock prices), USA Today, the Wall Street



GISSON

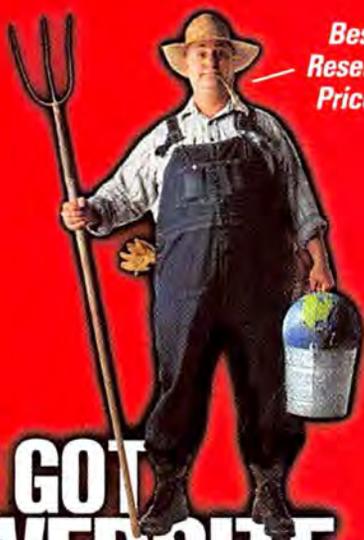
Journal, Moviefone, and Weather.com; you'll find dozens more at [www.palm.net](http://www.palm.net). Such instantaneous Web data can be a lifesaver on the road: the People Search PQA is a national phone book, MapQuest gives you turn-by-turn driving directions, and the Go PQA translates five languages. And with Palm Computing's free PQABuilder program for the Mac, you can even write your own PQAs using standard HTML.

Overshadowing all the good news, however, is the service price: \$10 per month for 50K of data sent and received (about one e-mail and two Web searches a day), or \$25 for three times as much. (Above your limit, you pay about 10 cents per screenful.) Worrying about your K count greatly curbs the exhilarating sense of freedom you'd other-

wise get. Spending safeguards are everywhere—for example, the e-mail program retrieves only the first 500 characters of each message, and you download the remainder at your option—but they also serve as reminders that Big Byte Brother is always watching.

**Macworld's Buying Advice** On one hand, the Palm VII is a version 1.0 device. The e-mail program needs more features, each pair of AAA batteries lasts only about three weeks, the BellSouth coverage could stand widening (it now covers the 260 most populous U.S. cities), and the whole affair cries out for an unlimited pricing plan. On the other hand, anyone who travels will find the device a life-changer. (When a recent flight was canceled, I used the Travelocity PQA to find a replacement flight on a rival airline—one that the desk agent had overlooked.) The bottom line: the Palm VII is the first one-piece, wireless palmtop, and it works.—DAVID POGUE

**RATING:** ★★★½ **PROS:** Valuable to mobile types; elegant software. **CONS:** Can't transfer e-mail off the device; no coverage in rural areas; pay-per-K system is a downer. **COMPANY:** 3Com/Palm Computing (800/881-7256, [www.palm.com](http://www.palm.com)). **LIST PRICE:** \$599 plus monthly fee.



Best Reseller Prices.

HE'S GOT  
A WEBSITE.  
DO YOU?

E-Commerce Enabled

Resellers, We Refer Design Work

30 Day Money Back Guarantee

The Best Support and Pricing in the Industry.

Yeeehaaaaw! It's what you'll say when you sign up with or switch to Interland® web hosting. Prices from as little as \$19.95 a month. Dual DS-3 connections for extra speed. A whopping eighty megabytes of disc space. Guaranteed 99.9% uptime. 24x7 toll-free support for the wee hours. And pricing with absolutely no hidden charges. You'll be happy, we guarantee it!

Check out our website and discover why more and more people worldwide are trusting their websites to Interland. Whether you're a computer veteran or just getting started, you'll receive the best service, support and technology the industry has to offer. At a price that's right for you. Not to mention a great reseller program. Give us a call today, and let Interland bring you the world.

Pricing From \$19.95 per Month

Call Today 1-800-599-0547  
(404) 586-9999

@ Speed. Reliability. Support.  
**interland**®  
Web Hosting  
[www.interland.net](http://www.interland.net)

Choose 10 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)



Just mail or fax this completed coupon for your FREE 68-page Guide to Power Protection. Better yet, order it today at the APC Web site!

<http://promo.apcc.com> KEY CODE m160z

(888) 289-APCC x8424 • FAX: (401) 788-2797

**APC**<sup>®</sup>  
Legendary Reliability™

# FREE 68-page Guide to Power Protection

- YES!** I want to know how to choose the right UPS for my system.  
Please send me my FREE 68-page Guide to Power Protection.
- NO,** I'm not interested at this time but please add me to your mailing list.

KEY CODE  
m160z



Name: \_\_\_\_\_

Title: \_\_\_\_\_ Company: \_\_\_\_\_

Address: \_\_\_\_\_

City/Town: \_\_\_\_\_ State: \_\_\_\_\_

Zip: \_\_\_\_\_ Country \_\_\_\_\_

Phone: \_\_\_\_\_

Brand of UPS used? \_\_\_\_\_ / \_\_\_\_\_

Brand of PC used? \_\_\_\_\_ / \_\_\_\_\_

Brand of Servers used? \_\_\_\_\_ / \_\_\_\_\_



**NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES**

**BUSINESS REPLY MAIL**

FIRST-CLASS MAIL PERMIT NO. 36 WEST KINGSTON, RI

POSTAGE WILL BE PAID BY ADDRESSEE

**APC**

KEY CODE: m160z

Department: C

132 FAIRGROUNDS ROAD

PO BOX 278

WEST KINGSTON RI 02892-9920



## How to Contact APC

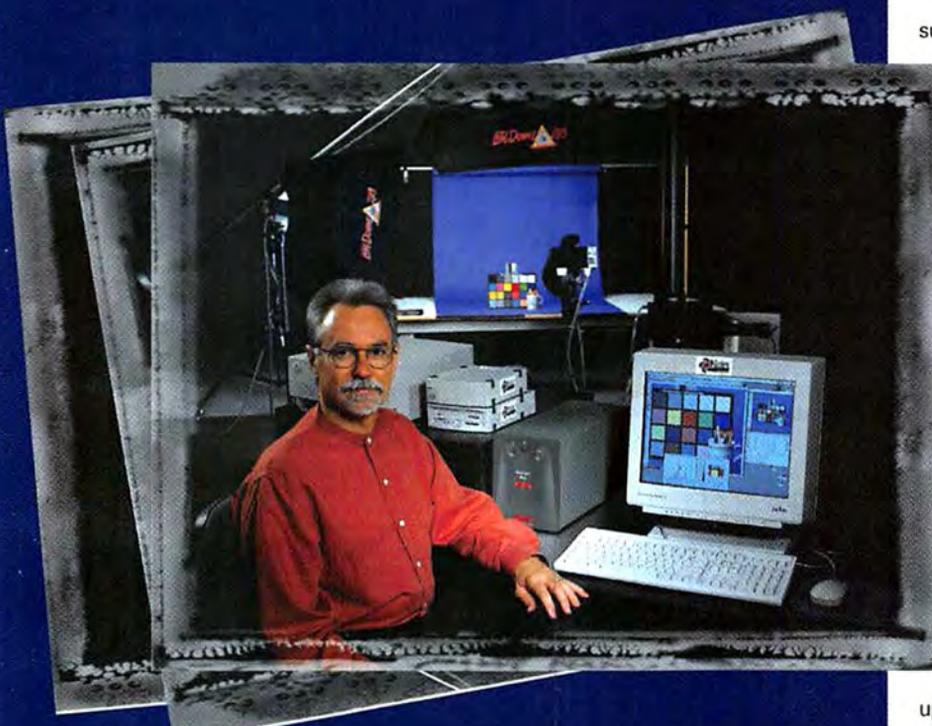
**Call:** (888) 289-APCC, *use the extension on the reverse side*

**Fax:** (401) 788-2797

**Visit:** <http://promo.apcc.com>,  
*use the key code on the reverse side*

**APC**<sup>®</sup>  
Legendary Reliability™

# What does a digital photographer do in the middle of a lightning storm?



With APC battery backup power,  
he gets the picture. All the time.

Solutions starting at \$99.

You can find APC power protection products at:



COMPUSA

MicroWAREHOUSE  
1-800-345-3045



Office  
DEPOT



APC Back-UPS Pro®

## Real Life

Dear APC: Bartlett Digital photography studio bills by the hour, which means we cannot tolerate avoidable downtime. The surge suppression and battery power of an APC UPS lets us finish the job, as scheduled, even with a temporary power outage.

- Tom Bartlett, central Florida

## Fact

According to research by IBM, a typical computer is subject to more than 120 power problems a month. Surge protectors prevent only a fraction of the power problems that cause keyboard lock-ups, system crashes, corrupted data, and worst of all, motherboard burnout. An APC uninterruptible power supply (UPS) with surge suppression and battery back-up protects your software, hardware, and most importantly, your work. APC Back-UPS Pro® provides clean, reliable power that lets you function at peak performance, giving you time to shut down during a power outage. Getting the picture? Visit the listed retailers to add APC's Legendary Reliability to your system.

**FREE 68-page Guide  
to Power Protection.**

Learn how to choose the right  
power protection for your system.



**Order now** Key Code m 160z  
<http://promo.apcc.com>

888-289-APCC x8424 • Fax: 401-788-2797

**APC**  
Legendary Reliability™

Choose 72 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

# Adobe Type Manager 4.5

SMALL ENHANCEMENTS ADD UP IN UPDATED FONT MANAGER

SOMETIMES A PRODUCT IS SO seamless that you take it for granted and don't bother with updates. In the case of Adobe Type Manager (ATM), that would be a mistake. While not exactly a quantum leap over version 4.0, ATM 4.5 adds a host of small and medium-size features that make it even more indispensable for the typographically inclined.

For many, the biggest selling point will be ATM's new compatibility with Mac OS 8.5 and 8.6. The previous version usually worked with Mac OS 8.5, but not always; users reported a variety of incompatibilities, including many that led to system freezes with some programs. In our testing, the new version didn't cause such system hang-ups, although some problems may remain for specific programs.

But what we like most about ATM 4.5 are the improved font-management functions. For example, when ATM finds a damaged font, it highlights that suitcase icon to make it easier to find. And you can now copy all the fonts in a set to a new location—perfect for desktop publishers who need to give their service bureaus



**Zap Font Duplicates** Adobe Type Manager 4.5 finds duplicate fonts and, if you like, removes them from ATM's font list or your hard drive.

copies of fonts for output.

Other handy features include the ability to search for fonts by name and have ATM find and delete duplicate fonts. The new version also offers better compatibility with Adobe Acrobat 4.0, which can now use ATM's font list when printing. In addition, ATM now includes the updated Adobe Type Reunion 2.5. Less useful is ATM 4.5's

ability to create temporary font sets; it seems just as easy to create a set and then deactivate or delete it if you don't need it any longer.

There's still room for improvement; for example, ATM 4.5's font cache uses three times as much RAM as version 4.0's did for the same set of fonts on our test system (1MB versus 384K), and the 15 included fonts are ho-hum designs you're not likely to use. In addition, Adobe Type Reunion won't work with QuarkXPress 4.0X's palettes, although it works fine with the Font menu; the company says a fix is in the works.

**Macworld's Buying Advice** Adobe Type Manager 4.5 is a must-have upgrade for current ATM users; publishing-oriented users simply depend on fonts too much not to take advantage of the program's improved stability and management abilities. With the new version, you'll once again be able to take ATM for granted.—GALEN GRUMAN

**RATING:** **PROS:** Better font management; improved interface; compatible with Mac OS 8.5 and 8.6. **CONS:** Uses more memory; Adobe Type Reunion has some incompatibility problems. **COMPANY:** Adobe Systems (800/833-6687, www.adobe.com). **LIST PRICE:** \$99.95.

## Now your Mac can do Windows EVEN BETTER!

### New! 3.0



### Faster

- PC disk performance
- Network access speeds

### Easier

- New Setup Assistant
- New Configuration Manager

### More Convenient

- Share a single Internet connection
- Sound Blaster® 16 sound support
- Extensive AppleScript support

Buy Virtual PC 2.0 now and get a free\* upgrade offer valid on purchases starting 6/18/99

**Connectix**

www.connectix.com 1800 395 1804

\* \$9.95 for shipping and handling

© Copyright Connectix Corporation. Connectix and Connectix Virtual PC are trademarks of Connectix Corporation. All other trademarks are property of their respective holders.

Choose 58 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

# IT DOESN'T HAVE TO BE THIS WAY.

You've got Macs. You've got PCs.  
You share a network. Now, your  
printer's not fitting in.

## GET POWERPRINT® FOR NETWORKS.

It lets both Macs and PCs print  
to virtually any PC-printer across  
an ethernet network. Whether  
you're adding a Mac into an existing  
network or a PC printer to a Mac  
network, PowerPrint's unique  
software and print server solution  
allows you to use any printer,  
anywhere.

PowerPrint for Networks.  
Group therapy that works.



IN F O W A V E

To pick up PowerPrint, visit major retailers in the U.S. and Canada, or call 800.330.6833.

SERIAL AND USB SINGLE-USE VERSIONS ALSO AVAILABLE.

[www.infowave.com](http://www.infowave.com)

Choose 32 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

## On Guard 3.2

ALL-PURPOSE SECURITY APPLICATION

**T**HOSE WHO OVERSEE MACS IN a shared-user environment, such as a classroom or office, often need to control individuals' access to the data on those computers. One way to do that is by using Power On Software's On Guard 3.2, a comprehensive—though not completely foolproof—utility for controlling access to information.

With On Guard installed on a Mac or across a network of Macs, the administrator determines who may view, move, open, and modify files and folders on hard disks, floppies, CD-ROMs, and removable media. In addition, you can force users to save files only to specific folders; limit the number of copies a user can print; prevent access to the Chooser, System Folder, and control panels; and disable the Force Quit command and Interrupt switch. You can also configure the program to lock volumes so they're inaccessible when someone boots the Mac from another disk.

Because On Guard has so many security options, administrators who can't resist tweaking every setting to the *n*th degree could spend a fair amount of time config-

uring the program for each user—after all, it lets you tinker with access configurations for every file on a Mac's hard drive. Thankfully, On Guard offers some help in this regard. For example, the program is preconfigured with the kind of options that are likely to be used in a typical classroom



**Stay on Your Guard** With On Guard 3.2, you can gang new users into groups.

setting—users are allowed to save documents only to their own folder or a floppy disk, but they can't move, duplicate, or make aliases of files or open any control panels. On Guard also lets you create groups of users: just configure the program

once for a group and then add individual users to that group. For example, students who supervise a computer lab's network could be granted greater access than the first-grade reading group. As welcome as this flexibility is, it would be nice if On Guard included templates for other typical setups and a wizard for creating more-complex configurations.

On Guard is intended for use in supervised situations and, as such, it's not completely bulletproof—I was able to skirt the program's protections without a great deal of difficulty. You may need to chaperon students and workers bent on defeating On Guard's guardianship.

**Macworld's Buying Advice** Although not secure enough for government work, On Guard is capable of handling the security needs of a supervised school computer lab or hackerless office. If the computers you control are unprotected, it may be time to put them on guard.—CHRISTOPHER BREEN

**RATING:** **PROS:** Comprehensive protection options; preconfigured for classroom use. **CONS:** Configuration can be involved; not completely secure. **COMPANY:** Power On Software (800/344-9160, [www.poweronsw.com](http://www.poweronsw.com)). **LIST PRICE:** Single-user pack, \$50; ten-user pack, \$250.

## "COMPING WITH FOIL... THAT'S THE KEY!"

"We're teaching trendsetting design to great young talent. The equipment they use should be as technically advanced as they are savvy. Alps stepped up with the MD-5000, 2400 DPI printer. It's able to output in Dye Sub\* mode and, even better, prints in foil. Think of the possibilities for packaging comps using color and foil. They are sharp! The best part is the price. It will cost you around \$500 for the MD-5000 with foil printing. What studio can afford to be without one?"

•Gold/Silver foil •Print both sides of paper •Photo sharp prints with VPhoto paper •Fadeproof, waterproof, smearproof, archival proven

\*Optional: Dye Sublimation Kit, USB Interface Module

CompUSA, Micro Center, H.H. Greg, ComputerWare, American TV, Nebraska Furniture

# ALPS

[www.alps.com](http://www.alps.com)  
877•536•0400



Choose 39 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

"This is one of the more progressive graphic design departments in the country, and the MD-5000 printer fits right in."

Tor Hovind  
Assistant Professor  
Cal State University  
Long Beach

**MD-5000**  
**2400<sup>DPI</sup>**

# PerfectFlat™ technology looks better with... Apple® Power and ViewSonic® on top!



Selecting your Mac® is only half the battle. Today, how you top it off is just as important. Innovations like multimedia monitors, flat panel displays and large screen CRTs are changing the old phrase "Monitor Sold Separately" to "Mac Sold Separately".

Take the new ViewSonic GF775 17" (16.0" viewable) monitor for example. This is the first 17" (various viewable) flat-screen CRT utilizing **PerfectFlat** technology to provide your Visual Computing Experience™ with precise, clear images. The GF775 provides an ultra-fine .24mm stripe pitch and 1600 x 1200 maximum resolution.

**At ViewSonic, we offer the #1 best selling monitors and flat panel displays in the USA.** Buy with confidence from the company that's won over 550 industry awards. The GF775's warranty covers 3 years parts and labor. Plus 24 hour customer service, 7 days a week.

**For more information on the company that's won over 550 industry awards, visit our website at: [www.ViewSonic.com/mac](http://www.ViewSonic.com/mac)**



**(Mac® Sold Separately)**

(800) 888-8583 \*Stanford Resources, Inc. Quarterly Monitor Report Q1 '99 and Display Search Quarterly Supply vs. Demand Study CRT's Q1 '99. LCD Monitors, Q1 '99. Specifications subject to change without notice. Copyright © 1999, ViewSonic Corporation. All rights reserved. Corporate names and trademarks stated herein are the property of their respective companies. Apple and Mac are the registered trademarks of Apple.



**ViewSonic**  
on top™  
[www.ViewSonic.com](http://www.ViewSonic.com)

# MacTuner 2.0

GATEWAY TO STREAMING BROADCASTS

**D**ID YOU KNOW THAT YOUR MAC is the ultimate world radio and TV receiver? Simply install one of RealNetworks' RealPlayer programs, and you can tune in to any of the more than 1,500 radio and TV stations that stream live broadcasts into cyberspace. You can also listen to air-traffic control towers, police scanners, and weather forecasts. But how do you find these riches? You could use a Web search engine or RealNetworks' RealGuide site ([www.realguide.real.com](http://www.realguide.real.com)), but there's a much easier way. Trexar Technologies' MacTuner 2.0.5 is a searchable database of live streaming stations; you find a station using MacTuner's search features, and RealPlayer handles the playback. It has some rough edges, but MacTuner is a wonderful way to tune in the world.

MacTuner gives you two ways to locate stations. The Map Browser, which displays clickable maps of the continents, is a fun way to browse. Its maps are far too small, however; you need a surgeon's touch to home in on Rhode Island and Delaware, not to mention most European countries. And Canada's nearly 100 stations are lumped into one

group rather than organized by province.

When you want to search for a station with more precision, use MacTuner's Search Engine window to search by state or country, format (jazz, blues, talk, and so on), media type (audio or video), or station call letters. But MacTuner won't find call



**Cool Tunes from Iceland** MacTuner 2.0.5's Map Browser lets you locate streaming stations by clicking on a map display.

letters typed in lowercase characters, and it ignores the return key, making you grope for the mouse to click the Search button. And it would be nice to be able to search by city name—something that a competing

Windows product, Nothing Else Matters' Vtuner ([www.vtuner.com](http://www.vtuner.com)), permits.

With stations frequently upgrading or changing their servers, you may find that MacTuner's station links don't always work. Trexar updates MacTuner's station database every few weeks or so, and the program can automatically download the latest updates. MacTuner also has a Favorites screen where you can store up to 15 of your favorite streams for quick recall.

**Macworld's Buying Advice** A session with MacTuner 2.0.5 is further evidence of just how small the Internet has made the globe. I've watched news from Iranian television, beheld steamy Brazilian soap operas, heard weather forecasts from New Zealand, and marveled at the United States' cultural influence while listening to Elvis from South Africa and Charlie Parker from Kazakhstan. MacTuner needs a bit of polish here and there, but it's still a great gateway to that glorious global cacophony known as broadcasting.—JIM HEID

**RATING:** ★★★ **PROS:** Fun; inexpensive; large station database. **CONS:** Maps are too small; limited search engine. **COMPANY:** Trexar Technologies (770/442-8045, [www.mactuner.com](http://www.mactuner.com)). **LIST PRICE:** \$22.95.

Best Product\*...



Best Price!  
\$49.00

# Grappler<sup>®</sup>

## SCSI

Ideal for new G3 Power Macs

MacWorld Magazine's Editor's Choice award went to Orange Micro's Grappler SCSI Card for three major reasons: 1. "fastest in its class" 2. "least expensive card in its category" 3. "and the only one that was bootable". Available in Fast, Ultra, and Ultra Wide. Make Grappler SCSI your choice!

**Orange Micro**  
inc.

[www.orangemicro.com](http://www.orangemicro.com)

\* August, 1999 MacWorld Magazine. © Orange Micro, Inc. 1999

Choose 60 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

## Macworld.com is Growing!

**MACCENTRAL**

[www.maccentral.com](http://www.maccentral.com)

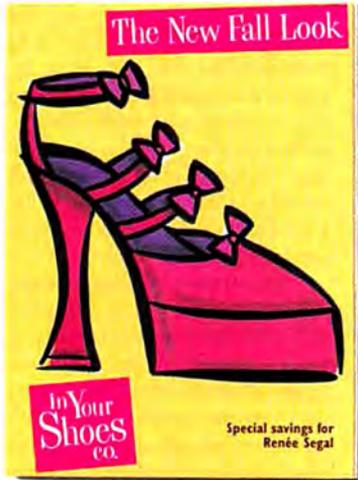
**Macworld**  
online

**MacBuy** .com

**MacWEEK.com**

**iMacworld**

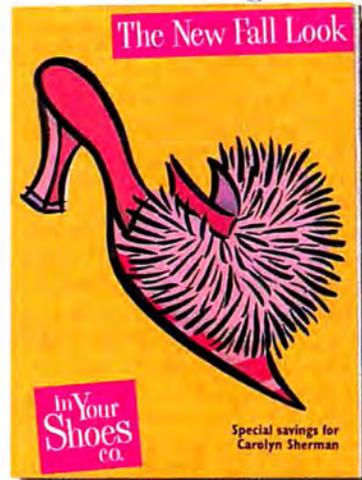
Run: 1000 NYC



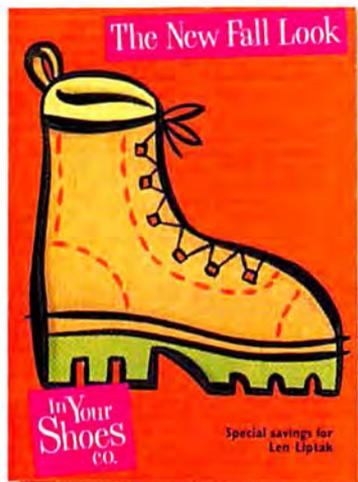
Run: 200 Dallas



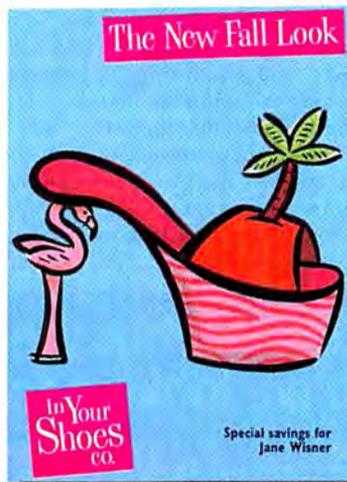
Run: 950 Hollywood



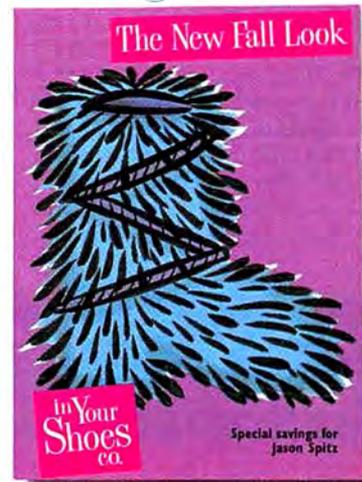
Run: 250 Seattle



Run: 50 South Beach



Run: 350 Alaska



## Now You Can Make One Brochure Look Good To Everybody.

Xerox gives you a leg up on profiting from today's highly targeted marketing.

The DocuColor 70 Digital Color Press turns around two-sided, brilliant color (600 x 600 dpi, 4-bit color depth) at 70 impressions per minute. So you can accommodate anyone needing affordable, great-looking short-run color. For personalized brochures, posters, or frequently revised materials on web-fed stocks,



coated or uncoated. Performance echoed by the Xerox DocuColor 40, with 400 x 400 x 8-bit resolution color at 40ppm and on 16 lb. text to 80 lb. cover. And both offer the Xerox Total Satisfaction Guarantee. 24-hour/7-day service is also available.

So call 1-800-ASK-XEROX ext. 178 to talk to a Xerox Color Specialist about which is the best fit. The odds are you'll want to walk away with one.



THE DOCUMENT COMPANY

XEROX

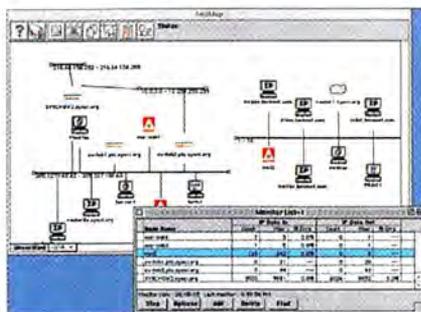
# LANsurveyor 5.0

NETWORK MONITOR STILL LIGHTWEIGHT

**W**ITH ALL THINGS NETWORKED migrating to TCP/IP, LAN administrators want IP-capable tools. Neon Software's LANsurveyor 5.0 obliges with new IP discovery capabilities and beefed-up Mac-centric features, but it lacks IP-management capabilities that many administrators consider essential; expect to buy adjunct tools, such as Neon's CyberGauge and Dartmouth College's InterMapper, to flesh out your networking tool kit.

LANsurveyor 5.0 consists of a main network-management application that you run on a centrally located Mac and a remote Responder application that runs on each Mac in your network (20 Responders are included). The management application scans the network, locating computers, printers, routers, and other network devices and plotting them on a map. You can then customize the map, assigning icons and arranging objects to suit your needs.

In its Discovery mode, LANsurveyor can now find IP-only devices as well as AppleTalk devices. Macs running the Responder application report system infor-



**Go with the Flow** LANsurveyor 5.0 monitors traffic flow and alerts you to congested areas.

mation; once your network is mapped, LANsurveyor monitors it for problems and notifies you by alert, alarm, e-mail, or page.

Managers will welcome the program's new ability to send folders and messages to remote Macs and to configure the Responder application remotely. The new version also adds convenience features, such as the ability to launch CyberGauge and Netopia's Timbuktu to further manage selected map objects, and monitoring improvements, including the ability to alert on a device's traffic volume rather than error rate.

Despite these enhancements, LANsurveyor still falls short as an IP-management tool. Its traffic monitor, for example, still checks only for packets moved in a moni-

toring interval rather than percent utilization or data rate in bits per second. The program still supports only one SNMP community name, and it still won't let you build subsidiary maps to manage large LANs. By taking the liberty of completely reorganizing its map whenever a new discovery process is run, LANsurveyor will frustrate users trying to maintain a custom map layout. And for all its newfound IP discovery abilities, it doesn't detect or monitor the IP services served by discovered devices.

**Macworld's Buying Advice** LANsurveyor's new features are welcome improvements, but the program fails to provide all the tools you need to manage a network. Worse, many of its shortcomings—such as quirky data-rate measurements—get in the way of good network-administration practice. If you need LANsurveyor's Mac-oriented management features, you may find a place for it in your tool kit, but plan to use something else for TCP/IP administration.—MEL BECKMAN

**RATING:**  $\frac{3}{4}$  **PROS:** IP discovery; can control Macs remotely. **CONS:** No subsidiary maps; can't detect or monitor IP services; arbitrary map reorganization. **COMPANY:** Neon Software (925/283-9771, www.neon.com). **LIST PRICE:** Five zones, \$259; unlimited zones, \$495.

**PowerBook® or Desktop VST has the portable solutions you are looking for.**

 Stop by Booth #561 and you could win a new VST FireWire® Hard Drive!

**Only 6" long!**  
(4" X 6" X 1")

**USB Floppy Disk Drive**  
Visit Booth #561 at Macworld Expo to see it for yourself

VST Products are available at [www.vsttech.com](http://www.vsttech.com)

Apple, Macintosh, iMac, and PowerBook are registered trademarks of Apple Computer, Inc. Zip is a registered trademark of Iomega Corp. SuperDisk is a trademark of Imation, Corp.



Choose 73 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

**Macworld's  
NEW ONLINE  
Reader Service**

**Get info**  
Macworld

[www.macworld.com/getinfo](http://www.macworld.com/getinfo)

# job opportunities

## multimedia developer

St. Louis: Fast-paced, exciting multimedia firm is searching for a star programmer and designer to help them develop interactive programs for area clients. The qualified candidate will be well-versed in Director software with a good eye for layout and design.

## user interface designer

Washington DC: Responsibilities include designing, coding, and implementation of the User Interface for a new system. Strong knowledge of database oriented search and retrieval systems, HTML, MS Active Server Pages, MS IIS Web server, C++ and Java required. Familiarity w/Oracle, Excalibur's RetrievalWare, PERL, UNIX, NT, DCOM and MS Web tools a plus.

## web art director

New York: Trend-setting, nationally recognized design firm seeking individual to lead talented team. Ideal candidate needs 5 or more years experience creating retail or commerce oriented websites, as well as skills in Photoshop, HTML, Flash, and Dreamweaver. Must have good conceptual design skills and ability to work on multiple projects.

## programmer

Philadelphia: Dynamic e-commerce client is seeking a bright, motivated individual with expertise in programming in Visual Basic and SQL. A thorough comprehension of databases is expected, as is the understanding of VB with Data Manipulation and File input/output. Experience in Java, Perl, C/C++, or ASP a plus. The salaries are competitive, the working environment is relaxed, and the hours are flexible. Great place to work!

800-937-3622

<http://www.hireknowledge.com>

## Locations

Baltimore  
Boston  
Chicago  
Dallas  
New York  
Philadelphia  
Providence  
San Francisco  
St. Louis  
Washington DC

**HireKnowledge**  
Specialized Staffing Solutions

intelligence to work  
putting intelligence to work

## senior copywriter

Baltimore: National advertising agency is looking for a copywriter with a background in direct mail. Key skills are originality of presentation and clear, sharp copy which gets across an idea in a fresh and different way. Significant experience at large agencies is required.

## director of information systems

San Francisco: This position involves directing activities concerning the design, development and maintenance of the company's product. BS and minimum of 8 years of progressively responsible experience as a senior level systems analyst/programmer along with 3 years of database-oriented search and retrieval systems, project management level experience required.

## graphic designer

Providence: A Rhode Island printing concern is looking for a computer-based typesetter. Strong knowledge of PageMaker is a necessity. Knowledge of Quark, Photoshop, Illustrator, Freehand, ability to convert files from PC to MAC, ripping, and color separations also required.

Choose 207 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

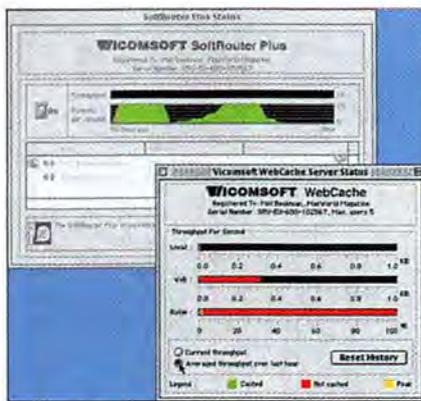
HireKnowledge<sup>SM</sup>  
PC and Mac Specialists

## SoftRouter Plus 6.0

ROUTING SOFTWARE ADDS WEB CACHING

**W**HEN HORDES OF USERS ON a network are surfing the Internet, the result is redundant traffic and wasted bandwidth—particularly when users are accessing the same group of Web sites. Vicomsoft's SoftRouter Plus 6.0.1 solves this problem by storing a copy of repeatedly accessed sites on a local server's hard disk for faster performance. At the same time, SoftRouter Plus features world-class TCP/IP routing and network-administration services equivalent to those in expensive hardware routers.

Besides offering all the functions of a typical hardware-based router—including the ability to internetwork Ethernet, Token Ring, dial-up, and wide-area networks—SoftRouter Plus has a graphical interface and a setup wizard that will have even nontechnical users up and running quickly. And the package includes a slew of helpful network-administration aids: Routing Information Protocol support for automatically configuring route tables, RADIUS (Remote Authentication Dial-In User Service), network address translation, Dynamic Host Configuration Protocol (DHCP), a dynamic DNS server that



**Show Me the Cache** SoftRouter Plus 6.0.1 displays both current traffic statistics and Web cache performance, letting you keep an eye on your Internet bandwidth.

synchronizes names with DHCP-assigned addresses, host access rights, and TCP/IP multihoming. And with the appropriate Mac hardware, you can even set up multiple serial PPP dial-in ports for remote users.

But the big improvement in version 6.0.1 is a bundled caching Web server, which makes copies of Web pages that users access most frequently and then retrieves them from the cache to satisfy repeat requests. Caching is transparent—you don't need to reconfigure users' browsers to

access a proxy server—and you can archive selected Web sites for access even when your Internet connection is down.

In tests over an ISDN Internet connection with five remote users, SoftRouter Plus demonstrated T1-like performance when accessing cached sites. For even better performance, you can run the caching server software on a separate machine, or even redirect HTTP requests to another vendor's caching server.

**Macworld's Buying Advice** SoftRouter Plus 6.0.1's Web cache does wonders for Internet performance when multiple users chase the same online content, and the program's many other administration aids make it perfect for cross-platform networks. If you can't afford a \$2,000 hardware router but have a spare Mac, SoftRouter Plus can be a budget saver, too; its low per-user pricing makes it affordable for virtually any workgroup.—MEL BECKMAN

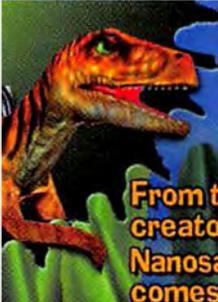
**RATING:** ★★★★★ **PROS:** Web caching; network address translation and DHCP; DNS/DHCP integration; multiple PPP dial-in ports; RADIUS support; virtual Web serving. **CONS:** None. **COMPANY:** Vicomsoft (800/818-4266, www.vicomsoft.com). **LIST PRICE:** Five users, \$190; ten users, \$280; unlimited users, \$430.

*News travels fast; MacWEEK.com moves faster.*

# MacWEEK.com

Mac news, commentary, up-to-the-minute stock quotes and Mac the Knife!  
Every day at <http://www.macweek.com>.

MacWEEK: Telling the Mac story since 1987



From the creators of Nanosaur comes...

# BUGDOM™

"Ground-breaking visuals and game play...playable by both child and adult, male and female" - Inside Mac Games



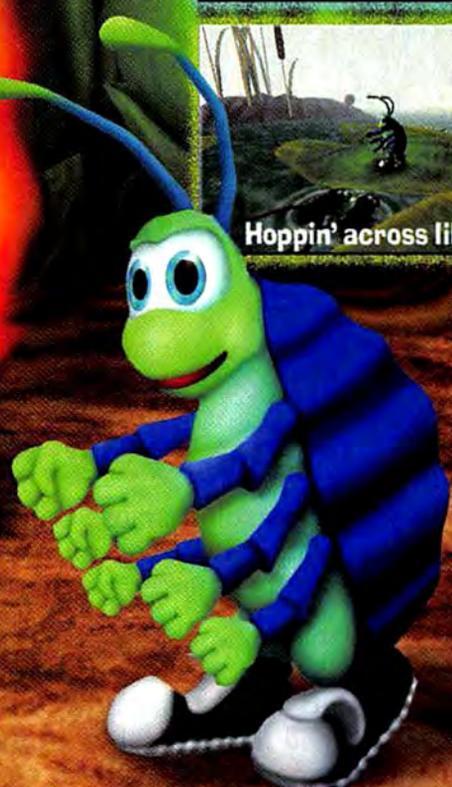
Cruisin' in the sunflowers.



Catchin' a ride on a dragonfly.



Hoppin' across lily pads.



- 10 action packed levels!
- Suitable for all ages!
- Real-time 3D action!
- Over 23 different bugs and enemies!

"Bugdom blows everything I've seen away."  
- MacGaming.com



www.toucanstudio.com

Get your copy at  
[www.pangeasoft.net](http://www.pangeasoft.net)



www.pangeasoft.net



# TOTAL ANNIHILATION<sup>®</sup>

## The New Landscape of War!

The word is spreading across the map. Total Annihilation is poised to redefine real-time strategy games on the Mac.

Total Annihilation is a real-time war game featuring true 3D terrain and run-time generated 3D units. Tanks drive up and overhills, tilting and rocking with each bump in the landscape and impact with enemy weapons. Battle on diverse landscapes from lava worlds to vast island-dotted oceans.

Build defenses high in the hills for a better view and a better shot. Planes bank and dive in intense air-to-air combat. Amphibious tanks drive into and dive underwater for surprise attacks.

Total Annihilation's 3D landscape is a revolution that demands deeper strategy and generates more realistic game play. Mobilize your forces and experience the new landscape of war!

**The winner of more than 50 awards worldwide is coming to the Macintosh.**



Available soon at your local retailer, or visit the GT Interactive online store:  
<http://www.gtstore.com> or call 800.229.2714

©1997 Humongous Entertainment, Inc. All Rights Reserved. Created by Cavedog Entertainment, a division of Humongous Entertainment, Inc. Distributed and published by MacSoft, a GT Interactive Software Company. Cavedog Entertainment<sup>™</sup> and Total Annihilation<sup>™</sup> are trademarks of Humongous Entertainment, Inc. All other trademarks are the property of their respective owners.

Choose 29 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)



# The Game Room

## Chasing Cheap Thrills

A BARGAIN HUNTER'S GUIDE TO MAC SHAREWARE GAMES

by Christopher Breen

**M**y life is nearly perfect. Heck—what could be better than getting paid to play computer games? I'll admit there is one *wee* insect in the unguent, however: Because I do spend an inordinate amount of time dinking around with computer games, I suffer from a common gamer's malady—I don't get out much. And when I say I don't get out much I specifically mean that I go to the movies about as often as Steve Jobs and his vegan buddies trip down to Billy Bob's Barbecue Bungalow for a slab o' ribs and a side of scrapple.

Which might explain why, when I finally succumbed to *The Force* and stood in a seemingly endless movie line, I bumbled "How much!?" when the ticket seller requested that I fork over eight-point-seven-five simoleons.

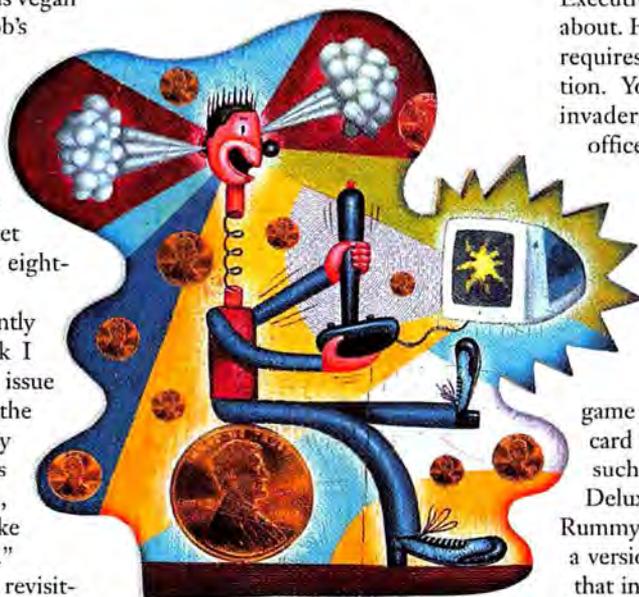
"Eight seventy-five," she patiently repeated while giving me a look I recognized as the same one I issue when friends of mine gripe about the cost of computer games. Roughly translated, that look means: "This is high-quality entertainment, buster, and if you want to partake you'll pony up and shut your yap."

And so I did, but not without revisiting my friends' complaints. It dawned on me that forty to fifty bucks *is* a lot of money, and although I maintain that there are several games worth the price, there *are* less expensive ways to gain a fair dollop of Macintosh gaming goodness. If you're interested in learning how, read on.

### Working with a Net

The best place to look for games that won't drain your bank account is the

Internet. A remarkable variety of high-quality games is available for the price of a download and, perhaps, a shareware fee of \$20 or less. Don't let the fact that these games are shareware dissuade you from investigating further. Although you're unlikely to find a shareware shoot-'em-up to rival Unreal or a pay-to-play flight sim as rich and complex as Falcon 4.0, the shareware world does offer commercial-quality arcade, board,



and adventure games for the price of a few movie tickets. Here's a rundown of some of the best.

I'll start my list of great shareware game publishers with the cream of the crop, Ambrosia Software ([www.ambrosiasw.com](http://www.ambrosiasw.com)). Shareware or no, Ambrosia games are outstanding—Andrew Welch and the rest of the crew are seemingly incapable of turning out

schlock. Welch's Maelstrom, an update to the arcade game Asteroids, is a classic, as are the Centipede-like Apeiron, and Swoop, a game that harkens back to Space Invaders and Galaxian. Ambrosia's recent games are just as delightful. Mars Rising is a wonderful scrolling shoot-'em-up, Barrack is a noble update to the old arcade game Qix, and Slithereens is the best Pac-Man variation I've seen. Oh, and then there's Harry the Handsome Executive, a game I'm absolutely goofy about. Harry is mostly a puzzle game that requires a degree of hand-eye coordination. Your job is to destroy the alien invaders who have overrun Harry's office. The hitch is that you're confined to scooting around the game in a six-wheeled office chair and office supplies are your only weapons. (Prices for all of Ambrosia's games are about \$15 to \$25.)

Freeverse ([www.freeverse.com](http://www.freeverse.com)) is another fine shareware game publisher, especially if you're into card games. This company produces such noteworthy games as Hearts Deluxe, Spades Deluxe, Classic Gin Rummy, and Burning Monkey Solitaire—a version of the solitaire game Klondike that inexplicably takes place in a theater full of simians. You'll definitely want to pay the shareware fees for Hearts Deluxe and Spades Deluxe. Unless you pay, your opponents are about as bright as a troughful of swamp water, which hardly leads to challenging game play. However, by the time you read this you should be able to eschew computer opponents altogether by playing Cribbage and Spades over the Web via Freeverse's server. Also worth a

*continues*

download are Freeverse's board games: Enigma, a code-breaking game; Cross-Cards, a poker-Scrabble combination; Reversi: The Eclipse, an Othello clone; and X-Words Deluxe, a Scrabble twin. Prices for all of Freeverse's games range between \$15 and \$20. By the way, if you're one of the few souls left among us who lacks an Internet connection, dry your tears. Both Ambrosia and Freeverse offer unregistered versions of their games on CD-ROM for \$10.

While you're cruising the Net, don't miss Fantasoft's Web site ([www.fantasoft.com](http://www.fantasoft.com)). This is the realm of Realmz, a popular Dungeons and Dragons-style role-playing game. You know the type: you gather a group of oh-so-romantic beings—sorcerers, elves, and so forth—and traipse around the countryside performing deeds of derring-do while giving the boot to ill-tempered, often orthodontically impaired bad guys. Frankly, this style of gaming is as appealing to me as removing plaque from my cat's teeth, but those who like this sort of thing swear that Realmz is *The Goods*. If you're as willing to believe them as I, you can get your copy of Realmz and the City of Bywater scenario for \$20 (additional scenarios are \$13 each). I much prefer

**Your Hearts Desire** Thanks to Freeverse's Hearts Deluxe, you can play hearts anytime—no human opponents required.



**What's Puzzling You?** Those who fondly remember MasterMind, the "match the colors and patterns" puzzle game from the 1970s, will love Freeverse's Enigma.

Fantasoft's arcade and puzzle games. Fans of the old Donkey Kong arcade standard will enjoy the \$20 Monkey Shines, and those who fondly remember Glenn Andreas's Blobbo—a puzzle game that requires you to gather the goods and avoid falling objects—will feel right at home with Fantasoft's \$20 Bugs Bannis.

And finally, no roundup of Net-based, inexpensive gaming goodies can fail to mention MacMame ([www.macmame.org](http://www.macmame.org)), a free emulation program that allows your Mac to perform convincing imitations of early 1980s arcade machines. With MacMame you can play such classic games as Asteroids, Defender, Frogger, Battlezone, DigDug, and dozens more.

Note, however, that the developers of this emulation system ask that before you download any games (games come separately, you see), you ensure that you own copies of the original cartridge versions of the games. Apparently there's a hazy legal issue about running these old warhorses without having paid for the license. If you own

the old games, you've paid for the license and therefore everything should be hunky-dory. If you don't own the games, then technically you're stealing someone's work, even though that work has been out of print since *The Dukes of Hazard* played in prime time.

### The Bottom Line about the Bottom Line

In good conscience, I should issue this warning: now that you know there are games this good at prices this reasonable, it won't be long before your Macintosh's hard drive is crowded with games and your ability to chip in with the ersatz Eberts around the office

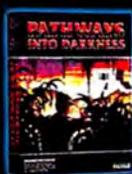
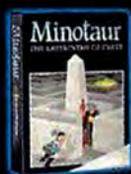


**Food of the Gods** Ambrosia's Mars Rising is a terrific—and not terribly expensive—scrolling shoot-'em-up.

watercooler will be vastly diminished. But in the end you'll thank me. Sure, like me, you won't get out to the movies until the next installment of *Star Wars* comes out, but when it does, you'll have saved enough dough for the \$12.75 admission *and* the small \$25 tub of popcorn. **m**

Contributing Editor CHRISTOPHER BREEN wouldn't hold it against you if you left the house long enough to purchase his new, coauthored book, *My iMac* (IDG Books Worldwide, 1999).

# SIX GAMES ONE SACK \$20 BUCKS!!



Get six of the greatest Mac action games ever for only \$19.95 with Bungie Software's MAC ACTION SACK. A must have for every Mac gamer's collection, the MAC ACTION SACK features the ground-breaking games Minotaur, Pathways Into Darkness, Abuse, and the legendary Marathon trilogy.

SIX AWARD-WINNING  
**\$19.95**  
BUNGIE GAMES

Available at [sack.bungie.com](http://sack.bungie.com),  
call 1-800-295-0060, or visit  
your nearest retailer.



COMPU CENTRE

COMPUSA  
AMERICA'S #1 COMPUTER SUPERSTORE

Compu  
Smart

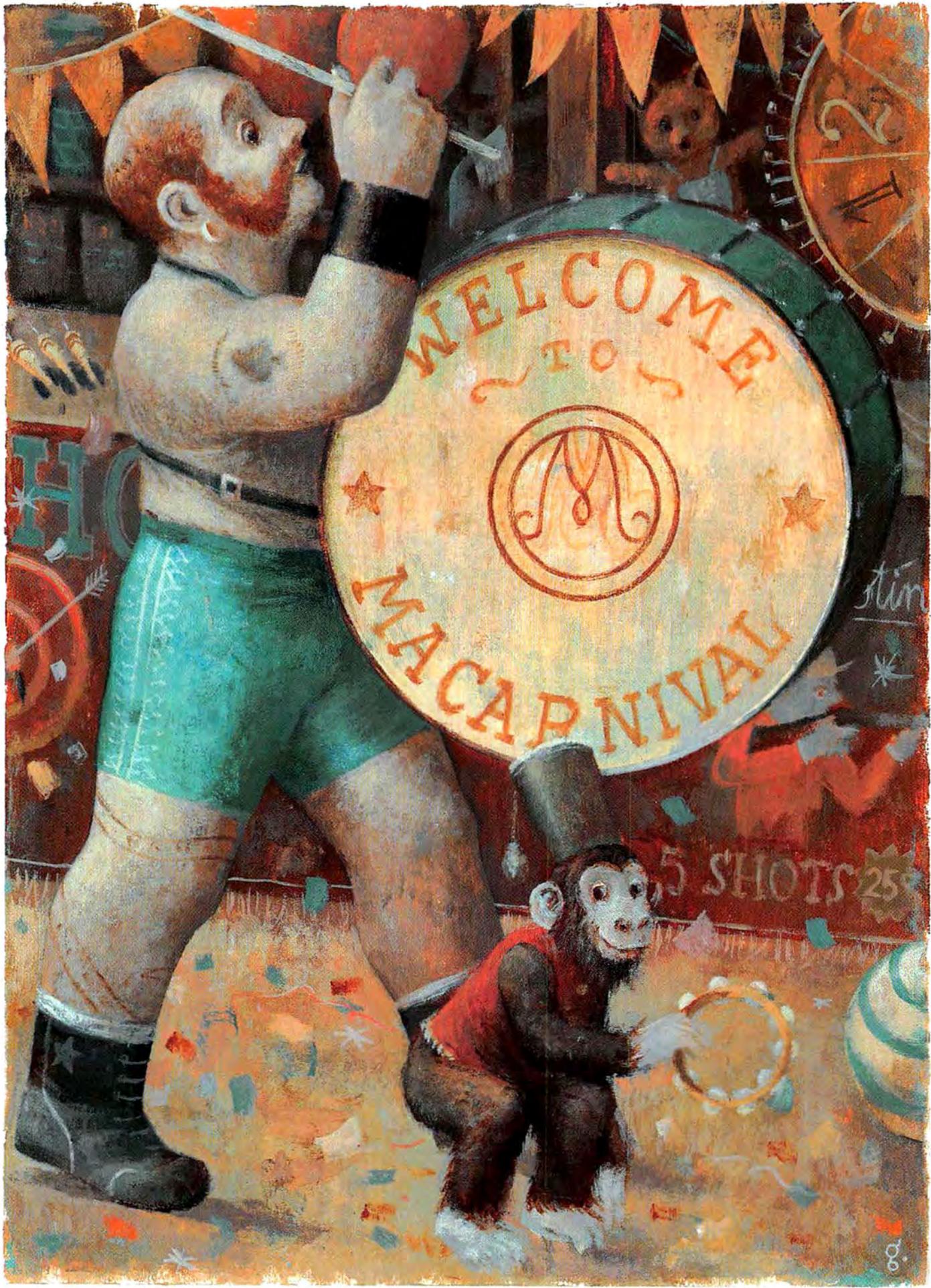
SP

MicroAge

MICRO CENTER  
THE COMPUTER EQUIPMENT STORE

BUNGIE

Choose 40 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)



WELCOME  
TO



MACAR NIVAL

5 SHOTS 25



urry! Hurry! Hurry! Come right this way! Welcome to our Carnival of Computing! Folks, for less than a sawbuck, you can behold these Macintosh marvels!

Why, haven't you heard?! The Mac is back, and fun is where it's at! We've traveled the world over from Cupertino to Kathmandu, gathering together the most captivating Mac gewgaws and doodads you're likely to find in one place. That's right, folks. This is the place where you'll find the coolest gadgets and additions for your Macintosh computer. And we've got it all—right here, I say, right here—from the mind-bending translucent backup drives to the mysterious talking mouse pad to our very own World Wide Web of wonder.

Come along with me on our tour. Straight ahead is the Mac Merry-Go-Round, just one of the great rides at this summer's carnival. But this ain't no ordinary merry-go-round. No sir, this special attraction is pure family fun, guaranteed to please any self-respecting Macintosh user. Over this way you'll see the Macworld Fun House, home to fun and games and frolic—after all, my friends, what else is

# The Fun is Back!

**STEP RIGHT UP TO SEE OUR COLLECTION OF THE COOLEST AND QUIRKIEST MAC STUFF AROUND**

summer for? And just beyond, the most fearsome and entertaining portion of our program—the Freak Show.

Fear not, my friends! For this Freak Show has no bearded lady or human pincushion. But you're sure to be amazed by the quirky computer paraphernalia within the Freak Show's walls.

Now that you've got an idea where everything is, let's take a closer look. I guarantee it'll be fun! Would I lie to you, my friends?

by Christopher Breen 

# UP AND DOWN ON THE MAC MERRY-GO-ROUND



Look what we have here—our main attraction: the Mac Merry-Go-Round. Ah, it looks like we're just in time, the ride's about to start. Presented for your amusement is a cornucopia of useful and fun Macintosh miscellany, sure to please even the most cynical Macintosh maven. Don't push! There's a seat for everyone.

## Skinny Speakers That Sing

The world of multimedia speakers has suddenly gone flat, as evidenced by the latest release from Sonigistix, the Monsoon MM-700 multimedia speaker system. Like its more expensive sibling, the \$229 Monsoon MM-1000 system (see *Reviews*, April 1999), the MM-700 system includes two skinny satellite speakers and a 5.25-inch subwoofer shaped like an ice cream cone. You control the volume of the speakers—even quickly muting them—with a small hockey puck-shaped control box.

Although the MM-700 system is slightly less powerful than the MM-1000, the MM-700 speakers deliver the same transparent, balanced sound as the more expensive Monsoon speakers. Gamers shouldn't expect brain-crushing volume from these speakers. At a moderate level they sound glorious, but when cranked they start to sound distorted before even rattling your windows or loosening your plaster.

SONIGISTIX; 501/372-0366, WWW.SONIGISTIX.COM. LIST PRICE: \$179.



## Where's the Hub, Bub?

Computers are now so common that many people have a few scattered throughout the house. So link all these machines together and play network games—oh, and maybe share files while you're at it.

Presenting Farallon's HomeLine Starter Kit, which lets you network two or more Macs, two PCs, or a Mac and a PC by simply adding a HomeLine PCI card to each computer, installing the proper drivers and software, and plugging each HomeLine card into the nearest phone jack. Yes, it's hard to believe, but HomeLine actually sends data through your home phone's internal wiring, with no need for Ethernet cables and hubs, and yes, you can continue to use that line for phone, data, and fax calls.

FARALLON; 510/346-8001, WWW.FARALLON.COM. COMPANY'S ESTIMATED PRICE: \$139.

## Roll Your Own

Any child who wants to take control of his or her Mac and create games, interactive stories, and simulations should take a gander at Stagecast Creator. Intended largely for use in schools, Stagecast Creator is a simple programming environ-

ment that allows kids to create their own characters and assign actions to them. For example, your child could design a simple board game, a pachinko simulation, an electronic book with illustrations—even a game of three-card monte.

Parents need not worry that Stagecast is a complete time waster. As the program's Teacher's Guide plainly reveals, hidden beneath the fun are some of the basic principles of programming. That's right, your child is bound to learn a thing or two along the way. The on-screen tutorial gives a nice overview of Stagecast's programming environment and is anything but dry. The CD-ROM includes several games and simulations—some captivating enough for grown-ups!

STAGECAST SOFTWARE; 650/354-0735, WWW.STAGECAST.COM.

LIST PRICE: \$60.

## Get the Picture?

If you have an iMac or new Power Macintosh G3 and are interested in putting video on your computer, you're in luck. Thanks to XLR8 and your computer's USB port, you can now capture and edit video for just under \$100. The means to this miracle is the InterView, a small doohickey that sports a USB connector on one end and an S-Video and composite-video connector on the other. The small, black box in between does most of the work. To capture audio, you'll need to connect the audio output of your source to the audio-input port on your Mac.

Using the InterView you can capture full-frame video at 320 by 240 pixels and still frames at 640 by 480 pixels and save the results as a QuickTime movie. Unlike other inexpensive video-capture devices, the InterView comes with a decent software bundle—Strata VideoShop 4.5—and produces smooth results.

XLR8 BY INTEREX; 316/636-5544, WWW.XLR8.COM. LIST PRICE: \$99.



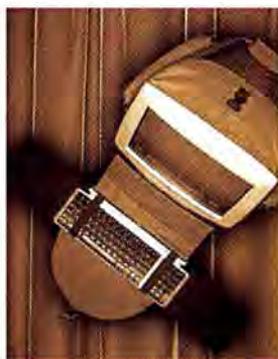
## The Incredible Roaming iMac

PowerBook owner: no longer need be the only mobile Mac users. With the GrabPac—and a muscular physique—you can now take your iMac and its accompanying peripherals on the

road. This black, green, or gray item is sure to remind you of the backpacks parents use to lug their small children around. Slip the GrabPac cover over the top of the iMac; slide the keyboard into its harness; tuck the mouse, cables, and any extra items you care to take with you into one of the two side pockets; wrap the GrabPac's padded handle around the iMac's handle; and you're ready to travel.

Although you may work up a sweat fitting your iMac into the carrying case, you won't need to completely unpack it once you reach your destination. Just unclip the front screen cover, fold out the two mouse pads that cover the keyboard, unleash the keyboard from its harness, plug in your cables, and fire up the iMac.

GRABPAC; 602/968-4752, WWW.GRABPAC.COM. LIST PRICE: \$60.



### Blissed Out

If you attended any rock concerts in the sixties and early seventies that featured swirling light shows, you probably don't remember doing so. Bliss Paint 2.0, from Imaja, may help jog what's left of your memory. Billed as an interactive color synthesizer, Bliss Paint allows you to create whirling, colorful animations that can evolve and morph over time. In addition to providing a bit of sixties nostalgia, these animations can resemble kaleidoscopes, animated Escher compositions, and even the strobing "Whoa, dude!" scene from *2001: A Space Odyssey*—you know the one.

You create these animations with Scribblers—shape generators and processing effects—and use Distributors to determine where the Scribblers paint. As with a musical synthesizer, you can "play" your animations and arrange them in sequences. These animations can be fired from your Mac keyboard, via MIDI, or through sound input.

IMAJA; 800/294-6252, WWW.IMAJA.COM. LIST PRICE: \$150.

### Picture This

Picture Playground, a commercial Web site put together by Eastman Kodak, is a bit like an online version of Adobe's PhotoDeluxe—a place where you can add common filters to digital photographs that you've uploaded or found on the Web. For example, you can turn pictures into cartoons; create sepia-tone, "antiqued" versions of your photos; saturate colors; reduce color pictures to black and white; or add an oil-paint filter to your image.

Another area of the site allows you to create postcards that you can then e-mail to friends. As with many greeting-card sites, these postcards speak to common themes and Hallmark holidays such as birthdays and Mother's Day. Unlike with other greeting-card sites, however, you can use images that you've uploaded, in addition to stock photography. In order to take advantage of many of Picture Playground's services, you must become a member. Membership, however, is free.

PICTURE PLAYGROUND; HTTP://ALTS1.KODAK.COM/US/EN/CORP/FURTHER/.

### How Do You Do That?

Can you whistle? Do you know how to tune a guitar? Having trouble shucking an oyster? If these or other common skills escape you, you have a friendly know-it-all on the Internet at Learn2.com. This fairly comprehensive site provides instructions in tasks both vital and inconsequential. In addition to providing step-by-step instruction for whistling—both the puckered-lip and two-finger methods—guitar tuning, and oyster shucking, Learn2 tells you how to use chopsticks, blow bubble-gum bubbles, juggle, fix a running toilet, perform a breast self-exam, and flush a car's radiator.

The site is nicely designed and features a fast and thorough search engine—you can also browse by categories such as Arts & Crafts, Food & Drink, and Technology. Steps are clearly delineated, and illustrations are often provided. Learn2 includes a list of top ten "2torials" as well as a link that allows you to mail the lessons to friends.

LEARN2.COM; WWW.LEARN2.COM.

### Share Files Cheap

When Apple yanked the SCSI port from the iMac and the blue-and-white G3s, it also removed one of the best ways to back up your Macintosh files. But have no fear—Aiwa has delivered a USB tape drive to safely salt your files away. The TD-UM8000 is a USB-based Travan tape drive capable of storing up to 8GB of compressed data (4GB uncompressed) on a single 8GB Travan cartridge. The preproduction unit we looked at backed up a 266MHz iMac at around 33.5MB per minute—not terribly speedy but perfectly serviceable for an overnight backup.

The drive comes with Dantz's Retrospect and a USB cable. Cartridges cost just over \$30 each. The TD-UM8000 sports an attractive Bondi-blue bezel and a *very* attractive price—just \$250. Such a deal! AIWA; 800/920-2673, WWW.AIWA.COM/CSD/. LIST PRICE: \$250.



### Rules of the Game

Of course your Mac should be your primary source of entertainment, but just suppose that one stormy evening the power goes out and all you're left with is a candle, two matches, three friends, and a deck of cards. What will you play with now? Well, if you'd taken the time to visit John McLeod's Card Games site and memorized each page there, you'd know the rules to just about every card game on earth. The list of games is exhaustive—why, the number of poker variations alone is remarkable.

Although solitaire games are well represented at Card Games, they aren't the only games fully explained. The site also carries sections for multiplayer games, commercial games (such as Mille Bornes) that require a special deck of cards, and invented games (such as card games site visitors have invented). John also provides links to places where you can play cards against opponents on the Internet.

CARD GAMES; WWW.PAGAT.COM.



# MORE FUN THAN A BARREL OF MONKEYS

**T**hat's it! The Merry-Go-Round ride is over. But fret not—it's time to move to the Fun House, home to wild and crazy Mac items. Interested in musical tools? Looking for something to spruce up that iMac? Step inside while I rustle us up a couple of corn dogs.

## Overstuffed iMac

Gone are the days of Raggedy Ann dolls—the cyberplaymates of the future are one-of-a-kind custom-made iMac pillows. And unlike their translucent plastic counterparts, these 6-by-9-by-7-inch cotton clones cost only \$12 and are made to order.

These fuzzy computer pals are available in all five flavors—plus Bondi blue—and can be personalized with your name for an additional \$3. Sorry, mouse and keyboard not included.

**BUNSTER CREATIONS; WWW.BUNSTERCREATIONS.COM. DIRECT PRICE: \$12 PLUS SHIPPING AND HANDLING.**

## iMac Appetizers

If you were to go by commercials alone, you might think that once you own an iMac you have everything you need. Nonsense. The fun really begins with the accessories.

Enter Belkin Components' iMac Starter Kit. This kit contains a quartet of useful iMac-hued accessories: the black and "ice," ultracomfy ErgoPad mouse pad; a likewise gel-filled, black and ice ErgoPad keyboard rest; a 10-CD-capacity, Bondi-blue jewel case; and a blue and ice SurgeMaster surge protector complete with protection for telephone lines. Granted, the surge protector and CD rack, while attractive, are something you could get elsewhere.

**BELKIN COMPONENTS, 800/223-5546, WWW.BELKIN.COM. LIST PRICE: \$60.**

## Oh, the Joy

Mac gamers, take note: Kernel Productions' JoyPort, a diminutive black box not much larger than an audiocassette, is packed with potential. This gizmo allows your ADB-equipped Macintosh to use many Sega Genesis, Nintendo 64, Sony PlayStation, and PC game controllers. You just turn off the Mac; connect the JoyPort to a free ADB port (sorry, iMac owners); restart the Mac; install the JoyPort software; restart again; slip a compatible joystick, game pad, or other controller into one of the JoyPort's ports; configure the controller for the game in the JoyPort control panel; and have big fun!

Although the JoyPort is nearly infinitely configurable, certain steering-wheel controllers don't function properly with old Mac car-racing games. The device works admirably with most arcade games and game pads, however, and is a natural



for those with Connectix's Virtual Game Station and a PlayStation controller. Kernel has promised a USB version soon.

**KERNEL PRODUCTIONS; 302/456-3026, WWW.KERNEL.COM. LIST PRICE: \$50.**

## Let's Get Tanked

There's definitely something fishy about Aquazone Deluxe, the virtual aquarium from Mindscape Entertainment. Unlike the scaly screen savers of old that boasted indestructible schools of fish, Aquazone's denizens are quite mortal. As with a real aquarium, if you don't feed your fish, keep the tank clean and warm, maintain a proper chemical balance, and deal with your little gilled buddies' ichthyological illnesses, the residents of your tank die. Keeping the fish healthy is vital, because four of

the six species come in limited numbers. If you fail to breed more of these fish and the original five of each species die out, you must buy more.

In addition to the fish, Aquazone Deluxe ships with five aquatic plant varieties, many decorative accessories, and 12 pre-conditioned tanks. You can also create your own tanks.

**MINDSCAPE; 415/895-2000, WWW.AQUAZONE.COM. LIST PRICE: \$30.**

## Play That Funky Music

Being a mobile DJ is tougher than you think. Sure, just about anyone can develop snappy stage patter or find an appropriately loud, sequined jacket, but the real difficulty is lugging around all the equipment and CDs necessary to get the job done. Fidelity Media just made that job a little easier with its MegaSeg. This music system allows you to download hundreds of CD tracks to your Mac, create and save playlists, edit custom segue and intro times for each track, and seamlessly crossfade between tracks. And just imagine the musical setup you'll create with your MegaSeg software and your handy iMac GrabPac.

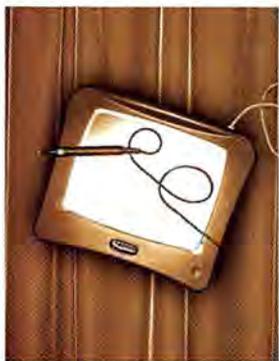
Fidelity Media claims that you can store more than 500 songs on a 6GB hard drive. This miracle is possible thanks to MegaSeg's use of IMA 4:1 compression—a standard that, while reducing the size of each file, strips the tracks of some dynamics and adds noise. Audio purists, take note.

**FIDELITY MEDIA; 877/634-2734, WWW.MEGASEG.COM. LIST PRICE: \$249.**



## Getting a Little Sketchy

There's a darned good reason why art historians have never run across a mouse among the tools in Winslow Homer's paint box: it's a lousy substitute for a brush or a pencil. If you'd like your children to have a more accurate and ergonomic artistic input device, consider the Pablo, from KBGear Interactive. This 8-by-6-inch graphics tablet ships with a wired pen large enough to be gripped by small hands,



a clear plastic overlay that enhances tracing, and a CD-ROM complete with MetaCreations' Art Dabblers and Power Goo SE. The pen sports a single yellow button that you can set to perform a single-click, double-click, click-lock, control-click, or any keystroke.

Currently the Pablo ships only in an ADB version, but a USB version is due in August. In the meantime, the maker of the Pablo suggests using Griffin

Technology's (615/255-0990, [www.giffintech.com](http://www.giffintech.com)) \$49 iMate USB-to-ADB adapter for ADB-less iMacs.

**KBGEAR INTERACTIVE; 800/926-3066, [WWW.KIDBOARD.COM](http://WWW.KIDBOARD.COM). LIST PRICE: \$99.**

## The Magic Kingdom

Let's face it, kids love just about anything that bears the Disney logo—movies, theme parks, decorative lunch boxes. If you want to make your little ones happy, point your browser to the Disney Channel, the online, interactive arm of the Land That Walt Built. This site is packed with Shockwave games that feature the traditional Disney crew as well as some of the more recent additions, including *Aladdin's Genie*.

Please note that although this site is full of fun, it's also crassly commercial—it's as jam-packed with Disney advertising as it is with entertainment.

**DISNEY CHANNEL; [HTTP://DISNEY.GO.COM/DISNEYCHANNEL](http://DISNEY.GO.COM/DISNEYCHANNEL).**

## A Better Mouse Trap

While Apple's current designs are certainly bold, some may wonder if our friends in Cupertino have sacrificed function for the sake of form. Take the Apple mouse, for example. Cute as a button it may be, but its shape is problematic for some users—if you don't have the hands of a child, the mouse doesn't leave a lot of room to rest your hand, and its roundness makes it difficult to determine which way is up.

You could buy a new mouse, of course, or you could simply add a new cover to the old one—the UniTrap from Contour Design, for example. This device fits over the round mouse and includes buttons in all five iMac flavors. To install, just



remove your mouse's colored side pieces, slip the mouse into the bottom shell of the UniTrap, and clip on the cover. The resulting mouse is a bit bulky but quite comfortable.

**CONTOUR DESIGN; 800/462-6678, [WWW.CONTOURDESIGN.COM](http://WWW.CONTOURDESIGN.COM). COMPANY'S ESTIMATED PRICE: \$15.**

## Sassy Synth

Ask any Mac musician about the quality of QuickTime Musical Instruments (QMI) and you'll receive a response so colorful in its negativity that we couldn't possibly print it. We can suggest an alternative—Alesis's QS6.1 synthesizer. This 64-voice, 61-key keyboard includes 16MB of memory (expandable to 32MB via PC Cards), four control sliders, a responsive keyboard, a serial port in the back for direct connections to serial port-bearing Macs, and a CD-ROM that contains Emagic's MicroLogic AV sequencer and a few other useful digital-audio and MIDI applications. The QS6.1 also contains a General MIDI bank of sounds that's far superior to anything found in QuickTime.



If you're interested in such a dedicated synthesizer but have a newer Mac that lacks serial ports, investigate those USB-to-serial converters that support MIDI—*not all do*. Check with Macintosh MIDI newsgroups to learn about MIDI configurations that work best for these modern Macs.

**ALESIS; 800/525-3747, [WWW.ALESIS.COM](http://WWW.ALESIS.COM). LIST PRICE: \$1,099.**

## Your Personal Top Ten

If you'd rather not wait for your coworker, Bob the Joke Guy, to lob another poorly transcribed Letterman Top Ten list into your e-mail in-box, go to the source—CBS's Late Show Top Ten site. Here you'll find Dave's latest Top Ten and more.

Perhaps you think you're good enough to compete with Dave's well-paid but harried writing staff. Maybe so. You can test your comedy mettle by entering the Top Ten Contest. Just offer your suggestion on topics such as Bob Barker's Top Ten Pet Peeves or Top Ten Least Popular Stores at the Mall; fill in your name, hometown, and e-mail address; and you could win a Late Night T-shirt. **CBS LATE SHOW TOP TEN; [HTTP://MARKETING.CBS.COM/LATESHOW/TOPTEN](http://MARKETING.CBS.COM/LATESHOW/TOPTEN).**

## Your Ticket to the Stars

You've slogged home after a long day at work, and following a quick, microwaved homage to mac and cheese, you're ready for a little video-based mind numbing. You flip to the newspaper's television listings and are confronted with numerous filmic possibilities on TCM, AMC, TNT, and TBS. Which to watch? Sure, you could simply channel surf, but why bother when you can Web surf to the Internet Movie Database? This site, hosted by Amazon.com, provides information on more than 180,000 movie titles. You can search by movie title as well as by actor—a great resource for those times when you can't quite recall all 238 films of Eugene Pallette's career.

**INTERNET MOVIE DATABASE; [HTTP://WWW.IMDB.COM](http://WWW.IMDB.COM).**



## FREAKS AND GEEKS

**M**y friends, finish your corn dogs and prepare to be amazed by the products that reside inside our tabernacle of terror, the Freak Show. You may find the denizens of the Freak Show a little strange, but I guarantee they'll add a little spunk to your Mac if you just give 'em a chance.

Ready for the quirky stuff, the weird outer-space, glow-in-the-dark, fortune-telling, freaky Mac stuff? Step inside!

### We Are Not Alone

What's the likelihood that somewhere, among the billions and billions of stars in our universe, there exists another sentient civilization eager to converse with us Earthbound schmoes? That's a question some folks at SETI (The Search for Extraterrestrial Intelligence) would like to find an answer to. And you can

help them obtain that answer. Here's how.

Download a copy of SETI@home. This application/screen saver downloads a chunk of data picked up by an audio observatory, analyzes that data to determine if otherworlders are attempting to send a response to the radio signals we broadcast into space, and sends the results of that analysis back to the SETI@home people. What better way to employ your Mac during its otherwise unoccupied moments?

SETI@HOME PROJECT; [HTTP://SETIATHOME.SSL.BERKELEY.EDU](http://SETIATHOME.SSL.BERKELEY.EDU).

### Palm Dessert

3Com's ubiquitous Palm is a handy enough device that users have been willing to put up with Graffiti, the Palm's write-it-or-way-or-else handwriting interface. But let's face it, using Graffiti is hardly the most convenient way to enter information into your pocket pal. If only the Palm—like the Newton MessagePad 2000 before it—came with a keyboard.

Now it does, thanks to LandWare's GoType, a diminutive plug-and-play QWERTY keyboard designed for all the Palms except the Palm V and Palm VII (LandWare will release a Palm V-compatible keyboard shortly). Just drop your Palm into the GoType's integrated cradle and start typing. While not tiny enough to fit in your back pocket, the GoType measures only 10 by 4 inches and is just 3/4 inch deep. Without an attached Palm, the GoType weighs just 11 ounces.

LANDWARE; 201/261-7944, [WWW.LANDWARE.COM](http://WWW.LANDWARE.COM). LIST PRICE: \$80.

### Unwired for Sound

You're deeply entrenched in an online Quake III fragfest, it's 3:10 A.M., and you—a considerate individual—are wearing headphones. In a dash to the bathroom between bouts, you forget to remove the headphones, and when your forward progress exceeds the length of the headphones' cable, you dislocate your neck and nearly rip off your ears. Do yourself and your ears a favor and give a listen to Loral Group's Un-Wired Model 6000IR wireless headphones.

As the name implies, these ultracomfortable headphones carry no attached cable. Instead, they receive audio signals from an infrared transmitter that you place in a convenient location within 25 feet of your intended area of use. Connect the included audio cable from your Mac's audio-output port to the transmitter's input ports, pop a couple of AAA batteries into the headphones, switch on the transmitter and headphones, and you're ready to rock remotely at a frequency response of 35Hz to 18,000Hz.

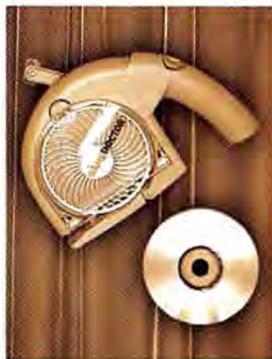
LARAL GROUP; 516/293-6900, [WWW.UN-WIRED.COM](http://WWW.UN-WIRED.COM). LIST PRICE: \$50.

### Doctor Wheelgood

Presenting the humble compact disc—useful for holding catchy tunes, the standard when it comes to installing software, and nearly indestructible. But occasionally one of these shiny, silver wonders becomes so scratched or abraded that areas of the disc cannot be read. Digital Innovations comes to the rescue with its GameDoctor, a device that looks like a cross between a can opener and a grocery-store label gun and that removes shallow scratches and abrasions from CDs.

To use the GameDoctor, simply fold down the device's lower jaw, strap a CD onto the wheel, spray the disc with the included Resurfacing Solution (filtered water), flip the jaw into place, and start cranking the Doctor's handle. As you crank, the wheel slowly rotates, polishing the disc. After polishing you simply dry and buff the disc with the included towel and felt square; with any luck, the disc will then function perfectly.

DIGITAL INNOVATIONS; 888/762-7858, [WWW.DIGITALINNOVATIONS.COM](http://WWW.DIGITALINNOVATIONS.COM). LIST PRICE: \$35.



### Are You an Ogre?

Described as a perfect place for some serious entertainment, Queendom.com offers the kind of tests and surveys often found in magazines that cater primarily to women. Care to test your IQ, check your personality, determine whether you suffer from depression, discover your degree of assertiveness, or compare your sex life to those of your fellow beings? Queendom.com

offers tests that cover all these areas, as well as advice columns and articles pertaining to women's health issues.

In general, the results of the tests are clear and nonjudgmental; regardless of how you answer, you won't have to read that you're an overbearing ogre who would be doing the world an enormous favor by taking up permanent residence in a remote mountain cave.

QUEENDOM.COM; WWW.QUEENDOM.COM/TESTS.HTML.

### Squeaky Mouse Pad

If you're tired of pushing your mouse around on the back cover of a vintage, 1984 issue of *InCider*, ComputerGear has more than plenty of decorative mouse pads for you. Presenting the Winning Shot and Wolf *audio* mouse pads—that's right, not only do these rubber-and-nylon pads sport the pictures of a putting green and a wolf baying at the moon, respectively, but when you press a particular spot on the pads, they erupt with sound (a cheering crowd for the Winning Shot pad and, as you might expect, a howling wolf for the other).

The novelty of these pads wears off after the first playing or two, so if you'd like something kicky but quieter, consider ComputerGear's *South Park* mouse pads, which feature a big-boned Eric Theodore Cartman and the ever-enthusiastic Kyle Broslowski.

COMPUTERGEAR; 800/373-6353, WWW.COMPUTERGEAR.COM. LIST PRICE: AUDIO MOUSE PADS, \$17; SOUTH PARK MOUSE PADS, \$15.

### Freaky News

There's a lot of news in the world—far more than your local radio station, television channel, or newspaper could ever hope to cover. Oh sure, you'll learn about the latest hurricane or scandal, but where are you going to read such gripping items as "Cops Seek Thief Who Digs Elders' Undies" or "Prep Student Attacked for Listening to Queen"? Log on to Jim Romensko's *Obscure Store and Reading Room*.

Mr. Romensko handpicks the more offbeat stories of our world and provides links to their source on this Web site. That source may be as lightweight as the *National Enquirer* or *Hollywood Reporter* or as earnest as the AP Newswire or CNN. You'll also find links to transcripts of newsmaker broadcasts such as *Larry King Live* and *Meet the Press*.

OBSCURE STORE AND READING ROOM; WWW.OBSCURESTORE.COM.

### Shocking Movies

Are you a frustrated filmmaker whose cinematic ideas can be realized in a single exchange of dialogue between two characters? Then the Digital Film Festival is for you. At *dfilm.com* you can create, view, and distribute your very own ShockWave movies. Here's how.

Simply click on the MovieMaker Game link, determine if you want your film to star one or two characters, select the characters you wish to use, choose a sky and background pattern, write the first (and last, as it happens) line of dialogue for each character, select a soundtrack, enter the title

of your movie and your name, and click on the Preview Movie link to see your film in the flesh. From the Preview screen, you can e-mail a link to your creation to anyone. And while you're at the site, you can watch clips of more-extensive films created specifically for the Internet.

DIGITAL FILM FESTIVAL; WWW.DFILM.COM.

### You Light Up My Life

When the iMac was first put on display, Apple used a cunning optical illusion to enhance the iMac's already cool appearance—the iMac mouse was placed on a lighted table, thus helping illuminate the mouse's innards. This illusion was so convincing that many people believed the round mouse actually contained a light source. It doesn't, but with a little help from iGlow, it can.

The concept is very simple. Send iGlow your round mouse, and for \$17.95 plus \$3.00 shipping, the company will implant a blue or red LED (light-emitting diode) into your translucent pointing device. If you have \$24.95 (and \$4.00 shipping) to spare, you can also have the company place up to three blue or red LEDs in a translucent trackball of your choosing. In addition, iGlow will sell you an already modified mouse—a MacAlly iMouse or Kensington USB Mouse in a Box—for \$49.95 plus \$3.00 shipping.

IGLOW; 408/262-8135, WWW.IGLOW.ORG. LIST PRICE: \$21.

### Alarming Development

PowerBooks are mighty convenient, but the very features that make them so convenient—their small size and easy portability—also leave them susceptible to theft. Other than chaining your PowerBook bag to your body, there is a measure you can take to make your PowerBook more secure: the Targus Defcon 1, a small alarm that attaches to your PowerBook or PowerBook bag.

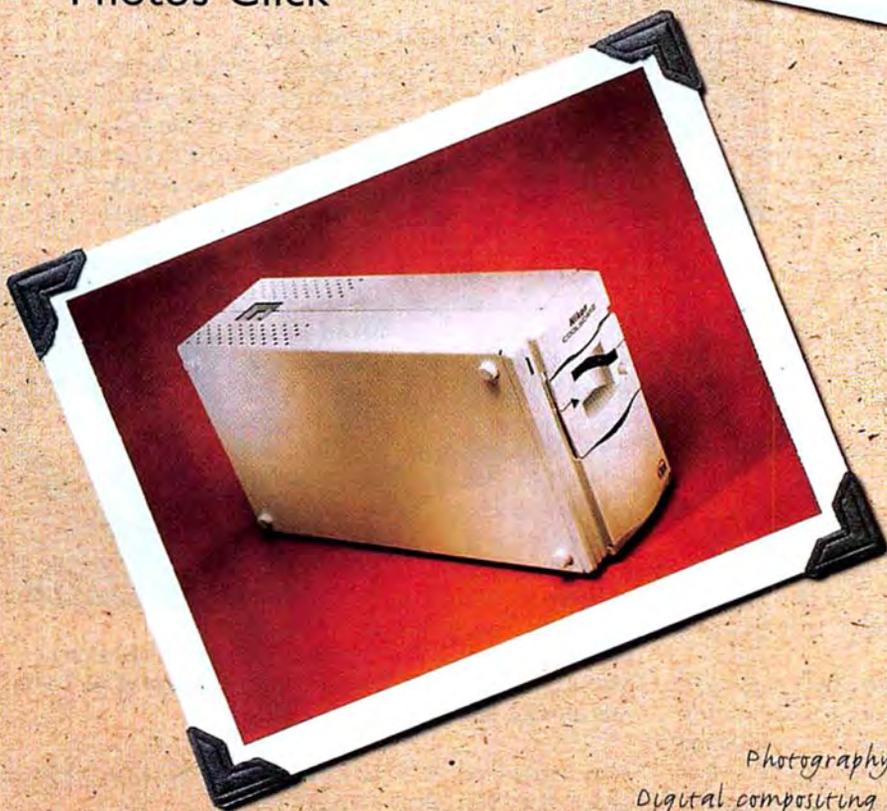
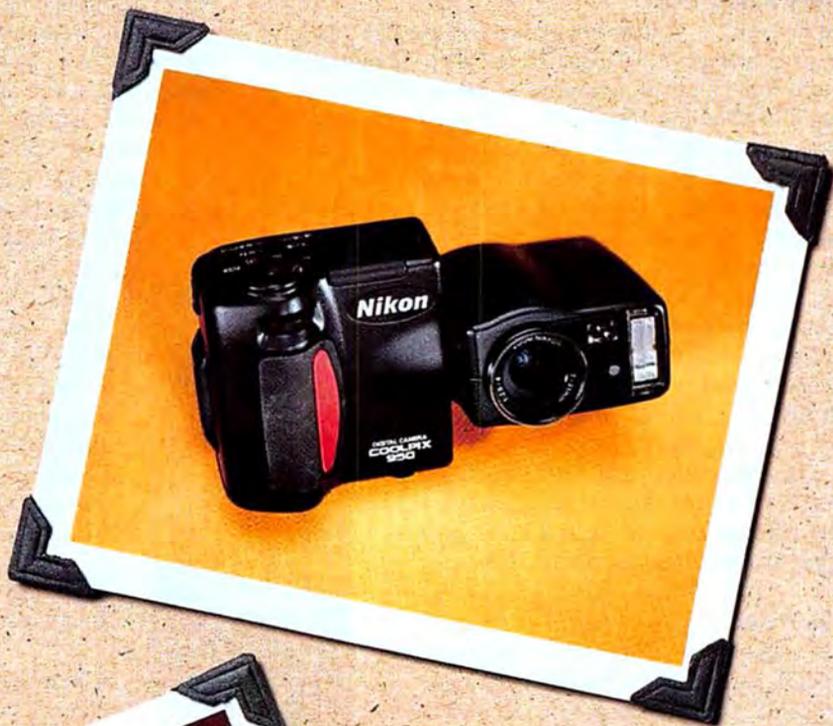
The Defcon 1, an alarm about the size of a cellular telephone, offers two types of protection. You can attach it to the security slot on your PowerBook, run Defcon 1's cable through the hole in the adapter, and lock the cable. If someone attempts to cut the cable, a screeching alarm sounds. The device also carries a motion alarm. If the Defcon 1 detects more than a few seconds of motion, it yells its head off. Note: The device is not sturdy enough to protect against prying thieves with sledgehammers. TARGUS; 714/523-5429, WWW.TARGUS.COM. COMPANY'S ESTIMATED PRICE: \$50. [m](#)

Before you leave the Freak Show, be sure to wave to *Macworld's* contributing game and iMac freak, CHRISTOPHER BREEN.



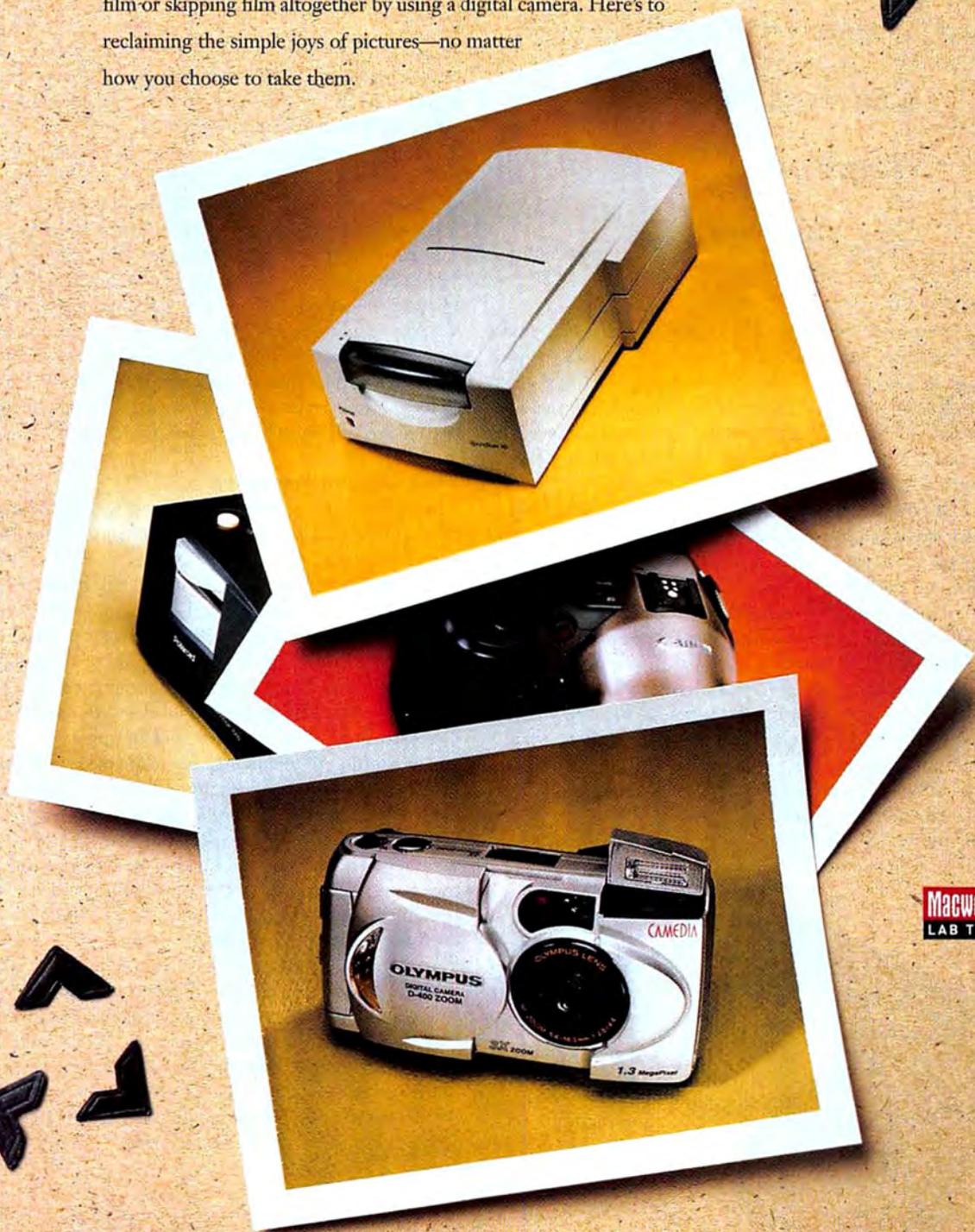
# Picture Perfect

Macworld Lab  
Looks at  
Digital Cameras  
and Scanners  
That Will  
Make Your  
Photos Click



*Photography by Kevin Candland  
Digital compositing by Stephen Sugg*

Sometimes a picture is worth a thousand words—all of the four-letter variety. After all, snapping the perfect shot is only the first step. If you want to post it on the Web or print it on a birthday card or in a magazine, you've got to get it into your Mac. You could shoot your pictures, take your film in, get it developed, make prints, and then scan each and every one. Or you could try a less stress-filled route: scanning your film or skipping film altogether by using a digital camera. Here's to reclaiming the simple joys of pictures—no matter how you choose to take them.



**Macworld**  
LAB TEST

# Digital Cameras Develop

These 14 Megapixel  
Cameras Will  
Help You  
Get the Picture

Everywhere you look, ads for software and computers celebrate the benefits of doubling: "Double the processing power!" "Twice the capacity!" "100 percent faster download times!" Yet somehow, once you're sitting at your desk, these leaps don't translate into equivalent increases in personal efficiency: you don't work twice as fast, nor is your work twice as good as it was before.

This isn't the case with digital cameras. When a digital camera captures twice as many pixels, you *see* the results. You really do get twice as much information, two times as much detail, and double the clarity. There's nothing theoretical about it—the results are right there in the photograph.

When we looked at digital cameras last year (see "Focus On," October 1998), the first of the \$1,000-and-under cameras had just broken the so-called megapixel barrier, capturing 1 million pixels or more per shot. This year, the number of pixels keeps climbing. One camera in our roundup, Nikon's \$999 Coolpix 950, packs more than 2 million pixels into each picture. Although earlier cameras have claimed to capture 1,600 by 1,200 pixels, they did so with the help of digital inter-

polation (adding pixels they hadn't really captured). The Coolpix 950 is the real thing, the first two-megapixel camera that costs less than a new iMac.

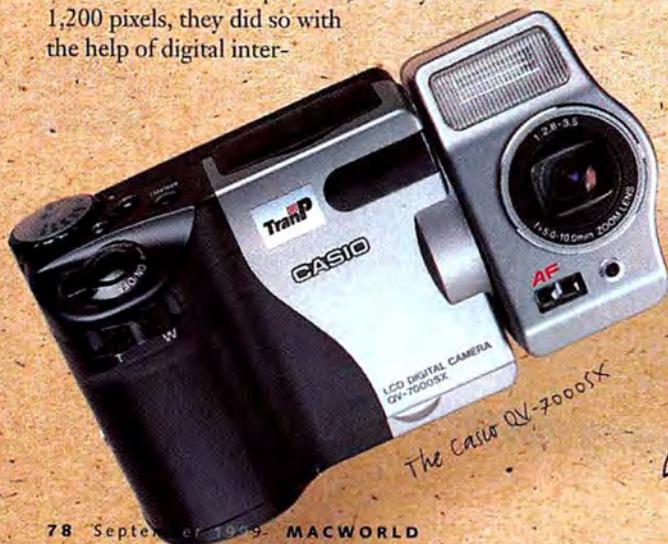
This is a bigger deal than you might think. Nikon's 2.11 million-pixel CCD (charge-coupled device) contains as many light-sensitive electrodes as do the image sensors in some professional-level cameras. For example, Kodak's popular DCS 520 captures several thousand pixels *fewer* than the \$999 Nikon, yet it costs \$14,995. Admittedly, the DCS 520 and its ilk offer features the simple Coolpix 950 lacks, but it's safe to say the Coolpix 950 breaks new ground. It's as if, despite their differences, the Coolpix 950 and professional-level DCS 520 used the same kind of film. Instead of supporting wildly divergent technologies, these cameras boast similar basic components packaged differently. This is good news for buyers on a budget.

## Weighing and Measuring

The Coolpix 950 isn't the only new camera on the market. In all, we looked at 14 megapixel cameras from 11 companies and priced between \$400 and \$1,200 (see the table, "14 Megapixel Cameras Compared," for details). The cameras ranged in weight from the stripped-down, 12-ounce Olympus D-340R (\$399) to the relatively gargantuan, 29-ounce Canon PowerShot Pro70 (\$1,199). Alas, none of these babies are small enough to fit in a shirt pocket; however, you can tuck all except the PowerShot Pro70 and the slightly smaller \$999 Olympus D-620L into a fanny pack or purse.

In addition to evaluating size and expense, we graded the cameras based on image quality, resolution, innovation, and ease of use. After all, if you're buying a camera for professional work, it's important that it capture crisply focused details and accurate color transitions. You also need a responsive camera that powers up and shoots pictures with few delays (see the benchmark, "Snap to It"). At home, the last thing you want to do is wage war with yet another machine, so convenience is king. Straightforward controls, flexible image transfer, and spiffy image quality even in low-light conditions are paramount.

This bushel is not without its bad apples, but although you may want to avoid a few, the group as a whole appears to be heading in the right direction. Two cameras in particular stood out from the crowd. The \$699 D-400 Zoom, from Olympus, is a first-rate camera for home use. Meanwhile, Nikon's Coolpix 950 is perfect for professionals.



by Deke McClelland

## Resolution and Interpolation

Five years have passed since Apple released the \$749 QuickTake 100, the first camera under \$1,000 to capture 640 by 480 pixels in 24-bit color. Thankfully, the state of the art has improved dramatically since then. The least-equipped camera in our roundup, the Olympus D-340R, costs about half as much and captures four times as many pixels as the old QuickTake. The higher concentration of pixels means you can print an image at larger sizes without revealing noise, compression artifacts, and other digital defects.

But today's megapixel cameras don't just capture *more* pixels—they capture *better* ones. Even the \$699 Kodak DC240—which produced the worst pictures of any camera we looked at—manages to capture sharply defined edges, though the colors of those edges are often inaccurate (see the sidebar, “The Proof Is in the Pictures”).

**Sizing Your Snapshots** Of the 14 cameras we looked at, 7 are solid megapixel devices. Their photosensitive CCDs, the digital equivalent of film, capture 1,280 by 960 pixels for a rough total of 1.2 million pixels per image. (The CCD actually captures *more* pixels than this, but some are masked out and don't make it to the picture.) What does this mean in practical terms? At 256 pixels per inch, roughly equivalent to the commercial standard for offset printing, you'll be able to print the pictures you take with these cameras as big as 5.0 by 3.75 inches. Go any larger than that and blocky pixels become visible.

Three cameras—the \$599 Fuji MX-600 Zoom, the Olympus D-620L, and the \$599 Toshiba PDR-M3—add a few pixels vertically, nudging the print size to 5.0 by 4.0 inches. Minolta's \$899 Dimâge EX Zoom 1500 snaps 5.25-by-3.9-inch photos.

The three remaining cameras provide more-substantive enlargements. Canon's PowerShot Pro70 and Kodak's \$999 DC265 capture 1,536 by 1,024 pixels, equivalent to a 6-by-4-inch print. The Nikon Coolpix 950's 1,600 by 1,200 pixels translate to a 6.25-by-4.7-inch photograph—that's 50 percent more picture than you can get from the 1,280-by-960-pixel crowd.

**Inventing Pixels** Sometimes it's not so easy to figure out how many pixels a camera can capture. Agfa's \$799 ePhoto CL50, Epson's \$799 PhotoPC 750Z, and Sanyo's \$899 VPC-Z400 all claim to support resolutions as high as 1,600 by 1,200 pixels, but these cameras are in fact limited to 1,280 by 960 pixels. They all use interpolation to achieve their inflated resolutions. None of the interpolated images held up to the authentic pixels the Nikon Coolpix 950's higher-resolution CCD captured.

## Innovations and Blunders

Three years ago, Casio proved its digital camera could go where no film

camera had gone before by including a color LCD screen. The LCD showed you the exact image projected onto the CCD inside, giving you a more accurate preview than an optical viewfinder would.

This trend continues with advances in LCD, flash, and focus. For example, in addition to providing ultrasmooth LCD image previews, the Agfa, Epson, and Sanyo models allow you to pop the top of the LCD so that sunlight can shine in and back-light the screen. Not only does this conserve power—the LCD is the camera's biggest power draw—but it also brightens the LCD screen when you're shooting outdoors in direct light, conditions under which a synthetically lit LCD is too dim to be visible.

**Sordid LCD Tales** Given the importance of a good LCD preview, you'll want to think twice before buying the Casio, Kodak, or Minolta models. The screens on these cameras are both grainy and unusually sensitive to movement. Each time you shift the camera to a new position, the subject blurs or separates into its RGB components, making it difficult to frame moving and still targets alike.

The \$699 Casio QV-7000SX exhibited another problem—the framing shown before and after snapping a picture didn't match, so the perimeter of the shot appeared to get cropped away. Given the fact that the Casio is the only model that lacks an optical viewfinder, such a ratty LCD is unforgivable.

Finally, note that the Olympus D-620L lacks an LCD preview altogether. Because the camera's SLR (single-lens reflex) design lets you frame the shot through the same lens the camera uses to shoot, Olympus deemed an LCD preview unnecessary. If your eye becomes quickly fatigued squinting through a tiny viewfinder, you may not agree.

**New Ways to Flash** Strobe flashes have hardly been a high point for digital point-and-shoot cameras in the past, but the new models are making important headway. Every camera but the Canon PowerShot Pro70 includes a built-in flash. Canon forgoes the flash in favor of an accessory shoe that allows you to slip on a standard detachable flash unit. This means less-severe light, with reduced risk of red-eye and other snapshot

**Hot Shots** From top to bottom, with Editors' Choice picks circled: Canon PowerShot Pro70 (first complete photo), Olympus D-400 Zoom, Casio QV-7000SX, Nikon Coolpix 950, Canon PowerShot Pro70, Olympus D-400 Zoom, Olympus D-620L.

PICTURE  
PERFECT:  
Cameras

spoilers. You can even select from predefined aperture settings to accommodate different brands of flashes.

Three other cameras—the Kodak DC265, Nikon Coolpix 950, and Olympus D-620L—offer a hot-sync port to trigger an external strobe, which means you can shoot under more-balanced light in a studio setting. In each case, you must purchase the hot-sync cable separately from the manufacturer.

Sometimes you may not want to use a flash at all. For example, low-light shots often look better with no flash than with the harsh lighting of a consumer strobe. In this situation, one camera outperformed the others. When shooting neon at night in Las Vegas, the Olympus D-400 Zoom did the best job of capturing colorful, sharply focused images without the help of a flash or tripod.

**Forays in Focus** LCD and flash aren't the only areas of innovation in digital photography. If you're looking for a camera that can take extreme close-ups, the Olympus D-400 Zoom is good and the Casio QV-7000SX and Olympus D-340R are even better, focusing as close as a finger's length from an object. The best of the bunch is the Nikon Coolpix 950, which can focus from just 0.8 inch away—close enough to capture the individual dots on a computer screen.

The Nikon also boasts the most-sensitive autofocus, with more than 4,000 steps of focus, sufficient to distinguish each millimeter of depth from the next. We spent a lot of time fighting with the autofocus of the Canon Power-

Shot Pro70 and the Olympus D-620L. The Canon camera permits you to take close and long shots alike in its "macro mode," but it frequently gave warnings and failed in low-light environments. The Olympus absolutely refuses to shoot a picture if the autofocus can't lock on the subject, which happens as often as not.

#### Design and Usability

Whether you are shooting a product out in the field or capturing your kid's birth-

day party, you need a camera that's ready to take pictures whenever you are. This means a reliable power supply, quick and easy zoom controls, and lots of expandable storage. Take away any one of these, and you risk having the perfect shot slip off-into fleeting memory.

**Never-Ending Need for Power** Unlike film cameras, digital cameras can't work without electricity. Mercifully, eight of the cameras ship with rechargeable batteries, which means you'll not only spend less on disposable cells but you'll also be able to shoot longer on a single charge.

The Epson PhotoPC 750Z, Kodak DC240 and DC265, Minolta Dimâge EX Zoom 1500, and Olympus D-620L ship with four AA NiMH cells and a charger. The Canon, Fuji, and Toshiba models rely on custom batteries. The Fuji and Toshiba cameras let you charge the battery by simply plugging the camera into a wall socket. But the AA cells represent the more flexible solution—if the rechargeable batteries run out of juice, you can toss in a set of disposable ones.

**Telephoto Troubles** All but the Olympus D-340R offer a telephoto lens. The Casio zooms by 200 percent, the Canon by 250 percent, and the others by 300 percent. All zooms are motor-driven, but some are more responsive than others. The Casio and Kodak cameras suffer from "leaping" zooms; the slightest touch of the zoom control has a dramatic effect on the focal length, making fine framing adjustments difficult.

**Storing Your Shots** All 14 cameras provide expandable memory in the form of a SmartMedia card or the more durable CompactFlash card. More memory means you can take more pictures at high-quality settings before you have to return to your computer and transfer the images to disk.

Kodak's DC265 bests the others by shipping with a 16MB CompactFlash card. Epson's PhotoPC 750Z comes in second with an 8MB CompactFlash card and 4MB of flash RAM on board. Canon's PowerShot Pro70 includes an 8MB CompactFlash card and permits you to plug in an optional second card at the same time—helpful if you want to shoot lots of pictures without swapping media.

Most of the other cameras include 8MB of removable memory. The exceptions are the Fuji MX-600 Zoom, Olympus D-340R, Sanyo VPC-Z400, and Toshiba PDR-M3, each of which bundles a 4MB SmartMedia card. The \$399 Olympus D-340R is inexpensive enough to justify the reduced memory, but the others are just plain skimpy. The Sanyo VPC-Z400 is particularly miserly; despite costing \$100 more than its twin from Agfa or Epson, it lets you shoot fewer pictures at a time.

**Giving Serial the Slip** These memory cards are also important for a different reason—the new Macs' lack of a serial port. However, the cards—and the adapters that let you use them with your Mac—are not hassle-free.

The FlashPath adapter lets you transfer pictures from a SmartMedia card using a standard floppy-disk drive. Unfortunately, it's incompatible with Imation's SuperDisk drive, which rules it out for many iMac and new-Power Mac G3 owners.

If your Mac has USB ports, you can purchase a \$99 memory drive. We tested SanDisk's ImageMate (888/216-2489, www.sandisk.com), which reads and writes CompactFlash cards, and Hagiwara Sys-Com's FlashGate (800/358-7267, www.hscus.com), which does the same for SmartMedia. Both worked fine with every machine on which we tested them.

For PowerBook owners, the best and least-expensive solu-

tion is a PC Card adapter. You can purchase a CompactFlash adapter from SanDisk and several other vendors for \$19. Canon includes a free PC Card adapter with its PowerShot Pro70. A SmartMedia adapter from Olympus, Fuji, or Toshiba costs \$79. None of these require any special drivers or other software.

One last device, Iomega's \$249 Clik drive (800/697-8833, [www.iomega.com](http://www.iomega.com)), lets you copy images from a CompactFlash or SmartMedia card to a 40MB Clik disk. The 6-inch-long drive is smaller than many cameras, making it easier to haul around than a PowerBook. A Clik disk costs about \$10—compared with about \$150 for a 40MB CompactFlash card—so you can store more pictures at a fraction of the price. The

problem is that in order to get the images from the Clik to your hard disk, you need a PC. Iomega plans to release a Mac-compatible USB docking station later this year.

### Macworld's Buying Advice

It really makes our job easier when one camera thoroughly trounces its competition. It's not that the other cameras are bad—the Kodak DC265 and Olympus D-620L in particular take great pictures—it's just that the Nikon Coolpix 950 is truly exceptional. It captures as many pixels as cameras costing 15 times as much; it can focus on absolutely anything; and it's a whiz at metering light, even in high-contrast settings. The

## 14 Megapixel Cameras Compared

Company	Product	Mouse Rating	Company's Estimated Price	Contact	CCD Resolution <sup>A</sup>	Maximum Image Size <sup>B</sup>	Default Memory	Built-in Flash	Rechargeable Batteries with Charger	MACINTOSH CONNECTIVITY			REMOVABLE-MEDIA FORMAT	
										Serial	PC Card/FlashPath	USB	SmartMedia 3.3V	CompactFlash
Agfa	ePhoto CL50	◆◆◆½	\$799 <sup>C</sup>	888/281-2302 <a href="http://www.agfahome.com">www.agfahome.com</a>	1.31	1,280 × 960	8MB	●	○	●	○	○	●	○
Canon	PowerShot Pro70	◆◆½	\$1,199	800/652-2666 <a href="http://www.powershot.com">www.powershot.com</a>	1.68	1,536 × 1,024	8MB	○	● <sup>D</sup>	●	● <sup>E</sup>	○	○	●
Casio	QV-7000SX	◆◆	\$699 <sup>C</sup>	800/836-8580 <a href="http://www.casio.com">www.casio.com</a>	1.32	1,280 × 960	8MB	●	○	●	○	○	○	●
Epson	PhotoPC 750Z	◆◆◆◆	\$799	800/463-7766 <a href="http://www.epson.com">www.epson.com</a>	1.30	1,280 × 960	12MB <sup>F</sup>	●	● <sup>G</sup>	●	○	○	○	●
Fuji	MX-600 Zoom	◆◆◆	\$599	800/800-3854 <a href="http://www.fujifilm.com">www.fujifilm.com</a>	1.50	1,280 × 1,024	4MB	●	● <sup>D</sup>	●	○	○	● <sup>H</sup>	○
Kodak	DC240	◆◆½	\$699	800/235-6325 <a href="http://www.kodak.com">www.kodak.com</a>	1.31	1,280 × 960	8MB	●	● <sup>G</sup>	●	○	●	○	●
	DC265	◆◆◆◆	\$999	800/235-6325 <a href="http://www.kodak.com">www.kodak.com</a>	1.60	1,536 × 1,024	16MB	●	● <sup>G</sup>	●	○	●	○	●
Minolta	Dimâge EX Zoom 1500	◆◆	\$899	201/825-4000 <a href="http://www.minoltausa.com">www.minoltausa.com</a>	1.50	1,344 × 1,008	8MB	●	● <sup>G</sup>	●	○	○	○	●
Nikon	<b>EDITORS' CHOICE</b> Coolpix 950	◆◆◆◆½	\$999 <sup>C</sup>	800/526-4566 <a href="http://www.nikonusa.com">www.nikonusa.com</a>	2.11	1,600 × 1,200	8MB	●	○	●	○	○	○	●
	D-340R	◆◆◆	\$399	800/347-4027 <a href="http://www.olympus.com">www.olympus.com</a>	1.31	1,280 × 960	4MB	●	○	●	○	○	●	○
	<b>EDITORS' CHOICE</b> D-400 Zoom	◆◆◆◆	\$699	800/347-4027 <a href="http://www.olympus.com">www.olympus.com</a>	1.31	1,280 × 960	8MB	●	○	●	● <sup>I</sup>	○	●	○
Olympus	D-620L	◆◆◆½	\$999	800/347-4027 <a href="http://www.olympus.com">www.olympus.com</a>	1.41	1,280 × 1,024	8MB	●	● <sup>G</sup>	●	○	○	●	○
	D-340R	◆◆◆	\$399	800/347-4027 <a href="http://www.olympus.com">www.olympus.com</a>	1.31	1,280 × 960	4MB	●	○	●	○	○	●	○
Sanyo	VPC-Z400	◆◆◆	\$899 <sup>C</sup>	818/998-7322 <a href="http://www.sanyodigital.com">www.sanyodigital.com</a>	1.31	1,280 × 960	4MB	●	○	●	○	○	●	○
Toshiba	PDR-M3	◆◆◆	\$599	949/461-4970 <a href="http://www.toshiba.com">www.toshiba.com</a>	1.50	1,280 × 1,024	4MB	●	● <sup>D</sup>	●	○	○	● <sup>H</sup>	○

● = yes; ○ = no. <sup>A</sup> In millions of pixels. <sup>B</sup> In pixels, excluding interpolation. <sup>C</sup> List price. <sup>D</sup> Custom cell charges inside camera. <sup>E</sup> PC Card. <sup>F</sup> Includes both expandable and on-board memory. <sup>G</sup> Standard NIMH AA cells. <sup>H</sup> Also supports SmartMedia 5V. <sup>I</sup> FlashPath.

For an expanded version of this table, see Macworld Online, at [www.macworld.com/1999/09/features/](http://www.macworld.com/1999/09/features/).

PICTURE  
PERFECT:  
Cameras



Agfa ePhoto CL50



Canon Powershot Pro70



Casio QV-7000SX



Epson PhotoPC 750Z



Fuji MX-600 Zoom



Kodak DC240



Kodak DC265



Minolta Dimâge EX Zoom 1500

# The Proof Is in the Pictures

**T**he most important measure of any digital camera is the quality of its photographs. Unfortunately, this also happens to be the hardest criterion to judge.

If you shoot a scene with a group of cameras and compare the images uncorrected, all you'll discover is the camera that works best with one particular computer setup. Whether that camera will work equally well with *your* system is anyone's guess.

Because none of these cameras automatically embeds color profiles, there's no way for a piece of software to "develop" the photograph automatically so it looks its best from one system to the next. I did the next-best

thing: After shooting five photographs of a still life with each camera at its highest-quality setting, I selected the best image from each and developed it manually inside Photoshop. I limited myself to gamma adjustments—applied equally to all channels—and uniform applications of Unsharp Mask. The results, shown here, better represent what a reasonably informed Mac user can expect to achieve.

Even under controlled conditions, the images developed quite differently. Several cameras read the grape iMac mouse as blue instead of violet. Also worth noting, the mouse pad should be emerald green, not teal. The background contains the

grays and browns shown in the Kodak DC265 photograph, not the yellow of the DC240 photo or the reds the Fuji MX-600 Zoom and Toshiba PDR-M3 invented.

More worrisome than these color shifts—which are to varying extents correctable—are occasional omissions of detail. The Kodak DC240 was the worst offender, erasing the border between the cup and the neighboring daffodil petals. The image from the Canon PowerShot Pro70 is rife with flat hot spots. The Casio and Minolta images suffer from too much contrast; each sacrifices definition in the shadows behind the cup and the light areas inside the flowers.

The Agfa, Epson, and

Sanyo models all performed very well, with the Olympus D-340R just a bit soft. The Olympus D-400 Zoom deserves special commendation for outstanding attention to crisp detail and tactile modeling, as does the Olympus D-620L, although its colors are slightly jaundiced.

The Kodak DC265 is the champion of color accuracy, nailing the distinction between the warm white of the daffodils and the cool white of the cup. But the clear overall winner is the Nikon Coolpix 950. If you enlarged each of these images to poster size, you'd see an attention to authentic form and detail in the Nikon photograph that the others can't match.



*Nikon Coolpix 950*



*Olympus D-340R*



*Olympus D-400 Zoom*



*Olympus D-620L*

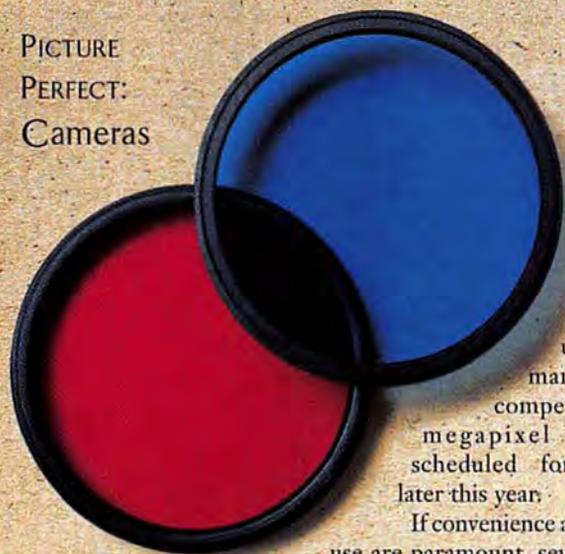


*Sanyo VPC-Z400*



*Toshiba PDR-M3*

PICTURE  
PERFECT:  
Cameras



Coolpix 950 is so good, in fact, that it will easily stand up against many of the competing two-megapixel cameras scheduled for release later this year.

If convenience and ease of use are paramount, several cameras fit the bill. We really appreciated the solar-aided LCD, wealth of memory, and rechargeable batteries the Epson PhotoPC 750Z provided. It's also the only device to include a power lock, so you can't accidentally turn it on. The similar Agfa ePhoto CL50 lacks rechargeable batteries, but its menu and zoom controls were easier to work with.

But if you had to pick one camera to take on a social occasion, it would be the one that would get the right shot without any fuss: the Olympus D-400 Zoom. Its compact design, smooth LCD display, low light requirements, and first-rate image quality give it an edge. Plus it ships with a FlashPath adapter, making it the only camera other than the Canon and Kodak models to provide a way to download pictures to your computer without resorting to the serial connection.

After all, the days of tethering digital cameras to a Mac are over. Now you can shoot your picture, remove the film card, and stick the card in your computer. At last, the camera works just like any another removable-media drive—one that sees and records the world. **m**

Contributing Editor DEKE McCLELLAND is the author of *Real World Digital Photography* (Peachpit Press, 1999).

EDITORS' CHOICE

Best Professional Camera

★★★★½ Nikon Coolpix 950 Professional-level resolution, light metering, and focus options put this camera head and shoulders above the rest. **Company:** Nikon (800/526-4566, www.nikonusa.com). **List price:** \$999.

Best Personal Camera

★★★★ Olympus D-400 Zoom Of all the cameras tested, this one was the most likely to get a good shot with the least amount of fuss. **Company:** Olympus (800/347-4027, www.olympus.com). **Company's estimated price:** \$699.

REAL PRODUCTS REAL RATINGS

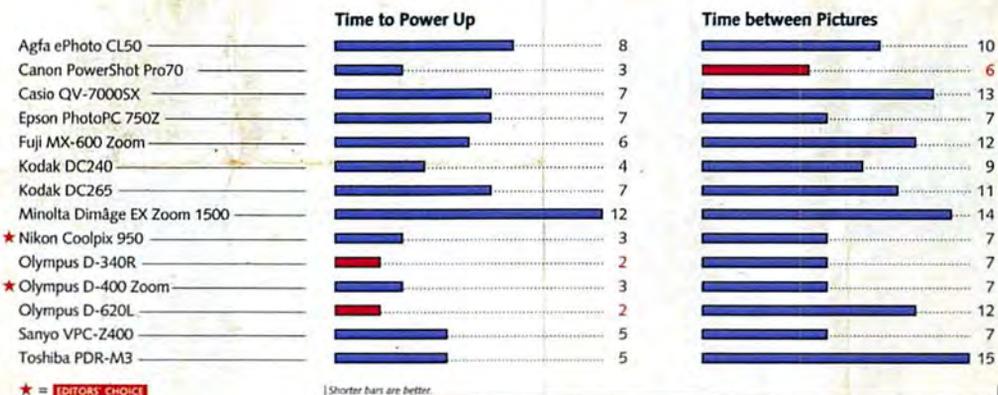
Reviews you can trust *Macworld* rates only final shipping products, not prototypes. What we review is what you can actually buy.



Snap to It

Digital cameras may be filmless, but they're not all fast in the field. For instance, Toshiba PDR-M3 makes you wait more than twice as long between taking pictures as Canon's PowerShot Pro70. Both our Editors' Choice picks offer less frustration per frame.

Best results in red. All times in seconds.



Behind Our Tests

Times were recorded at each camera's highest resolution with the flash on. Power-up time indicates the period between turning the camera on and when it's ready to take a picture. Time between pictures indicates the period between pressing a camera's shutter button and when the camera is ready to take another shot.—Macworld Lab testing supervised by Gil Loyola

# No Mac Is An Island.

## Think Asanté—Networks For The Mind

At Asanté Technologies, we know Mac. We know you eat, sleep, and breathe Mac. And we know you're not alone. So we've made it simple for you to network all your Macs.

Whether you need to connect your new iMac to your G3, wire a LAN for the Graphics Department, or establish an Enterprise WAN, we have the networking solution for you. The choices are many. The answer is simple. Asanté—speed, simplicity, and savings.

**Gigabit.** With our new Gigabit solutions, your entire office can soon be performing at Gigabit speed. Our FriendlyNET™ 7000 series of affordable, easy to install Gigabit switches and cross-platform GigaNIC™ PCI adapters ensure that no one will be waiting on the network.



**iMac Connectivity.** AsantéTalk™ is the easiest way to connect your Apple iMac or any Ethernet Mac for printing and file sharing. Simply plug in your Ethernet on one side and LocalTalk on the other to get up and running in no time.



### Laptop Connectivity.

Don't hit the road without a FriendlyNet 10/100 CardBus Adapter for your Powerbook. It's high performance mobile connectivity at an affordable price. And just like a Mac, its plug-and-play design makes integration easy.



### Low-Cost 10/100 Networks.

Asanté's FriendlyNET™ dual-speed hubs and switches put the power of 10/100 computing into the palm of your hand. Access network resources at up to 100Mbps with these compact yet cost-effective, plug-and-play networking solutions that fit on your desk and within your budget.



**Savings.** For a limited time only, Asanté is offering special rebates on select products for your home or office. Please visit our Web site for more information about how you can save.

 **ASANTÉ**  
MAKING NETWORKING SIMPLE  
www.asante.com

**Visit Asanté at Macworld Expo New York Booth #861.**

For complete details on the entire line of Asanté networking solutions call 1-800-303-9121.

# Slide Scanners

# Show Off

## Take Your Film

## Digital in a Flash with These 7 Scanners

**T**he process of capturing images is, in large part, a matter of throwing visual information away. You start with the scene you see with your eyes, which contains all the light, shade, and color of the real world. Next you reduce it to what film can see—details fall from the highlights, and shadows thicken. If you then make prints, you throw away still more because a negative contains much more subtlety of tone and color than you can reproduce in any single print.

What happens when you make *digital* edits on a 24-bit image? You throw a way more information. This may sound scary, but it's a normal and necessary part of image

reproduction. The trick is to throw away only what you don't need and to not throw anything away until you must. Consequently, when they need the best, most graphics and prepress pros scan *film* rather than prints because film contains much more visual information.

Although flatbed scanners have become much more capable at scanning slides and color negative film (see "Scan In," October 1998), you'll generally get better results from a dedicated film scanner. Why? Film scanners capture a wider range of light and shadow, or *dynamic range*, than flatbed scanners do. If you're scanning 35mm film, you also benefit from the much higher resolutions available with film scanners, since your original piece of film is so small.

We looked at seven film scanners, ranging in price from less than \$1,000 to around \$17,000. (See the table, "7 Slide Scanners Compared," for details on each model.) Four are strictly 35mm scanners, three handle medium-format film as well as 35mm, and two of the latter handle formats as large as 4 by 5 inches. Each of these scanners hooks up to a Mac with a SCSI connector, so if you have a new blue Power Mac G3 you'll need to get a SCSI card (see "Generation Gap," August 1999). To test the scanners, we scanned the same difficult image with each and asked a panel of experts to evaluate the results. We also gave each scanner's software a workout to see which package is truly worth your time.

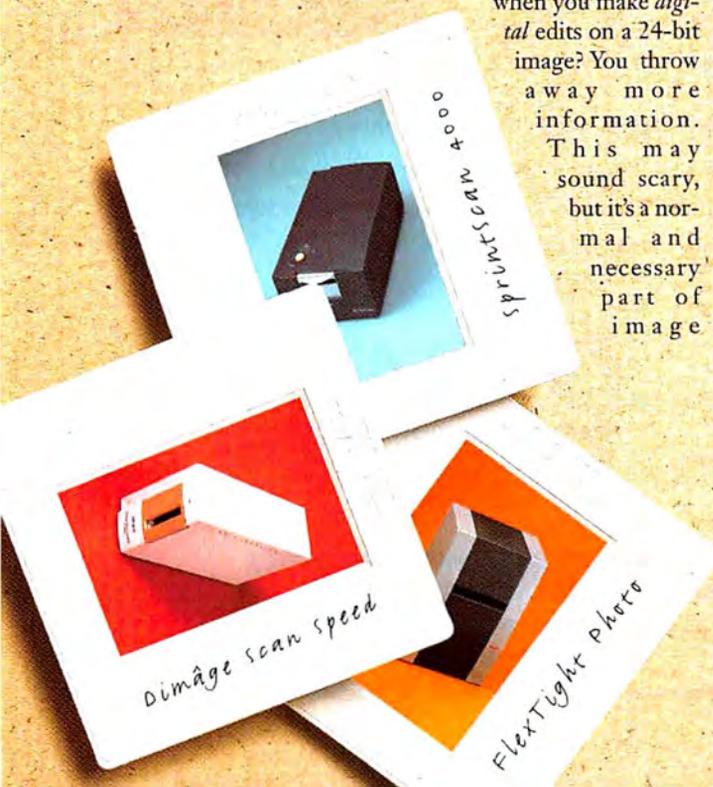
### Checking Specs

A scanner's most basic abilities are determined by its hardware. The two most important numbers to check out on a spec sheet are dynamic range (often represented by a *Dmax* value) and resolution, in that order.

**Dynamic Range** The scanners in our roundup claim dynamic ranges from 3.0 to 4.1. This means that each unit can capture a wide enough range of light and shadow to do color negatives justice.

The scanners we looked at from Imacon, the \$11,995 FlexTight Photo and the \$16,995 FlexTight Precision II, boast a massive dynamic range of 4.1, the highest we've seen in a desktop scanner. This means they're capable of handling virtually *any* quality of film you can throw at them.

by Bruce Fraser



Most of the others—Minolta's \$1,095 Dimage Scan Speed, Nikon's \$1,899 Super Coolscan 2000, and Polaroid's \$9,995 SprintScan 45 Pro and \$2,495 SprintScan 4000—cluster in the 3.4-to-3.6 range. The exception is Nikon's \$999 Coolscan III. Its dynamic range of 3.0, although satisfactory for many purposes, is inadequate for scanning higher-contrast slides. In theory, there should be a significant difference between a dynamic range of 3.4 and 3.6, but in practice we found that the scanners in the 3.4-to-3.6 range offered similar performance.

**Resolution** When scanning 35mm film, these scanners offer resolutions from 2,700 to 5,760 dpi. (To put this in perspective, most midrange flatbed scanners scan at around 1,000 or 2,000 dpi.) Even the lowest resolution in this group is enough to reproduce a 35mm original at tabloid size with magazine quality.

At the high end of the scale, the Imacon FlexTight Precision II offers an impressive optical resolution of 5,760 dpi for 35mm film. It drops to 1,800 dpi for 4-by-5 film, but this is still quite high quality. Polaroid's new SprintScan 4000 scans at 4,000 dpi. The Imacon FlexTight Photo scans both 35mm and medium-format film at 3,200 dpi.

The Polaroid SprintScan 45 Pro has an optical resolution of 2,000 by 4,000 dpi. The other scanners' resolutions are represented by only one number because as the scanning head in those units moves along the image, it captures the same number of pixels in a row as it does rows of pixels. The SprintScan 45 Pro is different. Its resolution is represented by two numbers because it interpolates (adds some pixels digitally instead of capturing them). We found that it produced rather soft scans from 35mm as a result. The Minolta Dimage Scan Speed has a rather strange resolution of 2,829 dpi. In practice, we found that this resolution offered little or no advantage over the 2,700 dpi of the Nikon Coolscan III and Super Coolscan 2000 scanners.

**Extra Innovations** Three of the scanners offer a few extra hardware innovations. Both the Imacon units feature very clever magnetic film holders that bend around a drum in the scanner so that the film plane is always exactly at the point of

focus. The holders won't damage your film and are very easy to load and unload. In addition, the Imacon scanners have a feature called Adaptive Light, which slows the scan so that more light gets pumped through the film for very dense originals. Each also has a built-in light box.

Nikon's Coolscan III and Super Coolscan 2000 feature a surface-defect-removal technology called Digital ICE, which effectively removes dust and all but the deepest scratches from scans. This isn't just a clever software routine—Digital ICE scans the film with invisible wavelengths that actually allow it to see through surface defects to the underlying image, using special hardware in the scanner to do so.

### Seeing Is Believing

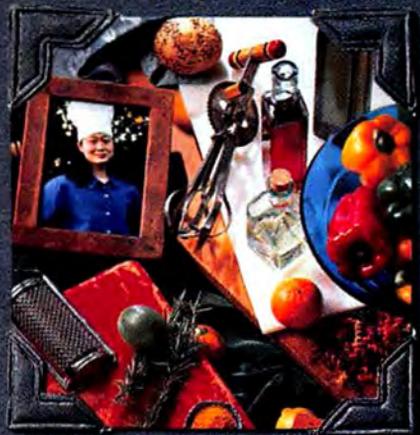
The best way to judge a scanner is by the image it produces, so we tested this group with an image designed to be a scanner operator's worst nightmare. Our image contained strong saturated colors and delicate pastels. There were also flesh tones, food, metal, and complex near neutrals.

We produced scans with each scanner's intelligent-agent software. In addition, we created scans by hand to approximate the experience a fairly seasoned user might have. We then gave the scans to a jury of color experts who evaluated color fidelity, shadow detail, neutral reproduction, and sharpness. For details about the quality of these scans, check out the sidebar, "See for Yourself."

**Hassle-Free Quality** In particular, we obtained good—if not outstanding—results with Nikon's Super Coolscan 2000 and with Imacon's FlexTight Photo and FlexTight Precision II. We also achieved these results without much hassle. These three scanners all had robust support for Apple's color-management software, ColorSync, and this added up to significant time savings. By using the color profiles that came with the scanners, we were able to get consistent color. We configured each of these scanners to scan into Adobe RGB (Photoshop 5.0's preferred color space) and then converted the scan to our proofer profile in Photoshop, with no manual color adjustments.

**Color Confusion** This was not the case with the other scanners in our group. Like most Mac users who would be in the market for a scanner such as the ones we tested, we used Photoshop 5.0.2 (800/833-6687, [www.adobe.com](http://www.adobe.com)) as our main imaging application, and we quickly found that the majority of scanner drivers aren't yet up to speed on Photoshop's new color architecture. (For a

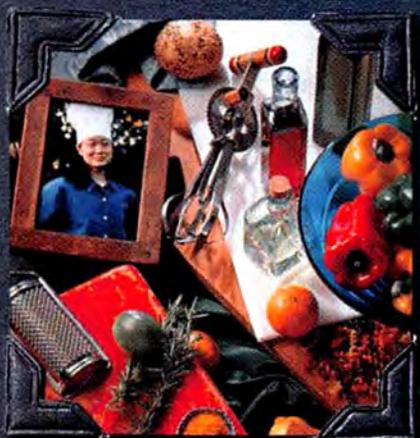
**Film Stars** From top to bottom, with Editors' Choice pick circled: the Minolta Dimage Scan Speed, Imacon FlexTight Photo, Nikon Super Coolscan 2000, Minolta Dimage Scan Speed, Polaroid SprintScan 4000, Imacon FlexTight Photo, and Nikon Super Coolscan 2000.



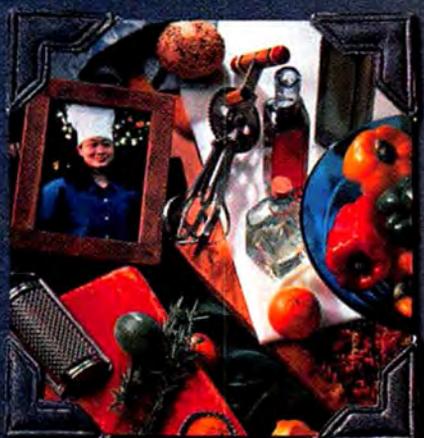
*Drum scan (reference)*



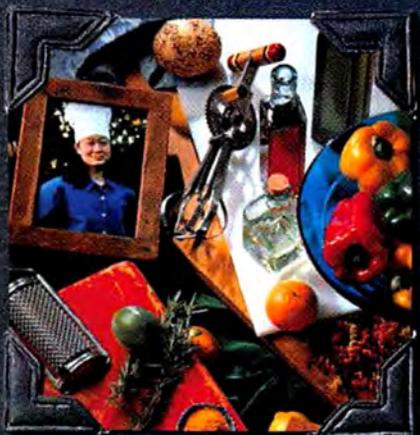
*Imacon FlexTight Photo*



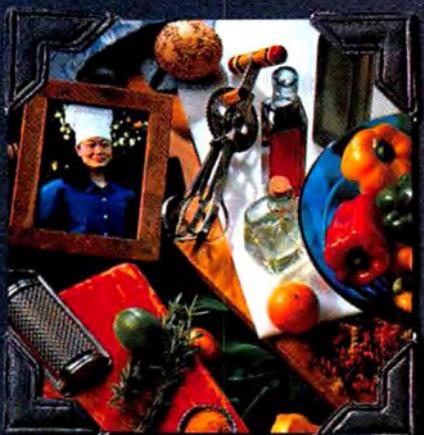
*Imacon FlexTight Precision II*



*Minolta Dimage Scan Speed*



*Nikon Coolscan III*



*Nikon Super Coolscan 2000*

## See for Yourself

The ultimate test of any scanner is the image it produces. Unfortunately, this is a difficult thing to judge, because everyone sees images a little differently, particularly when that image is as complex as the one we used for our testing.

Simply scanning with default settings rarely produces satisfactory results. You have to make compromises (and manual adjustments), so the biases and skills of the scanner operator always become part of the equation. This is typical of how things work in the real world—images often go through at least two rounds of scanning and proofing before sign-off. Some scanners do a lot better job with less work, however, and in our roundup they were the scanners that fully support ColorSync.

To get an idea of the scanners' capabilities, we asked a panel of experts to evaluate several scans from each one, including the images you see here. No

scanner could reasonably be expected to reproduce this photo perfectly, but the Minolta Dimâge Scan Speed missed on several counts, with oversaturated colors; blocked-up shadows; and a strong red color cast that is visible in the woman's face, the orange, the yellow peppers, and the shadows on the table.

Polaroid's SprintScan 4000 had a greenish cast, as you can see in the flesh tones. The SprintScan 45 Pro had a magenta cast that was particularly evident in the blue tablecloth, which it turned purplish. The SprintScan 45 Pro also lacked sharpness. Both of the Polaroid scanners rendered the red of the table as more of an orange-red. Nikon's Coolscan III oversaturated the image somewhat, as you can see in the tablecloth, the orange, and the peppers, but its main limitation was that it simply lacked the dynamic range to get all the detail in the shadows.

Our most expensive scanners, the

Imacon FlexTight Photo and FlexTight Precision II, both did very well, with very good skin tones and no trace of oversaturation. The vendor-supplied profile tended to block up the shadows slightly, however, as you can see from the dark shadows beneath the peppers. Both scanners have the dynamic range and software features that would allow you to correct this easily.

The Nikon Super Coolscan 2000 displayed some oversaturation but rendered all the hues in the image accurately, with good shadow detail. After another round of scanning and proofing, either of the two Imacon scanners—with their greater dynamic range and full-featured software—would likely produce significantly better results than the Nikon could ever achieve. But given the difference in price, we pick the Nikon as the best all-around value for the money and the best buy for all but the dedicated pro.



*Polaroid SprintScan 45 Pro*



*Polaroid SprintScan 4000*

full discussion of this problem, see "Avoid Photoshop's Color Calamities," *Create*, elsewhere in this issue.) As a result, we were forced to use a tedious, but fairly effective, method to get accurate color. For details, look at "Work-around 2" in the aforementioned article.

Using this strategy, we were able to obtain good results from the Nikon Coolscan III and the Polaroid SprintScan 45 Pro and borderline results from Polaroid's new SprintScan 4000. Only one scanner, the Minolta Dimage Scan Speed, failed to produce a scan that the jury rated acceptable for color fidelity and reproduction of neutrals.

**First Impressions** In the end, none of our scanners received a perfect score from the jury, but it's important to bear in mind that these were all *first* scans. Clients bring different biases to the table and rarely sign off on the first scan they see. We're confident that a second round of scanning that took the jurors' preferences into account could have produced excellent results from any of our top three scanners.

**Using the Darn Things**

Although hardware determines a scanner's basic capabilities, the scanner itself is only as useful as the software that drives it. If the scanner software doesn't allow you to preview the image accurately and correct it using the 10-, 12-, or 14-bit-per-channel data it captures internally, you're wasting the benefit of the extra bits.

**All You Could Want** The only truly full-featured scanning software in the bunch is Imacon's ColorFlex 1.8, which drives both the FlexTight Photo and the FlexTight Precision II. ColorFlex functions as a stand-alone application but offers the option of automatically opening the scanned images in any image editor you choose, so it combines the flexibility of scanning directly to disk with the convenience of a Photoshop plug-in.

The software also allows you to specify ColorSync profiles for input, output, and display. And it's the only scanning package of the bunch to let you embed the output profile in

## 7 Slide Scanners Compared

Company	Product	Mouse Rating	List Price	Contact	Film Formats	ColorSync- Compatible	Batch Abilities	Optical Resolution <sup>a</sup>	Dmax <sup>b</sup>	Bit Depth	Comments
Imacon	FlexTight Photo	★★★★	\$11,995	888/462-2668 www.imacon-usa.com	35mm, medium format	●	● <sup>c</sup>	3,200	4.1	14	A no-compromise scanner, especially for the serious (and bank-rolled) medium-format shooter.
	FlexTight Precision II	★★★★	\$16,995	888/462-2668 www.imacon-usa.com	35mm, medium format, 4 x 5; reflective up to size A4	●	● <sup>c</sup>	5,760	4.1	14	Awesome resolution and dynamic range with a price tag to match. A state-of-the-art scanner.
Minolta	Dimage Scan Speed	★★	\$1,095	201/825-4000 www.minoltausa.com	35mm, Advanced Photo System	○	○	2,829	3.6	12	Decent hardware crippled by primitive software.
Nikon	Coolscan III	★★★	\$999	800/526-4566 www.nikonusa.com	35mm, Advanced Photo System	●	● <sup>d</sup>	2,700	3.0	10	Low dynamic range makes scanning slides problematic. Digital ICE technology is a big bonus.
<b>EDITORS' CHOICE</b>											
	Super Coolscan 2000	★★★★	\$1,899	800/526-4566 www.nikonusa.com	35mm, Advanced Photo System	●	● <sup>d</sup>	2,700	3.6	12	Despite software shortcomings, a very capable scanner. Digital ICE is a big bonus.
Polaroid	SprintScan 45 Pro Multi-Format Film Scanner	★★½	\$9,995	800/432-5355 www.polaroid.com	35mm, medium format, 4 x 5	○	●	2,000 x 4,000 <sup>e</sup>	3.4	12	Decent hardware marred by subpar software that is unacceptable at this price range. Scans appeared rather soft.
	SprintScan 4000 Film Scanner	★★½	\$2,495	800/432-5355 www.polaroid.com	35mm, Advanced Photo System	○	●	4,000	3.4	12	Hardware shows potential, but the software needs a massive overhaul.

● = yes; ○ = no. <sup>a</sup> In dots per inch. <sup>b</sup> Optical density of the densest piece of film the scanner can read, according to the scanner's manufacturer. <sup>c</sup> Unmounted film only. Number of scans limited by size of holder. <sup>d</sup> For negative strips; multiple slides require optional batch adapter. <sup>e</sup> Scanner captures image information asymmetrically. It compensates for this with digital interpolation.

the image, which makes the scanner much easier to use in a workflow that includes color management. It offers decent-size monitor previews and a full complement of tools to get the best scan possible. It also lets you scan in raw 48-bit RGB if you prefer to make all your corrections in Photoshop.

**Adequate Offerings** The Nikon Scan 2.0 software is more of a mixed bag. It doesn't embed ColorSync profiles, but it does at least allow you to specify output and display profiles—Photoshop will report that the image has no profile, but you can simply open the image with no conversion, thereby saving time. Unfortunately, the mechanism for doing this is quite confusing and *seems* to work only with the Super Coolscan 2000, not with the Coolscan III.

Nikon Scan also doesn't provide any way to use a custom profile for the scanner, which is limiting both because individual scanners vary and because a single profile won't necessarily handle all film stocks equally. You have to use the profile supplied by Nikon, but it works fairly well.

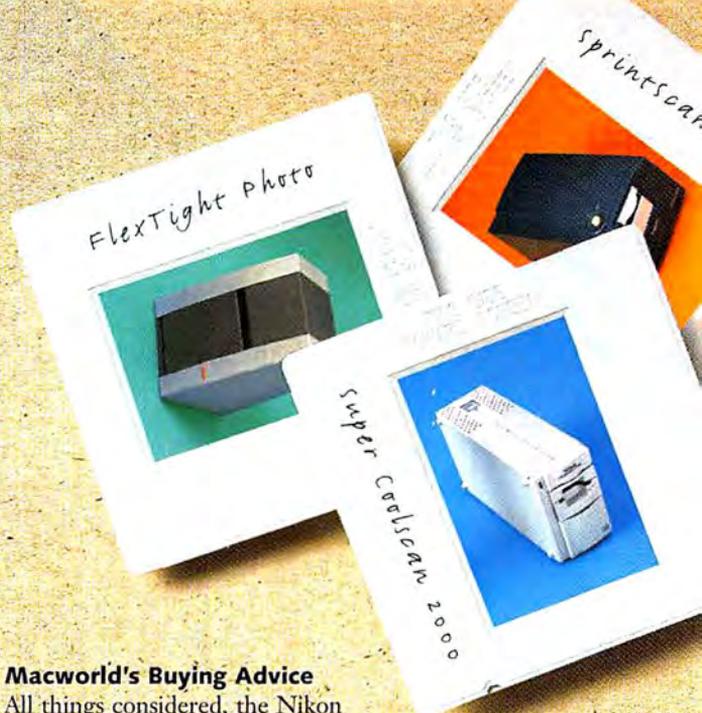
On the other hand, the Super Coolscan 2000 lets you scan raw high-bit data (the Coolscan III's hardware is limited to only 10-bit data) and also lets you average multiple scans to cut down shadow noise. This latter feature greatly improves the effective dynamic range but results in very slow scans, particularly since the software averages not only the final scan but also the prescan.

**Poorer Options** The other software packages fare much worse. Minolta's scanning software, Dimãge Scan Speed 1.0, is very basic indeed and even lacks some Mac keyboard shortcuts. We can really recommend the Dimãge Scan Speed only for Web work, where color fidelity is generally a happy accident if it happens at all.

Polaroid's new PolaColor Insight feels like a work in progress. It is certainly simpler and tidier than Polaroid's previous scanner software, but it also lacks some of the earlier software's features.

PolaColor Insight ships with several generic display profiles as well as input profiles for different film stocks. These are, in fact, ColorSync profiles, but instead of actually using ColorSync in the standard way, the software installs these profiles in its own special folder where they're visible only to the scanner software. This means, for example, that if you have a custom profile for your monitor, you can use it only by copying it to this special folder. Moreover, PolaColor Insight has no facility for scanning to a Photoshop working space or for scanning to CMYK. It's annoying to find that the software uses ColorSync profiles while simultaneously sabotaging any attempt to employ a ColorSync workflow.

More troubling is the fact that we got very different results using the automatic settings on the two Polaroid scanners. Using PolaColor Insight's autopilot settings worked pretty well on the SprintScan 45 Pro (which also comes with the more consumer-focused PhotoPerfect Master software, from Binuscan) and quite poorly on the new SprintScan 4000—so poorly, in fact, that although the SprintScan 4000's hardware is quite impressive, we cannot recommend the model until Polaroid improves its software. Reportedly, Polaroid plans to address these shortcomings, but at press time no release date for the next version of the software was available.



### Macworld's Buying Advice

All things considered, the Nikon Super Coolscan 2000 will give you the best scans for your money. Its implementation of ColorSync is rather strange but works well once you've figured it out. In addition, the Digital ICE technology will save you hours of work getting rid of dust spots and scratches.

Depending on your needs and the size of your wallet, however, two other scanners are well worth considering. If you want to make a serious investment in a scanner that will likely represent the state of the art for several years to come, the Imacon FlexTight Precision II is a beautiful—albeit expensive—piece of work. It offers the highest resolution and dynamic range we've seen in a desktop scanner, and it has full-featured software. If you don't need the larger film capability or more than 3,200-dpi resolution on 35mm film, the FlexTight Photo delivers 90 percent of the performance at about two-thirds the price.

The current generation of film-scanning hardware is the best yet, with relatively inexpensive devices producing results that are more than adequate for most image-reproduction processes and certainly good enough for all but the finest-quality offset printing. It's somewhat disappointing to see that the scanner software is lagging behind the hardware, but we're confident that it will catch up eventually. **m**

Contributing Editor BRUCE FRASER is a coauthor of *Real World Photoshop 5* (Peachpit Press, 1998).

### EDITORS' CHOICE

★★★★ Nikon Super Coolscan 2000 Although we have some reservations about Nikon's software, this is a fine scanner for the price. Company: Nikon (800/526-4566, www.nikonusa.com). List price: \$1,899.

#### REAL PRODUCTS REAL RATINGS

**Reviews you can trust** Macworld rates only final shipping products, not prototypes. What we review is what you can actually buy.

**LIVE!  
ON THE WEB**  
Video and Audio  
broadcast on  
[www.macworld.com](http://www.macworld.com)

# We're Back!

Macintosh Business Unit at **Microsoft®** proudly presents

# Macworld



## NEW YORK

hosted by Rik Myslewski

### We've Got the Best of the Show Covered!

Brought to you by



**Macworld** **MacBuy.com** **MacCentral.com** **MacWEEK.com** **iMacworld**

Check it all out at **Macworld Expo/New York**  
**Javits Center, Booth 531** or at  
[www.macworld.com](http://www.macworld.com)

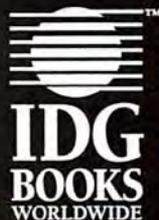
**M**acworld Live is a radio-themed Web and telecast—produced by the editors of **Macworld** magazine, **MacBuy.com**, **MacWEEK.com**, **iMacworld** and **MacCentral** in conjunction with the crews of **ZDTV** and **ZDNet News** during Macworld Expo/New York '99. The editors report “live” from the show floor with continuous coverage over the three days of the show at the Mac Publishing booth. If you didn't make it to the show, you can dial in from cyberspace at [www.macworld.com](http://www.macworld.com) to see and hear all of the special programming and features including...

## News and Analysis

- **Keynote Analysis**—Expert analysts tell you the REAL meaning of Jobs' keynote
- **Apple Surprise**—Find out about the latest products unveiled at the show
- **Ask the Experts**—Stump our panel of experts and win a prize!
- **Finance Track**—Make dollars and sense out of today's complicated markets and investing opportunities!
- **Headline News**—MacCentral & MacWeek.com report on the hottest breaking news at the show and what it means for you!
- **Mac OS**—Is version 8.6 the king? Find out here!
- **Macworld's Gaming Round-up**—The best games aren't just on PCs
- **Macworld “Best of Show” winners**—Our editors determine the best of the best
- **Product Demos**—Editors objectively analyze the latest Mac products
- **Online Buying Track**—Macworld editors tell you the quickest, easiest and most inexpensive places to buy online

## Guest Interviews

Hear the inside scoop from top executives of Apple, Microsoft and industry insiders! Learn software secrets and hardware tips from Macworld Labs and award-winning developers. Listen in as we answer questions from the studio live audience & the Web!

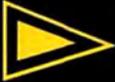


**Discover Insider Secrets With  
IDG BOOKS WORLDWIDE'S**

**Expert Authors!** Talks by David Pogue, Joseph Schorr,  
Bob LeVitus and more!

## Enter to Win **FREE Prizes!**

If you couldn't make it to the Expo in New York we've got all of the best Macworld Live programming archived for you at [www.macworld.com/expo/](http://www.macworld.com/expo/). Listen to and view any of the important moments you may have missed! Then enter to win great Macworld prizes in our post-expo sweepstakes! The sweepstakes begin on July 25th and end on August 13th; winners will be selected at random daily, (one winner per day). You could be a lucky winner!

Explore 

From in-depth character profiles to cinematic secrets, this is the CD-ROM that unearths what it takes to build a universe.

## STAR WARS EPISODE I INSIDER'S GUIDE



[www.lucasarts.com](http://www.lucasarts.com) ♦ [www.starwars.com](http://www.starwars.com)

© Lucasfilm Ltd. & TM all rights reserved. Used under authorization.

RATING PENDING  
**RP**  
PARENTS STRONGLY CAUTIONED



# Secrets

## Files without Borders

SECRETS OF THE MAC'S BUILT-IN FILE-CONVERSION TOOLS

by Joseph Schorr

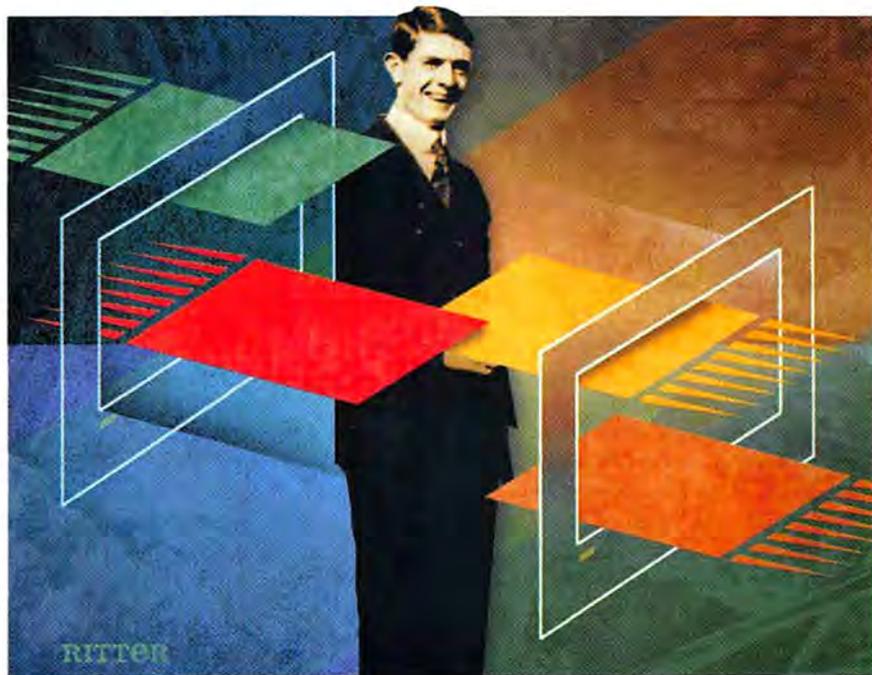
There are two computers on my desk—one Macintosh and one PC—and lately they've been getting along quite well. Part of the reason is that exchanging files has gotten easier with Mac OS 8.5's File Exchange 3.0 control panel. File Exchange has two basic functions—opening a PC file based on the extension used in the file's name (such as .txt or .doc) and determining which program can open a document when the application that created it can't be found.

However, both parts of File Exchange can be used to do much more than open and convert files. Here's how to tap into other aspects of File Exchange's file-handling smarts.

### Streamline the Creation of PDFs

You may think of File Exchange as a tool strictly for crossing from PC to Mac or vice versa, but its ability to link specific document types to specific applications can pay off in other ways—even if you never touch a single PC disk.

One useful trick, for example, is to turn PostScript files into PDFs simply by double-clicking on them. To configure File Exchange for this trick, follow these steps: In the File Translation panel of File Exchange, click on the Add button to open the Add Translation Preference dialog box. Select a PostScript file in the dialog box, and then click on Continue. From the list of applications available to open the file, choose Acrobat Distiller,



and click on OK. (You may have to turn off the Show Recommended Choices Only check box to make Distiller appear as a choice in the window.) You'll end up with a translation-preference listing like the one shown in "Click to Distill." Now when you double-click on a PostScript file, your Mac will launch Distiller and process the file, no questions asked.

### You Choose the Application

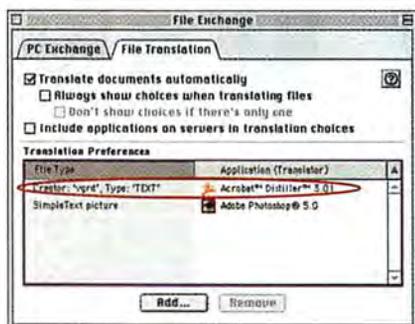
With the help of the PC Exchange window in File Exchange, you can even control which program will open a given file—simply by changing the file's name.

That's because PC Exchange chooses the program it will use to open up a PC file based on the DOS-style extension tacked on the end of the file's name: double-click on a .doc file, and Microsoft Word is launched; double-click on a .xls file, and you get Excel; and so on. Change a file's name to include a different extension, and PC Exchange will fire up a different application to launch it.

Imagine you have three text files imported from a PC. All three files bear the .txt extension, but one of them is a document created in a word processor, *continues*

one is a tab-delimited text file exported from a database, and the third is financial data exported from a spreadsheet.

By default, double-clicking will open all three as SimpleText files—readable but not terribly useful. With a few keystrokes, though, you can have each file open in a more appropriate application.



Click to Distill This translation preference in File Exchange causes PostScript files to automatically open in Acrobat Distiller, allowing you to turn them into PDF files simply by double-clicking on them.

Add a .fm3 to the name of the second file, for example, and double-clicking on it will launch FileMaker Pro, putting the data into a new database. Change the end of the third file's name to .xls, and the spreadsheet data will open in Excel.

Alternatively, you can choose which program you want to use to open a specific file by turning off the second check box in the PC Exchange window—the one that says Open Unmapped Files On Any Disk Using Mappings Below. With that option turned off, when you double-click on a Windows file, you'll see all the available applications that can open the file. Just pick the one you want to use from the list.

### Control Numerous Files

The previous secret is useful if you have a handful of individual files that need converting, but what if you have dozens—or even hundreds—of files you need to open with a specific program? Instead of adding the correct extension to each file's name, you can create a global translation preference in File Exchange that teaches your Mac to open the files in whatever application you want, regardless of how the files are named.

For example, you could configure File Exchange so that multiple HTML files created on a PC would open directly in a Web authoring program, such as Adobe GoLive. To do this, go to File Exchange's File Translation panel and click on Add. Select one of the PC HTML files (you can just drag one from the Finder straight into the Add Translation Preference window to select it), and click on Continue. From the list of applications available to open the file, choose GoLive, and click on OK. The translation preference will now cause the PC files to open in GoLive (see "Program of Preference").

After you're done editing all those pages, you can change the translation preference again, deleting the GoLive preference and replacing it with a mapping that links the HTML files to, say, Internet Explorer. Now, clicking on the same

Just about everyone knows that a .doc file is a Microsoft Word document. But what exactly is a .pot file or a .ram document? If you mix with the Windows world with some frequency, you'll probably encounter such files and want to know what they are.

In such cases, you can use File Exchange as a miniglossary that serves as a guide to the world of PC extension names. By default, the control panel lists more than 200 different extensions (along with the names of the applications needed to read them). To find out which application belongs to a particular extension, just click on File Exchange's PC Exchange tab and type the first letter or two of the extension to jump straight down to the appropriate entry in the list. Moments later you'll find out that a .pot file is a PowerPoint template and that those .ram files your friends sent you are Real Player documents.

You can do reverse lookups, too. Need to know what the three-letter PC extension is for a Microsoft Excel template? Click on the Application header in the PC Exchange list, and type the first few letters of the word *Microsoft* to see all the extension entries for Excel—including .xlt for Excel templates.

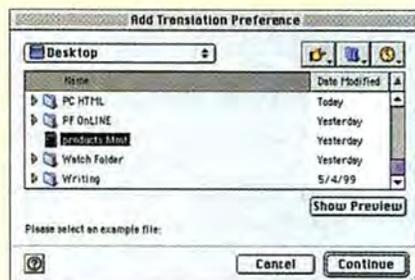
HTML files will make them open not in GoLive but in Internet Explorer.

Even with these tips, you're still likely to encounter the odd file that takes a little more effort to open, but with File Exchange properly configured, most of the journeys your files take from Windows to the Mac OS should involve little more than a simple double-click. ■

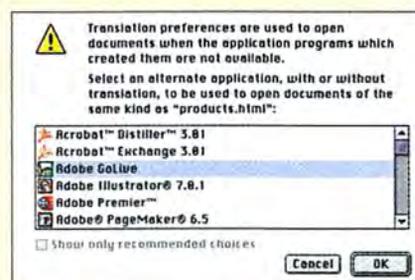
JOSEPH SCHORR is a coauthor of *Macworld Mac Secrets*, fifth edition (IDG Books Worldwide, 1998).

## Program of Preference

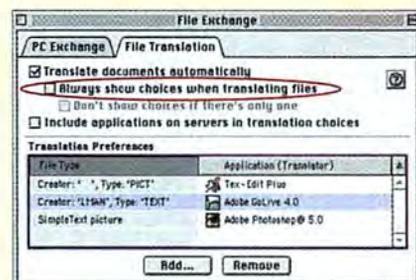
Teach File Exchange which program should open which document, by creating new translation preferences.



To set up a new preference, open File Exchange and click on the Add button (not shown). Then, target the file type you want to open—in this case, PC HTML files.



Next, click on Continue and pick the program you want to use to open the file.



The new preference will automatically open the files in the program you chose, without prompting, as long as the second check box (Always Show Choices When Translating Files) is left unchecked.

Simply fun

Simply creative

Simply educational

Simply great for business



Simply **Macworld**  
**EXPO**

The Face of Things to Come

**MACWORLD Expo/San Francisco**

Conference: January 4-8, 2000

Exhibits: January 5-8, 2000

[www.macworldexpo.com](http://www.macworldexpo.com)

800-645-EXPO

Sponsored by:  
**Macworld**  
**MacWEEK.com**  
**MacBuy.com**

Managed by:  
**IDG**  
RESEARCH MANAGEMENT  
COMPANY

Yes! Please send me more information on  
**MACWORLD Expo/San Francisco!**

MC1

I'm interested in:

Attending  Exhibiting

Name \_\_\_\_\_

Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City/State/Zip \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_

Email \_\_\_\_\_

(if you would like to receive information via email about MACWORLD Exp

Mail to: MACWORLD Expo, 1400 Providence Highway,  
PO Box 9127, Norwood, MA 02062. Or Fax to: 781.440.0357

**THIS IS NOT A REGISTRATION FORM.**

THE LEADING CONFERENCE AND EXPOSITION FOR:

GRAPHIC DESIGNERS | WEB PRODUCERS  
PUBLISHING PROFESSIONALS | PRINTERS/PREPRESS

SEYBOLD SF  
SEMINARS

21ST CENTURY PUBLISHING

# Create Out of the Ordinary



## IT'S POSSIBLE—WITH THE RIGHT TECHNOLOGIES.

Seybold San Francisco is more than just the leading print and Web publishing conference and exposition. It's the meeting place for people who communicate for a living. It's where they get the information, education and analysis to improve their skills and make smarter technology investments...where serious Web, print and prepress professionals gather to solve today's most critical challenges and outline the future...where creative and production join forces to streamline and enhance total workflow. Whether you create for print or the Web, Seybold San Francisco will expand how you think and work. You'll learn what bold new ideas are directing the industry and which revolutionary new technologies will work best for you. Come to Seybold San Francisco and your work will never look or feel the same again. For your free exposition pass and an advance program guide, contact us today.

[WWW.SEYBOLDSEMINARS.COM](http://WWW.SEYBOLDSEMINARS.COM)

1.888.886.8895 | 1.781.433.1665

CONFERENCE: August 30–September 3, 1999

EXPOSITION: August 31–September 2, 1999

Moscone Center, San Francisco, CA

## Tips, Tricks, and Shortcuts

by Lon Poole

Love your iMac or blue-and-white G3, but hate its %\$#@! round mouse? Frank Sauer of Reston, Virginia, found a simple way to improve its ergonomics. Buy a tube of Testor's cement for plastic models (number 3501). Put four or five tiny beads of glue on the mouse's equator at the colored-plastic parts, using a toothpick or a straightened paper clip to control bead size. Wait about two hours for the glue to dry. Presto—you now have tactile reassurance that you've grasped the mouse properly and it's pointing in the right direction. The principle is the same as the small guide beads on the surface of the F and J (or D and K) keys on your keyboard: to let you orient your fingers without looking.

If you don't have one of the newer round mice with the dimpled button, try what Troy Danielsen of Wellsville, Utah, recommends: place a single touch-reference dot of ordinary white glue on the mouse button. When dry, the glue becomes translucent, letting the color of the mouse plastic show through.

### Transfer Files to Your iMac

**Q.** I'm considering buying an iMac, but how will I transfer all the info from my Performa 6290 (which has only serial, ADB, and SCSI ports) to an iMac (which has only USB)?

SEAN HARRIS  
Columbus, Ohio

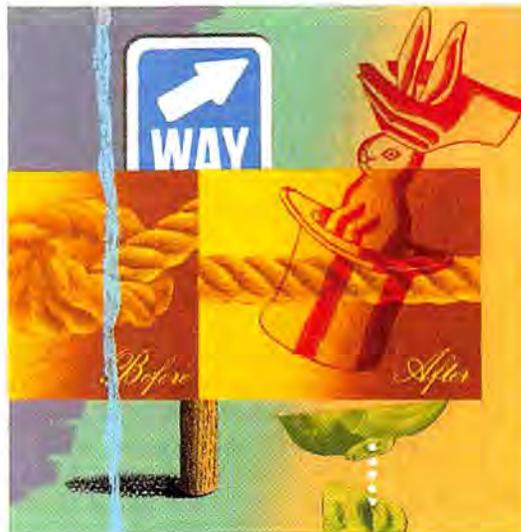
**A.** The simplest solution is to buy a Zip drive for each computer, download your files to a Zip disk, and then transfer them. The cheapest solution is to transfer files via the Internet. For example, you can get 25MB of space for just this purpose at [www.freemacspace.com](http://www.freemacspace.com). Caveat: If you have a modem con-

nection to the Internet, consider the hours you'll spend uploading each 25MB from your old Mac and then downloading that 25MB to the iMac.

The most expeditious solution is to connect the two computers via Ethernet (as described in December 1998's *Quick Tips*) and use the Mac OS file-sharing feature to transfer files. Since your old Mac apparently does not have the optional Ethernet port, you must either add one, or attach a LocalTalk connector to the 6290's serial port and bridge

Online, the latest Global Village software, and so on, and put the old modem script named Platinum V Modem Definition in the Modem Scripts folder in the Extensions folder, where it belongs. Now I can connect to AOL, use a little app called Set Clock, and send and receive faxes, but I can't connect via an AppleWorks communications document. The modem dials correctly but can't make a final connection; after the usual squawking sound, it emits a continuous high-pitched tone. I'm stumped.

JIM SCHWALM  
Rockford, Illinois



LocalTalk to Ethernet with a device such as Asanté's AsantéTalk or Farallon's EtherMac iPrint Adapter LT (as illustrated in January 1999's *Quick Tips*).

### Connect Through AppleWorks

**Q.** My Performa 6300CD's internal Global Village TelePort Platinum V modem worked fine until I cleaned up my hard drive. I did a clean installation of Mac OS 8.5.1, AppleWorks 5.0.3, America

**A.** AppleWorks (a.k.a. ClarisWorks) does not use items in the Modem Scripts folder. It uses another item in the Extensions folder called the Apple Modem Tool, which is initially configured for a generic Hayes-compatible modem. You can change the configuration using AppleWorks and your old Platinum V Modem Definition file or a newer modem-definition file (look in Global Village Software: Scripts: GV Modem Defs. for AMT 1.5).

Open your AppleWorks communications document and choose Connection from the Settings menu. In the Connection Setting dialog box that appears, make sure that you have the Method pop-up menu set to Apple Modem Tool, and then choose Modify This Menu from the Modem pop-up menu. In the next dialog box, click the Import button, and then in the following dialog box, select your modem-definition file. Click Open and then Done to get back to the main Connection Setting dialog box, where the Modem pop-up menu now lists the

*continues*



### The Best Tools for Every Job!

The **ACTION Utilities** Toolchest includes:

- ACTION Files** - Automatic file access and organization
- ACTION GoMac** - The Macintosh Task Bar™ and Start Menu
- ACTION WYSIWYG** - Multi-column view of actual typefaces and font families right in your application
- ACTION Menus** - Customize and create new menus organized any way you want!

Incredible savings in one powerful bundle. Guaranteed to make you more productive or your money back!



Phone: 800-344-9160 or 612-317-0344  
 Fax: 612-317-0345  
 email: sales@poweronsoftware.com  
 http://www.poweronsoftware.com

Choose 45 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

additional modem definitions. Choose the one that's right for your modem (Global Village tech support should be able to help you determine which one), select the port to which you have your modem connected, and click OK.

### Simulate Missing Keys

**TIP** Do you find yourself missing the end and forward-delete keys on your iMac, blue G3, or older PowerBook keyboard? Here's how to simulate them, using Chris Cummer's \$5 shareware ASCII Shall Receive in conjunction with any commercial or shareware program that lets you assign typed text to a keystroke or function key, such as Connectix's \$60 Speed Doubler 8 ([www.connectix.com](http://www.connectix.com)).

Open ASCII Shall Receive, and choose ASCII from the pop-up menu and then List All from the File menu. Scroll to ASCII character 4; this is the character for the end key. Select this line and control-drag it to the desktop to create a clipping file containing just the character. Open the clipping file and choose Copy from the Edit menu. Open SpeedDoubler 8, select the box that receives the typed text, and choose Paste from the Edit menu. Then specify the keystroke you want to simulate the end key (I used control-page down) and click OK.

Repeat this process for forward-delete by copying ASCII character 127, pasting it into SpeedDoubler 8, and assigning a different keystroke. I assigned F12 to trigger forward-delete, since it's right above the delete key, but control-delete would be another good choice.

MIKE MCKAY  
 Youngstown, Ohio

*Other keys you may want to simulate on an older PowerBook keyboard: home is ASCII 1, page up is ASCII 11, and page down is ASCII 12.—L.P.*

### Eliminate Web Image Gaps

**TIP** When creating a Web page, you can use HTML styles to position two images without a separation. However, HTML styles are complicated and work only in Netscape Navigator and Microsoft Internet Explorer versions 4.X and later. Instead, keep images together

with the `<noabr>` (no break) HTML tag, which older browsers support as well. The `<noabr>` opening tag has a matching `</noabr>` closing tag. Here's an example:

```
<noabr>

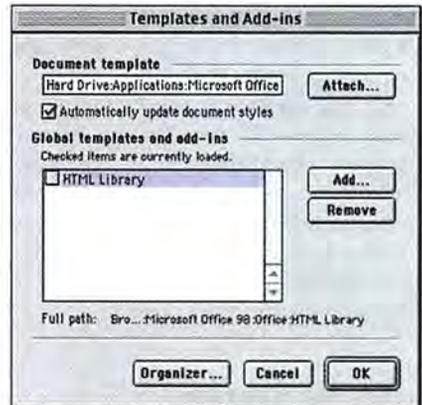
</noabr>
```

You can put text and tables as well as images between `<noabr>` and `</noabr>`, and you can designate discretionary breaks with `<wbr>` tags. But take care not to leave any stray spaces between images or other elements that `<noabr>` and `</noabr>` enclose.

ADOLFO QUEVEDO  
 Miami, Florida

### Fix Word's Format Update

**TIP** Microsoft Word 98 has an annoying bug that crops up in documents using an attached template other than Normal. If you selected the Automatically Update Document Styles option when you attached the template via the Templates And Add-ins dialog box, you may find that after you use the



**Repair Word's Format Bug** If you're using the format painter in an attached template other than Normal in Microsoft Word 98, you can restore formatting lost in "unpainted" paragraphs by fiddling with the Automatically Update Document Styles option, shown here.

format painter, some "unpainted" paragraphs lose the attributes of their assigned styles. If this happens, don't panic—you can restore the style formatting to all affected paragraphs by resetting the option. To do this, choose Templates And Add-ins from the Tools menu. In the dialog box that appears, turn off the Automatically Update Document

*continues*

# Publish 9 CONFERENCES 9

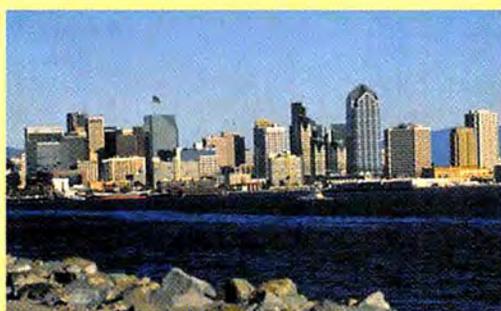
TM

*Publish Magazine* Presents

The Second Annual Conference on Mixed-Platform Publishing

## Mastering Digital Workflows

Asset Management, PDF and Networks  
in a Mixed-Platform Environment



Coronado Island Marriott Resort  
San Diego, California  
November 3-5, 1999



### PROGRAM TOPICS *(subject to change)*

- Choosing an Asset-Management System
- Building an Asset-Management System
- Cross-Media Asset Management
- Mixed-Platform Management
- Achieving Predictable Color
- PDF Workflows
- PDF Technology
- Network Servers

*"This conference will certainly help our company make the decisions that will help us to improve our product."*

*Carl Mirsky, Network Administrator, Allured Publishing,  
1998 conference attendee*



# Publish

To register, call 888-887-3679 or 650-286-2799.

FOR ADDITIONAL INFORMATION, GO TO

# [www.publish.com/conferences99](http://www.publish.com/conferences99)

Publish Conferences is a trademark of International Data Group, Inc.

put our



to work for

you

1. Let the Macworld Lab help you make the right purchase decisions. Whether you depend on the stamp of approval of an Editors'



Choice award, a five-mice rating, or the authoritative test data presented in our benchmark charts — you can put our lab to work for you.

Something obvious happens when a publication is backed by the most experienced, capable and thorough product testing in the Macintosh industry — more serious Mac buyers rely on it to make smart purchase decisions.

**Macworld**

**Macworld**  
LAB TEST

**Macworld**  
★★★★

Styles option and click OK (see “Repair Word’s Format Bug”). Immediately repeat the same steps, this time turning the option back on, and click OK. This should restore your paragraph’s original style formatting.

WILL PEARCE  
Raleigh, North Carolina

You might also try the Reset Character Formatting command ( $\text{⌘}$ -shift-Z) and Reset Paragraph ( $\text{⌘}$ -option-Q). You don’t normally see these commands on any menu, although you can add them to a menu or a tool bar using the Customize command in Word’s Tools menu.—L.P.

### Adjust Sound-Effects Volume

**TIP** If you have sound effects turned on in the Appearance control panel of Mac OS 8.5 or later and want to change their volume independent of other sounds on your Mac, adjust System Alert Volume in the Alerts section of the Monitors & Sound control panel rather than Computer System Volume in the Sound section.

DANIEL VANWIE  
Whittier, California

### Count Words in Excel

**TIP** Here is a simple approach to counting the number of words in a cell (here, cell F9) of a Microsoft Excel worksheet:

$\text{=LEN(} \text{TRIM(F9))} - \text{LEN(SUBSTITUTE(TRIM(F9), " ", ""))} + 1$

An interesting extension of this formula counts the number of words in a range (here, F9:F16):

$\text{=} \text{SUM(} \text{LEN(} \text{TRIM(F9:F16))} - \text{LEN(SUBSTITUTE(TRIM(F9:F16), " ", ""))} + 1)$

This is an array formula, so don’t type the outer curly brackets; instead, press  $\text{⌘}$ -return when you create or edit the formula, and Excel adds them.

SHANE DEVENSHIRE  
Walnut Creek, California

### Quickly Edit Icon Names

**TIP** If you want to edit an icon name, you don’t have to wait several seconds for the text to turn highlighted after you’ve clicked the icon name in the Finder. Instead, just click the

icon and immediately press enter or return to highlight the name.

RICH GLASS  
Brooklyn Park, Minnesota

*In order to set the insertion point at the beginning or end of the name, just perform the actions mentioned above, and then immediately press one of the arrow keys. In order to select a whole name quickly with the mouse alone, simply click the name and as soon as you release the mouse button move the mouse slightly.—L.P.*

### Connect Invisibly

If your Mac has the Control Strip, you needn't launch the Remote Access or PPP control panel to avoid the modal dialog box that blocks other work while connecting or disconnecting a dial-up Internet connection (as suggested in July 1999's *Quick Tips*).

James A. Baker of Murfreesboro, Tennessee, was the first of several readers to point out that the Remote Access module, which is standard on the Control Strip in Mac OS 8.5 and later, has Connect and Disconnect commands that work invisibly. If you use Mac OS 8.1 or earlier, Catherine Hummel of Hollywood, Maryland, suggests that you install OTPPP Strip, a free Control Strip module by Simeon Leifer (<http://u1.netgate.net/~simeon/software.html>); no waiting, no window!

If your Mac doesn't have the Control Strip, you can install it by doing a custom installation of Mac OS 7.6 through 8.1.

---

LON POOLE answers readers' questions and selects reader-submitted tips for this monthly column. His latest book is *Macworld Mac OS 8.5 Bible* (IDG Books Worldwide, 1999).

---

All shareware and freeware mentioned in *Quick Tips* is available from the Macworld Online software library ([www.macdownload.com](http://www.macdownload.com)).

We pay \$25 to \$100 for tips selected for publication that discuss how to use Macs, peripherals, or software. Please include your full name and address so that we can send you your payment. Send questions or tips to [quicktips@macworld.com](mailto:quicktips@macworld.com) or to Macworld Quick Tips, 301 Howard St., 16th Fl., San Francisco, CA 94105. All published submissions become the sole property of *Macworld*. Due to the high volume of mail received, we cannot provide personal responses. **m**

## WHEN YOU NEED A SUPERHERO



© The Creative Group. EOE

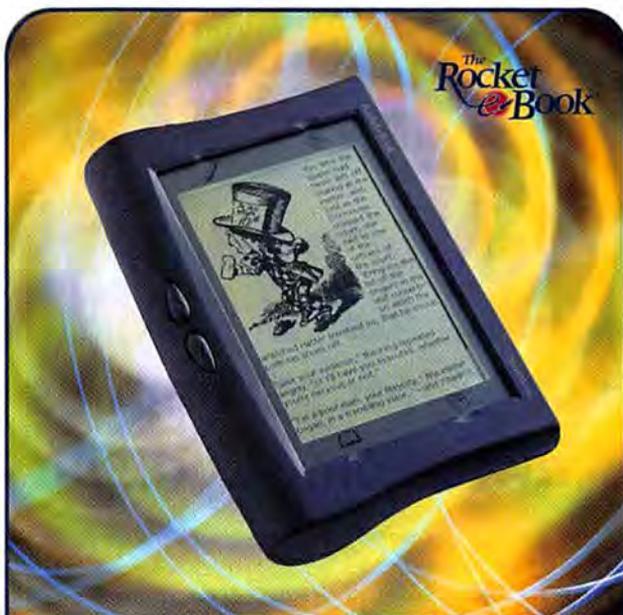
Count on The Creative Group. We specialize in creative, web, marketing and advertising staffing.

- art directors
- copywriters
- graphic designers
- web designers
- account/marketing managers
- and more

888.846.1668  
[creativegroup.com](http://creativegroup.com)

t g THE CREATIVE GROUP  
MARKETING & ADVERTISING PROFESSIONALS

Atlanta • Boston • Chicago • Dallas • Detroit • Houston • Los Angeles  
Minneapolis • New York • Paramus • Philadelphia • San Francisco • Seattle  
Stamford • Washington, D.C.



## A Rocket for your Mac

The world's first electronic book now works with your Mac.

Come see the Rocket eBook in the consumer showcase pavilion at MacWorld. Booth # 1937

[www.Rocket-eBook.com/Mac](http://www.Rocket-eBook.com/Mac)

for a special MacWorld price until September 1, 1999



# 2D or not 2D?

Turn your flat 2D images into  
awesome 3D results in minutes.



**I**ntroducing *Canoma™ 1.0*.  
The software that lets  
you quickly create  
photo-realistic 3D models  
from any digital image.

**FLEXIBLE & POWERFUL—**  
Create a 3D model right  
on top of your image

with wireframe primitives that you "pushpin"  
to your background image. Canoma generates  
a 3D model that you can rotate, walk through,  
or animate.

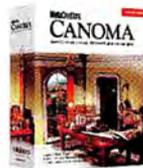
#### INTEGRATE YOUR EXISTING WORKFLOW—

Retouch textures, add text, and apply filters in  
your favorite image editor. Then export to other  
applications like *MetaCreations Ray Dream Studio™*,  
*Poser® 3*, and *Bryce® 4*, or *3D Studio Max®*,  
*trueSpace* and more.

**WEB READY—**Export to *VRML2*, or *Quicktime®*  
movies for playback on the web. Or, better yet,  
generate 3D models as a *MetaStream™* file, the  
ultra-compact 3D streaming file standard that  
plays in real time on your browser.

Let *Canoma* take your images to a new dimension.

Choose 5 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)



**MetaCreations.**  
The Creative Web Company

## CANOMA

Check out Canoma on the Web at  
[www.metacreations.com/canoma](http://www.metacreations.com/canoma)  
or call us today at 800-846-0111

## Avoid Photoshop's Color Calamities

HOW TO NAVIGATE AROUND PHOTOSHOP'S RGB COLOR-SPACE PITFALLS

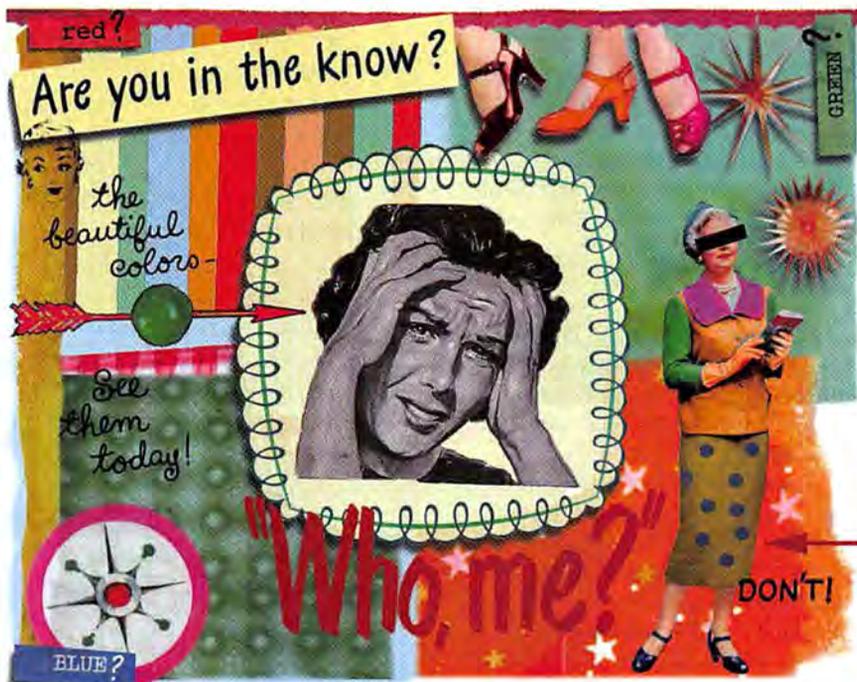
by Bruce Fraser

Desktop color-management technologies give designers the possibilities of superior color control—but also some serious headaches. A prime example is one of the more controversial color-management features of Adobe's Photoshop 5: the adoption of RGB color-space definitions that are not based only on your monitor. This was a great leap forward for color on the desktop (see the sidebar, "Why Use RGB Color Spaces?"), but created problems with most scanner-driver software on the market. As a result, the image you see in your scanner software often looks different when it arrives in Photoshop. So how can you reconcile the two, end up with an image that has the colors you want, and make sure they stay that way?

### A Troubling Mismatch

Most scanner software does not yet take advantage of Apple's ColorSync color-management technology, and simply sends your image's RGB values directly to your monitor. (If you're fairly new to color management or you aren't sure how ColorSync works, check out Apple's ColorSync Web site at [www.colorsinc.com](http://www.colorsinc.com).) Photoshop 5, however, interprets these RGB values according to the settings you've made in the RGB Setup dialog box and uses your ColorSync System Profile to transform the values that get sent to your monitor (see the screen shot "Your Monitor's Profile"). This disagreement between Photoshop and your scanner software creates color havoc—how can you tell what your image will *really* look like?

You have a number of options for avoiding the color-fidelity problems that arise when you're scanning into Photoshop 5. For one, you can just



hobble Photoshop 5 by using your monitor RGB as Photoshop's RGB workspace, but this isn't a great idea (see "Workaround 1: Downgrade Photoshop 5," below)—plus it defeats part of the purpose of upgrading to Photoshop 5 in the first place.

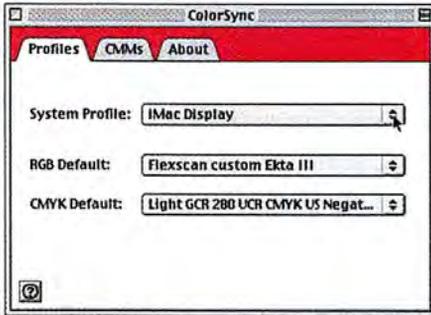
Other options let you reap the benefits of Photoshop 5's advances but involve a little more effort with your scanner software. For example, sometimes your best bet may be to do the bulk of your editing in the scanner software (see "Workaround 2: Correct the Prescan Image," below). Most scanners can capture more than 8 bits per channel but are limited to 8 bits on output. You can obtain significantly better quality by making as many of your large edits as possible in the scanner software, where

you'll have more data and more detail to work with, rather than editing the reduced data in Photoshop.

When you edit the high-bit data in your scanner software, you still end up with a full 256 levels per channel in the final 24-bit image. But when you edit this image in Photoshop, you immediately start to lose some of the possible levels in each channel (see the screen shot "Image Quality Control"). For example, when you make tone or color corrections on a 24-bit image, some levels that were formerly adjacent get stretched apart. If they get stretched too far apart, you start to see obvious jumps of color instead of smooth gradations—a phenomenon called *posterization*. Similarly, some levels that were formerly

*continues*

apart get squashed together, resulting in loss of detail. So there's a significant advantage to editing the high-bit data in the scanner software instead. But then again, if the scanner soft-



**Your Monitor's Profile** To use a custom monitor profile on your Mac, you must load it in the ColorSync control panel as the System Profile. (Currently, only AppleScript uses the RGB Default and CMYK Default settings, so if you aren't scripting ColorSync conversions, you can ignore them.)

ware displays the image differently than Photoshop, you may wind up with an image that looks beautiful in the prescan display but awful in Photoshop.

If your scanner has a color profile, you can use that to convert the color values to those in Photoshop's RGB profile (see "Workaround 3: Convert from Your Scanner Profile," below). But some scanner drivers insist on making automatic corrections and don't let you turn this feature off—in this case it's impossible to create a ColorSync profile for the scanner. To profile a scanner (or any other device), you must be able to keep it in a consistent state; automatic corrections mean that the scanner scans each image differently.

Even better is when your scanner driver allows you to scan to an output profile (see "Workaround 4: Choose Your Output Profile," below). Heidelberg CPS's LinoColor, Imacon's ColorFlex 1.8, LaserSoft's SilverFast, Nikon's scanner software, and Second Glance's ScanTastic all let you do this, and other scanner-software makers are likely to follow suit in future.

The best option of all may be to bring a high-bit image into Photoshop if your scanner software can save high-bit scans (a growing num-

## Why Use RGB Color Spaces?

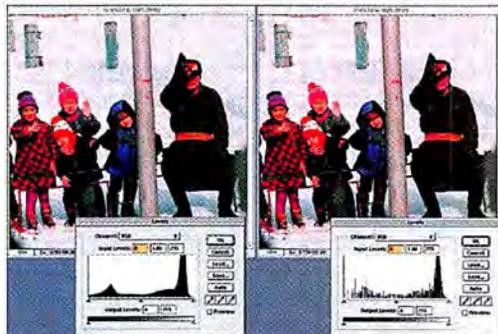
APPLICATIONS WITHOUT COLOR-MANAGEMENT FEATURES SIMPLY send the RGB values in your image directly to your monitor. This creates several problems.

- Since every monitor behaves differently (sometimes a *lot* differently), when you send the same RGB numbers to different monitors, the images don't look the same. Even when you calibrate monitors to the same specifications, it's rare for them to match exactly.
- Monitor color gamut—the range of colors a monitor can reproduce—is generally larger than the gamut of most output devices, including printing presses. However, it's much smaller than the gamut of film, and it also limits some of the colors you can reproduce on a press, particularly cyans, and adjacent blues and greens. If you work in monitor RGB, you limit the range of colors you can capture in your scans, as well as the range of colors you can print.
- Monitors are inherently nonlinear, and their RGB color spaces are *perceptually nonuniform*. This means the same increment of change you gain by using editing tools such as Photoshop's Levels, Curves, or Hue/Saturation may produce varying perceptual changes in different parts of an image's tonal range or color gamut. The same move may result in a barely perceptible change or in a large jump, depending on where you apply it.

Photoshop 5 lets you address all three of these issues by uncoupling the RGB color space from the monitor—it's an arbitrary color space that doesn't depend on the quirks of any particular device. For maximum editing flexibility, you can select a perceptually uniform RGB workspace with a large enough gamut to encompass your devices. Plus, you can standardize on a single RGB workspace for your workgroup and then move files around from one machine to another without worrying about color variations.

By default, Photoshop 5 automatically embeds a ColorSync profile in every image when you save it. When you move the image to another machine, Photoshop knows what actual colors the RGB values represent—or, to put it another way, the program knows what the colors are supposed to look like.

Photoshop's Display Using Monitor Compensation feature (see the screen shot "Downgrading Photoshop") uses the information stored in your ColorSync System Profile to perform a customized on-the-fly conversion of the RGB values in the image file as they're sent to your monitor. This makes it possible for the image to appear the same on everyone's monitor, as long as the ColorSync profile describes your monitor accurately.

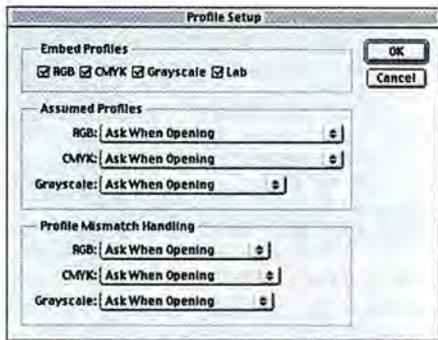


**Image Quality Control** The 16-bit-per-channel image on the right and the 8-bit-per-channel image on the left may look similar, but their histograms show a big difference. The higher-bit image contains a full 256 levels in each channel, but the 8-bit image has lots of missing levels that will cause the image quality to deteriorate under subsequent editing.

ber of scanner drivers can do this). When you save a high-bit scan, you're grabbing all the data the scanner can capture (see "Workaround 5: Import Masses of Raw Data," below). This will create a huge file, but all the image's data will be there for you to edit as needed in Photoshop.

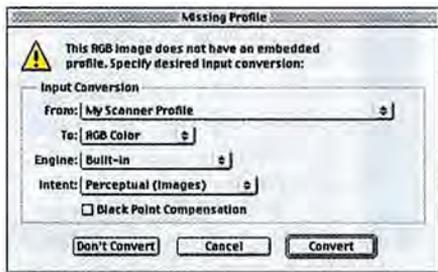
### Choosing a Lesser Evil

Depending on the capabilities of your particular scanner software, you can use one or more of the workarounds discussed below (presented from least to most desirable) to get around



**Automatic Mismatch Warning** You can make Photoshop's Profile Mismatch Handling feature let you convert an image as you open it. To do this, choose Profile Setup from the File menu's Color Settings submenu. In the Profile Setup dialog box (above), set all the Assumed Profiles settings and Profile Mismatch Handling settings to Ask When Opening.

When Photoshop's Profile Setup is configured like this, you'll see the Missing Profile dialog box (below) when you open a file that has no embedded profile. You can then convert the image into your RGB color space as it opens, instead of using Profile To Profile after the fact.



the mismatch between Photoshop's RGB and your scanner's RGB. At least one of these solutions should work for you.

Note: All the workarounds assume that your scanner driver operates as a Photoshop plug-in. If you scan to disk with a stand-alone application and you have Photoshop set up to warn you of profile mismatches (see the screen shot "Automatic Mismatch Warning"), you can use the Profile Mismatch Handling feature instead of Profile To Profile to make conversions, using the same settings mentioned in each workaround below.

### Workaround 1: Downgrade Photoshop 5

The simplest solution is to make Photoshop 5 behave like older versions of the program. I recommend using this approach only if your scanner software doesn't let you turn off automatic corrections, doesn't support high-bit

export, and doesn't support output profiles—and you can't be bothered to learn to work with the new behavior of Photoshop 5.

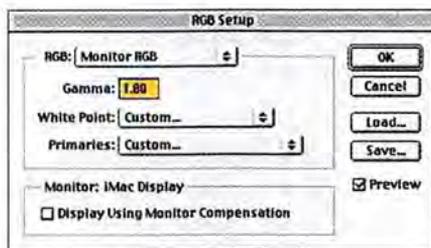
**What to Do** In Photoshop 5, choose RGB Setup from the File menu's Color Settings submenu. In the resulting dialog box, choose Monitor RGB from the RGB pop-up menu, and turn Display Using Monitor Compensation off (see the screen shot "Downgrading Photoshop").

**Pros** The problem disappears, because Photoshop now simply sends the RGB values in the file straight to the screen.

**Cons** The fairly substantial disadvantage is that you lose all the benefits of the RGB color-space approach introduced in Photoshop 5. Your color gamut is limited to what your monitor can display, and your editing space won't be *perceptually uniform* (see "Why Use RGB Color Spaces?" for a definition). Plus, if you send the files to someone else, they'll have to run the files through a conversion process to get them to display properly. And even if they are also using Monitor RGB as their color workspace, it's extremely unlikely that their monitor's color quirks will match yours.

### Workaround 2: Correct the Prescan Image

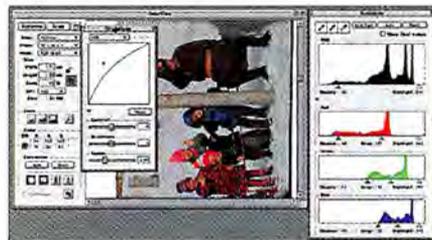
Even if your scanner software doesn't let you turn off automatic corrections, doesn't support high-bit export, and doesn't support output profiles, there's a better solution than downgrading Photoshop 5. If you correct an image based on the prescan, you can make



**Downgrading Photoshop** To make Photoshop 5 behave essentially like Photoshop 4, choose Monitor RGB from the RGB pop-up menu in the RGB Setup dialog box, and then turn Display Using Monitor Compensation off. Photoshop will then simply send raw RGB values to your monitor.

your monitor, not your scanner, the source profile for the image.

**What to Do** Scan as usual, making the image look good in the prescan (see the screen shot "Prescan Editing"). Once the image is in Photoshop, choose Profile To Profile from the Image menu's Mode submenu. In the Profile To Profile dialog box (see the screen shot "Converting Your Monitor Profile"), choose your monitor profile in the From pop-up menu. In the To pop-up menu, choose RGB Color. For the Engine pop-up menu, I generally recommend choosing Built-In, but in most cases you'll get virtually identical results no matter which engine you use. Then choose Perceptual (Images) from the Intent pop-up menu, turn Black Point Compensation off, and click on OK to perform the correction. Once it's done, the image should look the same in Photoshop as it did in your scanner driver.



**Prescan Editing** If your scanner software sends raw RGB values to the monitor, you can use that software to edit the prescan and use the monitor profile to bring the image into Photoshop's RGB workspace.

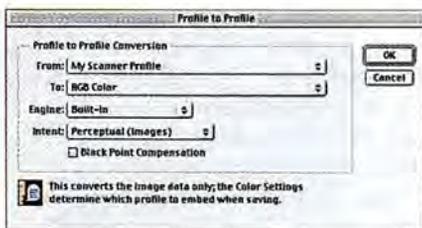
**Pros** This approach is fairly simple, lets you scan the way you're used to scanning, and allows you to take advantage of most of Photoshop's new color-handling features.

**Cons** The colors in the scan are limited to those your monitor can display. And since the conversion is performed on 24-bit data, you may lose some image quality.

### Workaround 3: Convert from Your Scanner Profile

If you have a profile for the scanner—and the scanner driver allows you to disable all automatic corrections—converting the profile is a more favorable approach.

*continues*



**Converting Your Scanner Profile** To convert an image from your scanner's RGB color space into Photoshop's RGB color space, use Photoshop's Profile To Profile command. Choose your scanner profile in the From pop-up menu, and RGB Color in the To pop-up menu.

**What to Do** Scan the image with no corrections. In Photoshop, choose Profile To Profile from the Image menu's Mode submenu. In the Profile To Profile dialog box (see the screen shot "Converting Your Scanner Profile"), choose your scanner profile in the From pop-up menu, and RGB Color in the To pop-up menu. Then choose Built-In from the Engine pop-up menu, and Perceptual (Images) from the Intent menu. Turn Black Point Compensation off and click on OK. Once the conversion is done, the resulting image should look very much like the original.

**Pros** You can preserve colors that lie outside your monitor's gamut.

**Cons** Since the conversion is performed on 24-bit data, you may lose some image quality.

#### Workaround 4: Choose Your Output Profile

If your scanner driver allows you to choose an output profile, use the Photoshop 5 RGB color space. You can create a ColorSync profile for your RGB workspace by clicking the Save button in Photoshop's RGB Setup dialog box (see the screen shot "Saving a ColorSync Profile"). To make this profile available to other applications and to your scanner software, make sure you save it in your ColorSync Profiles folder, which you can find at the root level of your System Folder.

**What to Do** Scan as usual, making global corrections in the scanner software. When the image lands in Photoshop, it will look the same as it did in the scanner software.

**Pros** You can preserve all the

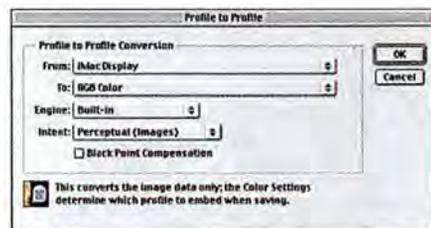
colors your scanner can capture. Plus, you'll get better image quality because the color conversion is performed on the high-bit scanner data rather than the 24-bit final image.

**Cons** You're making all your edits based on a smallish prescan image, so you can't see all the detail in the final scan. Also, your scanner software's tools are most likely not nearly as comprehensive as Photoshop's.

#### Workaround 5: Import Masses of Raw Data

If your scanner driver allows it, bring the raw high-bit scanner data—with no prescan corrections—into Photoshop as a 48-bit RGB file, and make all your corrections in Photoshop.

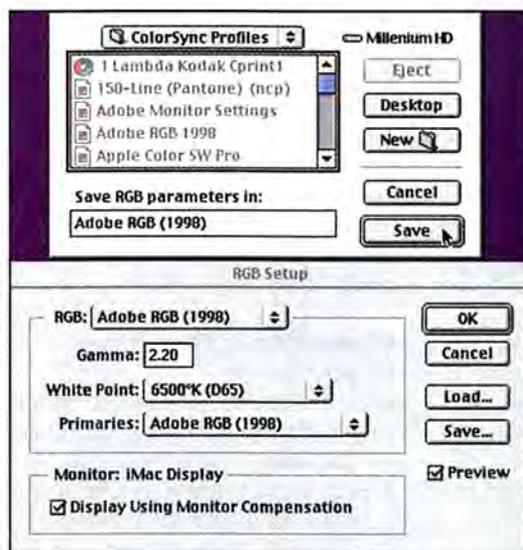
**What to Do** Set the image crop and resolution in your scanner soft-



**Converting Your Monitor Profile** You can convert your image from the Monitor RGB color space into Photoshop's RGB color space using Photoshop's Profile To Profile command. Just choose your monitor profile in the From pop-up menu, and choose RGB Color (which selects whatever color space you've chosen in the RGB Setup dialog box) in the To pop-up menu.

tion image using Photoshop's tools rather than correcting the low-resolution prescan image using the more limited tools scanner software offers.

**Cons** The file size is twice as large (at least initially) as that of a 24-bit image. Once you've done the conversions, you can downsize the image to 8 bits per channel by choosing 8 Bits/Channel from the Mode submenu on the Image menu. However, you could make a good case for archiving the high-bit file for future conversions to output devices, since you'll always get a better result doing the conversions on 48-bit data than you will on 24-bit data.



**Saving a ColorSync Profile** To create a ColorSync profile of your Photoshop workspace, first load the space you want to use in Photoshop's RGB Setup dialog box, then click Save. Save the resulting profile in the ColorSync Profiles folder so that your scanner software (and other ColorSync-savvy applications) can locate and use it.

ware, and bring in all the data you can. If you have a profile for your scanner, you can use Profile To Profile to convert the image from scanner RGB to Photoshop's RGB color space before you make any corrections. This should get the raw image closer to the appearance of the original so you'll have fewer corrections to make.

**Pros** You correct the full-resolu-

The new color architecture in Photoshop 5 may cause a few folks to do some head scratching, but this feature really does offer some major advantages over the old ways. Eventually all scanner software will integrate seamlessly with Photoshop 5, but for now, one of these methods should help you work around the mismatches. No matter which method you choose, you should get predictable color from your scanner. ■

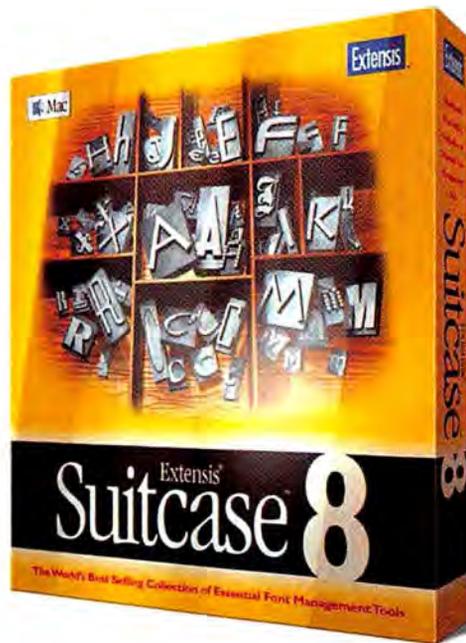
BRUCE FRASER is a self-confessed color geek and a coauthor of *Real World Photoshop 5* (Peachpit Press, 1999).

# Now Suitcase™ 8 comes with all sorts of new features

(Including the logo in the corner of this ad)

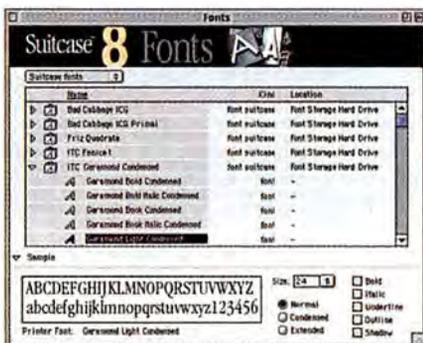


8.5  
Compatible



UPGRADE NOW  
AND SAVE BIG!  
\$39.95

We're not saying they didn't love Suitcase™. We just love it more. We've packed new Extensis Suitcase with everything you need to take control of your fonts. The font management features in Suitcase 8 make it easier than ever to locate, organize and quickly activate the fonts you need to get the job done.



**NEW** Suitcase is optimized for Mac OS System 8.5.

**NEW** Keep your System up to speed by opening only the fonts you need when you need them.

**NEW** No more "missing fonts" dialog box. Saves time creating and outputting QuarkXPress files.

**NEW** Organize, manage and display fonts in their own type styles and group fonts by families in your menus.

**ORDER NOW! EXTENSIS SUITCASE 8**  
[www.extensis.com/suitcase8](http://www.extensis.com/suitcase8)  
**ORDER YOUR COPY TODAY! 800.803.6921**



Extensis Corporation, 1.800.803.6921, 503.274.2020, Fax: 503.274.0530. Extensis Europe, The Netherlands, Phone: +31-30-24-75050, Fax: +31-30-24-12039. © 1999 Extensis Corporation. All rights reserved. Extensis and the Extensis logo are trademarks of Extensis Corporation. Suitcase is a trademark of Symantec Corporation. Menu Fonts is a trademark of Duul-Click Software, Inc. Suitcase XT developed by NRG Software, LLC. © 1999. FontAgent is a trademark of Insider Software. Macintosh and the Macintosh OS logo are trademarks of Apple Computer, Inc., used under license. Other trademarks are the property of their respective owners.

SUMWNA010399

Choose 14 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

### Fast, Filmless Photo Collages

TRANSFORM DIGITAL-CAMERA SNAPS INTO INSTANT ART

by Mike Wooldridge

Digital cameras still can't quite match film's image quality when it comes to high-end photography, but they do offer distinct advantages when it comes to the artistic process. With a digital camera, you don't have to interrupt your creative momentum by sending out film for processing. Instead, you can immediately dive into the results of photo sessions and begin creating.

San Francisco-based photographer John Lund, though schooled in traditional film-based techniques, discovered digital imaging eight years ago and has never looked back. He likes to use a digital camera so he can begin work on his photo art only moments after shooting.

For this Magritte-like photo collage, *Blinders*, Lund shot most of the elements—the train, the umbrella-toting man, and the blinders (composed of a belt and a wallet)—in his studio with a digital camera. This piece is typical of the surreal artwork he creates for his many clients, including Federal Express, IBM, Kodak, and UPS (you can view more of his art at [www.johnlund.com](http://www.johnlund.com)).

Digital artists tend to rely exclusively on Adobe Photoshop for digital-image editing, but Lund says that many artists—including him—prefer Live Picture. He finds its brush-based tools more efficient and precise than Photoshop's filters for mixing the different photographic elements in his work.

Lund shoots images in his studio using a Leaf DCB I digital camera with 2,048-by-2,048-pixel resolution. He then imports them onto a DayStar Genesis Mac clone with four 200MHz processors. In addition to Live Picture 2.5.1, he uses Photoshop 4 and 5. **m**



**Full Steam Ahead** The completed Live Picture collage included 51 layers. Lund finished by rendering the image as a TIFF file and then bringing it into Photoshop to touch up any remaining stray pixels. He also adjusted the Hue/Saturation controls in Photoshop to give the piece its sepia coloring. The resulting image is a surreal and startling juxtaposition of photo elements that required no trips to FotoMat.

MIKE WOOLDRIDGE is a freelance writer and new-media developer based in Berkeley, California.



**1** Lund started by photographing a miniature model train in his studio. After importing the digital photo into Photoshop, he duplicated the file and applied the Zoom Blur filter to create a version of the train that conveyed a sense of speed. Then in Live Picture he painted parts of the blurred version on top of the original image, so he could depict the illusion of motion while keeping some of the train's details sharp.



**2** For the smoke and steam, Lund used stock photos of an oil refinery and processing plant. He painted parts of the photos into the image in Live Picture using a large brush with very soft edges to keep the softness of the smoke and steam intact. Then he added a few more sharpen and blur effects in Live Picture to complete the background.

**3** Lund shot the image of the man with the bowler hat and umbrella in his studio with a digital camera. He brought the image into Photoshop and masked it from the background using the pen tool. Then Lund imported the image and its alpha-channel mask into the Live Picture file containing the train, smoke, and steam.



**4** Next, Lund built the blinders on the man's face by photographing a belt and a wallet separately. He photographed the belt wrapped around the model's face so it would have the right shape when added to the collage. In Live Picture, he painted strips of dark color beneath the belt sections to create subtle shadowing on the man's face, and added an extra layer of color atop the wallet to give it a more wrinkled look.



"Forget the Oscars, here come the Webbies."

- The New York Times, January 7, 1999

## Call for Entries

The International Academy of Digital Arts & Sciences™ invites you to submit your Web site for The 4th Annual Webby Awards®

[www.webbyawards.com](http://www.webbyawards.com)

Honoring the Best of The Web In 24 Categories:

Activism, Arts, Community, Commerce, Education,  
Fashion, Film, Finance, Games, Health, Humor, Living, Music,  
News, Personal Web Site, Politics & Law, Print & Zines, Radio,  
Science, Sports, Technical Achievement, TV, Travel, Weird

**Deadline: September 16, 1999**



An IDG Event

we also walk dogs



## Collaborate Long-Distance

SPAN THE MILES WITH THE RIGHT SOFTWARE AND SOME TELEWORKING TIPS

by Jim Heid

It used to be that the people who worked together on a project were located under the same roof. Today, they might not be on the same continent. The Internet has enabled workers to scatter like dandelion seeds in a gale, and it isn't unusual to find yourself working closely with someone you've never met in person.

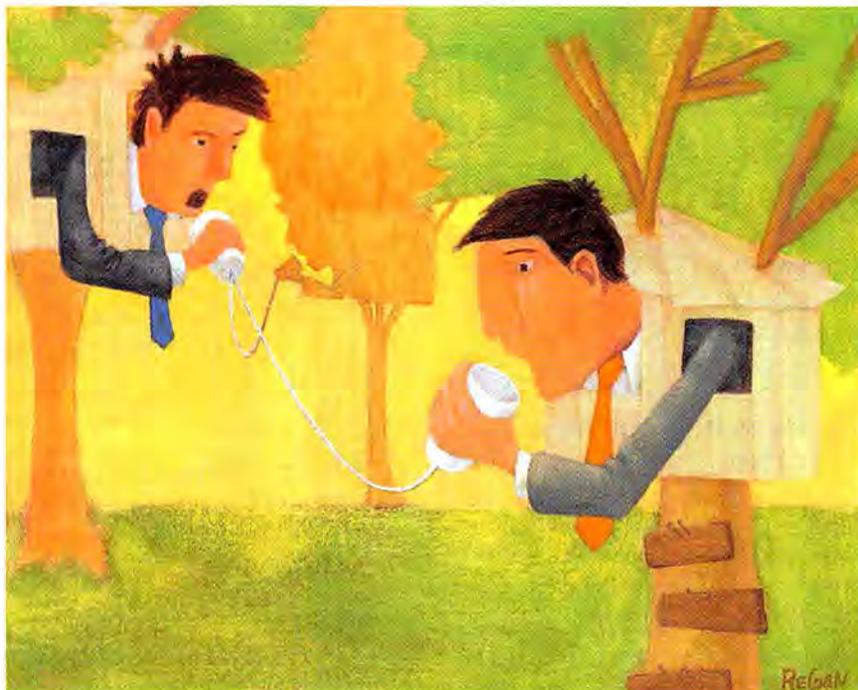
Telecommuting is wonderful, but it does introduce complications. How can you proof and comment on page designs and other documents without the delay and expense of couriers? How can you brainstorm in real time without racking up huge phone bills? How can you monitor or control a Web server that's located a thousand miles away?

Several software tools can help you address these issues. Here's a guide to stocking a remote-collaboration toolbox, and some tips for my favorite tools.

### Please Comment ASAP

They're common requests: Look over the latest brochure layout and get back to me. Approve the new logo design. Proof the annual report before tomorrow.

These chores used to mean last-minute sprints to the express mail drop-off box. Then fax machines came along and made their contributions to eyestrain and aggravation. E-mail has made it far more convenient to move documents around, and business software has



evolved accordingly—Microsoft Word and Excel, for instance, have features for adding annotations to documents. These sticky-note-like comments don't appear within a document's text, but instead show up as small icons. Double-click on an annotation's icon, and up pops a small window containing the comment.

But graphics and design programs generally don't offer annotation features. And even with Word and Excel, there's the risk that someone will make changes to a document without letting others know about it.

The answer: Adobe Acrobat 4.0. Acrobat has always been a great tool for distributing documents electronically—convert a file into Acrobat's Portable Document Format (PDF), and then send the PDF to your colleagues, who can review it and print it using the free Acro-

bat Reader software. Acrobat adeptly preserves the original document's formatting, even simulating fonts not installed on a recipient's system.

Acrobat 4.0 goes beyond these basics to pack a full array of collaboration tools (see "Acrobat Annotated"). Each member of a workgroup can attach annotations to a document and review annotations others have made. Acrobat 4.0 also enables you to mark up a document: you can, for instance, draw a strike-through bar to mark a section of text for deletion, and then attach replacement text by typing it in a pop-up window. Because reviewers are working on a PDF file and not the original, there's no worrying about changes to the original file and no fretting over whose copy is the current version.

*continues*

### WHAT YOU NEED

Adobe Acrobat

Netopia's Timbuktu Pro

Instant-messaging software, such as ICQ

Internet access

## Chat and Swap

Annotation features are noteworthy (get it?), but they don't allow for real-time remote brainstorming and collaboration. The telephone does, but can lead to a hefty long-distance phone bill.

One potential solution is instant-messaging (IM) software. Several free IM programs are available for both the Mac OS and Windows, and although they're most commonly associated with lovelorn teens, they can be powerful collaboration tools, too.

From a telecommuter's perspective, the best IM software for the Mac is the freeware ICQ ([www.icq.com](http://www.icq.com)). ICQ's interface is cluttered and cumbersome at

times, but the software has two crucial features: it supports file transfers and URL exchange.

## Remote Nirvana

ICQ does the job for occasional tele-brainstorming, but if remote collaboration is a big part of your work life, go all the way to Timbuktu. Available for both the Mac OS and Windows, Netopia's Timbuktu (510/814-5000, [www.netopia.com/software/tb2/](http://www.netopia.com/software/tb2/)) provides first-rate chat and file-exchange features and even an intercom mode that lets you chat using your vocal cords instead of your hands.

But these goodies are only side

dishes; Timbuktu's main course is remote observation and control. Outfit two or more computers with Timbuktu, and each user can watch the others' screens or even control other computers via modem, local network, or the Internet (see *Reviews*, November 1998).

You get real power by combining remote observation with Timbuktu's chat, intercom, and file-exchange features, as in the following example:

"I've got the latest layout on my screen. What do you think?"

"Change the headline font to Ransom Note Bold."

"OK. How's that?"

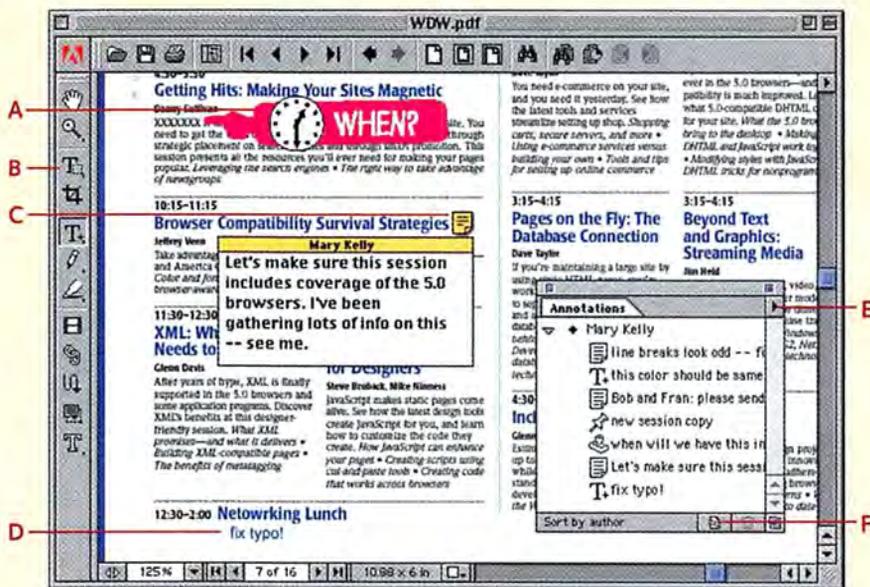
"Good. And by the way, I rescanned

# Acrobat Annotated

ACROBAT 4.0'S ANNOTATION AND MARKUP FEATURES SIMPLIFY THE PROCESS OF REVIEWING AND COMMENTING ON DOCUMENTS.

## Tips for Working with Acrobat Annotations

- To change an annotation's properties—for example, to use a different icon for notes or a different graphic for stamps—press control while clicking on it, then choose Properties from the pop-up menu.
- To make an annotation with a custom size—for example, a very large Note—don't just click. Instead, drag across the PDF until the rectangle is the desired size and then release the mouse button.
- You can import and export annotations with the File menu's Import and Export submenus. One reason to do so is to combine annotations from several people into one master file. Each user exports his or her annotations and then e-mails the file to whoever is assembling the master list. That person then imports all the annotation files into a single PDF.
- Want to see only a certain type of annotation, or view only one person's comments? Choose Filter Manager from the Tools menu's Annotations submenu, and then choose which or whose annotations you want to see.



(A) The Stamp tool is a virtual rubber stamp. Acrobat includes dozens of stamp graphics—everything from the usual Confidential and Approved to offbeat ones like Nuke This.

(B) The preset annotation tool is the Notes tool. To choose other annotation tools, point to the Notes tool and hold down the mouse button to make a pop-up menu appear, then drag to select the desired tool.

(C) The page icon denotes a Note. Double-click on the icon to view the annotation.

(D) A Text annotation appears directly on the PDF—there's no need to double-click an icon to view it.

(E) Click on the triangle to display a shortcut menu that enables you to import, export, and sort.

(F) Click this icon to scan the PDF for annotations and update the contents of the Annotations palette.

the photo. I'm sending you a revised version now."

This live collaboration is faster than annotating and e-mailing PDFs. It's almost like sitting alongside a colleague, but you can't catch his or her cold.

One of the beauties of Timbuktu is its support for multiple platforms and protocols. You can tap into other Macs on your network via AppleTalk, or you can use the Internet to tap into remote Macs or Windows machines using TCP/IP. You can even mix and match within a single chat window, connecting to local Macs via AppleTalk and remote machines via TCP/IP. (For more tips, see "Telecommuting with Timbuktu").

### It's No (Company) Picnic

Remote-collaboration tools can span the miles, but they aren't always a perfect substitute for getting together in what some call *meatspace*. A lengthy chat session can take its toll on your wrists.

Intercom features such as Timbuktu's can address these shortcomings, but voice-over-Internet technology lacks the sound quality and reliability of the telephone. Videoconferencing also holds promise; however, all but the most expensive videoconferencing tools deliver frustratingly poor quality. Until we all have Jetsons-quality videoconferencing systems, the best tools for remote collaboration are the ones I've discussed here.

And even these tools don't allow the kind of spontaneous brainstorming that can occur around watercoolers or in hallways. Telecommuting will always have some disadvantages in that regard, but the advantages often outweigh these—geographic and scheduling versatility, economy, and the flexibility to choose colleagues based on their talents rather than their locations. That's not to mention the chance to take your dog to the beach when you've finished a project. **m**

A contributor to *Macworld* since 1984, JIM HEID ([www.heidsite.com](http://www.heidsite.com)) writes and lectures about Internet and multimedia technologies and lives near a beach on California's Mendocino Coast.

## Telecommuting with Timbuktu

NETOPIA'S TIMBUKTU PRO IS A TELECOMMUTER'S DREAM, PACKING REMOTE CONTROL, FILE TRANSFER, AND CHAT INTO A SINGLE APPLICATION AVAILABLE FOR THE MAC AND WINDOWS ALIKE.

### Tips for Working with Timbuktu

- Timbuktu Pro provides two ways to send files. The Exchange window (shown at the upper right in the screen shot) provides two-way exchanges. That's convenient, but it's much slower than the Send command, which simply zaps a file from one machine to another.

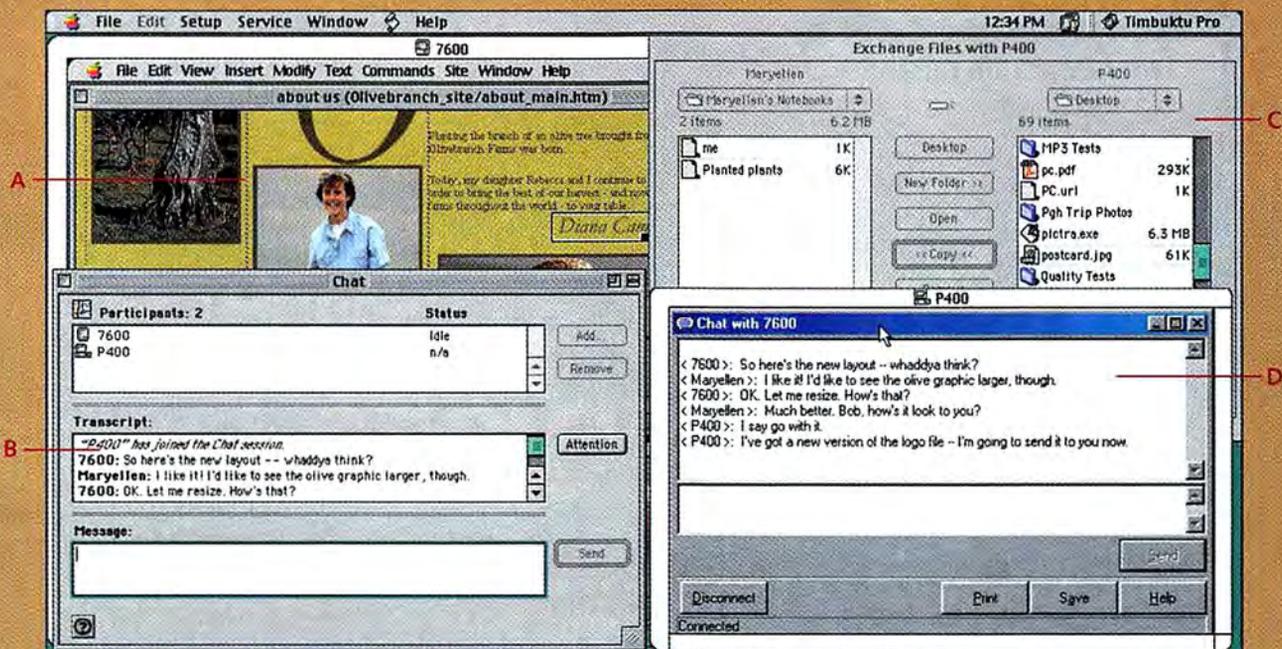
- Timbuktu Pro does a remarkable job of enabling you to remote-control a computer via a modem connection. It feels like running under water sometimes, but it works. To ensure that remote-control sessions run as fast as possible, eliminate any background images from your Mac or Windows desktops. Solid-colored backgrounds yield the best results.

(A) A distant Web designer's latest layout appears on a colleague's local Mac.

(B) Both designers are chatting with a third colleague about the layout.

(C) The file-exchange window lets you beam files between machines and platforms.

(D) No platform barriers—here a Mac controls a Windows 98 machine remotely.



**Macworld.com**

The Macintosh Authority

**MacBuy.com**

The Macintosh Buyer's Guide

**MacCentral.com**

Mac News First



**iMacworld**

Your iMac Info Center

**MacWEEK.com**

Expert Analysis of  
the Inside Story

**We've got answers  
for everyone.**

**www.macworld.com**

[www.maccentral.com](http://www.maccentral.com) [www.macweek.com](http://www.macweek.com) [www.imacworld.com](http://www.imacworld.com) [www.macbuy.com](http://www.macbuy.com)

# Macworld

## PROFESSIONAL DISCOUNT ORDER FORM

ANNUAL COVER PRICE	YOUR PROFESSIONAL ONE-YEAR RATE	BONUS STATUS
\$95.88	\$34.97	MACWORLD CLIP ART CD-ROM

As a Macintosh professional, you're entitled to a reduced rate on Macworld. Return this form now to get complete Mac OS coverage, and save up to 74% off the newsstand price. BONUS: MACWORLD CLIP ART CD-ROM -- FREE!

Check one:  1 year (12 issues) for \$34.97 — **SAVE 64%**     2 years (24 issues) for \$49.97 — **SAVE 74%**

Name \_\_\_\_\_ (Please Print)

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

E-mail \_\_\_\_\_

5SRY5

Check box if you would like to receive periodic e-mail offers from carefully screened providers of quality goods and services.

**REPLY REQUESTED**

Payment enclosed.     Bill me later.

**RETURN THIS FORM TO GUARANTEE SAVINGS.**

Annual newsstand price \$95.88. Non-U.S. orders, please add US\$20 postage; Canadian GST included. Your FREE CD-ROM will be shipped upon payment. This offer does not include monthly CD-ROMs.

Check us out on the Web —  
<http://www.macworld.com>



NO POSTAGE  
NECESSARY  
IF MAILED  
IN THE  
UNITED STATES

**BUSINESS REPLY MAIL**

FIRST-CLASS MAIL PERMIT NO. 66 BOULDER, CO

POSTAGE WILL BE PAID BY ADDRESSEE

**Macworld<sup>®</sup>**

Subscription Department  
PO Box 54506  
Boulder, CO 80323-4506



# INDEX TO ADVERTISERS

Interact with the companies whose products and services are advertised in **Macworld**

ADVERTISER	INTERACT	PAGE NO.	ADVERTISER	INTERACT	PAGE NO.
Adaptec	www.adaptec.com/mac	39	Kensington	www.kensington.com/imac BC	
Adobe Internet	www.adobe.com	31	La Cie		IFC,1
AEC Software	800/450-1982	10	LucasArts Entertainment Company LLC	www.lucasarts.com	94
Agfa Corporation	www.agfahome.com	50	Mac Zones	www.maczone.com	128-135
AIWA	www.aiwa.com/csd	16	MacMall/Creative Computers	800/222-2808	119-127
Alps Electric	800/536-0400	56	Macromedia	800/457-1774	19
ALSOFT	800/257-6381	43	MacSoft	www.gtstore.com	64
American Power Conversion	888/289-APCC ext. 8250	53	MacWarehouse	800/434-3035	136-143
Anthro	www.anthro.com	6	MegaHaus	800/786-1184	152
APS Technologies	800/285-0638	144-149	MetaCreations Corp	800/846-0111	104
Asanté Technologies		85	MicroMat	800/829-6227	26
ATI Technologies, Inc.	www.atitech.com/ad/mac	47,49,51	Microsoft	www.microsoft.com/mac	12,13
Bottom Line Distribution	800/990-5693	155	Newer Technology	www.newertech.com	IBC
Bungie Software	www.bungie.com	67	Nikon Electronic Imaging	www.nikonusa.com	21
Casady & Greene	www.casadyg.com	42,45	Orange Micro	714/ 779-2772	20,58
CDW Computer Centers, Inc.	800/509-4239	150,151	Pangea Software		63
CE Software	800/579-9452	18	Pantone	888-PANTONE	7
CNET		24,25	PowerOn	www.poweronsw.com	100
Connectix	www.connectix.com	54	ProDirect	800/524-9952	154
Dantz Development	www.dantz.com	8	Publish	888/887-3679	101
Dataviz	800/270-0030 ext. 133	41	RICOH	800/63RICOH	11
Diehl Graphsoft	www.diehlgraphsoft.com	22	Rocket eBook	www.rocket-ebook.com	103
Epson America	800/BUY EPSON	14,15	Seybold	888/886-8895	98
Extensis	www.extensis.com	109	The Creative Group	www.thecreativegroup.com	103
Formac	www.formac.com	32,33	ViewSonic	800/ 888-8583	57
GCC Technologies	www.gcctech.com	4,5	VST Technologies Inc.,	www.vsttech.com	20,44,60
Global Village	www.globalvillage.com	9	Webbies		112
Hire Knowledge	www.hireknowledge.com	61	XANTÉ Corporation	www.xante.com	46
Infowave	www.infowave.com	55	Xerox Corporation	800-ASK XEROX	59
Interland, Inc	800/599-0547	52	XLR8 by Interex	www.xlr8.com	48
J&R Computer World	800/221-8180	153			

# PRODUCT INDEX

Looking for a specific product? Simply use *Macworld's* product index to find the page or the advertiser of the products which interest you. Then simply log on at [www.macworld.com/getinfo](http://www.macworld.com/getinfo) and receive all the product information you need.

PAGE NO.      ADVERTISER      GET-INFO      PAGE NO.      ADVERTISER      GET-INFO

## ACCESSORIES

FURNITURE		
6	Anthro	—

## HARDWARE

BOARDS		
IBC	Newer Technology	55
39	Adaptec	—
48	XLR8 by Interex	59
47,49,51	ATI Technologies, Inc.	256
20,58	Orange Micro	60
32,33	Formac	—

ENTERTAINMENT		
20,58	Orange Micro	60

COMPUTER SYSTEMS		
119-127	MacMall/Creative Computers	131

DIGITIZERS/SCANNERS		
21	Nikon Electronic Imaging	59

DISPLAY		
57	ViewSonic	—

HARD DISKS/STORAGE		
16	AIWA	299
154	ProDirect	135
155	Bottom Line Distribution	221

MISCELLANEOUS		
16	AIWA	299

EXPANSIONS/UPGRADES		
48	XLR8 by Interex	59

INPUT DEVICES		
BC	Kensington	1

MISCELLANEOUS		
103	Rocket eBook	—
11	RICOH	4

MODEMS		
9	Global Village	106

NETWORKING		
85	Asanté Technologies	—

POWERBOOK		
20,44,60	VST Technologies Inc.,	73

PRINTERS		
11	RICOH	4
4,5	GCC Technologies	43
46	XANTE Corporation	112
59	Xerox Corporation	100
14,15	Epson America	—

PRINTER		
56	Alps Electric	39

Scanner		
50	Agfa Corporation	158

MISCELLANEOUS		
53	American Power Conversion	72

SECURITY		
53	American Power Conversion	72

HARD DISKS/STORAGE		
IFC,1	La Cie	—
144-149	APS Technologies	62

## MAIL ORDER

152	MegaHaus	229
153	J&R Computer World	282
154	ProDirect	135
155	Bottom Line Distribution	221
119-127	MacMall/Creative Computers	131
128-135	Mac Zones	71
136-143	MacWarehouse	150
150,151	CDW Computer Centers, Inc.	2

## SERVICES

MISCELLANEOUS		
61	Hire Knowledge	207
103	The Creative Group	—
112	Webbies	—
ON LINE		
24,25	CNET	—
TRADESHOWS/CONFERENCES		
98	Seybold	—
101	Publish Conferences 99	—

## SOFTWARE

BUSINESS		
10	AEC Software	203
12,13	Microsoft	—

CAD/CAM		
22	Diehl Graphsoft	46

COMMUNICATION		
18	CE Software	170
41	Dataviz	142

GRAPHICS/DTP		
7	Pantone	15
19	Macromedia	36
104	MetaCreations Corp	5
109	Extensis	14

MULTIMEDIA		
19	Macromedia	36

ENTERTAINMENT		
63	Pangea Software	95
64	MacSoft	29
67	Bungie Software	40
94	LucasArts Entertainment Company LLC	102

MUSIC		
45	Casady & Greene	115

ONLINE		
31	Adobe Internet	—
52	Interland, Inc	10

UTILITIES		
8	Dantz Development	26
26	MicroMat	67
42	Casady & Greene	116
43	ALSOFT	140
54	Connectix	105
55	Infowave	32

# E-mail Specials!

Register now at [macmall.com](http://macmall.com) for our weekly e-mail specials and receive a **FREE** gift!

## Get ready for something...

# Wild!

Go to [macmall.com](http://macmall.com) or call us for the hottest new products from MacWorld!

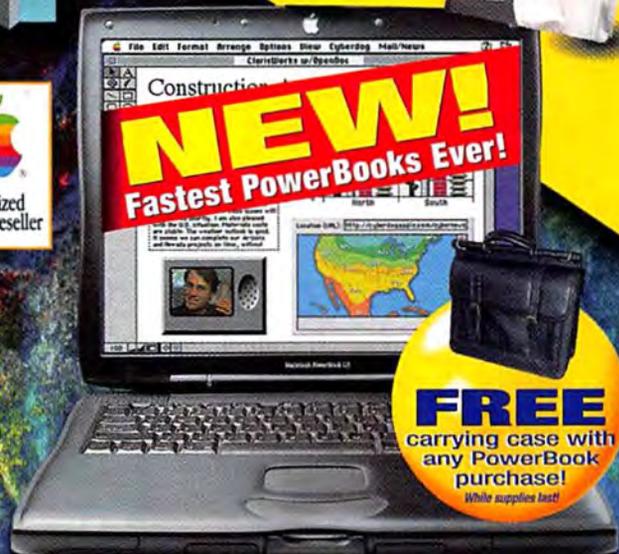


# MacMall

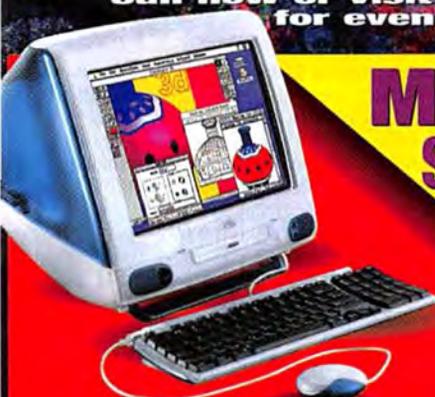
up to **400MHz**  
**PowerBook G3 Series!**

**333MHz** only \$2,498!  
**400MHz** only \$3,498!

Call now or visit [macmall.com](http://macmall.com) for even lower prices!



**FREE**  
carrying case with any PowerBook purchase!  
While supplies last!



**MACMALL Special Offer!**  
**96MB iMac**

**96MB iMac!**  
**EXTRA 64MB RAM**

**FREE!**  
w/333MHz iMac!  
**\$1,198!**



**NEW!**

Up to **450 MHz**  
as low as **\$1,598!**

Call for even lower prices.



**MACMALL EXCLUSIVE!**

up to an **Extra** or up to **\$150**  
**FREE** **Cash**  
**128MB** **Back**

with Power Mac G3 purchase! Monitor sold separately.

**SCPTRE**  
**P73 17" Color Monitor**  
 > 17" display (15.9" viewable)  
 > 27mm dot pitch  
 > 1152 x 864 resolution @ 65Hz  
**Super Price!**  
**\$189<sup>99</sup>** #47512

**PhotoPC 800 USB Digital Camera**  
 2.14 Megapixel for great prints up to 11" x 14"  
**\$699<sup>99</sup>**  
 #48308  
 Call for details.

**EPSON**  
**HP DeskJet 612C USB Printer**  
 > 50ppm black, 2.5ppm color  
 > Includes USB cable kit  
**\$129<sup>99</sup>** #48362  
 Reg. price: \$199 - \$10 mail-in rebate - \$40 mail-in rebate kit rebate = \$129<sup>99</sup>

# We'll Beat Any Price!

On any computer.

**1-800-217-9492**  
**macmall.com**  
AOL Keyword: **Mac Mall**

## PowerBook Essentials!

For Your New PowerBook G3

- > 1440 x 720dpi, 6-color (PRQ™) Quickdry inks
- > Ultra small ink droplets (6 picoliters)
- > Fast! Prints 4" x 6" photos in 1 minute
- > USB, parallel & serial ports

Stylus®  
Photo 750  
\$299<sup>99</sup>  
#44849

EPSON

NEW!



For more info  
visit [macmall.com](http://macmall.com)

### 4 Port USB Hub

This low cost USB solution gives you 4 powered USB ports to connect all your peripherals. Use it for keyboards, game controllers and more!



4-Port  
Hub  
\$29<sup>99</sup>  
#47702

- > Provides 4 ports
- > Plugs into existing USB port



For more info visit [macmall.com](http://macmall.com)

### Internal SuperDisk Drive for New G3 PowerBook!

Access Floppies and SuperDisks!

The only solution for the new PowerBooks for accessing floppies!

- > 120MB removable cartridge drive

Internal  
SuperDisk  
Drive for the NEW  
PowerBook G3  
\$219<sup>99</sup>  
#47082



For more info visit [macmall.com](http://macmall.com)

### Internal Zip for your New 1999 PowerBook G3

- > 100MB capacity per disk
- > 11.2 MB/sec. transfer rate
- > Share data with millions of Zip users



Internal  
Zip Drive for the NEW  
PowerBook G3  
\$219<sup>99</sup>  
#47081



For more info visit [macmall.com](http://macmall.com)

# NEW! Faster, Slimmer USB PowerBook G3

## Brand New G3 PowerBooks... Now an Incredible 400MHz!

The new PowerBooks are the sleekest, fastest, best-equipped notebooks ever! With the high-performance G3 processor, they

out-perform comparable Pentium and Pentium II processor-based desktop systems, with go-anywhere, do-anything PowerBook convenience!

### Cutting Edge Features at an Affordable Price!

#### Processor and Memory

- 333 or 400MHz PowerPC G3 processor—fastest performance ever in a notebook!
- 66MHz system bus
- 512K or 1MB backside Level 2 Cache; 133 or 160MHz dedicated 64-bit backside bus
- Integrated floating point unit and 64K on-chip Level 1 cache (32K for data and 32K for instr.)
- 64MB RAM; 2 SO-DIMM slots support up to 384MB RAM

#### Graphics, Video & Sound

- 14.1 inch (diagonal) display features built-in TFT XGA active matrix display, supporting millions of colors at 1024 x 768 resolution
- 8MB SDRAM video memory; supports millions of colors on external displays up to 21"
- 2D/3D graphics, through integrated ATI RAGE LT Pro video controller
- 24-bit video output port (VGA-style connector)
- 16-bit CD quality stereo input/output
- Two built-in stereo speakers
- Internal omnidirectional microphone

#### Storage

- Internal 4 or 6GB IDE hard drive
- 24X CD-ROM (#47566) or DVD-ROM drive (#47567) for use in expansion bay
- Removable 1.44MB floppy disk drive for use in expansion bay (sold separately)
- Hot-swappable expansion bay supports CD-ROM, DVD, Zip, SuperDisk or hard drive

#### Portability

- Includes one Lithium-ion battery for up to 5 hours of normal use; supports two batteries for up to 10 hours of use

#### Software (Pre-installed)

- Mac OS 8.6, Apple File Synchronization, Apple Location Manager, Microsoft Internet Explorer, Microsoft Outlook Express, Netscape Communicator and FAXstf

#### Expansion & Networking Ports

- 2 USB ports, SCSI port, power adapter port
- Built-in 10/100BASE-T Ethernet
- RJ-11 modem port, 4Mbps Infrared (IrDA) port
- Support for a Zoom Video PC card
- PC Card Slot for one Type I or Type II card

#### Size and Weight

- Width: 10.4"; Height: 12.7"; Depth: 1.7"  
Weight: 5.9lbs. (w/CD-ROM + battery installed)



Upgrades for your  
PowerBook G3

#31438	32MB PowerBook G3	\$75 <sup>99</sup>
#31440	64MB PowerBook G3	\$154 <sup>99</sup>
#31442	128MB PowerBook G3	\$369 <sup>99</sup>

Have your RAM professionally installed by one of our factory-trained technicians for only \$30. Ask for #2214. Visit our Web site: [macmall.com](http://macmall.com) for more Viking memory.

Order Any Time!  
Open 24 Hours!

# 1-800-217-9492

Order Today by 10pm EST—Get it Tomorrow by 10:30am!

er  
Series!

Get ready for something...

**Wild!**

Go to [macmall.com](http://macmall.com) or call us  
for the hottest new products  
from MacWorld!



**FREE**  
carrying case with  
any PowerBook  
purchase!  
*While supplies last!*



**New  
Slimmer and  
Lighter Design!**

The new features of the G3  
PowerBooks include two USB  
ports and high-speed  
10/100BASE-T Ethernet!

AOL keyword: **Mac Mall**



**We'll beat  
any price!**

**NEW USB PowerBook G3 Series!**

Order	MHz	RAM	HD	Cache	Drive	Modem	Display	Price	Lease
#47566	333	64MB	4GB	512K	24X CD-ROM	56K	14.1" Active Matrix	\$2,498	\$100
#47567	400	64MB	6GB	1MB	DVD-ROM	56K	14.1" Active Matrix	\$3,498	\$140

Ask for details on our low lease rates!

On any computer. Call now!

**Call for Even Lower Prices!**

Register now at [macmall.com](http://macmall.com) for our  
weekly e-mail specials and receive a **FREE** gift!

**Mention your Priority Code: #ZMWD991**

*Mac* **Mall**

# iMac™ Essentials!



## omega® Zip® 100MB USB Drive

Enjoy unlimited storage capacity and easy USB connectivity!

- Easy to connect
- Translucent blue
- Hot swappable

WAS \$149.99

**\$99.99** #34314

With purchase of CPU after \$30 mail-in rebate. Limited time only.

For more info visit [macmall.com](http://macmall.com)

New Low Price!

## HP Deskjet 812C Printer



Expanding Possibilities

Now get a colored printer cover to match your iMac or G3!

**\$199.99**

#47079  
FREE covers come with every HP Deskjet 812C, 882C or 895Cse printer purchased.

For more info visit [macmall.com](http://macmall.com)



MacMall Exclusive!

## Ares USB Joystick

The most advanced USB joystick available today—whatever kind of game you're playing, the Ares Ultimate Warrior joystick is ready to take on the challenge.

Save \$20

**\$19.99** #44872

With purchase of iMac or G3. Reg. price is \$39.99 #38338

For more info visit [macmall.com](http://macmall.com)



MacMall Exclusive!

## iMac™ Starter Kit Includes:

- iMac Blue 7-outlet surge protector
- iCatch ergonomic mouse adapter
- iMac Blue CD rack
- Web Buddy 2.0 software

(Shipped in promotional packaging.)

all for only **\$29.99**

Ask for #42105

For more info visit [macmall.com](http://macmall.com)



# 96MB RAM 333MHz iM

## Now iMac comes in many delicious colors!

Bye-Bye, beige. Now the most innovative personal computer ever has a variety of hot new looks you can choose from. Because while the iMac is built for work, it's

fun side is frankly, irrepressible. Best of all, the price of a new iMac has never been so low. Combined with Apple's Loan Program, there's no time like today to grab an iMac!

## Powerful multimedia that's easy to set up and use!

### Processor and Memory

- 333MHz Power PC G3 Processor
- 512K backside level 2 cache on processor module
- 133MHz dedicated 64-bit backside bus
- 66MHz system bus
- Integrated floating-point unit and 64K on-chip level 1 cache (32K data and 32K instruction)
- 32MB of SDRAM; two SODIMM slots support up to 256MB
- 64-bit memory bus

### Storage

- Internal 6GB IDE hard disk drive
- Internal 24X (maximum) CD-ROM drive

### Connectivity

- Two high speed Universal Serial Bus (USB) ports (12 Mbps), which support USB devices such as keyboard, mouse, printer, storage devices, and USB hubs

### Communications

- Built-in 10/100BASE-T Ethernet
- 56Kbps modem supports K56flex and V.90 standards

### Multimedia capabilities

- Incredible, high resolution display... MultiScan, tilttable shadow mask color display: 15-inch (13.8-inch diagonal viewable image size), .28mm dot pitch
- Supports millions of colors at up to 1024 x 768 resolution (24-bit)
- ATI RAGE PRO TURBO accelerated 2D/3D graphics controller and 6MB video memory
- Supports millions of colors at up to 1024 x 768 resolution (24-bit)
- Refresh rate of up to 117Hz
- Outstanding audio features
- Two built-in stereo speakers with SRS surround sound
- Built-in microphone
- Two front headphone jacks
- Minijacks for 16-bit CD-quality stereo input/output; 44.1-kHz sampling rate

### Software

- Mac OS 8.5 pre-installed
- AppleWorks, Adobe PageMill, much more!

USB  
UNIVERSAL SERIAL BUS  
For more USB peripherals, visit [macmall.com](http://macmall.com)

- #43777 USB Upgrade Kit-Blueberry Hub/6' Cable Mouse/Mousepad \$59.99\*
- #43774 USB Upgrade Kit-Grape Hub/6' Cable Mouse/Mousepad \$59.99\*
- #43776 USB Upgrade Kit-Lime Hub/6' Cable Mouse/Mousepad \$59.99\*

## MICRO CONNECTORS, INC.

- #43773 USB Upgrade Kit-Strawberry Hub/6' Cable Mouse/Mousepad \$59.99\*
- #43775 USB Upgrade Kit-Tangerine Hub/6' Cable Mouse/Mousepad \$59.99\*

\*Price with purchase of iMac™ or Power Mac G3. Reg price \$79.99.

Order Any Time!  
Open 24 Hours!

# 1-800-217-9492

Order Today by 10pm EST—Get it Tomorrow by 10:30am!

Get ready for something...

# Wild!

Go to [macmall.com](http://macmall.com) or call us  
for the hottest new products  
from MacWorld!



# Mac!

## 96MB iMac!

Get an extra 64MB RAM\*

# FREE!

w/333MHz iMac

All models include:

- ▶ 333MHz
- ▶ 32MB RAM
- ▶ 6GB HD
- ▶ 56K Modem
- ▶ 24X CD-ROM

only **\$1,198** each  
or **\$27<sup>45</sup>** per month  
with our Apple Loan Program.



## We'll Beat Any Price!

On any computer.  
Call now!

● #46955 Blueberry ● #46954 Tangerine ● #42841 Strawberry ● #42842 Lime ● #42839 Grape

Call for details on our low lease rates. \*A \$30 fee applies for professional installation of free memory. 67 monthly payments of \$22.90 per \$1,000 purchased. 14.89% Annual Percentage Rate subject to increase or decrease. Payments deferred for the first 120 days subject to interest of \$27.25 and loan origination fee of \$41.63 charged on day 91. No prepayment penalty. On approved credit. Tax and shipping not included.

Register now at [macmall.com](http://macmall.com) for our  
weekly e-mail specials and receive a **FREE** gift!

Mention your Priority Code: **#ZMWD991**

# MacMall

# NEW Power Macs up to 450MHz!



starting  
at only  
**\$1,598**

#47647

or lease for as low as \$64 per month

Check out our Web site for the  
latest computer deals!  
[www.macmall.com](http://www.macmall.com)

Monitor sold separately.

**MacMall Special Offer!**  
**up to 128MB RAM FREE**  
**or Instant Cash Back!**



**VIKING  
COMPONENTS**

**DON'T FORGET MEMORY!**

Upgrades for your Power Mac Yosemite G3

#42223	32MB PC100 DIMM	\$79 <sup>99</sup>
#42224	64MB PC100 DIMM	\$139 <sup>99</sup>
#42225	128MB PC100 DIMM	\$279 <sup>99</sup>
#42226	256MB PC100 DIMM	\$1,229 <sup>99</sup>

Have your RAM professionally installed by one of our  
factory-trained technicians, for only \$30. Ask for #2214.

**Instant Cash Back!**

**\$100 off**

All products in this catalog  
priced between \$1,597 & \$2,499

**\$150 off**

All products in this catalog  
priced between \$2,500 & \$2,999

**\$200 off**

All products in this catalog  
priced between \$3,000 & \$3,499

**\$250 off**

All products in this catalog  
priced between \$3,500 & \$4,396

**\$300 off**

All products in this catalog  
priced from \$4,397 & up

No coupons to mail in. No checks to wait for. Just instant savings! Best of all,  
there is no limit—so order as many times you want, and keep saving! Cannot be  
combined with Free Memory promo. Sorry, PowerBooks do not qualify for rebates.

**FREE Up to  
128MB RAM  
with your  
Power Mac®  
Purchase!**  
**A \$279<sup>99</sup>  
Value!**

\$30 installation fee  
applies. Cannot be  
combined with  
Instant Cash Back promo.



**Order Any Time!**  
**Open 24 Hours!**  
**Order Today by 10pm EST—Get it Tomorrow by 10:30am!**

**1-800-217-9492**

**We'll Beat Any Price!**

On any computer.  
Call now!

Get ready for something...

**Wild!**

**Incredible new features in one great system!**

The latest Macintosh G3 models come with a lightning fast processor up to 450MHz, ATI RAGE 128 graphics card, 2 USB ports and 2 FireWire ports designed especially for connecting video devices like scanners and digital cameras.

They are fast enough to handle the toughest video and publishing applications with ease. Smart enough to grow with your needs. And sophisticated enough to make your computer time more enjoyable than ever.

**A new standard in speed and design!**

**Outrageous performance.**

- PowerPC G3 processor running at 350, 400 or 450MHz
- Supports up to 1GB of low cost, high performance PC100 SDRAM
- 1MB of performance-boosting backside cache running at up to 225MHz
- System bus running at 100MHz (instead of the 66MHz bus on earlier models) boosts performance speeds, reduces bottlenecks
- 6 or 12GB Ultra ATA hard disks or a 9GB Ultra2 LVD SCSI hard disk
- 24X CD-ROM drive or DVD-ROM drive with DVD-Video playback
- Built-in 10/100BASE-T Ethernet networking; optional Gigabit Ethernet

**Advanced capabilities.**

- Two high speed FireWire ports for digital video and still cameras, printers, scanners and other multimedia peripherals
- Two USB ports for keyboards, mice, printers—up to 127 devices at once
- Two additional bays let you store over 100GB internally (varies by model)
- Four PCI slots (three 64-bit slots and one 32-bit for ATI card)

**Design elegance.**

- Translucent case, inspired by the iMac
- Easy, drop down accessibility for installing cards, drives, and memory
- Convenient, built-in handles for easy carrying

**Great graphics and video features.**

- ATI RAGE 128 Graphics Accelerator provides incredible 2D/3D performance for graphics intensive games
- 16MB SDRAM video memory
- Built-in FireWire—allows you to transfer video directly from your digital video camera for digital editing with virtually no loss of quality
- Hardware acceleration of graphics and video
- Support for up to 1,600- by 1,200-pixel resolution at 32 bits per pixel (millions of colors) and up to 85-Hz refresh rate
- Advanced integrated triangle setup engine
- Single-pass multi-texturing design

**Adobe Photoshop Comparison**

New Power Mac G3/450	403
Pentium III-based PC/500	452
Power Mac 9600/300	665

Total time in seconds to perform 16 commonly used operations in Adobe Photoshop 5.0 (Shorter bars are better.)

Go to [macmall.com](http://macmall.com) or call us for the hottest new products from MacWorld!



**New G3 Servers!**

**Fast and Easy Access to Everything Inside!**

- Power PC G3 400 or 450MHz
- 128 or 256MB SDRAM (exp. to 1GB)
- One or two 9GB Ultra2 LVD SCSI hard drives
- 1MB level 2 cache
- 24X CD-ROM drive
- AppleShare 6.2; Mac OS 8.6

G3 Servers starting at **\$3,298**



**New G3 Servers!**

#47652	400MHz, 128MB RAM, 9GB HD, 24X CD-ROM	\$3,298
#47653	450MHz, 256MB RAM, (2) 9GB HD, 24X CD-ROM	\$4,998
#47654	Mac OS X Server, 450MHz 256MB RAM, (2) 9GB HD, 24X CD-ROM	\$4,998

**EXTRA 64MB FREE!**  
Or instant Cash Rebate!

**EXTRA 64MB FREE!**  
Or instant Cash Rebate!

**EXTRA 64MB FREE!**  
Or instant Cash Rebate!

**EXTRA 128MB FREE!**  
Or instant Cash Rebate!

Order#	#47647	#47648	#47649	#47650
MHz	350MHz	400MHz w/DVD	400MHz w/Zip	450MHz
RAM	64MB	64MB	128MB	128MB
HD	6GB ATA	6GB ATA	12GB ATA	9GB UWS
Cache	1MB	1MB	1MB	1MB
CD	24X	DVD	24X	24X
Price	\$1,598	\$1,998	\$2,498	\$2,998

Monitor sold separately.

Register now at [macmall.com](http://macmall.com) for our weekly e-mail specials and receive a **FREE** gift!

**Mention your Priority Code: #ZMWD991**

**MacMall**

# If You Don't See it, Call

MacMall has the best prices on USB peripherals for the iMac,™ Power Mac and PowerBook G3s!

## BEST DATA 56K USB Modem



**\$84<sup>99</sup>**  
#47014

**FREE**  
USB 4-Port Hub  
A \$50 Value!  
Offer valid until 8/31/99.

## Agfa SnapScan 1212UB Scanner

- 36-bit
- 600 x 1200dpi optical
- 9600 interpolated
- Scans areas up to 8.5" x 11.7"



**now \$99<sup>99</sup>**  
#43359

with CPU purchase.  
Reg. price \$109.99.



## External Floppy Disk Drive for the iMac

- Matches iMac colors
- Hot-swappable interface



**only \$79<sup>99</sup>**  
#46117

with CPU purchase.  
Reg. price \$99.99.  
Call for details.

## Epson Expression 636 Pro 2 Scanner



- 36-bit scans
- 600dpi optical
- Adobe Photoshop LE

**\$399<sup>99</sup>**  
#41361

Factory refurbished. While supplies last.

**Includes Transparency Unit!**



## Ultimate Rez 2D/3D

128-bit 2D/3D video controller.  
Twin Turbo 128-3D and dual ported EDO VRAM!  
**now \$79<sup>99</sup>**  
#47690  
Shipped in non-retail packaging.

**While Supplies Last!**

## iXTV for Mac and PC!

Interact with your TV on your desktop!  
**\$69<sup>99</sup>**  
#46911



## iSpeakers w/3D Effects works with your iMac!

- Magnetically shielded
- 2 channel stereo amplifier

**\$19<sup>99</sup>**  
#47947

with CPU purchase.  
Reg. price \$29.99.  
While supplies last.



## Stylus® Color 740i Printer

Printer covers available in all 5 iMac colors  
**\$229<sup>99</sup>**  
#48226

Reg. price \$279.99 - \$50 mail-in rebate = \$229.99. Expires 9/30/99.

**FREE**  
Colored cover to match your iMac.  
w/CPU purchase.

## Virtual Game Station w/Hermes USB Gamepad

Get ready to play with Connectix and Ariston.

**\$69<sup>99</sup>**  
#45484

While supplies last!



## !Que! Drive 4x2x8 CD-Rewritable Drive for the iMac™

- The revolutionary USB interface CD-Rewritable Drive
- Three drives in one
- Ideal for data archiving
- Excellent addition for MIDI and recording studios
- Translucent Blue

**\$299<sup>99</sup>**  
#45035



## Blueberry USB Upgrade Kit

Includes Hub, 6' Cable, Mouse and Mousepad. All iMac colors available.



**\$59<sup>99</sup>**  
#43777

With iMac or Power Mac G3 purchase.  
Reg. price \$79.99.

## Imega® 100MB USB Zip® Drive

Enjoy unlimited storage capacity and easy USB connectivity! Easy to connect, hot-swappable, translucent blue.

**only \$129<sup>99</sup>**  
#34314

Price does not reflect **\$30 Rebate!** w/CPU purchase.



## Agfa ePhoto CL30

- 1440 x 1080 pixels
- 4MB Compact flash

**\$379<sup>99</sup>**  
#43799



#32427 Kodak DC220 USB/serial digital zoom camera \$699<sup>99</sup>  
#32425 Kodak DC260 USB/serial digital zoom camera \$899<sup>99</sup>

## SPECIAL! 56K V.90 External Modem

**NEW LOW PRICE!** Get V.90 right out of the box!  
**\$59<sup>99</sup>**  
#39443



No rebates, no hassles.  
While supplies last!

## HP DeskJet USB Printers



### HP DeskJet 812C Printer

- 6.5 ppm black
- 4.5 ppm color

**\$199<sup>99</sup>**  
#47079

### HP DeskJet 882C Printer

- 9 ppm black
- 6.5 ppm color

**\$299<sup>99</sup>**  
#41014

### HP DeskJet 895Cse Printer

- 11 ppm black
- 8.5 ppm color

**\$399<sup>99</sup>**  
#37240

**FREE**  
Color covers with HP DeskJet 812C, 882C or 895Cse Printer purchase.

## SuperDisk!

Twice as fast! Reads & writes both 120MB SuperDisk diskettes and standard HD 3.5" diskettes.



**\$169<sup>99</sup>**  
#46876

## 24X External SCSI CD-ROM Drive

**\$99<sup>99</sup>**  
#37358

## 40X External SCSI CD-ROM Drive

**\$129<sup>99</sup>**  
#47204

**Special Offer!**  
While supplies last!



Order Any Time!  
Open 24 Hours!  
Order Today by 10pm EST—Get it Tomorrow by 10:30am!

# 1-800-217-9492

# Us!

# Get ready for something...

# Wild!

## Go to [macmall.com](http://macmall.com) or call us for the hottest new products from MacWorld!

### HP LaserJet 5siMx Printer

- > 600dpi > 24 ppm
- > 12MB RAM, 76MB max.
- > Adobe PostScript L2
- > 420MB HD
- > Duplex
- > Ethernet

## \$1499<sup>99</sup>

#14680  
While supplies last!



### 3Com FREE Leather Case! Palm V™ w/MacPac 2.0 Organizer

- > Smaller, sleeker, lighter weight
- > New, clearer screen display

## \$436<sup>99</sup>

#44046

### 400MB Zip® Kit

Kit Includes: Zip Drive (factory refurbished) four 100MB Iomega Zip Disks

## \$99<sup>99</sup>

#46932  
1-year warranty. Call for details.



### Sceptre P73 17" Color Monitor

- > 17" (15.9" viewable)
- > 27mm
- > 1152 x 864 resolution @ 65 MHz
- > 3 year limited warranty

## only \$189<sup>99</sup>

#47512



### Olympus C-2000 3X Zoom w/additional 8MB SmartMedia

## \$999<sup>99</sup>

#46920



### The Future of Professional Publishing!

as low as **\$299<sup>99</sup>**

#45630

Now Shipping!

- > Seamless integration with Adobe Illustrator and Photoshop
- > Conversion of QuarkXPress 3.3-4.04 files as well as PageMaker 6.5 files
- > Create clipping paths automatically

#45249 Adobe InDesign Mac/PPC \$699<sup>99</sup>

SAVE \$400 off the regular price if you own QuarkXPress, Photoshop, Illustrator or PageMaker! Expires 8/31/99.

### Adobe Web Collection

Here are the core Adobe products you need to design sophisticated Web sites—all together for the first time in one suite: the full versions of Photoshop 5.5, Illustrator 8.0 and GoLive 4.0!

## \$989<sup>99</sup>

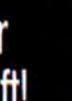
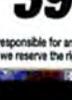
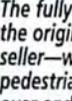
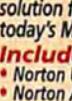
#48276

### Microsoft Office 98

Now compatible with Office 2000. Get better results with less effort. Communicate and collaborate easily.

upgrade for only **\$254<sup>99</sup>**

#26155 Ask your Account Manager about special offers with purchase.



Buy Mac OS 8.5 and Get Myth II FREE!

FREE! only

## \$88<sup>99</sup>

#46810

### Mac Super Utility Bundle!

A complete utility solution for today's Mac!

- Norton Utilities 4.0
- Norton AntiVirus 5.0
- Retrospect Express 4.1
- Spring Cleaning 2.0

Save \$105!

## \$134<sup>99</sup>

#43663

### Conflict Catcher and TechTool Pro

The Ultimate Startup file Manager and the #1 Mac Diagnostics tool together at last!

Save Over \$50!

Stop Crashes & Freezes!

## \$119<sup>99</sup>

#47032

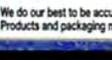
## Hot New Mac Games!

### Descent 3

More pulse pounding action as you can fly out of mines to attack enemies on the planet's surface!

for only **\$44<sup>99</sup>**

#47961

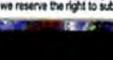


### Carmageddon 2

The fully 3D sequel to the original best seller—with more pedestrians to run over and 40 new cars to smash!

for only **\$39<sup>99</sup>**

#47887



### Adobe Photoshop 5.5

Photoshop is the standard for image editing, and new Photoshop 5.5 offers new creative tools and features especially designed for the Web.

- > Transform images with "painted" brush strokes
- > Perform complex masking tasks with increased precision
- > Add special effects with a complete set of filters
- > Includes Adobe ImageReady to create GIF animations and add Javascript Rollovers to Web pages

Photoshop 5.5 upgrade as low as

## \$119<sup>99</sup>

#47478

Price reflects \$70 mfr. mail-in rebate for Photoshop 5.0 or ImageReady 1.0 customers. Limited time offer.

While supplies last!

only

## \$189<sup>99</sup>

#47512

While supplies last!

only

## \$999<sup>99</sup>

#46920

for only

## \$44<sup>99</sup>

#47961

for only

## \$39<sup>99</sup>

#47887

Call For Yours Today!

## 1-888-425-MALL

Visit Our Online Catalog at [software.macmall.com](http://software.macmall.com)

Register now at [macmall.com](http://macmall.com) for our weekly e-mail specials and receive a **FREE** gift!

Mention your Priority Code: #ZMWD991

# MacMall

# macZone®



the next generation of



# \$100 Off

# 333 MHz!

## iMacs now

## FREE STUFF

at [www.zones.com/freestuff](http://www.zones.com/freestuff)

Like this!

### FREE MYST

Ask for #103750  
\*plus \$2.99 shipping and handling. All offers while supplies last. Subject to change without notice.



## FREE

### Software Included



with every Apple® iMac!  
\$400 Value!  
Titles are subject to change. Retail packaging not included.

Nowhere else on the Planet!

## FREE ZONES EXCLUSIVE!

Microsoft® Internet Explorer AND Outlook Express **4.5** with any Apple® CPU purchase!

Ask for Item #107700 \*While supplies last! Shipped in generic packaging.

**\$1** a day brings an iMac your way!  
Apple Loan Program  
CALL NOW TO APPLY!

**4-Year Extended Service Agreement**  
**\$189<sup>98</sup>** Ask for #106494

MacSense iCatch \$9<sup>98</sup>  
ONLY #102671



Give your iMac mouse the shape and feel of a standard mouse!

AppleCare iMac  
Two year extension  
Extends warranty coverage two additional years (3 years total)  
Includes keyboard and mouse

Mac Zone Exclusive!  
VALUES UP TO **\$250**  
Plus \$100 from E-TRADE

Buy an iMac, PowerBook G3, or PowerMac G3 and YOU CHOOSE WHAT'S **FREE\***

\*Make your selection from a variety of FREE and specially priced products when you purchase an Apple computer. Call or visit [www.zones.com/apple](http://www.zones.com/apple) for details

## Mac Zone Exclusive Bundles!

Buy a Mac from the Mac Zone and choose some cool stuff to go along with it!

### Really Need

32MB Memory Upgrade  
Epson 740i USB Printer  
Imation SuperDisk  
Hub required to use peripherals simultaneously



**\$489<sup>98</sup>**  
#108069

### Gotta Have

64MB Memory Upgrade  
Epson 740i USB Printer  
Entrega USB 4-port Hub  
AGFA 1212u USB Scanner  
Iomega USB Zip Drive  
CoZo Speakers  
Newer USB Floppy Drive



**\$889<sup>98</sup>**  
#108070

### Ultimate Games

64MB Memory Upgrade  
Virtual Game Station  
CoZo Speakers  
Extreme Mac Game Pack  
MacTell iPad



**\$299<sup>98</sup>**  
#108071

## Pick your favorite iMac color!



HP DeskJet 882C Color Printer only **\$299<sup>98</sup>** #102363  
HP DeskJet 895Cse Color Printer only **\$399<sup>98</sup>** #60236



we're open 24 hours a day 7 days a week



Credit cards are not charged until the order is shipped. Most products ship the same day (barring system failure, etc.). Shipping options include Ground, 2nd Day and Overnight delivery. Freight is based on average product weight. Handling extra. Insurance available. Special orders may require special shipping and handling charges. Call for international shipping rates. Prices and product availability subject to change without notice. Specials and promotions may be limited to stock on hand. Not responsible for typographical errors. All products sold by Multiple Zones International (MZI) are third party products and are subject to the warranties & representations of the applicable manufacturers, including but not limited to Y2K compliance. Accordingly, MZI makes no representation or warranty with respect to Y2K compliance of product sold. ©1999 Copyright Multiple Zones International Inc. All rights reserved. Unauthorized duplication is a violation of applicable laws. Apple®, the Apple logo, Macintosh® and PowerBook® are registered trademarks of the Apple Computer, Inc.

# Any Purchase!

when you open an account with  E\*TRADE

Get complete details at [www.zones.com/etrade](http://www.zones.com/etrade)



See the new products announced at **MacWorld Expo!**  
Visit [www.zones.com/newmacs](http://www.zones.com/newmacs)

For a complete selection of USB products visit [www.zones.com/usb](http://www.zones.com/usb)

## USB IMAGING

**ONLY \$75.98**  
#55440



Great for video-conferencing!  
**Connectix QuickCam VC**

**ONLY \$125.98**  
#97188



600x1200 resolution, 36-bit color, and great scanning software!  
**AGFA SnapScan 1212U Blue**

**\$99.98\*\***  
-100 FREE  
#655652



**UMAX Astra 2000U Scanner**  
\*\*After \$30 mfr. mail-in rebate. Must be purchased with CPU. Expires 7/31/99. Low Zone Price \$129.98

## USB STORAGE

**ONLY \$89.98**  
#102862



Easy to use external 1.44MB 3.5" floppy drive for your iMac!  
**VST Floppy Drive**

**\$129.98**  
-100 \$29.98\*  
#95251



100MB of removable storage - fast and easy!  
**Iomega USB Zip Drive**

**NEW!** **COMES IN 5 iMAC COLORS**

Outstanding print quality at 1440x720 dpi!  
**Epson Stylus 740i Color Inkjet Printer**



**\$249.98**  
-100 \$149.98\*\*  
#107815

**ONLY \$249.98\*\***  
#107815  
\*\*After \$30 mfr. mail-in rebate. Low Zone Price \$279.98. Expires 7/30/99

## USB SOUND

**ONLY \$79.98**  
#101373



High-quality SRS surround-sound!  
**CoZo iMac Speakers**

**\$99.98**  
FREE  
#106357



Cool looking drive handles 1.44MB floppies!  
**Newer Udrive USB Floppy Drive**

**\$169.98**  
-100 \$69.98\*  
#109035



Use floppy disks and add 120MB storage!  
**Imation USB SuperDisk Drive 2X**

## USB NETWORKING

**ONLY \$199.98**  
#105499



Connect your iMac peripherals to a convenient swiveling base!  
**CompuCable iDock**

**ONLY \$78.98**  
#37060



Connect your existing printer to your iMac!  
**KeySpan USB Serial Adapter**

**ONLY \$358**  
#609482



Easy-to-use USB CD-RW drive for your iMac!  
**Sony Spressa CD-RW USB Drive!**

**ONLY \$56.98**  
#30039



The easiest way to hook up devices to your iMac!  
**Entrega 4-Port USB Hub for Mac**

## USB INPUT

**ONLY \$24.98**  
#31901



The mouse your iMac deserves!  
**MacALLY iMouse USB Mouse**

**ONLY \$39.98**  
#31906



Excellent response - plus the iMac look!  
**MacALLY iBall USB Trackball**

**ONLY \$48.98**  
#602571



The trackball iMac users have been waiting for!  
**Kensington Orbit Trackball - iMac Blueberry Blue**

**ONLY \$39.98**  
#101329



Put iMac power in the palm of your hand!  
**Ariston Ares USB Joystick**

**ONLY \$39.98**  
#31933



Full-size, soft-touch for comfort and control!  
**MacALLY iKey USB Extended Keyboard**

**ONLY \$49.98**  
#100676



Surge suppressor, mouse pad, CD-rack, and wrist rest!  
**Belkin iMac Starter Kit**

## Mac Zone Best Sellers!

**Microsoft Office 98 Upgrade**  
FREE Extreme 6-pack #105036  
**\$254.98**

**Connectix Virtual PC 2.1 with Win 98**  
The key to running PC software on your Mac!  
#20634  
**\$168.98**

**Symantec Mac Utility Pack**  
FREE 6-pack of Extreme Mac Family Games with purchase!  
#106014  
While supplies last!  
**\$138.98**

**Star Wars Episode 1: The Gungan Frontier**  
#616052  
**\$26.98**

**NEW!**  
**Quake II**  
ONLY \$47.98  
#51946

74181	StarCraft	\$48.98
51928	Simpsons Virtual Springfield	\$21.95
41484	Tomb Raider II	\$48.98
34779	Myth II	\$48.98
79710	Encyclopedia Britannica 99	\$48.98
106302	Grolier MultiMedia Encyclopedia iMac Deluxe	\$47.98

**Guaranteed Low Prices!**

Visit us online at [Zones.com](http://Zones.com) to see our full selection of products at the latest prices



Order Online Today

Order by Phone  
**1.800.436.0606**

**Zones.com**<sup>TM</sup>

Corporate bids welcome!  
Fax to 1-800-684-8080

Source Code  
**MW909**

A NASDAQ COMPANY Ticker Symbol: MZON

## Must have's for ANY PowerBook!

Newer Technology  
FireWire 2 Go  
PC Card



**NEW!**  
ONLY \$249.98  
#109764

Olympus D-400  
Digital Camera



**FREE**  
Floppy Adapter!  
A \$100 Value!  
ONLY \$599.98  
#96863

Nikon Coolpix 950



**NEW!**  
ONLY \$999.99  
#608570

AsanteTalk  
10-BaseT to LocalTalk  
Hub



**\$88.99**  
**FREE!**  
#16630  
\*When you open an ETRADE account.

## PowerBook Software Best Sellers

Chronos Consultant  
Contact Manager



ONLY \$59.98  
#74292

PowerPrint  
4.5



\$94.99  
**FREE!**  
#00642  
\*When you open an ETRADE account.

Apple Remote  
Access



ONLY \$115.98  
#96676

Myth II:  
SoulBlighter



ONLY \$48.98  
#34779

Norton AntiVirus 5.0  
Upgrade



ONLY \$23.98\*  
#00116  
\* After \$40 mail-in rebate. Low Zone Price: \$63.98

FileMaker  
Pro 4.1



ONLY \$176.98  
#52485

Office 98  
Upgrade



ONLY \$249.98  
#55870

Virtual  
PC



ONLY \$168.98  
#20634

## Classic Apple® PowerBook® Accessories



Newer  
BookEndz  
Docking Station

ONLY \$199.98  
#08640

ixMicro  
Road Rocket

For dual monitor support  
from your  
PowerBook



ONLY \$249.98  
#03765

Apple  
DVD Drive  
Video Kit

Includes:  
• DVD Expansion Module  
• DVD PC Card  
• DVD Player Software

ONLY \$499.95  
#102937

VST Mobility  
Bundle



• Charger  
• LiIon Battery  
• AC Adapter

ONLY \$319.98  
#34325



VST  
Internal  
ZIP Drive

ONLY \$229.95  
#07159



VST  
SuperDisk  
Drive

ONLY \$219.98  
#101365

## Accessories for your NEW PowerBook® G3



VST 4GB  
Expansion  
Bay Hard  
Drive

ONLY \$306.98  
#109513



VST Zip  
Drive

ONLY \$129.95\*  
#109510  
\*When you open an ETRADE account.



VST  
SuperDisk  
Drive

ONLY \$229.95  
#109512

Portable Printer Kit  
HP 340 with  
PowerPrint  
USB



ONLY \$359.98  
#108073

Apple Lithium-Ion  
Battery



ONLY \$126.98  
#622731

Newer USB  
External  
Floppy  
Drive



ONLY \$98.99  
#106357  
\*When you open an ETRADE account.

## What you'll find at Zones.com: Hot New Products • Online Auctions

### Digital Cameras

73283	Kodak DC260 Digital Camera	\$899.98
608570	Nikon Coolpix 950 Digital Camera	\$999.98
608571	Nikon Coolpix 700 Digital Camera	\$549.98
93351	Sony Mavica FD91 with FREE 10pk Floppy Disks	\$999.99
602326	Agfa CL30 Digital Camera	\$389.98
602327	Agfa CL50 Digital Camera	\$749.98
73282	Kodak DC220 Digital 2x Zoom Camera	\$699.98
96363	Olympus D400 Zoom	\$599.99
96364	Olympus D620L	\$999.98
97195	Olympus D340L	\$399.98
107183	Sony Mavica FD73	\$499.98
610054	Kodak DC265	\$999.98
617978	Sony Mavica FD83	\$699.98
77333	Epson 750 Z	\$699.98
618993	Olympus C-2000	\$999.98
03378	Toshiba PDR-M1	\$399.98
617979	Sony Mavica FD88	\$899.98
625992	Fuji MX-600Z	\$549.98
615993	Fuji MX-2700	\$649.98
615991	Fuji MX-10	\$299.98

### Fixed HD / CD Drives

102785	VST FireWire 4.0GB HD	\$399.98
102786	VST FireWire 6.0GB HD	\$499.98
70393	Viking II 4.5GB U/W SCSI Internal HD OEM	\$237.97
70442	LaCie 4.5GB Internal SCSI HD	\$239.98
70444	LaCie 9.1GB Internal SCSI HD	\$399.98
70447	LaCie 4.5GB External SCSI HD	\$329.98
101725	LaCie 9.1GB External SCSI HD	\$499.98
101713	LaCie DVD-RAM External SCSI Drive	\$749.98
95354	LaCie 2.6GB Single-Sided DVD-RAM Media	\$29.98
95358	LaCie 5.2GB Double-Sided DVD-RAM Media	\$39.98
109035	Imation iMac USB SuperDisk Ext Drive	\$199.98
91952	Fuji CD-R 74min Single	\$1.98
47562	Fuji CD-R 5 pack with \$10 Rebate	\$14.98
59776	Fuji CD-R 10 pack with \$20 Rebate	\$29.98
21258	Fuji CD-R 25 pack with jewel cases	\$38.98

### Zip Drives and Media

51752	Zip Internal ATAPI w/5.25 mounting	\$99.95
55181	Zip External SCSI Reconditioned	\$89.95
12220	Zip External SCSI	\$99.95
101712	Zip 250 External SCSI	\$169.98
101727	Zip 250 Media	\$19.95
101715	Zip 250 Media (6 Pak)	\$199.95
52581	ZipPlus External SCSI/Parallel	\$69.95
32251	Zip large carrying case	\$29.95
83475	Zip PowerBook SCSI adapter	\$19.95
12236	Iomega Zip 100MB Mac Media Gray 3pk	\$49.95
12237	Iomega Zip 100MB Mac Media Gray 6pk	\$79.95
12238	Iomega Zip 100MB Mac Media Gray 10pk	\$99.95
73831	Iomega Zip 100MB Mac Media Color 10pk	\$99.95
88195	Fuji Zip Color 5pk with \$10 Rebate	\$59.98
37185	Fuji Zip Color 10pk with \$10 Rebate	\$79.98
86194	Fuji Zip Gray 5pk with \$10 Rebate & Free Case	\$59.98
37186	Fuji Zip Gray 10pk with \$10 Rebate	\$79.98
54009	Fuji Zip 20pk with 4 Free Disks by mail	\$185.98
86334	Fuji Zip Media 100MB Mac Disk	\$14.98

### Removable HD and Media

73771	Jaz 1GB SCSI Internal Drive Reconditioned	\$189.95
73839	Jaz 1GB SCSI External Drive Reconditioned	\$199.95
95233	Jaz 2GB SCSI Internal Drive	\$349.95
95234	Jaz 2GB SCSI External Drive	\$349.95
82841	Jaz large carrying case	\$29.98
43360	Jaz Card PC/MCIA Fax SCSI 2	\$124.95
81235	Jaz 1GB Cartridge	\$99.95
75663	Jaz 1GB Cartridge 3-Pack	\$269.95
73835	Jaz 2GB Cartridge	\$124.95
73836	Jaz 2GB Cartridge 3-Pack	\$299.95

### Modems

60339	Teleport 56K V.90 Ext Fax/Modem for Mac	\$77.98*
60313	3Com/USR 56K V.90 D/F for Mac	\$79.97*
60385	SupraExpress 56e D/F for Mac	\$89.98
617205	SupraExpress USB 56e Mac/PC Modem	\$95.98
107099	Viking USB 56K V.90 Ext Fax/Modem	\$107.98
108005	Teleport USB 56K V.90 Ext Fax/Modem	\$118.98
95638	Viking 56K V.90 PC/MCIA Card Modem	\$129.98

we're open  
hours a day  
24/7  
days a week

NO SURCHARGE ON CREDIT CARDS

Credit cards are not charged until the order is shipped. Most products ship the same day (barring system failure, etc.). Shipping options include Ground, 2nd Day and Overnight delivery. Freight is based on average product weight. Handling extra. Insurance available. Special orders may require special shipping and handling charges. Call for international shipping rates. Prices and product availability subject to change without notice. Specials and promotions may be limited to stock on hand. Not responsible for typographical errors. All products sold by Multiple Zones International (MZI) are third party products and are subject to the warranties & representations of the applicable manufacturers, including but not limited to Y2K compliance. Accordingly, MZI makes no representation or warranty with respect to Y2K compliance of product sold. ©1999 Copyright Multiple Zones International Inc. All rights reserved. Unauthorized duplication is a violation of applicable laws. Apple®, the Apple Logo, Macintosh® and PowerBook® are registered trademarks of the Apple Computer, Inc.

# G3 PowerBook!



See the new products announced at  
**MacWorld Expo!**

www.zones.com/newmacs

Do all your shopping online!

Click here

FREE Stuff!

Hot New Products

Best Deals

Call or Click

Zones.com

## \$100 Off any Purchase!

Get complete details online at  
www.zones.com/etrade

when you open an account with **E\*TRADE**

**Mac Zone Exclusive!** VALUES UP TO **\$250**

Buy an iMac, PowerBook G3, or PowerMac G3 and YOU CHOOSE WHAT'S **FREE\***

Plus \$100 from E\*TRADE

\*Make your selection from a variety of FREE and specially priced products when you purchase an Apple computer. Call or visit www.zones.com/apple for details.

## 20% Thinner and 2 pounds lighter!

### NEW! PowerBook G3

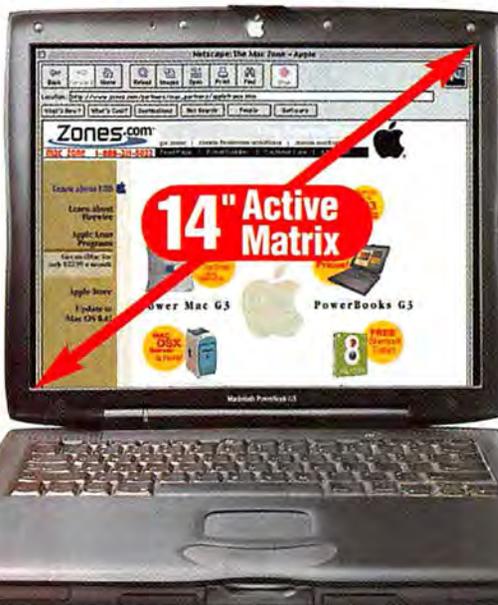
333 & 400 MHz Features:

- Two USB ports
- FireWire capable\*
- Mac OS 8.6
- 8MB VRAM
- S-Video/TV output for easy connection to a TV or a VCR
- ATI Rage LT Pro graphics accelerator for enhanced 2D and 3D graphics

**PLUS** • 10/100 Base-T Ethernet port

- 384MB max. system RAM
- Built-in SCSI port
- Integrated 4Mbps IrDA technology for easy wireless LAN access, printing and file sharing
- Lithium-ion battery; support for dual-battery operation
- 56K V.90 Modem
- Hot-swappable expansion bay

\*Req. FireWire CardBus Card



**14" Active Matrix**

**MAC ZONE EXCLUSIVE!**

Purchase ANY PowerBook & get **\$40 OFF** PowerPrint USB

**ONLY \$53.98\*** #108100

\*with PowerBook purchase - Low Zone Price \$93.98

**BACK-UP BONUS BUY!**

Retrospect Express and **FREE** Zip Disk - SAVE \$30!

**ONLY \$39.99** #108099



Targus NotePac Nylon Power-Book Case #06023

**\$39.98**

Targus Premier Deluxe Leather Power-Book Case #07720

**\$158.98**

**Memory Upgrades G3 PowerBook Series**

UPGRADE	ITEM #	ONLY
32MB Upgrade	#05057	CALL
64MB Upgrade	#05059	CALL
128MB Upgrade	#05061	CALL

**NEW! Apple® PowerBook® \$2494**

G3/333MHz ..... #108066  
64MB RAM, 4.0GB HD, CD-ROM, 512K Backside Cache, 14.1" Display

**4-Year Laptop Plan with Screen Protection!**  
**\$449.98** #97595

**NEW! Apple® PowerBook® \$3494**

G3/400MHz ..... #108067  
64MB RAM, 6.0GB HD, DVD-ROM, 1MB Backside Cache, 14.1" Display

**4-Year Laptop Plan with Screen Protection!**  
**\$459.98** #107107

Mac OS 8.6

Visit [www.zones.com/apple](http://www.zones.com/apple) for more product information

**Special Buys • Prices Updated Every Day • Major Brands**

PowerBook Essentials	
07157	Targus Leather Notebook Case ..... \$99.98
07173	Samsonite Notebook System Case ..... \$39.98
07175	Samsonite Notebook Compact Case ..... \$32.98
42245	Kensington Saddle Bag for PB G3 (blk) ..... \$89.98
07159	VST Internal Zip drive ..... \$239.98
06421	Kensington Security Cable ..... \$39.98
57714	HP 340cbi Portable Inkjet Printer ..... \$329.98
43690	Konexx Mobile Connector ..... \$119.98
20634	Virtual PC 98 ..... \$169.98
07159	VST G3 Zip Drive ..... \$239.98
82633	PB Universal SCSI Adapter ..... \$30.98
00116	Norton AntiVirus 5.0 ..... \$63.98
81849	DAVE 2.1 ..... \$119.98
00642	PowerPrint 4.5 ..... \$94.98
86331	Focus TVView Gold ..... \$399.98
96677	Apple Remote Access Client ..... \$49.98
06231	ACT! ..... \$149.98
04890	Norton Utilities 4.0 ..... \$94.98
89379	Kensington Mouse 1.0 ..... \$59.98

03765	Road Rocket ..... \$289.98
08640	BookEndz ..... \$199.98
88753	AirDock ..... \$64.98
55677	IREZ Capture zoomed video PCMCIA ..... \$109.98
55678	KitterKam ..... \$239.98
44546	VST Auto Adapter ..... \$78.98
Input	
75112	MacAlly Two Button Mouse ..... \$29.98
87464	Kensington Mouse in a Box ..... \$39.98
03727	Kensington Keyboard in a Box ..... \$49.98
89379	Kensington Mouse 1.0 ..... \$59.98
637021	Asante FriendlyNet USB 4 Port HUB ..... \$35.98
102688	Belkin USB 3-button Mouse (iMac blue) ..... \$14.99
78420	Kensington Orbit ..... \$69.98
87483	Kensington Turbo Mouse 5.0 ..... \$99.98
85553	Addresso Touch Extended Keyboard ..... \$39.98
31933	MacAlly iKey Extended USB Keyboard ..... \$45.98
85594	Addresso Tru-Form Ergo. Keyboard w/Touchpad ..... \$89.98
75109	MacAlly Port Xpander ..... \$58.98

**3-Year Extended Service Plans for Laptops**

\$701-1200	.....\$284.98	\$3001-4000	.....\$338.98
\$1201-2000	.....\$304.98	\$4001-5000	.....\$351.98
\$2001-3000	.....\$322.98	\$5001-10,000	.....\$406.98

**3-Year Extended Service Plans**

\$0-350	.....\$97.98	\$2001-3000	.....\$221.98
\$351-700	.....\$120.98	\$3001-4000	.....\$259.98
\$701-1200	.....\$156.98	\$4001-5000	.....\$278.98
\$1201-2000	.....\$198.98	\$5001-10,000	.....\$352.98

Visit [Zones.com](http://Zones.com) for your **FREE OS 8.6 DOWNLOAD**

Deals are going fast at the **Zones.com Auction Site**  
Bids begin at just **\$1.00!**

Corporate bids welcome!  
Fax to 1-800-684-8080

A NASDAQ® COMPANY Ticker Symbol: MZON

Source Code **MW909**

Order by Phone  
**1.800.436.0606**

Order Online Today  
**Zones.com™**



# macZone

the next generation of



# Visit Zones.com

Authorized  
Catalog Reseller

### QuarkXPress 4.0

Work faster and smarter!



\$699.98

-100

\$599.98

#613842

\*When you open an E-TRADE account.

### StuffIt Deluxe 5.0

ONLY \$24.98\*

#41956

\*After \$50 rebate with purchase of MS Office '98

#55871 MS Office98... \$419.98

### UMAX PowerLook III Scanner



ONLY \$895

#102871

### Entegra 4 Port SB Hub



ONLY \$56.98

#30039

### Keyspan Serial to USB Adapter



ONLY \$78.98

#37060

### Lexmark 310 USB Laser Printer



ONLY \$364.98

#104877

### Apple Int. 56K V.90 Faxmodem for G3



\$99.98

FREE

#102936

\*When you open an E-TRADE account.

FaxSIF Software incl. FREE!

Product shown is representative only.

### Adaptec Internal SCSI Card



ONLY \$59.98

#99498

Adds an external SCSI port to your new Power Mac!

Now up to **450MHz!**

**FIREWIRE Storage Available Now!**  
Starting at \$399\*  
Up to 14GB

FireWire

**AppleCare**  
**G3 Mac**  
Two year extension  
Extends warranty  
coverage two additional  
years (3 years total)  
Includes keyboard and mouse

**TOP SELLER!**  
**Apple®**  
**17" Studio Display**  
**ONLY \$494**  
#102932

## PowerMac G3

Every PowerMac G3 Includes:

- Two 400Mbps FireWire ports
- Two 12Mbps USB ports
- 10/100Base-T Ethernet port
- 1.0GB maximum system memory
- ADB port
- 100MHz system bus
- Three 64-bit 33MHz PCI slots
- One 32-bit 66MHz PCI graphics slot with 16 MB SGRAM; ATI RAGE 128 2D/3D graphics accelerator

**Mac Zone Exclusive!** **VALUES UP TO \$250**  
Buy an iMac, PowerBook G3, or PowerMac G3 and **YOU CHOOSE WHAT'S FREE\***  
\*Make your selection from a variety of FREE and specially priced products when you purchase an Apple computer. Call or visit [www.zones.com/apple](http://www.zones.com/apple) for details.



## What you'll find at Zones.com: Hot New Products • Online Auctions

Monitors	
94187	Princeton E0505 15"13.8" Monitor ..... \$169.98
08622	Princeton Ultra 72 17"15.8" Monitor ..... \$209.98
78590	Princeton E0705 17"15.9" Monitor ..... \$249.98
76514	ViewSonic G5771 17" Monitor (16" View) ..... \$339.98
60492	Sony Multiscan 210G5 17" Monitor ..... \$334.98
75914	ViewSonic Optiquest G17 17" Monitor ..... \$245.98
76501	ViewSonic E771 17" Monitor ..... \$265.98
629257	Princeton Ultra 95 19"18" Monitor ..... \$399.98
03581	ViewSonic P5790 19"18" 25" SM 1600 ..... \$584.98
101417	Sony Multiscan 220G5 17" Monitor ..... \$399.98
75956	ViewSonic Optiquest G51 15" Monitor ..... \$155.98
46794	Sony Multiscan 500PS 21" Monitor ..... \$1099.00
52829	ViewSonic G771 17" Monitor ..... \$379.98
46793	Sony Multiscan 400PS 19" Monitor ..... \$729.98
03774	Optiquest V73 17"16" 25" SM 1280 ..... \$314.98
104833	Princeton E0930 19"18" Monitor ..... \$499.98
76535	Hitachi RasterOps Mc7515 19" Monitor ..... \$539.98
84147	ViewSonic G810 21" Color Monitor ..... \$834.98
78588	Princeton E02010 21"20.1" Monitor ..... \$879.98

Printers	
31720	Epson Stylus 740 USB ..... \$248.98
00576	Epson Stylus 850 ..... \$299.98
107503	Epson Stylus Photo 750 USB ..... \$299.98
107818	Epson Stylus Photo 1200 USB ..... \$499.98
40920	Epson Stylus 1520 ..... \$499.98
76985	Epson Color 3000 ..... \$1299.00
108859	HP DeskJet 812C USB Printer ..... \$199.98
102363	HP DeskJet 882C USB Printer ..... \$299.98
60236	HP DeskJet 895Cse Printer ..... \$399.98
617646	HP LaserJet 4050N Printer ..... \$1389.00
57728	HP LaserJet 5000N Printer ..... \$1999.00
60296	HP LaserJet 4500N Color Printer ..... \$2899.00
77917	Tektronix Phaser 840 Plus Color Printer ..... \$3195.00
76646	Tektronix Phaser 740 Color Laser ..... \$1995.00
76087	Tektronix Phaser 740 Plus Color Laser ..... \$2695.00
52851	Costar Labelwriter Turbo ..... \$248.98
107815	Epson Stylus 740i USB ..... \$279.98
106579	Epson Stylus 3000 reconditioned ..... \$899.98

Scanners	
58475	Umax Astra 1220S SCSI Flatbed Scanner ..... \$129.98*
*After \$20 mfr. mail-in rebate Low Zone Price \$149.98	
Offer good through 7/31/99.	
622652	Umax Astra 2000U ..... \$99.98*
*After \$30 mfr. mail-in rebate w/purchase of CPU. Exp. 7/31/99.	
18369	Umax Astra 2400S ..... \$299.98
31864	Umax PowerLook III ..... \$1195.00
18400	Microtek XGEL Scanner ..... \$239.98
104840	Microtek X6 USB Scanner ..... \$99.98**
**After \$50 mfr. mail-in rebate Low Zone Price \$149.98	
Offer good through 6/30/99.	
97131	Microtek ImageDeck Stand-Alone ..... \$499.98
75676	Epson Perfection 636 ..... \$299.98
97168	Agfa 1212U Blue Scanner ..... \$125.98
00540	Umax Astra 1220S-P Transparency Adapter ..... \$199.98
602610	Microtek SlimScan G6 USB Scanner ..... \$109.98
97187	Umax Mirage II Duc Advanced Scanner ..... \$1995.00
90877	Microtek ScanMaker 4 Scanner ..... \$669.98

Processor Upgrades	
<b>PowerBook Upgrades</b>	
03512	NuPower G3 250MHz i/PowerBook 1400 ..... \$999.98
03516	NuPower G3 240MHz i/PowerBook 2400 ..... \$849.98
<b>Power Mac Upgrades</b>	
60439	MAXpower G3 220MHz/110 ..... \$449.98
60408	MAXpower G3 250MHz ..... \$529.98
94400	MAXpower G3 333/166 ..... \$1229.00
94403	MAXpower G3 366/183 ..... \$1499.00
<b>Power Mac G3 Upgrades</b>	
94405	MAXpower G3 333/166 ..... \$1229.00
94406	MAXpower G3 366/183 ..... \$1499.00
94409	MAXpower G3 400/200 ..... \$1999.00
<b>Sonnet Technologies</b>	
03524	Crescendo G3 266MHz ..... \$599.98
03526	Crescendo G3 300MHz ..... \$799.98
78928	Crescendo G3 PowerPC 333MHz ..... \$999.98
78934	Crescendo G3 PowerPC 360MHz ..... \$1199.00

Credit cards are not charged until the order is shipped. Most products ship the same day (barring system failure, etc.). Shipping options include Ground, 2nd Day and Overnight delivery. Freight is based on average product weight. Handling extra. Insurance available. Special orders may require special shipping and handling charges. Call for international shipping rates. Prices and product availability subject to change without notice. Specials and promotions may be limited to stock on hand. Not responsible for typographical errors. All products sold by Multiple Zones International (MZI) are third party products and are subject to the warranties & representations of the applicable manufacturers, including but not limited to Y2K compliance. Accordingly, MZI makes no representation or warranty with respect to Y2K compliance of product sold. ©1999 Copyright Multiple Zones International Inc. All rights reserved. Unauthorized duplication is a violation of applicable laws. Apple®, the Apple logo, Macintosh® and PowerBook® are registered trademarks of the Apple Computer, Inc.

**we're open 24 hours a day 7 days a week**

NO SURCHARGE ON CREDIT CARDS

# Get a FREE\* Gift!

See the new products announced at  
**MacWorld Expo!**

www.zones.com/newmaccs

Shipping and handling charges may apply. Limited time offer.

Click here  **FREE Stuff!**  
Hot New Products  
Best Deals  
Call or Click

**Do all your shopping online!**

**Zones.com**

## \$100 Off any Purchase!

when you open an account with 

Get complete details online at [www.zones.com/etrade](http://www.zones.com/etrade)

### Mac OS 8.5 Upgrade

The must-have upgrade!

- Faster
- Smarter
- Sherlock searching

**ONLY \$79.98 #41970**

**FREE Sherlock T-Shirt (\$2.95 value)**

Visit [Zones.com](http://Zones.com) for your **FREE 8.6 Download**

**New!**

**Adobe Photoshop 5.5**

The latest evolution of an industry standard!

**UPGRADE \$114.98\* #83084**

\* after \$70 rebate. Call for details.

**Norton Utilities 4.0**

The tools you need for data recovery and disk repair.

**ONLY \$44.98\* #04890**

\* after \$50 rebate for upgraders

## Pick the PowerMac G3 That's Right for You!

Now the most popular business Mac is at a new low price!

**Apple® Power Macintosh® G3**

**350MHz Minitower**

64MB SDRAM  
6.0GB Ultra ATA-33 hard drive  
24X Max. Variable Speed CD-ROM  
1.0MB Level 2 backside cache

**ONLY \$1594 #108086**

OR LEASE FOR JUST \$56/Mo.\*

Enjoy your favorite movies with the latest in DVD technology!

**Apple® Power Macintosh® G3**

**400MHz Minitower**

64MB SDRAM  
6.0GB Ultra ATA-33 hard drive  
DVD Drive  
1.0MB Level 2 backside cache

**ONLY \$1994 #108087**

OR LEASE FOR JUST \$70/Mo.\*

Visit [Zones.com](http://Zones.com) For the Latest Promotions!

**Imation USB SuperDisk**

**Now 2X!**

**\$169.98 - \$100 = \$69.98\* #109035**

\*when you open an E\*TRADE account.

**Epson Stylus Photo 1200usb**

**ONLY \$499.95 #107818**

Included Iomega® Zip Drive is ideal for graphics professionals!

**Apple® Power Macintosh® G3**

**400MHz Minitower**

128MB SDRAM  
12.0GB Ultra ATA-33 hard drive  
24X Max. Variable Speed CD-ROM  
1.0MB Level 2 backside cache

**ONLY \$2494 #108088**

OR LEASE FOR JUST \$88/Mo.\*

The power you need for high-end media creation at the right price!

**Apple® Power Macintosh® G3**

**450MHz Minitower**

128MB SDRAM  
9.0GB Ultra Wide SCSI-2 hard drive  
24X Max. Variable Speed CD-ROM  
1.0MB Level 2 backside cache

**ONLY \$2994 #108089**

OR LEASE FOR JUST \$106/Mo.\*

Visit [Zones.com](http://Zones.com) For the Latest Promotions!

**VST External USB Floppy Drive**

Use your old floppy disks (and files) with your new Power Mac G3!

**ONLY \$89.98 #107094**

**USB Zip Drive**

**\$129.98 - \$100 = \$29.98\* #95251**

\*when you open an E\*TRADE account.

**Apple Studio Display 17"**

**ONLY \$494 #102932**

Keyboard and mouse sold separately.

**Apple Studio Display 21"**

**ONLY \$1494 #102933**

### Special Buys • Prices Updated Every Day • Software Downloads

UPS/Power	
00933 APC Back-UPS 200	\$89.98
00931 APC Back-UPS 300	\$99.98
00930 APC Back-UPS 500	\$149.98
00929 APC Back-UPS 650	\$229.98
00934 APC Back-UPS Office	\$84.98
55744 PK Electronic BlackoutBuster UPS	\$94.98
00923 APC Back-UPS Pro 280	\$149.98
00925 APC Back-UPS Pro 420	\$209.98
00926 APC Back-UPS Pro 650	\$269.98
88537 APC Back-UPS Pro 1000	\$359.98
26827 APC Back-UPS Pro 1400	\$459.98
55740 APC Smart-UPS 420	\$239.98
55741 APC Smart-UPS 620	\$309.98
07165 APC Smart-UPS 700	\$359.98
40410 APC Smart-UPS 1000	\$479.98
40411 APC Smart-UPS 1400	\$629.98
40419 APC Smart-UPS 1400 Rack Mount	\$699.98

Networking	
607708 AsantéFAST 10/100 PCI	\$45.98
09414 AsantéFAST 10/100 PCI 5-Pack	\$229.98
12009 AsantéFAST 10/100 PCI 20-Pack	\$828.98
102750 Asanté GigNIC 1064SX PCI Gigabit	\$899.98
12290 AsantéFAST 10/100 NuBus	\$239.98
101296 Asanté MacCon CS 10T CommSlot	\$69.98
02505 Asanté MD10C 10T LC PDS	\$79.98
102747 FriendlyNet PCMCIA 10T Dual Platform	\$75.98
600579 FriendlyNet PCMCIA 10T/10T Dual Platform	\$85.98
16630 AsantéTalk 10T to LocalTalk	\$69.97*
*After \$15 mfr. mail-in rebate.	
93330 Micro AsantéPrint 10T	\$129.98
85151 FriendlyNet 8-Port 10/100 Desktop Hub	\$129.98
106517 FriendlyNet 5-Port 10T Desktop Hub	\$39.97
106518 FriendlyNet 8-Port 10T Desktop Hub	\$47.97
106519 FriendlyNet 16-Port 10T Hub	\$119.98
102749 FriendlyNet 2104i ISDN Router	\$497.98
105477 FriendlyNet 2214A Dual 56K Router	\$538.98

600577 FriendlyNet 4004E 4-Port 10/100 Switch	\$199.97
600578 FriendlyNet 4008E 8-Port 10/100 Switch	\$399.97
102751 FriendlyNet 7108 8+1 Gigabit Switch	\$959.98
11923 IntraSwitch 6216M 16-Port 10/100 Switch	\$1158.00
13270 IntraSwitch 6224 Managed 10/100 24-Port	\$1456.00
102748 IntraSwitch 6224M 24-Port 10/100 2 Mil	\$1547.00
33268 Apple Network Assistant	\$369.98
78312 AppleShare IP 6.0 upgrade	\$439.98
73952 PC MacLAN for NT	\$198.98
36083 PC MacLAN for Win 95/98	\$159.98

**Sherlock Savvy!** Search [Zones.com](http://Zones.com) for everything Macintosh

Check out our Auction Site at [Zones.com](http://Zones.com)

Bids begin at just **\$1**

**MONTHLY BLOWOUT**

Corporate bids welcome!  
Fax to 1-800-684-8080

A NASDAQ COMPANY Ticker Symbol: MZON

Source Code **MW909**

Order by Phone **1.800.436.0606**

Order Online Today **Zones.com**



Authorized  
Catalog Reseller

the next generation of



# \$100 Off

## GUARANTEED LOW PRICES!

Computer prices change all the time. If you find any item advertised for less in a current national catalog or publication, we'll match their in-stock price. Call for complete details.

- Order Online at Zones.com
- Order 24 hours a day, 7 days a week
- Serving Mac enthusiasts since 1986
- Publicly traded NASDAQ company: MZON
- Complete Mac product selection – call for products not listed!
- Affordable leasing options
- Tech Support and Customer Service
- 100% Apple "Learn and Earn" Gold certified sales staff!
- Sherlock Savvy!



HEWLETT PACKARD

Expanding Possibilities

Genuine HP quality for your Mac!

ONLY \$399.98 #60236



Premium performance with photo-quality color! HP DeskJet 895C Printer

ONLY \$799.98 #102384



Sharper, faster and more expandable! HP LaserJet 2100M

ONLY \$1386 #617964



The new workgroup standard! HP LaserJet 4050N Printer

ONLY \$2839 #60296



Network color printing for workgroups! HP Color LaserJet 4500N Printer

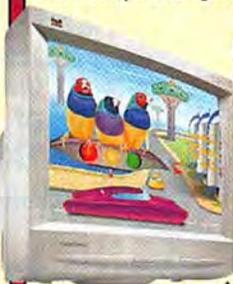


Organize in style! Ultra-thin and ultra-light! Palm V™ Organizer w/MacPac V.2



New! E-TRADE Sample Savings \$429.98 \$329.98 #100100 \*When you open an E-TRADE account

The new high-performance monitor with a compact design!



ViewSonic® See The Difference! PS790 19" (18" viewable)

ONLY \$484.98\* #03581

\*After \$100 rebate.



Easy to use, big on features! Fuji DX-10 Digital Camera



ONLY \$299.98 #615991



New 56K V.90 standard Teleport Modem!

Global Village Teleport 56K V.90 Fax/Modem



Our Best Selling Mac Modem!

E-TRADE Sample Savings \$109.98 -\$100\* #60339 \*When you open an E-TRADE account

Epson's fastest ink jet printer!

EPSON Stylus Color 900

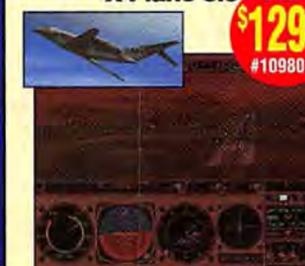


New!

ONLY \$449.98 #105493



Take to the skies for the ultimate flight experience! X-Plane 5.0



ONLY \$129.98 #109803

## What you'll find at Zones.com: Hot New Products • Latest Offers

Business Software		
06231	Act! 2.8 1/Mac	\$149.98
93952	Adobe Acrobat 4.0	\$219.98
96676	Apple Remote Access Personal Server 3.0	\$115.98
08329	AppleWorks 5.0	\$87.98
33597	Calendar Maker 4.5	\$48.98
74292	Consultant Contact Manager	\$59.98
03873	Corel WordPerfect 3.5.1	\$159.98
96801	Farellon Timbuktu Pro 4.0 Twin Pack	\$173.98
55861	MS Excel 98 Upgrade	\$129.98
55870	MS Office 98 Upgrade	\$249.98
55872	MS Office 98 Upgrade Gold Edition Mac	\$329.98
55873	MS Office 98-Gold Edition Mac	\$499.98
55871	MS Office 98-Mac	\$419.98
04161	MS Project 4.0 - Mac	\$389.98
55869	MS Word 98 - Mac	\$332.98
55868	MS Word 98 Upgrade - Mac	\$179.98
99042	MYOB Accounting Plus	\$179.98
80582	Now Up-To-Date/Contact/Pblstr/Synce 3.65	\$86.98

Utilities		
67067	Micromat TechTool Pro 2.11	\$64.98
77998	Connectix Virtual PC 2.0.95	\$138.98
20634	Connectix Virtual PC 2.1.98	\$168.98
02077	Virex 5.9	\$54.98
25006	Insignia SoftWindows 98	\$148.98
90375	Speed Doubler 8 for Mac OS	\$48.98
41956	StuffIt Deluxe 5.0	\$24.98*
*After \$50 rebate for upgraders		
00555	Hard Disk Toolkit 2.5	\$122.98
32550	Connectix Triple Pack: includes RAM Doubler 8, Speed Doubler 8, Surf Express Deluxe	\$64.98
08285	Retrospect Express 4.1	\$44.98
91300	Conflict Catcher 8	\$72.98
00642	PowerPrint 4.5	\$54.98
84048	RAM Doubler 8	\$45.98
00116	Norton AntiVirus 5.0	\$23.98*
*After \$40 mfr. mail-in rebate for upgraders.		

Games		
74181	Starcraft	\$48.98
74149	ShangHai Dynasty	\$39.98
72741	Carmageddon	\$29.98
34779	Myth 2: SoulBlighter	\$48.98
49279	Diablo	\$43.98
74946	Civilization 2	\$28.98
07420	Deer Hunter	\$19.98
53467	Jack Nicholas 4	\$19.98
74847	Quake	\$27.98
53465	Real Pool	\$16.98
07419	Unreal	\$42.98
74166	Riven: The Sequel to MYST	\$39.98
07427	Extreme Mac 12-Pack	\$39.98
*03788	Connectix Virtual Game Station	\$48.98

Education		
90081	Bailey's Book House	\$16.98
90082	Miller's Math House	\$16.98
505005	KidDesk Internet Safe	\$25.98
74177	Math Blaster Pre Algebra	\$18.98
71251	Mavis Beacon Teaches Typing 9.0	\$36.98
80635	Family Tree Maker Deluxe II	\$79.98
77404	Dragon Trail 3	\$39.98
79710	Design your Own Home 3D Walkaround	\$69.98
05884	Encyclopedia Britannica 1999 CD	\$48.98
604602	Reunion 6.0: Family Tree	\$99.98
14163	National Geographic 109 Years Collectors Ed.	\$144.98
05884	Dr. Seuss Preschool	\$17.98
07397	Arthur's Teacher Troubles	\$27.98
90018	Where In The World Is Carmen Sandiego?	\$27.98
90018	Learn To Speak Spanish 7.0	\$69.98

100s of games available... if you don't see it listed, Call!

We're open hours a day 24/7 days a week



Credit cards are not charged until the order is shipped. Most products ship the same day (barring system failure, etc.). Shipping options include Ground, 2nd Day and Overnight delivery. Freight is based on average product weight. Handling extra. Insurance available. Special orders may require special shipping and handling charges. Call for international shipping rates. Prices and product availability subject to change without notice. Specials and promotions may be limited to stock on hand. Not responsible for typographical errors. All products sold by Multiple Zones International (MZI) are third party products and are subject to the warranties & representations of the applicable manufacturers, including but not limited to Y2K compliance. Accordingly, MZI makes no representation or warranty with respect to Y2K compliance of product sold. ©1999 Copyright Multiple Zones International Inc. All rights reserved. Unauthorized duplication is a violation of applicable laws. Apple, the Apple logo, Macintosh® and PowerBook® are registered trademarks of the Apple Computer, Inc.

# Any Purchase!

See the new products announced at MacWorld Expo! Visit [www.zones.com/newmags](http://www.zones.com/newmags)

when you open an account with  E\*TRADE

Get complete details at [www.zones.com/etrade](http://www.zones.com/etrade)



**macromedia Flash 4 Upgrade**

The Web standard for vector graphics and animation!

**ONLY \$119.98**  
#77533

**NEW VERSION!**

- Full design, typographic & layout tools
- Vector and bitmap transparency
- Shape morphing
- Transparency effects
- Bandwidth profiler

**Adobe Professional Web Bundle**

Three great Adobe products in one affordable bundle - you save over \$200!

**ONLY \$389.98**  
#616006

- GoLive™ 4.0
- ImageStyler 1.0
- ImageReady 1.0

While supplies last.

**Microsoft Office 98 Mac Edition Upgrade**

Get results as smart as your ideas!

**ONLY \$254.98**  
#55870

- Complete - Includes Word 98, Excel 98, PowerPoint 98, Outlook Express and Internet Explorer
- Simplest Mac/PC sharing ever... no conversion needed!

**SYMANTEC™**

Protect your Mac with this Mac Super Utility Bundle

Norton Utilities • Norton AntiVirus Retrospect • Spring Cleaning

**FREE 6-Pak of Extreme Mac Family Games**

**E\*TRADE Sample Savings \$138.98 \$38.98**  
#106014 \*when you open an E\*TRADE account

While supplies last.

**Adobe Award Winning Tools for Professional Publishing!**

The world standard image-editing solution!

**Adobe Photoshop 5.5**

**NEW VERSION!**

**\$184.98 -70% -100% \$14.98**  
#83084

- Complete all your essential Web functions right in Photoshop
- Produce high-quality Web graphics with smallest possible file size for fast downloads
- Perform complex masking tasks with professional-level precision
- Create original artwork, retouch photos and add special effects with comprehensive filters

\*After \$70 mfr. mail-in rebate for current Photoshop 5.0 and ImageReady owners. Offer good while supplies last. \*\*when you open an E\*TRADE account.

**Adobe InDesign**

**NEW!** Professional page-design software with new code base and powerful tools!

**ONLY \$299**  
#107036

- Design sophisticated pages with fully editable layers and frames
- User interface utilizes familiar commands, tools, shortcuts and palettes
- Directly import Photoshop and Illustrator files
- Quickly convert QuarkXPress documents to InDesign format

Special limited time price for QuarkXPress, PageMaker, Illustrator and Photoshop users only. Offer good through 8/31/99. After 8/31/99, price goes to \$698.98. Call for complete details.

**FREE!** 6-month subscription to Desktop Publisher's Journal (6 issues) when you buy Adobe InDesign! Ask for item #17236

**Extensis Suitcase 8 Upgrade**

Put your fonts in order and focus on your creativity!

**ONLY \$39.98**  
#102870

- Now updated for Mac OS 8.5
- Management tools
- Easily add fonts and build your own sets
- Organize fonts by project

Visit **Zones Business Solutions** for volume savings on your business software!

[www.zonesbusiness.com/softwarelicensing](http://www.zonesbusiness.com/softwarelicensing)

**Special Buys • Prices Updated Every Day • Software Downloads**

Internet	
7533	Macromedia Flash 4 Upgrade \$94.98
7299	Dreamweaver Fireworks Studio \$388.98
7535	Dreamweaver 2 Upgrade \$127.98
3486	Macromedia Dreamweaver 2 \$288.98
04700	Fireworks 2 Upgrade \$124.98
9636	Fireworks 2 Full Version \$188.98
4756	Adobe ImageReady \$188.98
4182	Adobe ImageStyler \$119.98
9844	Adobe PageMill 3.0 \$98.98
1914	NetObjects Fusion 3.0 Upgrade \$97.98
1910	NetObjects Fusion 3.0 Full version \$199.98
1916	Adobe GoLive 4.0 \$289.98
6471	Bare Bones BBEdit 5.0 \$99.98
33320	Microsoft FrontPage \$139.98
1243	PANTONE ColorSuite for Internet \$74.98
1925	WebSpace Animations \$78.98
06118	WebSpace 2,000,000 \$79.98
1991	WebSpace Objects \$78.98

Graphics	
83084	Adobe Photoshop 5.5 Upgrade \$114.98*
*After \$70 mfr. rebate for Photoshop 5.0 & ImageReady owners.	
88205	Adobe Illustrator 8.0 Upgrade \$114.98
71273	Adobe Graphics Studio \$899.98
103797	Adobe PageMaker 6.5 Plus Upgrade \$89.98
83930	Adobe Type Manager Deluxe 4.5 \$64.98
95334	Adobe Premiere 5.1 Upgrade \$189.98
84242	Macromedia FreeHand 8 Upgrade \$139.98
86007	Macromedia Director 7 Shockwave Internet Studio Upgrade \$479.98
92266	Director 7 Shockwave Internet Studio \$899.98
102870	Extensis Suitcase 8.0 Upgrade \$39.98
107669	Extensis Suitcase 8.0 Full Version \$89.98
71245	Extensis QXTools 4.0 Upgrade \$49.98
53541	Extensis PhotoFrame Vol I & II \$119.98
72975	Extensis IntellihancePro 4.0 \$189.98
104522	MetaCreations Poser 4.0 \$239.98
53567	MetaCreations Painter 5.5 Web Ed Full ver. \$279.98

59682	Kali's SuperGoo \$44.98
17246	Kali's Power Tools 5.0 \$124.98
104508	Nova Art Explosion 525,000 \$149.98
72905	Bryce 4.0 \$189.98
71129	PANTONE ColorReady \$392.98
89657	PANTONE Color Survival Kit \$154.98
71241	PANTONE ColorSuite for Graphics \$229.98
72714	MacPublisher \$17.98
72974	QuarkXMedia 1.3 \$238.98
613842	QuarkXPress 4.0 \$699.98

**Sherlock Savvy!**

Search Zones.com for everything Macintosh

Visit us online at **Zones.com** to see our full selection of products at the latest prices!



Corporate bids welcome!  
Fax to 1-800-684-8080  
A NASDAQ COMPANY Ticker Symbol: MZON  
Choose 71 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

Source Code **MW909**

Order by Phone **1.800.436.0606**

Order Online Today **Zones.com™**



Authorized  
Catalog Reseller

# LIGHTNING-FAST 450MHz

Tektronix • JVC • Apple • Quark • Kodak • Iomega • PowerUser

### Mac Cables & Adapters

Call us! We have everything you need!

**POWERUSER**

### 100MB Zip USB Drive

Price: \$129<sup>95</sup>  
Manufacturer's mail-in rebate: -\$30\*

**\$99<sup>95</sup>** after rebate, with purchase of any computer.

Item #DR9464

- Translucent blue
- USB compatible, works with your iMac!

\*Coupon for mtr's mail-in rebate is available at [www.warehouse.com/rebate/iomega](http://www.warehouse.com/rebate/iomega), or call us at 1-800-390-0706 to request one. Qualifying products must appear on same invoice. Offer valid 6/15/99 to 9/11/99.

### Iomega 100MB Zip Disks

**Free!** CD-R 5-pack with purchase of Zip Media 10-pack. Ask for item #AAA1017.

**While Supplies Last!**

Gray 100MB Zip Disk 10-pack Item #BND3314 ..... ONLY \$99.95

Multi-color 100MB Zip Disk 10-pack Item #BN5265 ..... ONLY \$99.95

### QuarkXPress 4.0

**Only \$729<sup>95</sup>!**

DTP0694

Precise layout tools and control over every aspect of your document!

### KODAK DC265 ZOOM DIGITAL CAMERA

**Only \$899<sup>95</sup>!**

IN7770

- 1536 x 1024 ppi resolution
- 3X optical/2X digital zoom lens
- USB and serial cables included
- 2.0" TFT color LCD • Audio record and playback
- 16MB compact Flash Picture card

## 350-450MHz Power Mac G3s!

Prices starting at **\$1599!**

From MacWAREHOUSE, Get

**FREE\*** 64MB RAM!

**OR**

**Instant Rebate!**

off regular MacWAREHOUSE prices. Call for details!

Offers not valid on purchase of reconditioned models. Limited time offer. \*\$29.95 installation fee required. †Value based on MacWAREHOUSE pricing as of this magazine printing.

- ### All Power Mac G3s Feature:
- ✓ Up to a 450MHz PowerPC G3 processor
  - ✓ 1MB Backside Level 2 Cache
  - ✓ ATI RAGE 128 graphics card with 16MB of graphics memory
  - ✓ Up to 12.0GB hard drive
  - ✓ Up to 128MB SDRAM (exp. to 1GB)
  - ✓ 24X max. CD-ROM drive or DVD-ROM drive (on model CPU1383/CPU1394)
  - ✓ 10/100Base-T Ethernet
  - ✓ Two FireWire ports
  - ✓ 2 extra bays/4 PCI slots

**NEW!**

### 128MB PC100 SDRAM G3 Memory

For New Power Mac G3s with 100MHz bus speed.

**Upgrade only \$379<sup>95</sup>!** each

Item #CHP0691

### Apple 56K<sup>+</sup> Internal Modem

**Only \$109<sup>99</sup>!**

56K modem with FaxSTF Software

Item #DMD4229

†Capable of receiving at 56Kbps. Actual send and receive speeds may vary.

### JVC GR-DVM70 DIGITAL VIDEO CAM

- 10X Optical Zoom with 200X Digital Zoom with Spline Interpolation technology
- Hi Resolution Digital Recording (4:1:1 Digital Component Recording)
- 680,000 pixel CCD with Digital Image Stabilizer to eliminate "camera shake"
- 2.5" Color LCD Monitor
- Removable Multimedia Card technology for Snapshot capability
- Mac and PC compatible

**Only \$1499<sup>95</sup>!**

Item #IN7863

FireWire! DV Input/Output IEEE 1394 compliant

### PHASER 780 COLOR LASER PRINTER

**Tektronix**

- 1200 dpi blk, 600 dpi color
- 4 ppm color; 16 ppm black
- Prints from 3.5" x 5.5" to 13" X 19"

**Only \$4995!**

Item #PR14428

Adobe Postscript 3 Color Laser Printing!

PAGE 1 OF 8

- Our sales staff is ready to take your order 24 hours a day, 7 days a week. We accept the following major credit cards: Visa, MasterCard, Discover Card/NOVUS, AmEx. Your credit card will not be charged until each item is shipped (no surcharge). CT, NJ and OH residents add applicable sales tax.
- Overnight delivery just \$9.95 per order up to 5 pounds. For all orders over 5 pounds, shipping is \$9.95 plus an additional \$1.75 per pound or fraction thereof. (Example: shipping for a 6 pound order is \$11.70). Please add an additional \$3.00 for all orders \$50.00 and under.
- Orders for "in-stock" items placed on weekdays up until 12:00 midnight (E), 10:00 pm (P) for Internet orders, ship same day for

overnight delivery (barring system failure, etc.). We anticipate being able to ship "out-of-stock" items within 30 days.

- All items we sell come with the MacWAREHOUSE 30-Day Guarantee Against Defects. Call our Customer Service Department at 1-800-925-6227 for a Return Merchandise Authorization (RMA) number within 30 days of the original invoice date. Defective software will be replaced immediately upon receipt of the defective product. Defective hardware will be replaced or repaired at our discretion, except for products from Apple 1-800-SOS-APPLE (1-800-767-2775), or Tektronix (1-800-635-6100). These manufacturers must be contacted directly, and will repair or replace products at their sole

discretion. Should you return hardware to MacWAREHOUSE from Apple or Tektronix, you will be assessed a 15% restocking fee which will be charged to your account. All returns are subject to the following: 1. All products must be returned in original packaging. 2. Shipping and handling charges are not refundable. 3. Software and consumables are not refundable unless returned unopened in original packaging with documentation. 4. Custom orders and cables are not refundable. 5. Products designated as "all sales final" are not refundable.

Copyright © 1999 Micro Warehouse, Inc. MacWAREHOUSE® is a division of Micro Warehouse, Inc. Item availability and price subject to change without notice. We regret that we cannot be

responsible for typographical errors. All prices shown in U.S. dollars. Micro Warehouse makes no representations or warranties of any kind and assumes no liability concerning whether any of the products or services sold by us are Year 2000 Compliant. Year 2000 representations and warranties may be supplied directly to our customers by the manufacturers or publishers of certain products.

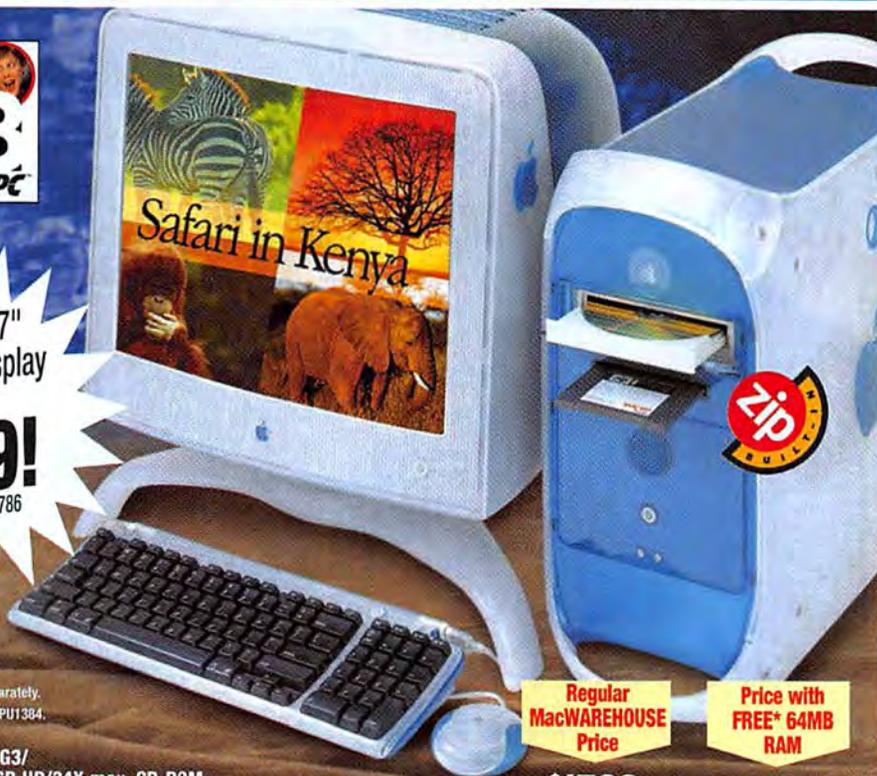


# POWER MAC G3s!

CALL FOR A FREE FULL-COLOR CATALOG!



Adaptec • Apple • Epson • AGFA • QPS • Nikon



Apple 17" Studio Display  
Only **\$499!**  
Item #MON0786

Monitor sold separately.  
Model shown is CPU1384.

350MHz PowerPC G3/  
64MB SDRAM/6.0GB HD/24X max. CD-ROM  
drive/1MB Backside Level 2 Cache

Lease!!! for as low as \$47/mo.\*

Regular  
MacWAREHOUSE  
Price

**\$1599**

Item #CPU1382

Price with  
FREE\* 64MB  
RAM

**\$1628<sup>95</sup>**

Item #CPU1393

400MHz PowerPC G3/64MB SDRAM/6.0GB HD/  
DVD-ROM drive/1MB Backside Level 2 Cache

Lease!!! for as low as \$58/mo.\*

**\$1999**

Item #CPU1383

**\$2028<sup>95</sup>**

Item #CPU1394

400MHz PowerPC G3/128MB SDRAM/12.0GB HD/24X max.  
CD-ROM drive/Zip Drive/1MB Backside Level 2 Cache

Lease!!! for as low as \$73/mo.\*

**\$2499**

Item #CPU1384

**\$2528<sup>95</sup>**

Item #CPU1395

450MHz PowerPC G3/128MB SDRAM/9.0GB Ultra2 SCSI HD/  
24X max. CD-ROM drive/1MB Backside Level 2 Cache

Lease!!! for as low as \$87/mo.\*

**\$2999**

Item #CPU1385

**\$3028<sup>95</sup>**

Item #CPU1396

\*\$29.95 installation fee required.

Agfa 1212u  
Scanner

Only **\$99<sup>95</sup>!**

after MacWAREHOUSE  
\$30 rebate with the  
purchase of an  
iMac or Apple Power  
Mac G3. Item #HT7051.

• Translucent blue • 36-bit color • USB  
\*Price before mail-in rebate: \$129.95. Rebate coupon available at  
www.warehouse.com/rebate/snapscan, or ask for coupon #A4129.  
While supplies last. Offer expires 9/30/99.



Adaptec PowerDomain  
2930U Ultra SCSI Adapter

Ideal for  
Power Mac G3!



Only **\$99<sup>95</sup>!**  
DRI3165

- 20MB/sec. transfer rate
- Internal & external connectors
- Bootable

adaptec

Epson Stylus Color  
900 Printer

Only **\$449<sup>95</sup>!**  
PR14811

- 12ppm black; 10ppm color
- 1440 x 720 dpi
- Smallest ink droplets
- Optional networking



EPSON

Nikon CoolPix 950  
Digital Camera



Only **\$949<sup>95</sup>!**  
IN7755

- 2" color LCD • 3X optical zoom
- 2.11 million pixel resolution
- 8MB compact flash stores up to 128 standard images

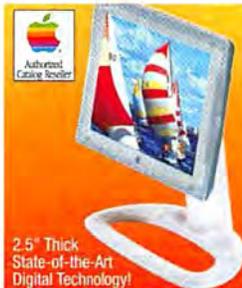
Nikon

## APPLE 15.1" LCD STUDIO DISPLAY

- 15.1" viewable LCD
- Twice as bright as typical CRT displays
- 120°-wide viewing angle
- Built-in composite and S-video connectors

Only **\$1299!**  
Item #MT2619

21" Apple Studio Display with ColorSync  
Technology, Trinitron CRT  
MON0787 ..... only \$1499



2.5" Thick  
State-of-the-Art  
Digital Technology!

## POWER MAC APPLE CARE WARRANTIES\*

- AppleCare Extended Service Plan begins immediately after your original warranty expires
- 100% parts and labor protection and unlimited repairs
- Quality service by authorized Apple-certified technicians
- Genuine Apple parts

**\$120!**

Item #WAR0475

2-year Extended Service Enrollment  
WAR0480 ..... \$180  
\*AppleCare Extended Service is not available to customers in the state of Florida.



## QPS QUE! USB CD-RW

USB CD-RW 4x2x8 for iMac and Power Mac G3s



Only **\$299<sup>95</sup>!**  
DRI3342

- USB interface
- 2MB buffer RAM
- 700KB/sec data transfer rate
- Includes software, media, and bag

PAGE 2 OF 8

1-800-434-3036 ★ www.warehouse.com/md

ORDER TOLL-FREE 24 HOURS A DAY, 7 DAYS A WEEK! CANADA ORDERS CALL: 1-800-603-5139

MacWAREHOUSE EXPRESS DELIVERY OVERNIGHT!

In-stock items,  
call weekdays by  
midnight (E), or order online  
weekdays by 10pm (E).



Hi, I'm Ken. Call me  
for more great deals!

Your #1 Source for Mac™ Systems and Products—since 1987!



Mac**WAREHOUSE**

# FREE<sup>†</sup> 64MB RAM Upgrade

Broderbund • Apple • Iomega • Hewlett Packard • Umax • Kensington • Sony • Entrega

## VIRTUAL PC 2.1 WITH WINDOWS 98

Upgrade only  
**\$39<sup>95!</sup>**  
UPG0810



- Includes Microsoft Windows 98 full version!
- Fully integrated with Mac OS 8 and OS 8.5
- NEW 56K modem speed support!

Connectix

COM1039: Virtual PC 2 with Windows 98 Full Version.....	\$169.95
COM0951: Virtual PC 2.1 with Windows 95.....	\$149.95
COM0952: Virtual PC 2.1 with PC DOS CD.....	\$49.95

## Iomega Zip<sup>®</sup> USB Value Pack

Only  
**\$229<sup>95!</sup>**  
BND3035



- Includes:
- Translucent blue Zip drive
- 10 color disks
- Carrying case
- Disk caddy
- Media wallet

## NEW! HP DeskJet 882c Color Printer

Only  
**\$299<sup>95!</sup>**  
PR14684



- USB compatible only
- 9ppm black; 6.5ppm color
- PhotoRET II technology

## iMac USB Hubs

As low as  
**\$59<sup>95!</sup>**  
DEH4075



- Provides 4 to 7 additional USB ports for expanding your peripherals.
- Matching iMac color case

## Astra 1220u Duo Color Scanner

Only  
**\$99<sup>95!</sup>**  
IN7260



- Was \$129.99
- 600 x 1200 dpi resolution
- 36-bit with 10-bit A/D converter

NEW LOW PRICE!

Available in all 5 colors!

## iMac/333MHz

Still only

**\$1199!<sup>†</sup>**

each



Blueberry



Grape



Lime



Strawberry



Tangerine

The 333MHz iMac blows the doors off anything else on the information superhighway!

**iDock**, from CompuCable, expands iMac's connectivity. iDock is a swivel base with an integrated 3-port USB Hub plus 2 Apple Serial/Geo Ports and 1 Parallel Port.

With iDock, iMac can be connected to Mac serial devices and multi-platform parallel devices. iDock is molded in "Ice" to match any iMac perfectly.



Adds Serial and Parallel ports to your iMac!

COMPU CABLE **\$199<sup>99</sup>**

Ask for item #DEH4621

See the complete line of G3s at  
[www.apple.warehouse.com](http://www.apple.warehouse.com)

Visit us at:  
[buymacgames.warehouse.com](http://buymacgames.warehouse.com)

for our full selection of great games for the Mac!



† Leases are only available to business customers with approved credit on product orders where at least one product totals \$750 or more. Lease payments are based on a 48-month Fair Market Value Lease. Call today to see how you can qualify. Lease terms are subject to change.

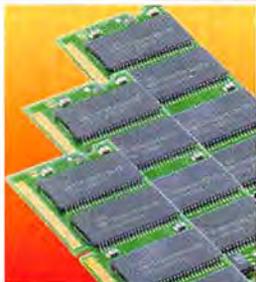
## IMAC G3 MEMORY

128MB SDRAM

Only  
**\$299<sup>95!</sup>** each  
Item # CHP0659

- 66MHz
- 144 PIN SODIMM

CHP0659: 128MB ..... only \$299.95



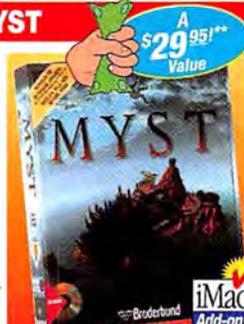
## MYST

**FREE\*** with any purchase from MacWAREHOUSE  
Item # AAA0742

- Challenge your puzzle-solving skills in the Island world that is Myst!

Broderbund

\*\$3.95 shipping and handling applies. Shipped in promotional packaging. Hurry! Offer good while supplies last. \*\*Value based on MacWAREHOUSE pricing as of this magazine printing.



## PAGE 3 of 8

## ORBIT USB FOR MAC

Only **\$34<sup>95!</sup>** with iMac or USB Power Mac G3 purchase  
Ask for item #AAP0600.

- Designed specifically for use with USB
- Fits the natural shape of your hand



KENSINGTON Orbit USB for Mac if Purchased separately: INP1761 ..... \$49.95

## HP LASERJET 2100M PRINTER

Only **\$779<sup>95!</sup>**  
Ask for item #PR14691.

- 1200 dpi
- 10ppm
- Mac LocalTalk connectivity

HEWLETT PACKARD Expanding Possibilities



## SONY DIGITAL FD73 MAVICA

Only **\$499<sup>95!</sup>**  
Ask for item #IN7834.

- 10x optical zoom • E-mail mode
- 2.5" Color LCD • VGA resolution
- Quick Access 2X Floppy Disk Drive
- Picture effect • File copy/disk copy



# for your iMac G3! only \$1199<sup>†</sup> ea.

See below for details.



Epson • Connectix • Imation • Farallon • Asanté • Microsoft • Asanté • Symantec • Intuit

# FREE<sup>†</sup> 64MB RAM UPGRADE!

from MacWAREHOUSE  
when you  
order your  
333MHz  
iMac today!

†\$29.95 installation fee  
required. Limited time offer!  
Does not apply to reconditioned  
models.



Get a 333MHz  
iMac for  
only \$27.45  
a month!<sup>††</sup>  
Ask for details.

- 333MHz G3 Processor
- Built-in 15" Color Monitor (viewable size: 13.8")
- 32MB (256MB max.)
- 6.0GB hard drive
- 512K Backside Level 2 Cache
- 6MB of Video RAM
- Built-in 24X CD-ROM drive
- Built-in 56Kbps Modem
- Built-in 10/100 Base-T Ethernet
- 2 USB Ports
- Mac OS 8.5

**Regular MacWAREHOUSE Price:**

- Blueberry: item #CPU1336
- Grape: item #CPU1337
- Lime: item #CPU1338
- Strawberry: item #CPU1339
- Tangerine: item #CPU1340

**\$1199! ea.**

Lease!! for \*\$5/month!

**Price with FREE<sup>†</sup> 64MB RAM installed:**

- Blueberry: item #CPU1438
- Grape: item #CPU1439
- Lime: item #CPU1440
- Strawberry: item #CPU1441
- Tangerine: item #CPU1442

**\$1228<sup>95!</sup> ea.**

Lease!! for \*\$6/month!

**New Imation SuperDisk USB Drive**

Only **\$169<sup>99!</sup>**  
DRI3350

- Now faster than ever! • 120MB capacity
- USB interface and hot-swappable

**Imation LS-120 SuperDisks**

Only **\$7<sup>99!</sup>** each, in 10-pack with SuperDisk Drive purchase.

**Farallon EtherMac iMac iPrint Adapter**

Only **\$109<sup>99!</sup>**  
DEP1734

- Connects your iMac to LocalTalk printers and other Macintosh computers
- Easy plug-and-play installation

Ethernet iPrint Adapter for Stylewriter: DEP1739... **\$109<sup>99</sup>**

**AsantéFast 10/100 Adapter**

Only **\$49<sup>99!</sup>**  
DEC3794

- 10/100 PCI adapter (Mac/PC)
- Auto negotiation

10/100 PCI Adapter 5-pack (Mac/PC):  
Item # DEC3344, only \$239.99. **ASANTÉ**

**QuickBooks Pro 4.0**

Upgrade Only **\$129<sup>95!</sup>**  
after rebate  
FIN0308

- Automatically flows to editable accounting features!
- Time tracking integration for business users.

**Intuit**  
\*Price AFTER publisher's \$70 mail-in upgrade rebate. Before rebate: \$199.95. Rebate expires 12/31/99.

**Norton Utilities 4.0**

Upgrade Only **\$49<sup>95!</sup>**  
after rebate  
UTI1383

- HFS Plus compatibility
- Power PX native
- Enhanced SCSI/IDE support

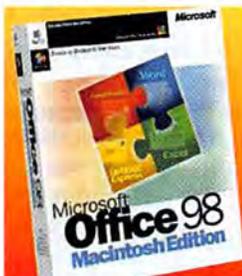
\*Price AFTER publisher's \$50 mail-in upgrade rebate. Before rebate: \$99.95. Proof of ownership of previous version of Norton Utilities for Mac required. Limit one per customer. Copy of invoice required. Rebate expires 30 days after purchase date.

**MICROSOFT OFFICE 98**

**Microsoft**

- Includes: Word 98, PowerPoint 98, Excel 98 and Outlook Express

Upgrade only  
**\$239<sup>95!</sup>**  
Item # UPG0778



BUS1150: Microsoft Office 98 Full Version... only \$399.95

**EPSON STYLUS COLOR 740i PRINTER**

Price: **\$279<sup>95</sup>** **EPSON** **NEW!**  
Manufacturer's mail-in rebate: **-50\***

Your final **\$229<sup>95</sup>**  
Cost:

- Comes in Blueberry or can be customized to match your iMac flavor
- 1440 x 720 dpi w/smaller ink drops
- 1440 x 720 dpi w/smaller ink drops
- 6ppm black; 5ppm color
- USB/Mac serial compatible

\*Rebate coupon available at [www.warehouse.com/rebate/epson](http://www.warehouse.com/rebate/epson) or call us at 1-800-390-0706 to request one. Offer expires 9/30/99.



**PAGE 4 of 8**

**1-800-434-3036 ★ www.warehouse.com/md**

ORDER TOLL-FREE 24 HOURS A DAY, 7 DAYS A WEEK! CANADA ORDERS CALL: 1-800-603-5139

**MacWAREHOUSE EXPRESS DELIVERY OVERNIGHT!**

In-stock items, call weekdays by midnight (E), or order online weekdays by 10pm (E).

Your #1 Source for Mac Systems and Products—since 1987!



Hi, I'm Chris. Call me for more great deals!



# MacWAREHOUSE

# Blazing Fast Apple Power

Apple • Newer Technology • VST • Global Village • Imation • 3Com US Robotics • Keyspan

**Broderbund MYST** **\$29.95** a value! \*\*

**FREE!** with any purchase from MacWAREHOUSE AAA0742

Challenge your puzzle-solving skills in the Island world that is Myst!

\*\$3.95 shipping and handling applies. Shipped in promotional packaging. Hurry! Offer good while supplies last.

\*\*Value based on MacWAREHOUSE price as of this magazine printing.

**USB Serial Converter**

**Only \$79.95!** DAD1577

**KEYSPAN**

**3Com Palm V Connected Organizer**

**Only \$429!** BN6356

Clearer backlit display  
Holds up to 5 years of appointments!

Palm IIIx Connected Organizer BN6334 ..... \$349

**Olympus D-400Z** 1.3 megapixels

**PRICE SLASHED!**

**Now only \$599.95!** was \$699.95 IN7514

1280 x 960 ppi resolution  
3X optical lens  
8MB Smartmedia card

**OLYMPUS**

**SupraExpress V.90 Modem**

**Only \$99.99!** DMD3503

Supports 56K\* ITU standard V.90 & K56flex technology  
Serial interface

\*Capable of receiving data up to 56Kbps. Actual send and receive speeds may vary.

## HP LaserJet Printers

**HP LASERJET 8000N** **Only \$2489.95!**  
Ask for item #PR13724. Lease!! for \$72/mo.\*  
• Prints 24ppm • 1200 dpi max. resolution  
• 133MHz RISC processor

**HP LASERJET 2100M**  
• Prints 10ppm  
• 1200 dpi resolution  
• HP PostScript Level 2  
• LocalTalk connectivity

**HP LASERJET 8000 SERIES BLACK TONER CARTRIDGE** Only **\$179.95** ea. Item #63223

**HP LASERJET 2100 SERIES BLACK TONER CARTRIDGE** Only **\$109.95** ea. Item #PA1871

**HP LASERJET 8100N**  
• Prints 32ppm • 1200 dpi  
Item #PR14315 .....Lease!! for \$82/mo.\* **\$2809.95**

**HP COLOR LASERJET 8500N**  
• Prints 24ppm blk/6ppm color • 600 dpi  
Item #PR14213 .....Lease!! for \$184/mo.\* **\$6359.95**

**HP LASERJET 8100 SERIES BLACK TONER CARTRIDGE** Only **\$219.95** ea. Item #PA1662

**HP LASERJET 8500 SERIES BLACK TONER CARTRIDGE** Only **\$109.95** ea. Item #PA1644

**HP LASERJET 4050N** **Only \$1399**  
Ask for item #PR14947. Lease!! for \$41/mo.\*  
• Prints 17ppm  
• 1200 dpi maximum resolution  
• 100MHz RISC processor  
• Ethernet 10BaseT/10Base2 + LocalTalk

**HP LASERJET 5000N** (not shown)  
• Prints 16ppm • 1200 dpi • Prints 3" x 5" thru 11" x 17"

Ask for item #PR13443 .....Lease!! for \$58/mo.\* ..... **\$1999.95**

**HP LASERJET 4050 SERIES BLACK TONER CARTRIDGE** Only **\$94.95** ea. Item #PR13025

**HP LASERJET 5000 SERIES BLACK TONER CARTRIDGE** Only **\$169.95** ea. Item #PR13742

**NEW!**

**OPTIQUEST V73 17" MONITOR**

**Optquest** OPTIMIZE YOUR IMAGE™

- 17" (16" viewable) screen
- 26mm dot pitch
- 1152 x 870 resolution @ 75Hz
- Manufacturer's 3-year warranty

**Only \$349.95!** Item #MON0725

**IOMEGA JAZ 2.0GB CARTRIDGES**

**jaz 2GB**

**Only \$99.95!** ea., in 3+ quantity  
Item #MED0508

**Free CD-R 5-pack with Jaz 2 cartridge purchase!**  
Limit one per customer. While supplies last. Item #AAA1017.

Quantity	1-2	3+
Price per disk	\$124.95 each	\$99.95 each

**OMNIPAGE PRO 8.0 UPGRADE**

**FREE!** Adobe PhotoDeluxe 2.0 when you purchase OmniPage 8.0.

**HURRY, WHILE SUPPLIES LAST!**

Optical character recognition (OCR) software enables you to quickly and easily convert scanned pages into computer editable documents.

**Only \$89.95!** caere  
Item #UPG1023

\*Adobe PhotoDeluxe shipped in promotional packaging.

**www.webauction.com**

Your #1 Auction Source!

**Many bids \$1 starting at**

on Mac computers and lots of other great products.

Join the action at **WEBAuction.com**  
THE AUCTION WAREHOUSE!

Products shown not necessarily being auctioned currently.

**New products arriving daily!**

**IMATION CD-Recordables**

- 74 min.
- 650MB
- Jewel cases included

**\$149\* each, after \$10 rebate** only  
Ask for item #BN5936

**\$20 Rebate!** on 10-pack

Price for 10-pack before manufacturer's mail-in rebate: \$24.99. Download coupon at [www.imation.com/rebate/](http://www.imation.com/rebate/) or ask for coupon #AA1590. Limit 3 rebates per name or mailing address. Offer expires 9/31/99.

**3Com U.S. Robotics V.90 56K\* FaxModem**

**Only \$97.99!\*\*\* after \$20 rebate**  
Ask for item #BND3179

**\$20 Rebate!**

- Manufacturer's lifetime warranty
- \*Capable of receiving data up to 56Kbps. Actual send and receive speeds may vary.
- \*\*Price before manufacturer's mail-in rebate: \$117.99. Offer expires 8/28/99.

**Free Nova Software 3,000 Images™** with the purchase of 2 Inkjet cartridges.

**Amazon Inkjet Cartridges**

**As low as \$15.99!** each, in 2-pack

Ink cartridges for Epson Stylus Photo and PM700 (1 blk/1 color); Item #BN6064, 2-pack only \$31.99.

Ink cartridges for Epson Stylus Color 400/600 (1 blk/1 color); Item #BN6066, 2-pack only \$31.99.

Ink cartridges for Epson Stylus Color 800/850/1520 (1 blk/1 color); Item #BN6065, 2-pack only \$33.99.

\*\*While supplies last.



# Book G3s as low as \$2499! Up to 400MHz!

Hewlett Packard • Optquest • Iomega • Olympus • Caere • Amazon • Targus

## Apple PowerBook G3s!

As low as

# \$2499!

# UP TO 400MHz!

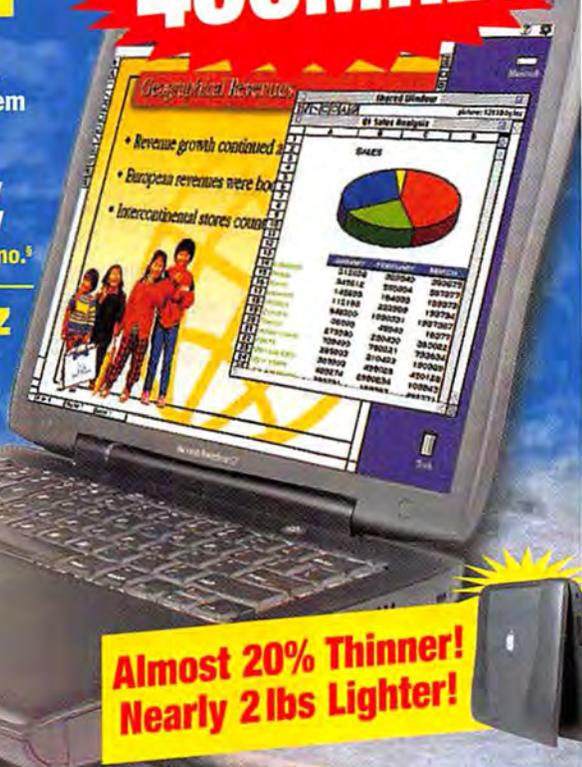
- 333MHz PowerPC G3 processor
- 64MB SDRAM • 4.0GB hard drive
- 24X CD-ROM drive • 56K V.90 modem
- 10/100 Base-T Ethernet
- 512K Backside Level 2 Cache
- 14.1" Active-Matrix Color Display
- 2 USB ports • 8MB Video Memory

ASK FOR ITEM #CPU1359. Lease! for \$73/mo.\*

### PowerBook G3/400MHz

Only **\$3499!** ASK FOR ITEM #CPU1360. Lease! for \$102/mo.\*

- 400MHz PowerPC G3 processor
- 64MB SDRAM • 6.0GB hard drive
- DVD-ROM drive • 56K V.90 modem
- 10/100 Base-T Ethernet
- 1MB Backside Level 2 Cache
- 14.1" Active-Matrix Color Display
- 2 USB ports • 8MB Video Memory



**Almost 20% Thinner!  
Nearly 2 lbs Lighter!**

### VST Zip 100 Drive

Only **\$179<sup>95</sup>!**  
AAP0552

Put a little Zip in your PowerBook!



\*When purchased at the same time as a 6-pack of Iomega Zip disks. Both items must appear on same invoice. While supplies last.



Iomega Zip Disks (6-pack) MED0394 ..... \$79.95

### Targus Notepac Plus Black Carrying Case

Only **\$59<sup>95</sup>!** each  
AC19972



Call for other cases!



### PowerBook G3 Battery

As low as **\$139<sup>95</sup>!**  
ACC3728

- Lithium-Ion
- ACC3728 (fits new 1999 models) \$139.95
- ACC3307 (fits 1996 models) shown, \$199.95



### 56K\* V.90 FaxModem PC Card

Only **\$159<sup>99</sup>!**  
DMD3824

- K56 Flex and V.90 technology
- Send, receive, view, print, and manage faxes right from your PowerBook
- \*Capable of receiving data up to 56Kbps. Actual send and receive speeds may vary.



### FireWire 2 Go

Add FireWire to your PowerBook G3!

Only **\$239<sup>95</sup>!**  
DRI3505

**NEW!**

Fits in CardBus slot

### 32MB POWERBOOK G3 MEMORY UPGRADE

Upgrading your memory is the most cost-effective way to increase the performance of your system!

**32MB PowerBook G3 Memory** only **\$99<sup>95</sup>!** each  
Item #CHP9820



### POWERBOOK G3 DVD-VIDEO KIT

- DVD-ROM drive reads CD-ROM discs up to 12X, DVD at up to 1.5X
- DVD-Video PC Card
- DVD player software
- Works with 1998 PowerBooks

Only **\$499<sup>95</sup>!**  
Item #DRI3206  
While supplies last.



**NEW!**



PAGE 6 OF 8

1-800-434-3036 ★ www.warehouse.com/md

ORDER TOLL-FREE 24 HOURS A DAY, 7 DAYS A WEEK! CANADA ORDERS CALL: 1-800-603-5139

**MacWAREHOUSE EXPRESS DELIVERY OVERNIGHT!**

In-stock items, call weekdays by midnight (E), or order online weekdays by 10pm (E).



Hi, I'm Andy. Call me for more great deals!

Your #1 Source for Mac Systems and Products—since 1987!

# NEW! Adobe InDesign

Apple • 3Com • Hitachi • Global Village • Sony • Iomega • Microtek

## Olympus C-2000 Digital Camera

Only **\$999<sup>95!</sup>**  
IN7788



- 2.1 Megapixel
- 1600 x 1200 resolution
- 3X optical zoom
- 8MB SmartMedia Card included!

OLYMPUS

Print out your digital photos on the new Olympus P330 Stylus Photo Printer  
PR14784 ..... **\*\$399.95**

## 32MB SmartMedia Cards

Only **\$129<sup>95!</sup>**  
MY11858

NEW  
32MB!

- Digital film for digital cameras
- Compatible with new digital cameras with SmartMedia slot



## Microtek ScanMaker 4

Only **\$599<sup>95!</sup>**  
BND3356



- 36-bit color
- 600 x 1200 dpi
- Built-in transparency bay

NEW  
LOW PRICE

MICROTEK

**MacWAREHOUSE EXCLUSIVE!**  
FREE Mac G3 compatible SCSI card  
when you buy a ScanMaker 4, while supplies last!

## 74 Minute CD-Recordables

Only **\$189!**  
in 30+ qty  
ME7553



- Branded single with Jewel Cases
- 650MB capacity

Kodak  
digital science

## 3Com Palm IIIx™ with Mac Pac version 2 Software

Only **\$229!**  
BN6359



Store thousands of addresses, appointments, and more!

PAGE 7 OF 8



## Apple 333MHz iMacs

Authorized Catalog Reseller  
Only **\$1099!** each

### Apple Power Mac G3 350MHz Minitower



- 350MHz
- 64MB SDRAM
- 6.0GB HD
- 24XCD

Only **\$1399!**

Ask for Item #RCPU1382.  
Monitors sold separately.  
Model shown is RCPUI384

Power Mac G3/ 400MHz/64MB SDRAM/  
6.0GB HD/DVD ROM: RCPUI383 ..... **\$1799\***

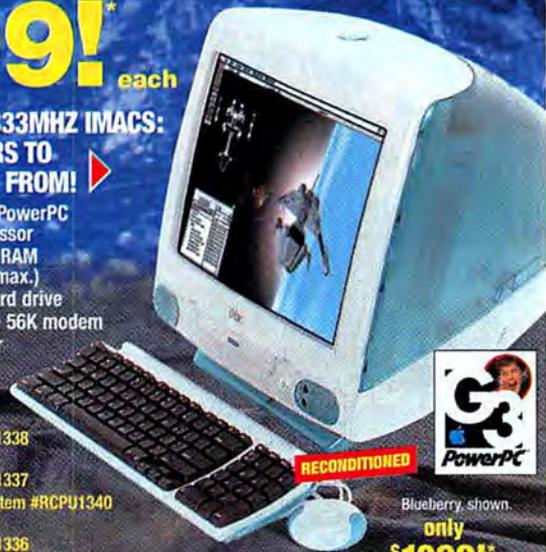
Power Mac G3/400MHz/128MB SDRAM/  
12.0GB HD/24XCD/Zip Drive: RCPUI384 ..... **\$2199\***

Many other reconditioned Power Mac G3 models available. Call for details.

### APPLE 333MHZ IMACS: 5 COLORS TO CHOOSE FROM!

- 333MHz PowerPC G3 processor
- 32MB SDRAM (256MB max.)
- 6.0GB hard drive
- 24X CD • 56K modem
- 15" color monitor

Lime: Item #RCPU1338  
Grape: Item #RCPU1337  
Tangerine: Item #RCPU1340  
Blueberry: Item #RCPU1336  
Strawberry: Item #RCPU1339



RECONDITIONED

Blueberry, shown  
only **\$1099!** each

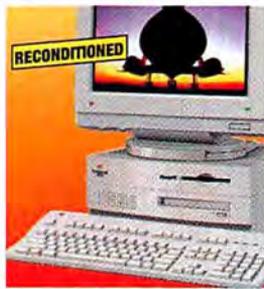
## POWER MAC 7100/80MHZ

- 80MHz PowerPC 601 processor
- 16MB RAM (exp. to 136MB)
- 500MB HD • 4X CD

Only **\$399!**  
Item #RCPU1356

RCPU1347: Power Mac 8100/110MHz,  
16MB RAM, 1.0GB HD, 2X CD,  
only \$499\*

\*Reconditioned system. Reconditioned computers may not include original application software. 90 day parts and labor warranty. All sales final. While supplies last. Monitor and keyboard sold separately.



## APPLE POWERBOOK 540C/33MHZ

- 33MHz 68LC040 processor
- 20MB RAM • 240MB hard drive
- 19.2Kbps modem
- 9.5" Active matrix color display

Only **\$699!**  
Item #RCPU1196

RCPU1359: PowerBook G3/333MHz, 64MB SDRAM, 4.0GB hard drive, 24X CD, 56Kbps modem, 14.1" Active matrix color display only \$229\*

\*Reconditioned system. Reconditioned computers may not include original application software. 90 day parts and labor warranty. All sales final. While supplies last.



## HITACHI MC6405 17" MONITOR

### HITACHI

- 17" monitor (15.9" viewable)
- Resolutions up to 1152 x 870 @ 75Hz
- 22mm horizontal pitch
- Manufacturer's 3-year warranty

Only **\$289<sup>95!</sup>**  
Item #MON0826



## SONY 420GS 19" MONITOR

### SONY

- 19" monitor (18" viewable)
- 1600 x 1200 resolution @ 75Hz
- Manufacturer's 3-year warranty

Only **\$639<sup>95!</sup>**  
Item #MON0762



## Jaz 2.0GB Cartridges

FREE CD-R 5-pack with purchase of Jaz 2.0 cartridge.

Only **\$99<sup>95!</sup>** each, in 3+ quantity  
Ask for Item #MED0508.

Quantity: 1-2     3+  
Price: \$124.95 ea. | \$99.95 ea.

\*Limit 1 per customer. While supplies last. Ask for Item #AAA1017.



## NEW!

## Epson Stylus Photo 1200 Printer

Only **\$499<sup>95!</sup>**

Ask for Item #PR15097

- 1440 x 720 dpi • Prints up to 13" x 44"
- Mac serial and USB compatible
- Includes Adobe Photoshop 5.0 LE



EPSON



## Global Village 56K\* Teleport Internal Mac Modem

Only **\$79<sup>99!</sup>** after rebate  
Ask for Item #AMD4267

\*Capable of receiving data up to 56Kbps. Actual send and receive speeds may vary.

\*Price AFTER MacWAREHOUSE exclusive \$30 rebate. Rebate coupon available at www.warehouse.com/rebate/globalvillage or call 1-800-390-0706. Expires 8/31/99.

for as low as **\$299<sup>95!</sup>** \* See below for details.

CALL FOR A **FREE FULL-COLOR CATALOG!**



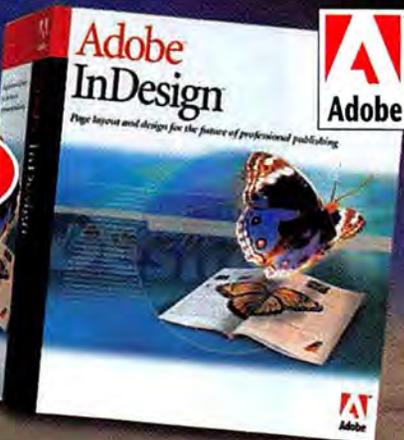
Olympus • Epson • Newer Technology • Sony • Adobe • Macromedia

# Adobe InDesign

Professional page layout with seamless integration of Adobe products!

QuarkXPress, Adobe Photoshop, Illustrator and PageMaker owners: Get Adobe InDesign for only **\$299<sup>95!</sup>** \* Ask for item #SID0426.

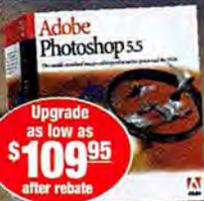
**NEW!**



## NEW VERSION! Adobe Photoshop 5.5

- Multiple undo: Quickly undo or redo several steps.
  - Magnetic Tools: Precisely follow the edges of an image.
- Adobe Photoshop 5.5 Upgrade (from Photoshop v5.0 or ImageReady 1.0) UPG1049 ..... **\$109.95\***  
 Adobe Photoshop 5.5 Upgrade (from Photoshop v4.0 or earlier) UPG1049 ..... **\$179.95**  
 Adobe Photoshop 5.5 (Full Version) GRA2951 ..... **\$599.95**

Upgrade as low as **\$109<sup>95!</sup>** after rebate



\*Price AFTER publisher's \$70 mail-in rebate for previous owners of Adobe Photoshop 5.0 or ImageReady 1.0. Before rebate: \$179.95. Rebate coupon included in box. Rebate must be postmarked no later than 9/17/99 to qualify.



## Adobe Illustrator 8.0

- Art Brush: Save objects as Art brushes and apply to any path.
- Smooth and Erase Tools: Quickly smooth and erase paths.
- Actions Palette: Record and play back a series of steps to automate repetitive tasks.

Upgrade only **\$119<sup>95!</sup>** #UPG0887

Full version, only \$359.95! Item #GRA2649.

## Macromedia FLASH 4

NEW VERSION!

UPGRADE ONLY **\$119<sup>95!</sup>** UPG1044



Fusing vector graphics, bitmaps, motion, MP3 audio, form input, and interactivity, Flash 4 delivers fast, Steaming files, consistently and efficiently reaching all your sites visitors.

Serial number of previous version required at time of order. Full version only \$279.95! Item #COM1166

## Sony Digital FD73 Mavica

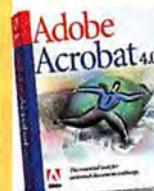
Only **\$499<sup>95!</sup>** IN7834



SONY. NEW!

- 10x optical zoom • Quick Access Floppy Disk Drive
- E-mail mode • VGA resolution
- Program auto exposure • Picture effect
- File copy/disk copy • 2.5" LCD

## Adobe Acrobat 4.0



Upgrade only **\$89<sup>95!</sup>** UPG0992 (CD)

The essential tool for universal document exchange!

Full version only \$229.95! Item #COM1128

## Extended On-Site Support\*

Six great reasons to get complete system coverage:

1. Toll-Free Technical Help
2. Fast On-Site Support with next business day response in most areas for most items!
3. Free Replacement if unit cannot be repaired!
4. No Deductible — 100% coverage on parts and labor!
5. 24-36- and 48-Month Coverage available from date of purchase!
6. Fully Insured — Program underwritten by an "A-Excellent" rated insurer

Service you can depend on! Support and repairs administered by NWC which has been providing superior, price-competitive programs for over 20 years!

Cost of Computer and/or Peripherals	Warranty Price (48 months)	Ask for Item #
\$701 - \$1,200	\$219	WAR0001
\$1,201 - \$2,000	\$269	WAR0002
\$2,001 - \$3,000	\$309	WAR0003

Call your Account Manager for details on orders over \$3,000.

Call your sales representative today!

\*Note: This promotion, itself, is not a Service Agreement, but an outline of coverage available by National Warranty Corporation. Please call Micro Warehouse, Inc. for information and read the complete Service Agreement from NWC for exact coverages, terms, and conditions. On-site Support begins after the manufacturer's warranty expires. Plan not available on international or Florida orders. All returns not covered under the standard MicroWAREHOUSE return policy are subject to a \$25 return fee assessment.

## G3 MEMORY UPGRADES

SAVE UP TO **\$180<sup>†</sup>** when you also buy Adobe InDesign



- NEW G3 128MB 100MHz SDRAM Only **\$199<sup>95!</sup>** Item #AAP0612
- G3 128MB 66MHz SDRAM Only **\$199<sup>95!</sup>** Item #AAP0611

†Savings based on MacWAREHOUSE prices as of this magazine printing. \*Memory must appear on same invoice as Adobe InDesign to qualify for this price. Offer valid between 5/3/99 and 9/14/99 or while supplies last.

## MAXPOWR G3 UPGRADES

**\$75 REBATE** when you also buy Adobe InDesign

- MAXpowr G3 300MHz with 512K Cache only **\$379<sup>†</sup>** Item #AAP0608
- MAXpowr G3 400MHz with 1MB Cache only **\$699<sup>†</sup>** Item #AAP0609



†Price AFTER manufacturer's \$75 mail-in rebate. G3 Upgrade must appear on same invoice as Adobe InDesign. Rebate coupon available at [www.warehouse.com/rebate/newertech](http://www.warehouse.com/rebate/newertech), or call us at 1-800-390-0706 to request one. Offers expires 8/31/99.

## MAC OS 8.5

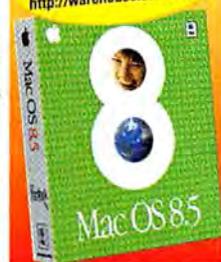
- Sherlock Finder
- Internet Explorer 4.0 easy access to the Web!
- Outlook Express, e-mail programs from home, work, or school



As low as **\$89<sup>95!</sup>** \* Item #SYS0292

\*Price AFTER MacWAREHOUSE \$10 Internet mail-in rebate. Before rebate: \$99.95. Limit one rebate per customer (or total of 5 rebates per customer site.) Rebate coupon is available at [www.warehouse.com/rebate/applesoftware](http://www.warehouse.com/rebate/applesoftware), or call us at 1-800-390-0706 to request one. Offer valid through life of product.

NEW! Mac OS 8.6 Free download available at <http://warehouse.com/os86>



## WWW.WAREHOUSE.COM

Get a **FREE\*** gift when you order online.

Every time you order from our full line of Mac products on the Web, you can get one of these FREE\*: MYST, Hot Door Transparency and Collect Pro, HVS Toolkit Pro 2.0, Alley 19 Bowling & more!

\*\$3.95 shipping and handling applies. Limit one per customer per order. Shipped in promotional packaging. While supplies last.

See our **BLOWOUT SPECIALS and SUPER OFFERS — every day!** Place your order online by 10:00 pm. (E) and get it the next day!

**1-800-434-3036** ★ [www.warehouse.com/md](http://www.warehouse.com/md)

ORDER TOLL-FREE 24 HOURS A DAY, 7 DAYS A WEEK! CANADA ORDERS CALL: 1-800-603-5139

**MacWAREHOUSE EXPRESS DELIVERY OVERNIGHT!**

Your #1 Source for Mac Systems and Products—since 1987!

In-stock items, call weekdays by midnight (E) or order online weekdays by 10pm (E).





# Now, share & protect



## APS CD-RW 6x4x24

- Our fastest rewritable CD drive ever
- The ultimate CD drive for digital content creation and distribution

 If you demand absolute top performance, this is it. The APS CD-RW 6x4x24 is our all-around fastest rewritable ever. Unheard-of speeds let you spend less time burning discs and more time creating. Includes professional CD recording software for both Mac and PC.

**Fastest Ever • Just \$499.95**

External Configuration

## APS CD-R 8x20

- Super-speedy CD burner for creative professionals
- 8X record/20X read mechanism
- Includes full-featured CD recording software for Mac and PC

 Hit the afterburner! The CD-R 8x20 is our fastest CD recorder ever. The blazing 8x20 mechanism cranks out your CDs in just nine minutes, so you spend less time burning, more time creating. If your payday depends on producing CDs, punch in with the APS CD-R 8x20.

**Top CD Burner Only \$389.95**

External Configuration

## APS DVD-ROM

- World's first 5X DVD mechanism also acts as 32X CD-ROM drive

Now, you can play DVD movies, games, and entertainment titles, plus audio CDs and even CD-R and RW discs – all from the same drive. And this next-generation 5X drive gives you the smoothest playback ever.

**w/WIRED 4DVD MPEG DECODER \$339.95**

Internal SCSI Configuration

**w/WIRED 4DVD MPEG DECODER \$399.95**

External SCSI Configuration

Cruise over to our website at

[www.apstech.com](http://www.apstech.com)

for the most up-to-date prices



## APS CD-RW 4x4x16

- 167% faster reads and 100% faster rewrites than CD-RW Pro 4x2x6
- Excellent rewritable CD drive for professional creative environments

 For most content creation and distribution, the CD-RW 4x4x16 is the only CD drive you need. This tray-loading drive offers a 2MB buffer to prevent underruns and failed recordings. Plus, you get professional CD recording software for both Mac and PC.

**Speedy CD Burner \$299.95**

External Configuration

## APS CD-RW 8x2x20

- Blazing new rewritable CD drive with fastest record speeds ever
- 8X record/2x rewrite/20X read mechanism
- Includes full-featured CD recording software for Mac and PC

 Isn't it about time you got up to speed? This brand-new rewritable CD gives you our fastest record and read speeds ever. At 8X, you can burn a full disc in just nine minutes! And just in case you make a mistake or forget a file, you get a "do-over" with CD-RW discs. For inexpensive distribution, the CD-RW 8x2x20 also burns CD-R media. If you've been waiting for rewritable CD technology to catch up with you, the wait is over. Call us today for the APS CD-RW 8x2x20.

**\$489.95**

External Configuration

## APS DupliCD Duplicators

- Stand-alone units give you one-button disc duplication – easy for even non-tech staff
- Faster reader and 4x8 CD-R dupes full CDs in just 18 minutes for better production

 The new APS DupliCD-121 and -126 are simple enough for even your non-technical staff to use. Just load the discs and push the button. These stand-alone duplicators can also be connected to your computer via the Fast SCSI-2 interface. Inexpensively dupe one CD at a time with the DupliCD-121. Or copy six discs at the same time with the DupliCD-126. Plus, you get full-featured recording software for both Mac and Windows.

**DupliCD 121 \$999.95**

External Configuration

**DupliCD 126 \$2,399.95**

External Configuration



Drives on these pages are covered by the APS 30-Day Money-Back Guarantee.

# your work better.



## APS HyperDAT® IV

- Longer tape, higher density vault DDS-4 into network backup capability
- 20GB native capacity, 2-3MB/s transfers

 If you trust your desktop and workstation backup to DAT/DDS, but you thought it didn't meet your server or workgroup needs, take a second look. New DDS-4 technology has increased capacity by 67% over DDS-3 and shrunk your backup time in half. But the HyperDAT IV can read and write to your older DAT/DDS tapes, so migration is painless. Add the HyperDAT IV for your big jobs.

**w/ Retrospect \$1,299.95**  
External Configuration

## APS NS-20

- Protects up to 4GB of critical data (native)
- "...the best back-up solution available for the home and small offices." – Brad Miser, *Using Mac OS 8.5*

 The APS NS-8 (the drive formerly known as the APS HyperQIC) is now better than ever. This Travan NS-8/QIC drive now has hardware ALDC compression for faster backups and more efficient data storage. You can safeguard up to 8GB of valuable business or personal files on one tape with the new compression. The APS NS-8 is recommended as the best backup solution for home and small offices in *Using Mac OS 8.5* by Brad Miser. The NS-8 is just as good for Windows users, too.

**w/ Retrospect \$549.95**  
External configuration



## APS HyperDAT® III

- 12GB native backup for high-end workstations, entry-level networks
- Reliable DDS-3 technology

 The APS HyperDAT III provides a cost-effective solution to the backup needs of data-intensive systems. Transfer rates of up to 60MB/s for fast backups.

**w/ Retrospect \$999.95**  
External Configuration

## APS AIT Plus

- Safeguards up to 35GB native on AIT Plus tape
- Super-fast backup speeds for mid-range and application server backup, even DV storage

 If you thought DLT was your only choice for gigantic backups, think again. The new AIT Plus challenges the DLT70 in both capacity and transfer speeds. Self-cleaning features and low cost of ownership.

**w/ Retrospect \$1,999.95**  
External Configuration

APS TAPE BACKUP SYSTEMS		
Model	Description	External
APS NS-8	Travan-4/NS8/QIC	339 <sup>95</sup>
APS NS-20	Travan-5/NS20/QIC	549 <sup>95</sup>
APS HyperDAT® II	DDS-2/DAT (4-8GB)	649 <sup>95</sup>
APS HyperDAT® III	DDS-3/DAT (12-24GB)	999 <sup>95</sup>
APS HyperDAT® IV	DDS-4/DAT (20-40GB)	1,299 <sup>95</sup>
APS DDS-3 Autoloader	4mm DDS-3 Autoloader (96-192GB)	2,999 <sup>95</sup>
APS DLT40	DLT 4000 (20-40GB)	1,999 <sup>95</sup>
APS DLT70	DLT 7000 (35-70GB)	3,999 <sup>95</sup>
APS AIT Plus	8mm AIT (35-70GB)	1,999 <sup>95</sup>
APS AIT Autoloader	8mm AIT Autoloader (140-280GB)	4,799 <sup>95</sup>



## APS DVD-RAM

- Stores 5.2GB of data on double-sided discs
- Reads all previous CD and DVD formats
- Get Wired4DVD card to play DVD movies

This powerful data storage technology now also plays DVD movies with the DVD card. Plus, the DVD-RAM reads all your CDs – including CD-R and CD-RW.

**External SCSI \$749.95**

**Internal SCSI w/ Wired4DVD \$839.95**

**External SCSI w/ Wired4DVD \$939.95**



## APS 5.2GB MO

- Highest capacity magneto-optical drive ever
- Use LIMDOW disks to cut rewrite times in half

 The new APS 5.2GB MO drive gives the IS/IT manager corporate-class archiving capabilities. And the disks still have an expected data-storing lifespan of 50 years or more. If your business already relies on MO for archival and backup functions, the 5.2GB MO is backward-compatible with your existing disks. And LIMDOW (Light Intensity Modulation Direct Overwrite) technology lets you write over data without erasing first. So move up to the APS 5.2GB MO.

**Super Archiving \$1,699.95**  
External Configuration



Advanced tools for digital visionaries

**Call 800-285-0638**

**24 HRS/7 DAYS A WEEK**

Corporate Sales (800) 554-3941  
International (816) 920-4109



# If you've got the

## APS Ultra SCSI Drives

Item	RPM	Bare Price	Internal Price	APS Pro Price	Formatted Capacity MB	Seek Time	Trans Rate Read	Trans Rate Write	Wnty	Int Price /MB
APS Q 2GB	5400	\$189.95	\$199.95	\$259.95	2051	8.4MS	6.7MB/S	8.50MB/S	3	0.10
APS Q 3GB	5400	199.95	209.95	269.95	3079	7.1MS	6.7MB/S	8.50MB/S	3	0.07
APS ST 4GB	7200	209.95	219.95	279.95	4340	9.5MS	6.7MB/S	8.50MB/S	3	0.05
APS I 9GB	7200	349.95	359.95	419.95	8715	3.8MS	6.7MB/S	8.50MB/S	5	0.04
APS ST 9GB	7200	319.95	329.95	389.95	8653	5.0MS	6.7MB/S	8.50MB/S	3	0.04
APS ST 18GB	7200	699.95	709.95	769.95	17501	3.3MS	6.7MB/S	8.50MB/S	5	0.04

## APS Ultra 160m / Ultra 2 Wide LVD SCSI Drives

Item	RPM	Internal Price	APS Pro Price	Formatted Capacity MB	Seek Time	Trans Rate Read	Trans Rate Write	Wnty	Int Price /MB
APS I 9GB LVD	7200	\$349.95	\$419.95	8760	2.8MS	10.4MB/S	11.2MB/S	5	0.04
APS Q 9GB Ultra 160m L	7200	399.95	469.95	9053	4.17MS	6.9MB/S	12MB/S	5	0.04
APS ST 9GB LVD	7200	429.95	499.95	9017	2.9MS	6.9MB/S	7.4MB/S	5	0.05
APS I 9.1GB LVD 10K	10000	549.95	619.95	9024	5.3MS	8MB/S	14MB/S	5	0.06
APS Q 9.1GB Ultra 160m LVD 10K	10000	569.95	639.95	9049	5MS	7.4MB/S	13.04MB/S	5	0.06
APS ST 9.1GB LVD 10K	10000	539.95	609.95	9042	3.08MS	5MB/S	6MB/S	5	0.06
APS I 18GB LVD	7200	699.95	769.95	18100	7MS	13MB/S	15.9MB/S	5	0.04
APS Q 18GB Ultra 160m LVD	7200	729.95	799.95	18200	4.17MS	6.9MB/S	12MB/S	5	0.04
APS ST 18GB LVD	7200	729.95	799.95	18210	2.4MS	6.9MB/S	7.1MB/S	5	0.04
APS I 18GB LVD 10K	10000	949.95	1019.95	18100	6.5MS	14.7MB/S	15.7MB/S	5	0.05
APS Q 18GB Ultra 160m LVD 10K	10000	969.95	1039.95	18200	5MS	7.4MB/S	13.04MB/S	5	0.05
APS ST 18GB LVD 10K	10000	949.95	1019.95	18200	3.08MS	5.7MB/S	6.5MB/S	5	0.05
APS I 36GB LVD	7200	1299.95	1359.95	36400	7.5MS	12.3MB/S	15.1MB/S	5	0.04
APS Q 36GB Ultra 160m LVD	7200	1399.95	1469.95	36400	4.16MS	7.9MB/S	12MB/S	5	0.04
APS ST 36GB LVD	7200	1279.95	1349.95	36400	2.4MS	7.4MB/S	8.2MB/S	5	0.04
APS Q 36GB Ultra 160m LVD 10K	10000	1559.95	1629.95	36400	5MS	7.4MB/S	13.04MB/S	5	0.04
APS ST 36GB LVD 10K	10000	1599.95	1669.95	36400	3.08MS	5.7MB/S	6.5MB/S	5	0.04
APS ST 50GB LVD	7200	1599.95	1669.95	50100	2.64MS	7.4MB/S	8.2MB/S	5	0.03

## APS Ultra ATA Drives

Item	RPM	Internal Price	Formatted Capacity MB	Seek Time	Trans Rate Read	Trans Rate Write	Wnty	Int Price /MB
APS 10GB ATA	5400	\$169.95	10275	5.5MS	9.3MB/S	12.2MB/S	1	0.05
APS 20GB ATA	5400	289.95	20553	5.5MS	9.3MB/S	12.2MB/S	1	0.26

## APS Laptop Hard Drives

Item	RPM	Internal Price	Formatted Capacity MB	Seek Time	Trans Rate Read	Trans Rate Write	Wnty	Int Price /MB
APS 5.1GB Notebook Hard Drive	4200	\$249.95	4886	13MS	4MB/S	3.2MB/S	1	0.84
APS 6.4GB Notebook Hard Drive	4200	349.95	6243	13MS	4MB/S	3.2MB/S	1	0.6
APS 8.1GB Notebook Hard Drive	4200	499.95	7924	13MS	4MB/S	3.2MB/S	1	0.53

## APS USB Hard Drives

Item	RPM	Internal Price	Formatted Capacity MB	Seek Time	Trans Rate Read	Trans Rate Write	Wnty	Int Price /MB
LaCie EKO 6GB USB Hard Drive	5400	\$249.95	6400	11MS	1MB/S	1MB/S	1	0.84
LaCie EKO 10GB USB Hard Drive	5400	299.95	10200	11MS	1MB/S	1MB/S	1	0.53
LaCie EKO 20GB USB Hard Drive	5400	499.95	20544	11MS	1MB/S	1MB/S	1	0.26

## APS ST 18GB 10K Ultra2 Wide LVD SCSI

- Brand-new, third-generation Cheetahs offer even better performance and reliability
- 10,000 rpm and Ultra2 Wide LVD for multimedia, 3D, even digital video
- 18GB capacity for high-performance workstation and creative department/workgroup servers

Get the ultimate performance from your content creation workstations and servers. These Cheetahs really scream, with up to 28MB/s internal data rates and super-low 5.2msec seek times. Third-generation technology and experience make this line more reliable than ever. For your next digital masterpiece, order an APS ST 18GB 10K today.



**APS ST 18GB U2W LVD SCSI \$949.95**

Internal Configuration

Surf on over to our website at [www.apstech.com](http://www.apstech.com)

for the most up-to-date prices



## APS ST 9GB Ultra SCSI

- Inexpensive 7200 rpm drives with Ultra SCSI interface
- 4 and 9GB capacities for workstation through server storage



With this Medalist Pro-based drive, you can upgrade your file and print servers to 7200 rpm speed and keep your budget well under control.

**APS ST 9GB ULTRA SCSI \$319.95**

Bare Internal Configuration

## APS I 9GB 10K Ultra2 Wide LVD SCSI

- 10,000 rpm drives from the original developers of the hard drive
- Maximum performance for graphics and video editing workstations and demanding servers



For the absolute maximum hard drive performance on an Ultra2 Wide LVD SCSI-based system, ramp up with a 10,000 rpm Ultrastar from IBM and APS. Based on the new Ultrastar 9LZX18ZX mechanism, these drives offer seek times as low as 5.6ms and very high sustained internal data transfer rates (up to 23.4MB/s). Upgrade your creative workstations and servers to the power of one of the fastest mechanisms in the world and Ultra2 Wide LVD SCSI speed.

**APS I 9GB 10K U2W LVD SCSI \$549.95**

Internal Configuration

## APS I 36GB Ultra2 Wide LVD SCSI

- 7200 rpm mechanisms from the inventors of the hard drive
- 36GB capacities for high-volume workstations, departmental/enterprise servers



This Ultrastar-based drive turbocharges your high-volume servers. The Ultra2 Wide LVD SCSI interface is perfect for huge files that need maximum throughput.

**APS I 36GB U2W LVD SCSI \$1,289.95**

Internal Configuration

# passion, we've got the drive.



## APS 20GB IDE

- Ultra ATA interface keeps up with fast hard drives with 33MB/s transfers
- Always the best price/performance available

Save time, save effort AND SAVE MONEY with the APS Ultra ATA series of drives. We've done the research for you, picking the best Ultra ATA storage options from the world's premier mechanism manufacturers, all at awesome prices. You always get the best price/performance possible with an APS Ultra ATA drive.

**APS 20GB IDE \$289.95**  
Internal Configuration

## LaCie USB CD-RW

- Finally, a rewritable CD drive with a USB interface
- Hot-swappable, so your workstations can quickly and easily share one CD-RW drive



You asked. We answered. Many of you have been clamoring for USB-based devices for your iMacs, new G3s and USB Windows™ machines. So, APS is pleased to offer the LaCie USB CD-RW. This drive combines the power and flexibility of a rewritable CD drive with the hot-swappable ease of USB. USB eliminates the toil and trouble of shutting down your system, checking SCSI IDs or ATA settings, configuring your system, and so on. USB is truly plug and play. So your USB workstations can quickly and conveniently share one CD-RW drive.

**LACIE USB CD-RW \$349.95**  
External Configuration

## LaCie EKO 10GB USB

- Among the first hard drives with USB
- Easiest way to add over ten gigabytes of storage

Adding more capacity to your desktop, workstation or server is a snap with this USB hard drive. It's hot-swappable; just hook it up and go.



**LACIE EKO 10GB USB \$299.95**  
EKO Enclosure

**LACIE EKO 20GB USB \$499.95**

## VST 10GB FireWire Hard Drive

- Ample hard drive with fast, hot-swappable FireWire/IEEE-1394 interface
- Great for multimedia/digital video pros, graphic designers

Forget device IDs termination, and hassle. This 10GB FireWire drive offers hot-swapping to any FireWire-equipped Mac or PC. Perfect for transferring video and other huge files among workstations and offices.



**VST 10GB FIREWIRE \$779.95**  
External

## APS 18GB ShortStack Disk Array

- Choose from RAID levels 0, 1, 0+1 or 5\* for greater speed and/or data availability
- Complete with Ultra2 Wide/LVD SCSI drives
- Perfect for small graphics/multimedia businesses and high-end workstations
- Easy connectivity for instant results

Now, even small and home businesses, or individual workstations, can enjoy the blistering performance of an array. The APS ShortStack Disk Array is made up of two 7200 rpm disks that work together with your choice of RAID software products to become a high-performance disk array. The ShortStack is perfect for graphic design and image editing, digital video production, database environments, transaction processing and more.

**APS 18GB ShortStack Disk Array \$1199.95**  
External

## Iomega Zip 250

- Now holds 250MB - even better for content creators
- SCSI version (Mac or Windows) is 50% faster than original SCSI Zip
- Also reads and writes original 100MB Zip disks to extend your investment



Now you can store, work with, and transport even bigger files, like multimedia, animation, 3D, CAD and graphics files. Based on the immensely popular Zip, the new Zip 250 holds 250MB of data. And the SCSI version is up to 56 times faster than your floppy drive. Or choose the parallel port version for nearly instant hook-up to your PC. The Zip 250 is read/write compatible with 100MB Zip disks, so you can purchase it with confidence. The Zip 250 is an exciting and intelligent investment.

**IOMEGA ZIP 250 \$179.95**  
External, SCSI or Parallel Version



Advanced tools for digital visionaries

**Call 800-285-0638**

**24 HRS/7 DAYS A WEEK**

Corporate Sales (800) 554-3941  
International (816) 920-4109  
APS Technologies • 6131 Deramus • Kansas City, MO 64120



Drives on these pages are covered by the APS 30-Day Money-Back Guarantee.

Visit us online at  
[www.apstech.com](http://www.apstech.com)



# How to turn your

## LaCie electron22Blue

- Brand-new 22" Diamondtron Natural Flat technology eliminates distortion and glare
- Mammoth resolution of 1800 x 1440 pixels at 80Hz for biggest layouts
- Five USB ports for the most advanced, convenient computing system ever

Introducing quite possibly the most advanced monitor ever for digital visionaries. This 22" display gives you outstanding color fidelity and perfectly geometrical images. No more distortion or straight lines that curve on screen. And the USB connections let you quickly swap USB devices like the LaCie USB CD-RW, new scanners, and more.

### LACIE ELECTRON 22BLUE

**\$1,399.95**

### LACIE ELECTRON 19BLUE \$769.95

## Wacom LCD Display Tablets

- Amazing tablets act as monitors – you draw and design directly on screen and work more intuitively
- Pressure-sensitive tablets (256 levels) include cordless Erasing UltraPens
- Must-have for cutting-edge graphics pros, animators, Web designers, multimedia



At APC, we are not easily impressed by new technologies. But Wacom has knocked our socks off. The new LCD Display Tablet line is like having the monitor screen on your lap or desk. You can design, illustrate, paint, animate and edit on-screen more accurately – to within 0.02 inches. We could say more, but you really have to see it to believe it. Be the first on your block to get a Wacom LCD Display Tablet. Call today.

### WACOM PL-300 W/ 10.4" WORK AREA

**\$2,199.95**

### PL-400 - 13.3" work area - \$2,999.95

## Agfa DuoScan Solo Color Scanner

- Versatile scanner for creative departments, small firms
- Innovative TwinPlate for transparencies and reflective documents
- One-pass tri-linear CCD with 1000 x 2000 ppi resolution

The DuoScan handles all of your business scanning needs with ease, capturing images from virtually any kind of document. The built-in scanning bed for transparencies makes switching between media types easier than ever. And the DuoScan is fast. You will see your preview in just 11 seconds. And the DuoScan can deliver A4-sized color scans at 1000 ppi in just two minutes. So get high-quality scans for business documents fast with the DuoScan from Agfa.



### AGFA DUOSCAN SOLO (MAC/PC)

**\$2,459.95**



## EPSON Stylus Color 900 Printer

- 1440 dpi and Micro Piezo technology for sharp details, no splatters
- Faster color printing (up to 10 ppm) makes you more productive

The new Stylus Color 900 lets even home and small businesses print corporate-class documents. And you can print color pieces faster than ever. So you spend less time waiting and more time drumming up business. Plus, with USB, parallel and Mac serial connections, you can use this image-maker with almost any computer. Get sharp, brilliant color fast and make a splash with the Stylus Color 900 from EPSON.



**EPSON STYLUS COLOR 900 PRINTER \$429.95**

## APC Back-UPS Pro

- Extra surge suppression and longer runtime
- Safeguards data & equipment from lightning strikes and blackouts

Tape backup is critical to safeguarding your irreplaceable data. But it won't stop lightning from frying your motherboard. Back-UPS Pro, the ultimate workstation UPS, safeguards your data and equipment, like your CPU, drives, and monitor, against disasters like lightning strikes. And the uninterruptable power supply gives you time to save your files and shut down in case you ever lose power. Don't wait until it's too late. Get Back-UPS now.



CAT. #	ITEM DESC	OUTPUT VA	CAP WATTS	TYPICAL RUNTIME	BAT. OUTLETS	SURGE ONLY OUTLETS	DIMENSIONS (H" X W" X D")	PRICE
108355	BP280S	280	180	7-15 MIN	2	1	6.6 X 4.7 X 14.5	\$134.95
108356	BP420S	420	260	12-18 MIN	3	3	6.6 X 4.7 X 14.5	219.95
108357	BP650S	650	410	35-40 MIN	3	3	6.6 X 4.7 X 14.5	269.95
108717	BP1000	1000	670	10-15 MIN*	6	N/A	8.5 X 6.7 X 17.3	365.95
108714	BP1400	1400	950	15-20 MIN*	6	N/A	8.5 X 6.7 X 17.3	459.95

\*With 3 computers connected.



# dreams into digital reality.



## Canon ELURA Digital Video Camcorder

- Palm-sized DV Camcorder with Canon 12X optical/48X digital Zoom lens
- Noise reduction and Optical Image Stabilizer give you top quality footage

Now, you can get the power of digital video and the precision of Canon, all in the palm of your hand. The ELURA sports all of the advanced capture features of Canon's larger camcorders. You get crystal-clear digital video, with intricate details and true colors. The progressive scan CCD captures much better quality images than other, interlaced CCD camcorders. With up to 500 lines of horizontal resolution, you get 20% better-than-analog quality. Automatic or manual controls satisfy both the beginner and veteran. Plus, you can easily add your own personal touch to your video using the faders, effects, and a multi-image screen. So get the power of the Canon ELURA in the palm of your hand today.

**CANON ELURA \$1,299.95**

## Adaptec Ultra HotConnect 8945



- Connects both digital video camcorders and Ultra Wide SCSI devices to your computer using only one PCI slot
- Includes DV capture software, FireWire and SCSI cables/connectors

This PCI card lets you connect your digital video camcorder to your Mac or PC on the same slot as your SCSI drives. You can chain up to 62 IEEE-1394/FireWire devices and up to 15 SCSI devices, like Ultra Wide SCSI hard drives, CD recorders, Jaz and tape devices. This awesome package includes a complete set of SCSI and 1394/FireWire cables and connectors, plus digital video capture software.

**ADAPTEC 8945 \$539.95**

## Sony DSC-D700 Digital Camera

- 1.5Megapixel images (1344 x 1024) for top-quality print projects
- 5X manual optical zoom, equivalent to f28mm to 140mm zoom lens on a 35mm camera
- Includes Type II PC Card and reader for easy transfer to desktop computer



Professional photographer for print? You may think that digital photography just doesn't have the quality or flexibility of your SLR camera. Well, now it does. Introducing the Sony DSC-D700 Digital Camera. This powerful device captures 1.5 million pixels per image to give you the kind of resolution you want for print. The DSC-D700 also gives you the control you are used to with your traditional camera. You get a 5X optical zoom lens with a manual focus ring that feels familiar and professional. Choose between using the 2.5" color LCD screen or the viewfinder, depending on your situation. Advanced features include manual white balance, a center-weighted spot meter, auto/manual exposure, and a Hot Shoe for connecting an external flash with strobe lights. The pop-up flash comes in handy out in the field.

**SONY DSC-D700 \$1,699.95**

## Sony MVC-FD91 Digital Mavica Cameras

- Convenient digital cameras capture photos and video
- Store and transfer content on standard floppy disks
- Add images and multimedia to presentations, Web sites



The MVC-FD91 Digital Mavica Camera grabs digital photos and video quickly. And these smart cameras store their contents on standard floppies that you can use to easily transfer your images to your Mac or PC. The FD91 really gets in there at 14X. And you can record up to 15 seconds of presentation-quality MPEG video or 60 seconds for a video e-mail. Pick up a MVC-FD91 Digital Mavica Camera today.

**MVC-FD 91 \$947.95**  
**SONY MVC-FD83 \$699.95**

Surf on over to  
**www.apstech.com**  
for more multimedia tools



Advanced tools for digital visionaries

**Call 800-285-0638**

**24HRS/7DAYS A WEEK**

**Corporate Sales (800) 554-3941**  
**International (816) 920-4109**  
APST Technologies • 6151 Deramus • Kansas City, MO 64120



Mac OS is a registered trademark of Apple Computer, Inc. APS and APST Technologies are registered trademarks. Other brand or product names are registered trademarks or trademarks of their respective holders.

- 30-day money-back satisfaction on all APS brand drives and accessories. Your risk is the cost of shipping.
- Monitors and 3rd party products carry warranties from their respective manufacturers.
- SCSI cables sold separately.
- APS warranty is a pass through of the mechanism manufacturer's warranty which will be serviced by APS for one year. APS warrants APS branded enclosures, brackets and power supplies for a period of one year from the date of purchase and will, at its discretion, replace or repair products found to be defective according to the specific terms of the warranty accompanying the product.
- Returned orders subject to 20% restocking fee.
- International customers must pay for all shipping charges.
- Listed capacities are formatted.
- Actual data compression and tape capacity vary greatly depending on the type of data recorded.
- Other system parameters and environment.
- Prices and specifications are subject to change without notice.
- You must install system software appropriate to your machine before using our hard drives.
- Not responsible for typographical errors.
- Four APS Drive unit may contain one or more components that were in prior use, but which have been inspected and approved or rebuilt as necessary. These components, if any are covered by the same warranty provisions, exclusions and limitations to the same extent, and on the same terms as otherwise "Your components."
- © 1999, APST Technologies. All Rights Reserved.

Choose 62 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

Why dream in black and white

*when you can dream in color!\**



*\*Dreams sold separately.*

# REAL

Only \$199

### Apple® iMac™

- ◆ 333MHz PowerPC G3 processor ◆ 15" display, 13.8" viewable, with 1024 x 768 resolution ◆ 32MB SDRAM ◆ 6GB hard drive
- ◆ 24X Max CD-ROM drive ◆ 56Kbps modem ◆ 10/100BASE-TX Ethernet
- ◆ Two 12Mbps Universal Serial Bus (USB) ports ◆ 6MB video memory
- ◆ Built-in stereo speakers with SRS sound

#### Blueberry

CDW 161620

#### Strawberry

CDW 161623

#### Tangerine

CDW 161632

#### Grape

CDW 161627

#### Lime

CDW 161634



### Apple® Power Macintosh G3 Series

- 350MHz PowerPC G3
- 1MB backside cache
- 100MHz system bus
- 64MB SDRAM
- 6GB Ultra ATA hard drive
- 24X Max CD-ROM drive
- 16MB video memory

**\$1594.00**  
CDW 171054

- 400MHz PowerPC G3
- 1MB backside cache
- 100MHz system bus
- 64MB SDRAM
- 6GB Ultra ATA hard drive
- 5X/32X DVD-ROM drive
- 16MB video memory

**\$1994.00**  
CDW 171055

- 400MHz PowerPC G3
- 1MB backside cache
- 100MHz system bus
- 128MB SDRAM
- 12GB Ultra ATA hard drive
- 24X Max CD-ROM drive
- 100MB Zip drive
- 16MB video memory

**\$2494.00**  
CDW 171056

- 450MHz PowerPC G3
- 1MB backside cache
- 100MHz system bus
- 128MB SDRAM
- 9GB Ultra2 SCSI hard drive
- 24X Max CD-ROM drive
- 16MB video memory

**\$2994.00**  
CDW 171057

Slim, stunning, superfast

### Apple Macintosh PowerBook® G3 Series

- 400MHz PowerPC G3 processor
- 1MB backside cache
- 160MHz bus speed
- 64MB RAM
- 6GB hard drive
- 2X Max DVD-ROM drive
- 56Kbps (V.90) modem
- 14.1" active-matrix display

**\$3494.00**

CDW 167073



**GET REAL**

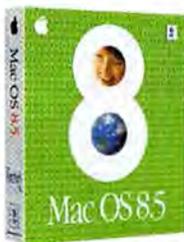
800-509-4239  
www.cdw.com

# WORLD



## Know your options

CDW is a \$1.9 billion, Fortune 1000 company. In September 1998, Fortune magazine listed CDW as one of "America's Fastest Growing Companies" for the second consecutive year. CDW is an Apple® authorized catalog reseller and your one-stop source for all your computing needs.



**Apple Mac OS 8.5**  
**\$88.92**  
 CDW 134030

**Entrega 4-port USB Hub**  
**\$55.74**  
 CDW 133137

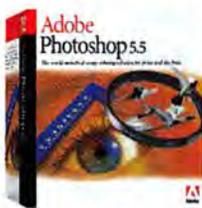


**UMAX 1220U**  
 Flatbed scanner with 4-port  
 USB Hub  
**\$129.00**  
 CDW 171415

**Epson Stylus Color 740i**  
 Color inkjet printer  
 for Mac  
**\$279.00**  
 CDW 161209



**Global Village Teleport**  
 Internal 56K modem  
**\$109.18** CDW 148272



**Adobe**  
**Photoshop V5.5**  
 Upgrade  
**\$187.92**  
 CDW 171265



**Mitsubishi**  
**Diamond Pro 900U**  
 19" truly flat screen monitor  
**\$689.89**  
 CDW 130067

### MONITORS

#### APPLE

Apple Studio Display 17" (16" view) 0.25mm AG	\$499.00
Apple Studio Display 21" (19.8" view) 0.25-0.27mm AG	\$1499.00
Apple Studio Display LCD 15.1" (15.1" view)	\$1299.00

#### MITSUBISHI

Diamond Pro 900U 19" (18" view) 0.25-0.27mm AG	\$689.89
Diamond Plus 70 17" (16" view) 0.25mm AG	\$345.40

#### PHILIPS/MAGNAVOX

105S 15" (14" view) 0.28mm	\$155.67
107S 17" (16.2" view) 0.28mm	\$239.97
109S 19" (17.9" view) 0.26mm	\$417.17

#### NEC

MultiSync A500+ 15" (13.8" view) 0.28mm	\$195.34
MultiSync A700+ 17" (16" view) 0.28mm	\$316.19
MultiSync E750 17" (16" view) 0.25mm	\$409.57
MultiSync E900+ 19" (18" view) 0.26mm	\$694.88
MultiSync P1250+ 21" (19.6" view) 0.28mm	\$969.52

#### SONY

100ES 15" (14" view) 0.25mm	\$199.76
200ES 17" (16" view) 0.25mm	\$336.43
400PS 19" (18" view) 0.27mm	\$719.27
500PS 21" (19.8" view) 0.26mm	\$1165.31

#### VIEWSONIC

GS771 17" (16" view) 0.27mm	\$359.99
G790 19" (18" view) 0.26mm	\$464.77
P810 21" (20" view) 0.25mm	\$917.62
PS775 17" (16" view) 0.25mm	\$434.50
GB10 21" (20" view) 0.25mm	\$874.15
PS790 19" (18" view) 0.25mm	\$585.98
PT813 21" (20" view) 0.28mm AG	\$1119.78
P815 21" (20" view) 0.25mm	\$1158.79

### VIDEO BOARDS

#### ATI TECHNOLOGIES

ATI NEXUS GA 16MB	\$389.25
ATI RAGE ORION 16MB	\$178.16
ATI NEXUS 128 SCD MB	\$259.06
ATI XCLAIM 3D+ LCD 8MB	\$129.44
ATI XCLAIM VR 128 16MB TV	\$199.09

### IX MICRO

Ultimate Rez 2D/3D EM PCI	\$315.39
i3D Pro Rez 8MB PCI Power Mac	\$219.23
TV Tuner Card	\$99.84
Road Rocket PC Card	\$254.01

### COMMUNICATIONS

#### GLOBAL VILLAGE

TelePort 56K V.90 external USB	\$119.33
TelePort 56K V.90 internal	\$109.66
TelePort 56K V.90 internal for the G3	\$109.18

#### 3COM/U.S. ROBOTICS

Sportster 56K Faxmodem external	\$117.99
---------------------------------	----------

### VIKING

Viking 56K V.90 Modem external USB	\$115.24
------------------------------------	----------

### DATA STORAGE

#### IOMEGA

Zip drive 100MB external USB	\$129.95
Zip drive 100MB external SCSI	\$99.95
100MB Zip disk 3-pack	\$39.95
Zip drive 250MB external SCSI	\$199.95
250MB Zip disk 4-pack	\$69.95
Jaz drive 2GB internal	\$349.95
Jaz drive 2GB external	\$349.95
2GB Jaz disk 3-pack	\$299.95

#### LACIE

20GB external FireWire™ hard drive	\$499.00
4X4X16 CD-RW external w/ PCI SCSI card	\$329.00
5.2GB DVD RAM disc double sided	\$39.00
4X4X16 CD-RW external SCSI	\$348.00
USB external CD-RW drive	\$349.00
DVD-RAM external	\$749.00
2.6GB DVD RAM disc single sided	\$29.00
4.0GB external SCSI hard drive d2 case	\$239.00
9.1GB external SCSI hard drive d2 case	\$359.00
9.1GB external SCSI hard drive d2 case	\$369.00
18.0GB external SCSI hard drive d2 case	\$779.00
36.0GB external SCSI hard drive d2 case	\$1899.00
10GB external USB hard drive	\$299.00
20GB external USB hard drive	\$448.00

#### QUANTUM

9.1GB Atlas III Ultra SCSI LVD	\$394.34
9.1GB Atlas III Ultra SCSI	\$394.34
18.0GB Atlas III Ultra SCSI	\$719.43
18.2GB Atlas III Ultra2 SCSI	\$719.43

#### IMATION

USB 120MB SuperDisk drive USB	\$169.99
-------------------------------	----------

### SCANNERS

#### AGFA

SnapScan 1236S	\$199.00
SnapScan 1212U for the iMac	\$129.00
DuoScan T1200	\$644.90

#### EPSON

Perfection 636	\$299.00
Perfection 636U	\$229.00
Expression 800 Executive	\$699.00
Expression 800 Artist	\$799.00
Expression 800 Professional	\$999.00
Expression 836XL	\$2499.00

#### MICROTEK

ScanMaker 4	\$666.15
ScanMaker 9600XL	\$1388.22
ScanMaker X6	\$138.87
ScanMaker X6EL	\$226.87
ScanMaker X6 USB	\$144.87

#### NIKON

CoolScan III LS 30 film scanner	\$959.34
Super CoolScan LS 2000 film scanner	\$1817.27

#### POLAROID

SprintScan 4000	\$1909.27
-----------------	-----------

#### UMAX

Astra 1200S	\$149.00
Astra 1200X	\$149.00
Astra 1220U USB	\$129.00
Astra 2400S	\$299.00
Powerlook III	\$895.00
Powerlook III w/ transparency adpt	\$1195.00
Mirage II Duo	\$1995.00

#### VISIONEER

OneTouch 7600 USB	\$139.77
OneTouch 5300 USB	\$99.06

### CDW® DIRECTORY

PC sales	800-800-4239
Mac sales	800-509-4239
Corporate sales	800-280-4239
Corporate software sales	800-294-4239
Government and Education sales	800-808-4239
Networking sales	800-377-4239

### CDW® TELEPHONE HOURS

Sales	
Monday-Friday	7 a.m.-9 p.m. CT
Saturday	9 a.m.-5 p.m. CT
Tech Support/Returns for Customers	
Monday-Friday	7 a.m.-9 p.m. CT
Saturday	9 a.m.-5 p.m. CT



BUY WITH CONFIDENCE CDW® IS A NASDAQ TRADED COMPANY

TICKER SYMBOL CDWC D & B rated S&I Duns 10-782-7952  
 Credit card charges are not submitted until time of shipment. For your protection, we ship only to your credit card's verified billing address. Shipping and handling charges apply; please ask your CDW account manager for details. Before returning any product, you must obtain an RMA number. Non-defective returns are subject to a restocking fee. Software, chips and other electronic components are not returnable. Allow 10 business days for shipping when paying by personal check. All pricing subject to change. For all prices, products and offers, CDW reserves the right to make adjustments due to changing market conditions, product discontinuation, manufacturer price changes, errors in advertisements or other extenuating circumstances. All trademarks and registered trademarks are the sole property of their respective owners.



**Computing Solutions**  
 Built for You™  
**800-509-4239**  
**www.cdw.com**

All products sold by CDW are third party products and are subject to the warranties and representations of the applicable manufacturers, including but not limited to Y2K compliance. Accordingly, CDW makes no representation or warranty with respect to the Y2K compliance of products sold.  
 56K modems are capable of 56Kbps downloads, however, current regulations limit download speed to 53Kbps.  
 Internet connectivity requires access services from an Internet access provider. Contact your local access provider for terms, terms and conditions.

©1999 CDW® Computer Centers, Inc. 200 N. Milwaukee Avenue, Vernon Hills, IL 60061 MW4823.B 9/99

Choose 2 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)



## OUR BEST BUYS ON CD RECORDERS!



**EACH CDR DRIVE WILL INCLUDE TOAST MASTERING SOFTWARE, TOLL FREE SUPPORT AND 5 FREE DISKS!**

Stomper CD label kit only \$35 with CD-R drive!

	Int.	Ext.
4x12 Plector mechanism, caddy/tray load, 2MB buffer	\$319	\$379
6x24 Teac mechanism, tray load, 2MB buffer	\$359	\$419
8x20 Sanyo mechanism, tray load, 2MB buffer	\$369	\$429
8x20 Plector mechanism, tray load, 4MB buffer	\$489	\$549
8x24 Teac mechanism, tray load, 2MB buffer	\$439	\$495

	Int.	Ext.
4x4x16 Yamaha mechanism, tray load, 2MB buffer	\$309	\$369
6x4x16 Yamaha mechanism, tray load, 2MB buffer	\$339	\$399
4x2x20 Plector mechanism, tray load, 2MB buffer	\$369	\$429
8x2x20 Plector mechanism, tray load, 2MB buffer	\$489	\$549
8x2x20 Sanyo mechanism, tray load, 2MB buffer	\$439	\$499

## HARD DRIVES

### Quantum

**ULTRA 160m SCSI** New SCSI interface will transfer 160MB/sec on new controllers. Drives will work on older SCSI, Ultra Wide, Ultra-2 controllers.

9.1GB 7200 2MB	KN309100LW	\$359
9.1GB 10,000 2MB	TN309100LW	\$489
18.2GB 7200 2MB	KN318200LW	\$659
18.2GB 10,000 2MB	TN318200LW	\$829
36.4GB 7200 2MB	KN336400LW	\$1269

9.1GB 7200 512K	KA309100A	\$149
13.6GB 7200 512K	KA313600A	\$165
18.2GB 7200 512K	KA318200A	\$229

**IDE Ultra ATA/66**

6.8GB 7200 512K	KX306800A	\$129
10.2GB 7200 512K	KX310200A	\$149
13.6GB 7200 512K	KX313600A	\$169
20.6GB 7200 512K	KX320500A	\$259
27.3GB 7200 512K	KX327300A	\$359



**ULTRA SCSI**

4.5GB 5400 512K	IBM34560N	\$199
9GB 7200 2MB	IBM309170N	\$379
18.2GB 1" High 2MB	IBM318350N	\$669

**ULTRA WIDE SCSI**

4.5GB 5400 512K	IBM34560W	\$199
9GB 7200 2MB	IBM309170W	\$379
18.2GB 1" High 2MB	IBM318350W	\$669

**ULTRA-2 SCSI**

9.1GB 7200 2MB	IBM309170U2	\$379
9.1GB 10,020 4MB	IDRV59U2A	\$539
18.2GB 10,000 2MB	IDMV51U2	\$1049
18.2GB 10,020 4MB	IDRV518XZ	\$839
18.2GB 1" High 2MB	IBM318350U2	\$669
36.4GB 7200 4MB	IDRV536U2	\$1199
36.4GB 10,000 2MB	IDRH36SU2	\$1699

**IDE**

9.1GB 7200 512K	IBM9GX P	\$179
10.1GB 5400 512K	IBM10GP	\$165
10.1GB 7200 512K	IBM10GX P	\$189
13.5GB 7200 512K	IBM13GX P	\$245
14.4GB 7200 512K	IBM14GX P	\$235
15.2GB 5400 512K	IBM15GP	\$225
18.0GB 7200 2MB	IBM18GX P	\$299
20.3GB 5400 2MB	IBM20GP	\$285
22.0GB 7200 2MB	IBM22GX P	\$365
25.0GB 5400 2MB	IBM25GP	\$350

## WESTERN DIGITAL

**IDE**

4.3GB 5400 512K	WDAC14300	\$109
6.4GB 5400 512K	WDAC26400	\$119
8.4GB 5400 512K	WDAC28400	\$129
9.1GB 7200 2MB	WDAC29100	\$199
10.2GB 5400 512K	WDAC310200	\$155
13.0GB 5400 512K	WDAC313000	\$179
18.0GB 7200 2MB	WDAC418000	\$289
20.0GB 5400 2MB	WDAC420400	\$279

## HARD DRIVES

### Seagate

**ULTRA SCSI**

4.5GB 7200 512K	ST34520N	\$189
4.5GB 7200 512K	ST34573N	\$315
9.1GB 7200 512K	ST39140N	\$315
9.1GB 7200 1MB	ST39173N	\$375
18.2GB 7200 1MB	ST118273N	\$669

**ULTRA WIDE SCSI**

4.5GB 7200 512K	ST34520W	\$195
4.5GB 7200 512K	ST34573W	\$320
9.1GB 7200 512K	ST39140W	\$320
9.1GB 7200 1MB	ST39173W	\$380
18.2GB 7200 1MB	ST118273W	\$669

**ULTRA-2 SCSI**

9.1GB 10,000 1MB	ST39103LW	\$539
9.1GB 10,000 4MB	ST39103LW4	\$575
9.1GB 7200 1MB	ST39175LW	\$369
9.1GB 7200 1MB	ST39175LW4	\$425
18.2GB 7200 1MB	ST318275LW	\$695
18.2GB 7200 4MB	ST318275LW4	\$765
18.2GB 10,000 1MB	ST318203LW	\$889
18.2GB 10,000 4MB	ST318203LW4	\$905
36.4GB 7200 1MB	ST136475LW	\$1279
36.4GB 10,000 1MB	ST136403LW	\$2239
50.1GB 7200 1MB	ST150176LW	\$2579

**IDE**

4.3GB 5400 512K	ST34312A	\$89
6.4GB 5400 256K	ST36422A	\$119
8.6GB 5400 512K	ST38422A	\$129
10.2GB 5400 512K	ST310232A	\$159
13.3GB 5400 512K	ST313032A	\$169
17.2GB 5400 512K	ST317242A	\$219

**IDE**

8.4GB 5400 512K	M90845D	\$129
10.0GB 7200 512K	M91024D	\$175
13.0GB 5400 512K	M91303D	\$175
17.2GB 5400 512K	M91275D	\$215
20.4GB 7200 512K	M92048D	\$319

**IDE Ultra ATA/66**

6.5GB 5400 2MB	M90650U	\$125
10.2GB 5400 2MB	M91020U	\$169
13.6GB 5400 2MB	M91360U	\$185
20.4GB 5400 2MB	M92040U	\$239
27.2GB 5400 2MB	M92720U	\$369

## 2.5" IDE LAPTOP

3.2GB 8.45mm	Toshiba	MK3212MAT	\$135
4.3GB 8.45mm	Toshiba	MK4309MAT	\$149
6.4GB 8.45mm	Toshiba	MK6412MAT	\$209
10GB 12.5mm	Toshiba	MK1011GAV	\$389
3.2GB 9.5mm	IBM	DB203240	\$149
4.8GB 9.5mm	IBM	DB204860	\$169
6.4GB 9.5mm	IBM	DB206480	\$229
8.1GB 12.5mm	IBM	DC208100	\$339
10GB 12.5mm	IBM	DC210000	\$365
14.1GB 17mm	IBM	DC214000	\$555

We are committed to being the #1 Source for hard drives for Macs. If you need a drive not listed here, we probably have it. Call for pricing and availability.

## USB PRODUCTS

4x2x8 CD Rewritable (USB4X2X8)	\$Call
100MB Zip (ZIP100USB)	\$145
USB to SCSI adapter (USBSCSI)	\$89
SuperDisk drive, 120MB & floppy (USBL5120)	\$149
Floppy Drive (USBFLOPYY)	\$99
8GB Hard Drive (USB8GB)	\$229
12GB Hard Drive (USB12GB)	\$309
16GB Hard Drive (USB16GB)	\$379
USB Case for IDE hard drive (USBCASE)	\$99

## G3 UPGRADES

Upgrades for the new G3 Mini Tower Macintosh computers.	
Adaptec PCI SCSI card (A2906E)	\$65
20GB Hard Drive (M92048D)	\$365

## DID YOU KNOW?

We stock the widest selection of data storage products. For Mac, PC, and Workstations. Visit [megaha.us.com](http://megaha.us.com)

## HOT SELLERS

### YAMAHA

Drive with Toast, Direct CD, 1 Free CD-RW disk

4x4x16 CD-RW Drive	
Internal (YCRW4416M)	\$239
External (YCRW4416MX)	\$289
6x4x16 CD-RW Drive	
Internal (YCRW6416M)	\$279
External (YCRW6416MX)	\$339

Fargo InkJet CD Color Printer (CDPRINTER)	\$999
Adaptec Ultra Wide PCI controller (A2940MUW)	\$285
Adaptec Ultra-2 PCI controller (A2940MU2V)	\$385
Toshiba SCSI 5X DVD ROM (SDM1201)	\$159

### DVD RAM

Toshiba SCSI DVD RAM drive (SDW1101)	\$449
Panasonic SCSI DVD RAM drive (LFD101U)	\$559
Mac DVD RAM driver software (MDVDSFT)	\$59
DVD RAM media (DVDRAMDISK)	\$35

## RAID

We can custom configure a RAID system to your exact needs. Call one of our RAID experts at 800-786-5653. Here are a few of our popular RAID components.

Enclosure holds 3 Hot Swappable SCSI drives \$299 (SCA3DRIVE) INTERNAL ADD \$100 FOR EXTERNAL

## CD ROM

**SCSI**

NEC CDR1910	32X	85ms	\$85
Plector PX32TS (tray)	32X	85ms	\$119
Plector PX32CS (caddy)	32X	85ms	\$149

Toshiba XM6401B 40X 79ms \$95  
 Plector PX40TS 40X 85ms \$139

**WIDE SCSI**

Plector PX40TSUW	40X	85ms	\$169
------------------	-----	------	-------

**IDE**

NEC CDR3000	40X	75ms	\$65
Mitsumi CRM CX40X	40X	80ms	\$59
Memorex CD48X	48X	90ms	\$72
Kenwood UCR412	52X	90ms	\$121
Memorex CDS5X	56X	90ms	\$89

Pioneer 24X 6 Disc external SCSI DRM6324X \$419  
 Custom configurations of multiride CD Towers are a specialty for us. Call with your needs.

## TAPE BACKUP

Capacity	Native/Compressed	Max. Speed	
<b>4mm DAT</b>			
2-4GB	66MB/min	Seagate STD24000N	\$549
4-8GB	66MB/min	Seagate DDS-2 STD28000N	\$629
4-8GB	90MB/min	Sony SDT7000A1	\$559
4-8GB	60MB/min	HP C1599A1	\$719
6GB	52MB/min	Indigita IDT2500	\$489
12-24GB	144MB/min	Sony DDS-3 SDT9000A1	\$759
12-24GB	132MB/min	Seagate DDS224000N	\$849
12-24GB	120MB/min	HP DDS-3 C1554A1	\$929
20-40GB	288MB/min	Sony DDS-4 SDT10000A1	\$1129
32-64GB	90MB/min	Sony TSL7000 8 tape load	\$1899
49-96GB	48MB/min	Seagate STLA96000N	\$2199
72-144GB	120MB/min	HP C5648A 6 tape load	\$2679

**EXABYTE 8mm DAT**

7-14GB	120MB/min	ELIANT820	\$1279
20-40GB	360MB/min	EXB8900	\$2489
70-140GB	60MB/min	EXB1010 10 tape loader	\$2699

**QUANTUM DLT**

20-40GB	180MB/min	DLT4000	\$1859
35-70GB	600MB/min	DLT7000	\$4579
40-80GB	600MB/min	DLT8000	\$5339

## REMOVABLE MEDIA

100MB Zip Ext SCSI w/ 1 disk	\$119
2GB Jaz Internal SCSI	\$300
2GB Jaz External SCSI	\$319
1GB Jaz disk 2-4/5-9/10+	\$777/\$713
2GB Jaz disk 2-4/5-9/10+	\$864/\$812
Maxoptix Magneto Optical 2.6GB SCSI drive	\$1129
5.2GB SCSI drive	\$1509
Sony Magneto Optical 5.2GB SCSI drive	\$1529

## BACKUP TAPES

4mm DAT 90M 3 pack w/lean \$20 Limited Qty #DST90M3	
4mm DAT 120M	\$13 \$10 \$8
4mm DAT 125M	\$26 \$23 \$21
4mm DAT 150M	\$59 \$57 \$55
8mm DAT 112M 2 pack \$10 Limited Qty #DST112M2	
8mm DAT 160M	\$17 \$14 \$12
TR4	\$29 \$26 \$24
TR5	\$47 \$44 \$41

## DLT MEDIA SALE

DLTIII 10-20GB	\$38 \$35 \$34 \$31
DLTIIIIX 15-30GB	\$40.5 \$38 \$36 \$34
DLTIV 20-40GB	\$74 \$70 \$68 \$66

Since 1987 The Drive Authority

# MEGAHAUS

# 1-800-786-1184

Sales lines open: M-F 8-8 Sat 9-3 CST

## www.megaHaus.com

Secure ordering • Daily Specials • #1 Drive Store on the Web!



2201 Pine Drive, Dickinson, Texas 77539  
 (281)534-3919 FAX (281)534-6580

Prices & specifications subject to change without notice. Shipping charges are nonrefundable. Returns must be in new condition and in original packaging. Defective items may not be returnable. No refunds on software or special orders (items not listed in ad.) All refunds subject to 15% restocking fee. All trademarks are registered trademarks of their respective companies. Personal checks held for clearance. We reserve the right to refuse any sale for any reason. Bundle price good only if sold at ad price. All warranties listed are manufacturer's warranty only. ©1999 MegaHaus Inc.

**Macworld Special!**

**Apple® Final Cut Pro**

•High-quality video without hassle or high cost •Combines professional editing, composing & effects capabilities •CD-ROM for Macintosh®

**\$999.99** (APP FINALCUTP-C)

**GET A FREE DIRECTOR'S CHAIR AND A DRESS SHIRT WITH YOUR PURCHASE OF APPLE® FINAL CUT PRO! A \$120.00 VALUE!**



# J&R COMPUTER WORLD



**Walk In**  
15 Park Row  
New York, NY



**Phone In**  
(800)  
221-8180



**Log In**  
www.jandr.com  
AOL keyword: J&R

**Macworld Special!**



**Panasonic SL-S230**  
Portable CD Player  
•10-sec. Anti-Shock Memory II •XBS Extra Bass System •24-track programming •Metallic silver color •AC adapter & headphones (EAN SL-S230)  
**FREE** with purchase of **ANY Apple® Power Macintosh® G3 MiniTower or PowerBook®!**

**Epson Printer**



**EPSON Stylus® COLOR 740i**  
USB Ink Jet Printer for Mac G3s  
•1440 x 720 dpi •USB port (requires USB cable) •Blueberry cover matches G3  
**\$229.99** after \$50 Mail-In Rebate (EPS C257111) EXPIRES 9/30/99

**LaCie Hard Drive**

**SAVE \$100.00!**  
**LaCie External 9GB**  
Narrow Ultra SCSI Hard Drive  
•9ms seek time •7200rpm •3-year limited warranty  
**\$399.99** (LAC 300047)

**CD-Writers**

**Macworld Special!**  
**QPS Quo! Drive**  
4x2x8 CD-ReWritable Drive  
•4x write, 2x rewrite, 8x read •USB  
**\$289.99** (QPS QP42811MAC)

**Macworld Special!**  
**SONY Spressa® CRX100E/X**  
External USB CD-RW Drive Kit  
•6x read/4x write / 2x rewrite •USB  
**\$299.99** (SDN CRX100E/X)

**Monitors**

**Macworld Special!**  
**Panasonic**  
**Panasonic PanaFlat® LC505**  
15" LCD VIS Flat Panel Color Monitor  
•Active-matrix •USB •For Mac w/adapter •Speakers  
**\$849.99** (PAN LC505)

**Macworld Special!**  
**ViewMate**  
**ViewMate Oz-795G3**  
17" Color Monitor w/16.1" VIS  
•Digital on-screen controls •Mates with G3 computer  
**\$269.99** (VMT OZ795G3)

**Order from**  
**www.jandr.com**  
**AOL keyword: J&R**

All Major Credit Cards Accepted  
**Overnight Delivery Available!**

**Order Code: MW909**  
(prices good until 9/15/99)

**A J&R EXCLUSIVE!**

**Apple® Power Macintosh® G3/300**  
64/6GB/24x-CD A/V Mini Tower with Apple® 17" Studio Color Monitor



**SAVE \$1000 From Original Price!**

- 300MHz PowerPC™ G3 processor •64MB SDRAM
- 512K backside L2 cache •100MHz system bus
- 6GB HD •4MB VRAM •24x CD-ROM
- 10/100BASE-T Ethernet •2-USB/2-FireWire® ports/1-ADB port •Includes Apple® 17" Studio Display Color Monitor •Blue & white styling

**CALL FOR SPECIAL MACWORLD PRICE!** (APP M7262LL/A) + (APP M6221LL/A)

Features the **ATI Xclaim VR** graphics card with **NTSC In/Out** & **Avid Cinema** for complete movie making capabilities. Capture video from standard cameras & VCRs, author your own work & print to tape to make professional quality film for the Internet, wedding videos, corporate communications & much more!

**Includes Apple® 17" Studio Color Monitor!**

**Macworld Special!**  
**BONUS! FREE SCSI CARD WITH PURCHASE!**

**Adaptec SCSI Card 2906 Kit**  
PCI Card For PC/Mac  
•Run your Zip drive or scanner up to 6 times faster •Includes Adaptec EZ-SCSI® software  
**A \$60.00 Value!** (ADP AVA2906KIT)

**Apple® Macintosh® PowerBook® G3/333**

64MB/4GB/24x CD  
•14.1" active-matrix display  
•333MHz PowerPC™ G3 processor  
•64MB SDRAM •4GB HD •24x CD-ROM •8MB VRAM •56K V.90 modem •Built-in 10/100BASE-T  
**\$2499.99**  
(APP M7304LL/A)



**Apple® Macintosh® PowerBook® G3/400**

64/6GB/DVD-ROM  
•14.1" active-matrix display  
•400MHz PowerPC™ G3 processor •64MB SDRAM  
•6GB HD •DVD-ROM •8MB VRAM •56K V.90 modem •Built-in 10/100BASE-T  
**\$3499.99**  
(APP M7308LL/A)

**5-HOUR BATTERY LIFE!**  
Businesses can lease G3 computers for as little as \$58.88 per month!  
For details, call J&R Corporate Sales, (800) 221-3191 or (212) 238-9080

PowerPC and the PowerPC logo are trademarks of International Business Machines Corporation, used under license therefrom. Apple, the Apple logo, Macintosh, Power Macintosh, PowerBook, Apple are registered trademarks of Apple Computer, Inc. (ip drive is a trademark of Imago Corporation. ©1999 Apple Computer, Inc. All rights reserved. Apple, the Apple logo, Macintosh, Power Macintosh, and PowerBook are registered trademarks of Apple Computer, Inc. All other trademarks are the property of their respective owners. All Apple products are designed to be accessible to individuals with disabilities. For more information in the U.S. only, call 1-800-748-3333 or TDD 1-800-633-6722

**J&R CORPORATE SALES BUSINESS LEASING:**  
**No Money Down, No Payments for 30 Days!**  
\*Call J&R Corporate Sales for details at 1-800-221-3191 or 1-212-238-9080



**Global Village Modems**



**Global Village External 56K V.90 Fax/Modem**  
**\$69.99** after \$30.00 Mail-In Rebate!  
REBATE THRU 9/30/99 (IGV EXTV9056K)  
**Global Village Internal 56K V.90 Modem**  
(IGV INTV9056K) **\$99.99**  
**Global Village Teleport External USB 56Kflex V.90 Modem (FOR G3 COMPUTERS)**  
(IGV EXTUSB56V90) **\$129.99**

**Scanners**



**UMAX® Astra 2000U**  
Color Flatbed Scanner For PC or Mac  
**\$99.99** after \$30.00 Mail-In Rebate!  
REBATE THRU 9/30/99 (UMX AST2000UDU)  
**Agfa USB SnapScan 1212u** (Translucent Blue For Mac)  
(AGF SNAP1212UB) **\$129.99**  
**Microtek ScanMaker® X6ELDP** (36-bit, scans legal)  
(MTX SCAN6ELDP) **\$199.99**  
**Minolta Dimage Scan Dual** (For PC/MAC)  
(MIN DIMAGEDUAL) **\$499.99**

**Mac Software**



**Adobe® InDesign® Upgrade**  
•For users of Quark XPress, Adobe® Illustrator, PageMaker or Photoshop •Page layout & design for the future of professional publishing •CD-ROM for Macintosh®  
**\$299.99** (ADM INDESIGN-C)  
**Suitcase® (8.0) Upgrade**  
by Extensis® (ETM SUITCASE-C) **\$34.99**  
**Eudora Mail Pro (4.2)**  
by Quakom (IGU EUDORAPRO-C) **\$44.99**  
**Norton Antivirus (6.0)**  
by Symantec® (SMM NAV6-C) **\$59.99**  
**QuickBooks Pro (4.0)**  
by Intuit (IUM QBXP4-C) **\$179.99**  
**Office 98 Macintosh® Edition**  
by Microsoft® (MSM OFFICE98-C) **\$399.99**

To Order Toll Free and Receive a Free Catalogue

24 Hours, 7 Days, Anywhere In The USA  
**800-221-8180**  
PARK ROW • NEW YORK • NY • 10038 FAX: 1-800-232-4432

Not responsible for typographical or pictorial errors. Merchandise is brand-new, factory-fresh & 100% guaranteed! Some quantities may be limited. Choose 282 at www.macworld.com/getinfo



HOME OF THE SPEED-TUNED HARD DRIVE

**Save** **MEMORY** **ProDirect** **FAST BUY**

LIFETIME 24 HOUR REPLACEMENT WARRANTY ON ALL PRODIRECT MEMORY

# www.pdisales.com

## HIGH PERFORMANCE SPECIALISTS

ALWAYS CALL OR VISIT OUR WEBSITE FOR THE MOST CURRENT PRICE ON ALL ADVERTISED PRODUCTS. PRICES CHANGE DAILY.

**FREE SHIPPING ON ALL ORDERS!**

**FREE**

**90 Day Performance Guarantee**

**Blue Yosemite G3**  
168 pin SDRAM

**32MB** \$27  
**64MB** \$40  
**128MB** \$86

**Beige G3 168 pin SDRAM**

**32MB** \$37  
**64MB** \$49  
**128MB** \$97

**iMac SODIMM**

**32MB** \$33  
**64MB** \$52  
**128MB** \$101

**7200-9600, 5400-6400**  
168 pin 5vDIMM

**16MB** \$32  
**32MB** \$58  
**64MB** \$116

**Seagate CHEETAH**

**9.1GB U2W \$525**  
5.2ms seek (ST39103LW) External: \$805

**18.2GB LP U2W \$865**  
(ST318203LW) External: \$945  
10000 RPM 1024K 5.9MS 5YR LOW PROFILE

**36.4GB U2W \$CALL**  
(ST136403LW) External: \$CALL  
10000 RPM 1024K BUFFER 5.9MS SEEK

**Seagate BARRACUDA**

**9.1GB U2W \$395**  
(ST39175LW) External: \$475

**18.2GB LP U2W \$695**  
(ST118273LW) External: \$775  
7200 RPM 1024K 6.9MS 5YR LOW PROFILE

**36.4GB U2W \$1325**  
(ST136475LW) External: \$1405  
7200 RPM 512K BUFFER 7.1MS SEEK

**Seagate MEDALIST**

**4.5GB NARROW/WIDE \$205**  
(ST34520N/W) External: \$255 Wide Ext.: \$305

**6.5GB NARROW/WIDE \$259**  
(ST36530N/W) External: \$319 Wide Ext.: \$359

**9.1GB NARROW/WIDE \$299**  
(ST39140N/W) External: \$359 Wide Ext.: \$379  
7200 RPM 512K BUFFER 8.5MS SEEK

**Seagate ELITE**

**23GB NARROW/WIDE \$1395**  
(ST423451N/W) External: \$1495 Wide Ext.: \$1525  
5400 RPM 2048K BUFFER 11MS SEEK

**IBM ULTRASTAR**

**4.5GB NARROW/WIDE \$195**  
(DDR334560S/W) External: \$255

**9.1GB NARROW/WIDE \$299**  
(39130W) External: \$399  
200RPM 512K BUFFER 8.5MS SEEK

**18.2GB LP U2W \$695**  
(DNES-31850LW) External: \$795  
7200 RPM 1024K 6.9MS 5YR LOW PROFILE

**36.2GB U2W \$1225**  
(318200LW) External: \$1325  
7200RPM 4096K BUFFER 6.8MS SEEK

**9.1GB U2W \$495** Ext: \$595  
**18.2GB U2W \$795** Ext: \$895  
10,000RPM 1024K BUFFER 6.8MS SEEK

**IBM DESKSTAR GXP**

**10.1GB** (DTTA-371000) \$185  
**14.4GB** (DTTA-371440) \$229  
**18.0GB** (DTTA-37118) \$269  
**22.0GB** (DTTA-372000) \$349  
7200RPM 512K BUFFER 9.5MS SEEK

**IBM DESKSTAR GP**

**10.1GB** (DTTA-351010) \$155  
**13.5GB** (DTTA-351350) \$175  
**16.8GB** (DTTA-351680) \$216  
**20.5GB** (DTTA-351203) \$285  
**25.0GB** (DTTA-35125) \$350  
5400RPM 512K BUFFER 9.5MS SEEK

**Quantum**

**ATLAS 10K Ultra2 LVD**

**9.1GB** (QM309100TN-LW) \$499 Ext: \$579  
**18.2GB** (QM318200TN-LW) \$849 Ext: \$929  
**36.2GB** (QM336400TN-LW) \$1585 Ext: \$1685  
10,000RPM 2048K BUFFER 5.5MS SEEK

**ATLAS IV Ultra2 LVD**

**9.1GB** (QM309100KN-LW) \$359 Ext: \$439  
**18.2GB LP** (QM318200KN-LW) \$665 Ext: \$745  
**36.4GB** (QM336400KN-LW) \$1265 Ext: \$1345  
7200 RPM 2048K BUFFER 6.9MS SEEK

**Quantum VIKING II U2W**

**4.5GB** (PX34550LW) \$229 Ext: \$309  
**9.1GB** (PX39100LW) \$319 Ext: \$399  
7200RPM 512K BUFFER 7.5MS SEEK

**Quantum FIREBALL**

**2.1GB** FB32100TM-S \$159 INT \$219 EXT  
**4.3GB** FB34300ST-S \$199 INT \$259 EXT  
5400RPM 128K buffer 9.5ms 1 Yr. Warr.

**ACCELERATOR CARDS**

Adaptec YOUR CHOICE: ATTO

**ULTRA WIDE ACCELERATOR CARD**  
or ATTO Express PCI or Initio Miles

UP TO 40 MB/Sec. \* WITH ANY DRIVE PURCHASE

**Ultra Wide SCSI PCI**

**PowerDomain 2940UW** UP TO 40 MB/Sec. \$235  
**Adaptec AHA2930U** PCI to Ultra SCSI HD50 pin... \$99

**Ultra SCSI Dual Channel PCI**

**PowerDomain 3940** UP TO 40 MB/Sec. \$345  
**Dual Channel Express PCI** ..... \$389

**Ultra 2 SCSI LVD PCI**

BACKWARDS COMPATIBLE WITH EXISTING SCSI & ULTRA SCSI

**PowerDomain 2940U2W** Card Only... \$299  
**Adaptec AHA2906** PCI to SCSI 2 HD50 pin... \$65  
**Express PCI LVD** ..... \$329  
**Express PCI Ultra2/LVD Dual Channel** ..... \$489  
**Initio A100U2W** PCI to Ultra 2LVD ..... \$229  
UP TO 80 MB/Sec.

**PowerStor Super Deals**

**USB or Mac SCSI**

5400 RPM, 512K Buffer, 9 MS Seek, 3 Year Warranty

**2.1GB** Seagate Medalist \$195  
**3.2GB** Seagate Medalist \$215  
**6.4GB** Quantum Fireball \$245  
**9.1GB** Quantum Fireball \$289  
**13.5GB** IBM UltraStar \$305  
**16GB** IBM UltraStar \$355  
**20GB** IBM UltraStar \$525

**Mac IDE Accelerator**

**Power ULTRA 33**

**\$129**

- Dual Channel
- Ultra IDE 33 MHz
- Uses Apple Drivers
- Supports 4 Drives
- Great for Internal G3 RAID's
- Low Cost Option for Video Editing

**Internal Dual Channel PowerRAIDs**

**20GB** \$925  
**44GB** \$1195  
**54GB** \$1375  
**66GB** \$1675  
**88GB** \$2095

Includes Ultra 33 MHz Accelerator, All Cables and Brackets, Adaptec Riemus Software, IBM GPX 7200 RPM Hard Drives. We pre-configure and Speed-Tune! for a Plug and Play Solution!

**TAPE BACKUP**

**SONY AIT50500C 50/100 GB \$4099**

SPEEDY TAPE DRIVES IN STOCK TODAY

CAPACITY	MODEL	TRANSFER RATE	SALE
8 GB	Seagate TD28000	60 MB/Min.	595
8 GB	Sony 7000	90 MB/Min.	750
24 GB	HPI 554 DDS3	120 MB/Min.	1025
24 GB	Sony 9000 DD3	120 MB/Min.	835
30 GB	DLT 2000XT	150 MB/Min.	1195
40 GB	DLT 4000	180 MB/Min.	1979
70 GB	DLT 7000	600 MB/Min.	4489
144 GB	HPI 559 DDS3	120 MB/Min.	3295
200 GB	DLT 4500	180 MB/Min.	3795
280 GB	DLT 4700	180 MB/Min.	5575
560 GB	DLT Stor1114LST	180 MB/Min.	10,485

RETROSPECT 4.0 MAC OR CHEYENNE WINDOWS (NT) SOFTWARE INCLUDED WITH ALL TAPE DRIVES

**DVD, CD/CDR**

**DVD RAM Drive** \$559 \$589  
**Pioneer 40x CD Drive** \$79 \$129  
**Toshiba 40x CD Drive XM401B** \$99 \$139  
**Yamaha CRW4416 CDR Drive** 2Mb Buffer 4x Recorder, 4x Rewritable, 16x Reader \$299 \$339  
**Panasonic CDR7502 Drive** 1Mb Buffer 4x Recorder, 8x Reader \$295 \$345  
**Plexstor Plexerwriter 820** \$445 \$499

**RAID SYSTEMS**

**Plug in an Ultra 2 PowerRAID™**

For Maximum Data Transfer Rates

All PowerRAIDs are initialized, Speed Tuned, Tested and Bench Marked To Insure a True Plug and Save Reliability

- The Premier Adapter 2940U2W Ultra2 Wide Accelerator (Available with Dual Channel)
- Raid-Tuned Hard Drives
- Raid Center Enclosures With Maximum Duty Power Supply, Teflon Shielded Cables, High Output Cooling
- Remus Raid Software.
- All PowerRAID components are covered by a 5 Year 48 Hour replacement warranty.

**www.pdisales.com/merchant/MacRaid.html**

**IDE to SCSI RAID Solution**

**New PowerRAID 5**

The security and performance of a hardware SCSI RAID with the cost effectiveness of IDE drives

- RAID Level C1, & S
- 40MB/sec transfer rates
- Host Independent Mac/NT/Sun
- Dual 25W redundant & load sharing hot swappable power supplies & cooling fans
- Up to 128MB cache
- Hot swappable drives
- LED panel for quick and easy readout of RAID status
- Supports auto-rebuild
- Includes Adaptec 2940U2W PCI card & ext. cables Mac/PC

PowerRAID 5 can deliver up to 5400RPM colors. Color 7200 RPM color available.

Great for Digital Video or Server

**50GB...\$3189** **84GB...\$3498**  
**101GB...\$4189** **125GB...\$4498**

**CHEETAH PowerRAIDs Seagate BARRACUDA PowerRAIDs**

<b>18GB PowerRAID SC18</b> FIXED: \$1795 LEASE FOR: \$78/MO. REMOVABLE: \$2195 LEASE FOR: \$83/MO.	<b>18GB PowerRAID SB18</b> FIXED: \$1375 LEASE FOR: \$74/MO. REMOVABLE: \$1520 LEASE FOR: \$82/MO.
<b>36GB PowerRAID SC36</b> FIXED: \$2895 LEASE FOR: \$143/MO. REMOVABLE: \$3055 LEASE FOR: \$162/MO.	<b>36GB PowerRAID SB36</b> FIXED: \$1995 LEASE FOR: \$108/MO. REMOVABLE: \$2215 LEASE FOR: \$115/MO.
<b>72GB PowerRAID SC72</b> FIXED: \$5259 LEASE FOR: \$255/MO. REMOVABLE: \$5589 LEASE FOR: \$273/MO.	<b>72GB PowerRAID SB72</b> FIXED: \$3695 LEASE FOR: \$144/MO. REMOVABLE: \$3895 LEASE FOR: \$154/MO.
<b>144GB PowerRAID SC144</b> FIXED: \$9,698 LEASE FOR: \$333/MO. REMOVABLE: \$10,189 LEASE FOR: \$363/MO.	<b>144GB PowerRAID SB144</b> FIXED: \$7365 LEASE FOR: \$245/MO. REMOVABLE: \$7765 LEASE FOR: \$275/MO.

**CLOSEOUT SPECIALS CPU UPGRADES**

**MAXPOWER G3 240MHz 1024K 6100** \$349  
**MAXPOWER G3 400MHz 1024K/200 G3** \$899

**PowerRAID**

Windows 95/98/NT, Apple MacOS, UNIX

Service + Performance + Price + Always™

- 90 Day Performance Guarantee
- Toll-Free Tech Support
- Same Day Shipping
- No Sales Tax Outside MN
- Retailer Pricing Available
- Educ. & Govt. Discounts
- Never a Surcharge!

**ProDirect**

10830 Nesbitt Ave. South  
Bloomington, MN 55437

Hours: Monday-Friday 8AM-7PM  
International Orders: 612-884-0012

ProDirect Fax: 612-941-1109  
Toll Free Tech Support 800-524-9952

Internet: www.pdisales.com  
E-mail: info@pdisales.com

**DIGITAL VIDEO**

Adaptec **ULTRA HOT CONNECT 8945**

**PROFESSIONAL QUALITY DIGITAL VIDEO PLUS ULTRA WIDE SCSI PORT**

Plug your FireWire equipped Camera right into your computer to easily capture digital video and stills. NTSC and PAL formats compatible

**Ultra Hot Connect 8945** ..... \$485  
(WITH FIREWIRE AND ULTRA WIDE SCSI BOTH ON ONE CARD)

**MEDIA 100 QX** WITH ADAPTEC PREMIERE 3.0 MAC \$1695 WIN NT \$1795  
**MEDIA 100 QXC** WITH ADAPTEC PREMIERE 3.0 \$3795  
**MEDIA 100 LE** WITH DRIVE OR PowerRAID PURCHASE \$5295

**FREE Media100 Training Video**  
with any Media100 or PowerRAID purchase a \$79.95 Value...Only from ProDirect

**Miramotion DC30+ V1 PREMIERE 4.2 MAC** \$865

**www.pdisales.com**  
Quickly find and order. It now on our website!

**800-524-9952**

ALL PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE. RETURNED ORDERS ARE SUBJECT TO A RESTOCKING FEE. INTERNATIONAL CUSTOMERS PAY ALL SHIPPING CHARGES. ALL SHIPPING CHARGES ARE NON-REFUNDABLE. TO RETURN MERCHANDISE CALL FOR AN RMA NUMBER. ALL RMAs MUST BE RETURNED WITHIN 10 BUSINESS DAYS OF ISSUANCE. CUSTOMERS ARE RESPONSIBLE FOR SHIPPING CHARGES TO RETURN PRODUCT.

# Bottomline DISTRIBUTION



**Special Of The Month**

**YAMAHA** CDWR ReRecordable Drive Internal

Internal Drive:  
• 2MB Cache Buffer  
• Mac OS Bootable

**\$199**

Mac Only

[www.bldistribution.com](http://www.bldistribution.com)

**1-800-990-5691**

## Burn, Baby, Burn!

CDR/CDRW Drives At Unbeatable Prices!

**YAMAHA** CDWR ReRecordable Drive Internal

2MB Cache Buffer

**\$199**

Three Drives In One!  
**Yamaha Case 4116S CDRW:**  
4/4/16 w/Toast & DirCD .....\$359  
**Don't Need Toast? External:**  
4/4/16 Ext. NO TOAST .....\$259  
**Magic Yamaha External:**  
ReRecordable 4x/4x/16x .....\$329

**PLEXTOR** 8x/24x Speed CDR Drive

9 MINUTE BURN!

**\$389**

Fully Supported By Toast! 4MB Cache

Retrospect Express Back-Up Software

**\$29.99**

Price w/CDR(W) Purchase

CDR Media: Single.....\$1.49 Single.....\$2.99  
10-Pack.....\$13.99 3-Pack.....\$7.99  
100-Pack.....\$119 10-Pack.....\$31.99  
8x Media.....\$1.59 100-Pack.....\$ALL

**TEAC** 6x/24x Drive \$209.99

**TEAC** 8x/24x Speed CDR Drive

9 MINUTE BURN!

HUGE 6MB Cache Buffer!

Adaptec Toast v3.5.6 w/Direct CD Bundle

**\$69**

Yamaha Audio Cable.....\$8.99  
Teac Audio Cable.....\$8.99  
85/9500 Internal CD-KIT.....\$23.97  
86/9600/G3 Int. CD-KIT.....\$19.79

## Bottom Line iMac Store

The New 333MHz iMac!

**\$1199**

What Is Your Favorite Color?  
333MHz iMacs In 5 Different Colors

Get More RAM!  
iMac 32MB Module .....\$59.99  
iMac 64MB Module .....\$64.99  
iMac 128MB Module .....\$119.99  
iMac 256MB Module.....\$599  
iMac 2MB VRAM.....\$12  
iMac 4MB VRAM.....\$19

**\$125** Omega Zip 100MB USB Drive

**\$167** Includes Retrospect Express v4.1 iMation Superdisk 2x USB Floppy/Storage

**\$359** QPS Que! 4x/2x/8x USB CDRW Drive

**\$99** Agfa USB 1212U iMac Blue Scanner

## Massive Price Drop On G3 Cards!

G3 Upgrade Cards For Your Apple®  
7300/7500/7600/8500/8600/9500/9600 UMAX®  
S900/J700, Or PowerComputing Systems!

Featured Card:  
**RAILGUN G3 400MHz Daughter Card \$599**

**RAILGUN** from Bottomline

**RAILGUN** from Bottomline

G3 275MHz/1MB 1.5-1 .....\$249  
G3 366MHz/1MB 2-1 .....\$539  
G3 400MHz/1MB 2-1 .....\$599

**POWERLOGIX** www.powerlogix.com

G3 333MHz/1MB 2-1 .....\$479  
G3 400MHz/1MB 2-1 .....\$659

We also carry Cache Slot G3 Cards for your 6400/6500/6360, and G3 Cards for 6100/7100/8100, Call For Details!

G3 300MHz/1MB 1.5-1 .....\$499  
G3 366MHz/1MB 2-1 .....\$539  
G3 400MHz/1MB 2-1 .....\$599  
G3 400MHz/1MB 2-1 .....\$729

**2-Year Warranty! 30 Day MBG!**

MAXpower G3 240/1MB For 6100.....\$399  
MAXpower G3 300/150MHz 312x.....\$439  
MAXpower G3 366/183MHz 1MB.....\$629  
MAXpower G3 400/200MHz 1MB.....\$729

G3 ZIF Cards For "Beige" Or "New Blue" Macs!

**RAILGUN** from Bottomline

G3 366MHz/1MB 2-1 .....\$399  
G3 400MHz/1MB 2-1 .....\$499  
G3 466MHz/1MB 2-1 .....\$599

**POWERLOGIX** www.powerlogix.com

G3 466MHz/233MHz 1MB .....\$659

**2-Year Warranty! 30 Day MBG!**

G3 333MHz/1MB 2-1 .....\$499  
G3 366MHz/1MB 2-1 .....\$539  
G3 400MHz/1MB 2-1 .....\$579  
G3 466MHz/1MB 2-1 .....\$799

**New Slimmer G3 PowerBooks**

Prices Start At:

**\$2499**

The Slimmer G3

Slimmer G3 PowerBook Prices  
333MHz 64/4GB/20x/14.1".....\$2499  
400MHz 64/6GB/DVD/14.1".....\$3499

"New" G3 PowerBook RAM:  
32MB Memory Module.....\$69.99  
64MB Memory Module.....\$89.99  
128MB Memory Module.....\$169.99

**WIRED DVD**

Get DVD For Your PowerMac Today!

If You Have A PCI PowerMac You Can Add DVD-RAM Or DVD-ROM To Your Mac!

**Panasonic** All Our DVD-ROM Drives Ship With **WIRED DVD** Decoder Cards:

DVD-RAM Drive From: SCSI DVD IDE DVD

**\$579** **\$369** **\$279**

## Bottom Line's Best Prices On RAM. Lifetime Warranty!

168-Pin DIMM EDO 5-Volt

UMAX C Series, 65/6400/PowerCC

16MB 168-Pin DIMM 60ns.....\$24  
32MB 168-Pin DIMM 60ns.....\$55  
64MB 168-Pin DIMM 60ns.....\$124

168-Pin DIMM FPM

PCI PowerMac 7300-9600, PowerCC, S900

16MB 168-Pin DIMM 60ns.....\$29  
32MB 168-Pin DIMM 60ns.....\$59  
64MB 168-Pin DIMM 60ns.....\$109  
128MB 168-Pin DIMM 60ns.....\$259

"Old" G3 RAM SDRAM

Exclusively for the old Beige G3 Macs

32MB 100MHz SDRAM .....\$38.99  
64MB 100MHz SDRAM .....\$69.99  
128MB 100MHz SDRAM .....\$109.99  
256MB 100MHz SDRAM .....\$459.99  
4MB VRAM Upgrade .....\$24.99

DIMMs 168-Pin 3.3 volt

Starmax, Apple 6500, 4400

32MB 168-Pin DIMM 60ns.....\$79  
64MB 168-Pin DIMM 60ns.....\$139

"New Blue" G3 RAM PC100

32MB PC100 DIMM.....\$49.99  
64MB PC100 DIMM.....\$54.99  
128MB PC100 DIMM.....\$109  
256MB PC100 DIMM.....\$749

iMac RAM

32MB SIMM 60ns.....\$59.99  
64MB SIMM 60ns.....\$67.99  
128MB SIMM 60ns.....\$119.99  
4MB VRAM Upgrade .....\$24.99  
2MB VRAM Upgrade .....\$19.99

## We Carry Over 3000 Macintosh Related Products. Check Them Out On Our Website! [www.blol.com](http://www.blol.com)

**New G3 Macs From Apple**

Apple's New "New Blue" G3 Macs:

450MHz/1MB 128/9GB-U2/32x **\$2849**

**\$1899** 400MHz/1MB 64/6GB/32x/DVD

350MHz/1MB 64/6GB/32x **\$1599**

**\$2369** 400MHz/1MB 128/12GB/32x/ZIP

New Features:  
• 2 Firewire Ports  
• 2 USB Ports  
• NO SCSI Connection  
• Rage 128-Bit Graphics

Must Have Accessories:  
Grappier 906F .....\$49.99  
Adaptec 2930U .....\$89.99  
Initio "Blue Note" .....\$69  
Apple Internal Modem:  
56k v.90 .....\$105.99

15" LCD Display 17" Studio Display

**\$1299** **\$499**

21" Display • Diamondtron CRT  
• 25mm aperture grill  
• 16" viewable

**Fuse**

XLR8 Carrier ZIF PCI Card.

The Last Upgrade You Will Ever Buy!

**\$185**

Works Great With Railgun G3 ZIFs!  
PCI Upgrade Card Takes ZIF Upgrades!

Digital Video Capture Card **\$489**

Captures Video At 30fps/60fields  
Includes Adobe Premiere Lite!

**Fuse™ rocks!**

**32MB**

32MB 168-Pin SDRAM DIMMs  
Lifetime Warranty From Bottom Line

**\$38.99** Bottom Line's Low Price

Who do that video card you need for your Mac?

Voodoo 2 For PCI Mac **\$109**

12MB PCI Card! Only \$109.99!

Voodoo 2 For iMac **\$179**

**RAILGUN** from Bottomline

**\$599** G3 400MHz Daughtercard!

For Your PowerMac  
7300/7500/7600/8500/9500/8600/8500,  
UMAX J700/S900, and Select Power  
Computing Systems!

**128MB**

128MB SDRAM/PC100 DIMMs  
For G3 Apple® PowerMac G3 Systems  
Lifetime Warranty From Bottom Line

Bottom Line's Low Price **\$99**

<http://www.bldistribution.com/> **Bottomline DISTRIBUTION** **1-800-990-5691** M-F 8-7 CST

\*Free UPS ground shipping on domestic internet web orders over \$100.00, and under 10lbs.

Shipping: \$5, 5 lbs., UPS Ground Payment: No credit card surcharge. Corporate POs welcome. Tax: Texas residents add 8.25% sales tax. Prices: Items, prices and availability subject to change. Returns: Call for RMA number. Must be in original condition, opened software is non-refundable. All orders subject to a minimum 15% restocking fee. Original shipping is non-refundable. Apple brand products are not returnable for credit. Bottom Line Distribution cannot be responsible for errors in typography or photography, Apple specifies subject to change. Customer Service: 512-485-4602. International Sales: Bottom Line Distribution is committed to the needs of international Macintosh users. We offer discounted rates with DHL - 2 to 3 day delivery to most countries. Dealer inquiries welcome. Language interpreters available. Address: 715 West 23rd St. Ste. N, Austin, TX 78705 Fax: 512-485-4601. Hours: MF 8-7 All Trademarks are the sole property of their respective owners. Free UPS ground shipping on orders placed on our web site at: <http://www.bldistribution.com/>. We do not offer free shipping on phone in orders.

Bottom Line Offers Business Leasing on all items we carry (orders over \$1000.00). Call today for details, or fill out a lease form online!

Choose 221 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

Free UPS Ground Shipping When You Order On-Line. Surf to: <http://www.bldistribution.com/>

Free UPS Ground Shipping When You Order On-Line. Surf to: <http://www.bldistribution.com/>

PRODUCT INDEX			
Category	Page No.	Category	Page No.
<b>Business Operations . . . . .</b>	<b>156-157</b>	<b>Peripheral Products . . . . .</b>	<b>162-164</b>
Bar Code		Cables	
Inventory Management		Digital Media	
		Printing Supplies	
<b>Communications/</b>		<b>Services . . . . .</b>	<b>180-182</b>
<b>Networking . . . . .</b>	<b>161</b>	Data Recovery	
Cross Platform		Digital Production	
		Printing	
		Repair	
<b>Education/</b>		<b>Systems &amp; Peripherals . . . . .</b>	<b>164-175</b>
<b>Entertainment . . . . .</b>	<b>157-158</b>	<b>USB . . . . .</b>	<b>159-161</b>
Discount Software		<b>Account Manager:</b>	
		Carol Johnstone.....415.243.3691	
<b>Graphics . . . . .</b>	<b>161</b>	carol_johnstone@macworld.com	
		<b>Account Manager:</b>	
<b>Memory &amp; Upgrades . . . . .</b>	<b>176-179</b>	Niki Stranz.....415.243.3664	
		niki_stranz@macworld.com	
		<b>Assistant:</b>	
<b>Digital Advertising Coordinator:</b>		Alissa Mach.....415.243.3628	
Russ Nordmeyer ....415.243.3511		alissa_mach@macworld.com	
production@macworld.com			

**Call Us Toll Free 800-345-4220**

**Broadest Selection of Bar Code Products in the Industry**

- Technically superior products direct from the manufacturer
- Toll free technical and pre-sale support
- 24-hour turnaround on repairs
- Free UPS Blue shipping in U.S.
- 30-day money back guarantee

- Portable & non-portable Batch Readers
- Cordless interactive R/F Terminals
- Wand, Laser, CCD, Magstripe or Slot Badge
- PostScript bar code fonts

or visit our website at **www.BARCODEHQ.COM** for a complete catalog and bar code primer

**USB** **WORTHINGTON** DATA SOLUTIONS

Phone: 831-458-9938 • Fax: 831-458-9964

**POINT OF SALE • INVENTORY CONTROL**

**Software & Hardware for:**

- Retail/Wholesale
- Mail Order
- Internet Commerce
- Rentals
- Service/Repair
- Manufacturing
- FileMaker Tools

Fully Integrated Accounting  
Multi-Site Polling • Cross Platform  
Barcode Readers • Receipt Printers  
Cash Drawers • Mag Stripe  
Ribbons/Paper/Labels  
Credit Card Authorization  
& Deposit Software

Now iMac compatible

**www.posdirect.com**  
(800) 622-7670 • sales@posdirect.com  
(618) 985-8237 vox • (618) 985-3014 fax

**P.O.S. DIRECT**

Order Free CD Rom on Web Site

**Create your own bar code graphics.**

**CALL FOR FREE DEMO**

**Bar Code Pro v3.5 with Veribar**

*For guaranteed readability!*

**SNX** www.snx.com Call 800 619-0299  
Tel 718 499-6293 Fax 718 768-3997

1997 Product Of The Year  
**Imagine**  
-Imaging Magazine

Create perfect PostScript (EPS) bar code graphics for Quark, PageMaker, Illustrator, Freehand, etc. All popular bar code types (UPC, Postnet, 39, EAN, 128, ITF, ISBN) included. Works with any printer resolution, with no fonts required! Mac/Win95/NT

Choose 402 at www.macworld.com/getinfo

**BAR CODE SOLUTIONS**

- Labeling Applications
- Bar Code Font Packages
- Inventory Management
- Time & Attendance
- Scanners & Lasers
- Thermal Label Printers

Visit us online at: **www.bearrock.com**

Bear Rock Offers: Free Expert Consultation, Lifetime Technical Support and Satisfaction Guaranteed on ALL Bar Coding products!

Bear Rock Welcomes VARs.

**FREE Handbook "Bar Code Basics"**  
A User's Guide to Bar Coding

**Call Today for a FREE Consultation!**  
**800 232-7625**  
Intl: (530) 672-0244 Fax: (530) 672-1103

Choose 401 at www.macworld.com/getinfo

### ACADEMIC DISCOUNTS

For Students, Teachers, and Faculty!

BEdit	\$69	Filemaker Pro	\$109	Minicad 8	\$329
Bryce 4	\$139	Fireworks 2	\$98	Microsoft Office 98	Call
CodeWarrior Pro	\$109	Finale 98	\$199	NisusWriter	\$69
CorelDraw 8	\$109	Flash 4	\$98	Painter 5.5 Web	\$199
Director 7	\$329	FormZ	\$849	Poser 4	\$169
DreamWeaver 2	\$98	Freehand 8	\$98	Strata StudioPro	\$439
ElectricImage	\$619	Infini-D	\$269	Suitcase 8	\$45



Check out more products and prices on-line, 'cause this ad is too small!

**1-800-333-8571**

Fax PO's and ID's to 512-450-0263

**ACADEMIC DISCOUNT WAREHOUSE**

[www.ADWonline.com](http://www.ADWonline.com)

Choose 408 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

### FREE! FREE!

1-206-222-

**FREE**

or go to

[www.cyberspace.net](http://www.cyberspace.net)

User Name: guest Password: password

V90 - 56k Fax - FREE email

No Hassles - 100% anonymous

Modem #

1-206-495-1000

**FREE INTERNET ACCESS**

Choose 406 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

### Mouse Pads



Great Desk Advertising

Custom Printed

Manufacturer Direct

**MicroStore™ Inc.**

P.O. Box 125 • Le Sueur, MN 56058

800-962-8885 Fax: 507-665-2604

[www.microstore-mousepads.com](http://www.microstore-mousepads.com)

Choose 405 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

"AS A LEADING DEVELOPER OF PC-TO-MAC CONNECTIVITY SOFTWARE, MIRAMAR SYSTEMS RELIES ON REACHING A CAPTIVE READERSHIP OF MAC OS-BASED BUYERS AND DECISION MAKERS. MACWORLD MAGAZINE'S SHOPPER SECTION HAS CONSISTENTLY OUT-PERFORMED OTHER MAC PUBLICATIONS THAT WE'VE ADVERTISED IN, WITH HIGHER RECALL AND QUALITY LEADS. A LOT OF MAGAZINES TALK ABOUT THEIR 'VALUE ADD', BUT MACWORLD MAGAZINE TRULY DELIVERS."

**Renee Cooper,**  
Director of Marketing,  
Miramar Systems, Inc.

**Macworld** **Get** **info**

[www.macworld.com/getinfo](http://www.macworld.com/getinfo)

**StickerPIX™**  
The Mini Photo Sticker Studio

Over 200 Frames!

FOR FUN! FOR BUSINESS!

**\$39.99**

[WWW.XLSOFT.COM](http://WWW.XLSOFT.COM)

Choose 404 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

### Your Connection to Student, Teacher and School Discounts!

**Software Connection**

Check out Web Specials for "Online Only" Deals

Visit our new Web Site  
[www.software-connection.com](http://www.software-connection.com)

Our Website has revolutionized the way students & teachers buy software!

- Easy to use
- FREE product information
- Shop & order online
- Special offers & rebates
- Unadvertised Web specials

- BEdit 5.0 \$79
- Bryce 4.0 \$149
- Canoma 1.0 \$379
- Canvas 6.0 \$199
- Coda Finale 98 \$249
- DeBabelizer 3.0 \$279
- Director 7.0 E-Doc \$349
- Eye Candy 3.0.1 \$79
- FileMaker Pro 4.1 \$119
- Fireworks 2.0 \$99
- Flash 3.0 \$99
- FLIGHTCHECK 3.5.2 \$199
- Font Reserve 2.0 \$99
- FreeHand 8.0.1 \$99
- HeadLine Studio 1.0 \$99
- Infini-D 4.5 \$299
- Kai's Power Tools 5.0 \$89
- LightWave 3D 5.6 \$889
- MacLinkPlus Deluxe 10.1 \$69
- Mask F/X \$149
- Mask Pro 2.0.1 \$149
- Nisus Writer 5.1.1.3 \$75
- Ray Gun \$75
- Scriptware 1.1.5 \$149
- VectorWorks \$339

**\$99**

Dreamweaver 2.0  
"Professional Web Site Design"

**\$729**

Electric Image Broadcast 2.9  
"Next Generation 3-D Modeling, Rendering & Animation"

**\$119**

CodeWarrior Pro R4  
"The World's Most Powerful Integrated Development Environment"

We will match or beat any advertised price.

- Microsoft & Symantec products also available to qualifying customers
- Software Connection has the right to refuse any order(s)
- Not responsible for typographical errors
- Prices & availability subject to change
- School Purchase Orders accepted • PC products also available

**Software Connection**

2640 Highway 70 Bldg. 7 Manasquan, NJ 08736  
(732) 223-8770 Fax# (732) 223-8768

CALL US A **FREE** CATALOG  
**(800) 568-6837**

Major Credit Cards accepted

### STUDENTS!

Save up to **75% OFF** popular software!

**STUDENT SOFTWARE GUIDE**

Adobe  
Microsoft  
Kinetics  
MetaCreations  
Macromedia  
AliasWavefront  
Softimage  
Autodesk  
Corel  
ADAM  
Wacom  
Many More!

1-800-874-9001  
[www.journeyed.com](http://www.journeyed.com)

THOUSANDS OF TITLES AVAILABLE!  
**FREE CATALOG!**

**1-800-874-9001**

**JourneyEd**

JOURNEY EDUCATION MARKETING  
LORDI

Choose 407 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

**World of Reading, Ltd.**

Your Only Source for

Foreign Language & ESL (English as a Second Lge.) Software for Windows and Macs  
Over 40 languages from publishers worldwide  
From learning a language to multilingual translation software  
We also offer Books, Tapes, DVDs and Videos

**World of Reading, Ltd.**  
P.O. Box 13092  
Atlanta, GA 30324-0092  
800-729-3703 or 404-233-4042  
Fax 404-237-5511  
E-mail [polyglot@wor.com](mailto:polyglot@wor.com)

Call for our print catalogue or visit us online at:  
[www.wor.com](http://www.wor.com)

# SAVINGS FOR STUDENTS, TEACHERS, & SCHOOLS

ACADEMIC DISCOUNT SUPERSTORE / UP TO 80% OFF

After Dark 4.0 Deluxe.....	\$45
Authorware 4.0.....	\$399
Auto F/X AutoEYE.....	\$75
Auto F/X Photo/Graphic Edges.....	\$119
Boris FX 4.0 for Premiere.....	\$479
Bryce 4.0.....	\$159
CADtools 2.0.....	\$159
Cakewalk Metro 4.0.....	\$139
Canoma 1.0.....	\$399
Canvas 6.0.....	\$199
CheckUp 1.5.....	\$145
Coda Finale 98.....	\$249
Conflict Catcher 8.....	\$75
CorelDRAW 8.0.....	CALL
Cubase VST 4.0.....	\$199
DeBabelizer 3.0.....	\$275
DenebaCAD 1.5.....	\$269
Director 7.0.....	\$349
Dramatica Pro 3.0.....	\$209
EdgeWizard 2.0.....	\$75
ElectricImage 3D 2.9.....	\$739
Electrifier Pro.....	\$245
EndNote 3.0.....	\$105
FireWorks 2.0.....	\$739
Font Agent 2.7.....	\$59
Font Reserve 2.0.....	\$89
Form Z 3.0.....	\$899
FreeHand 8.0.....	\$99
Gemini Plugin.....	\$159
Headline Studio 1.0.....	\$149
HomePage 3.0.....	\$59
InfiniD 4.5.....	\$299
Intelligence 4.0 Pro.....	\$99
MAPublisher 3.5.....	\$125
MacDraft 4.3.....	\$145
MacDrive 98.....	\$39
MacLinkPlus 10.1 Deluxe.....	\$69
MagicMask 2.0.....	\$75
Mathematica 3.0.....	\$139
MiniCAD 8.01 Vectorworks.....	\$339
Mirage NY Scenery & Skylines.....	\$99
Myrmidon 2.1.....	\$39
Neal's Efex.....	\$49
NetObjects Fusion 3.0.....	\$99
NewTek Inspire 3D.....	\$299
Nisus Writer 5.1.3.....	\$79
Painter 5.5.....	\$219
Pantone ColorSuite.....	\$229
PhotoSpray.....	\$69
PhotoTools 3.0.....	\$79
Portfolio 4.0.....	\$109
Poser 4.0.....	\$195
PowerCad 4.0.....	\$399
RayDream Studio 5.0.....	\$119
Total Xaos.....	\$119
Virtual PC 2.1.....	\$159
Wacom Intuos 9x12 Tablet.....	\$399
WebPainter 3.0.....	\$55
WebSTAR 3.0.....	\$479
WebSpice 2,000,000.....	\$59
WordPerfect 3.5.1.....	Call
FLIGHTCHECK 3.52.....	\$199

## FREE CATALOG 800-699-1836



### Dreamweaver 2.0

Professional Web Site Design and Production

**\$99**



### 3D Suite 3.0

Includes:  
Bryce 3D  
Poser 3  
Painter 3D  
Ray Dream Studio 5.0

**\$299**

### FileMaker Pro 4.1

Powerful relational database software

**\$139**



### Xenofex 1.0

16 Inspirational Effects to energize any graphics project

**\$79**



### Wacom Intuos 6x8

Intelligent graphics tablet system

**\$285**



### Flash 4.0

Web Standard for Vector Graphics

**\$99**

### LightWave 3D 6.0

\*Model  
\*Animate  
\*Render

**\$889**



### CodeWarrior Pro R5

Integrated Development Environment

**\$119**



### Mask Pro 2.0

Professional precision masking and selection tool

**\$149**



### Kai's Power Tools 5.0

#1 Adobe Photoshop Compatible Plug-ins

**\$89**

### NY Scenery & Skylines

100 Royalty-Free photographic images  
-35 mb compressed  
-CMYK JPEG's

**\$99**



### Final Draft 4.1

Professional Screenwriting Software

**\$149**



Visit our website for...

K-12 software -Books -Videos -Free software contests -Secure ordering -and more...



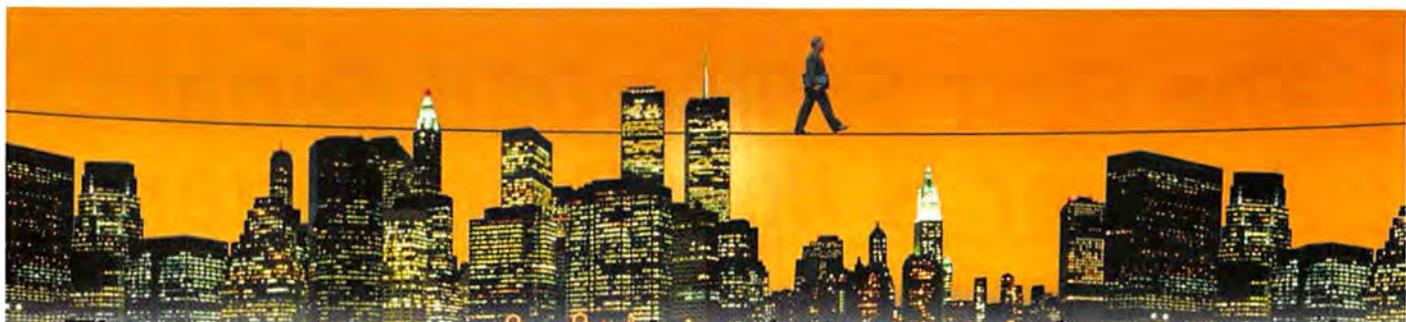
## Software Showcase (800) 699-1836

417 Euclid Ave, Loch Arbour, NJ 07711  
Phone# 732-660-8820 Fax# 732-660-8828



\* Not responsible for typographical errors  
\* Prices subject to change

# WWW.SOFTWARESHOWCASE.COM



**This is no time to worry about being properly connected.**

### Universal Serial Bus technology.

It's connecting everything to everything in the computer world - faster, easier and limitless. USB makes it simple to connect virtually everything - serial devices, parallel printers, networks and storage devices - as many as you need, quickly and efficiently. USB is truly a "universal" solution for home, office, and corporate computing environments.



Belkin Components  
www.belkin.com  
310.898.1100 • Fax 310.898.1111  
Los Angeles, CA • United Kingdom • Holland • Atlanta, GA



Belkin has been part of this revolution from the beginning, and we're particularly proud of our USB line - the finest and most balanced in the industry. From our ExpressBus™ hubs to our USB BusPort™ for Macintosh, we've got everything you need to take full advantage of the USB revolution. New products such as our USB Serial Adapter for Mac's, USB to SCSI Adapter and USB VideoBus™ maximize the performance capabilities of USB.

**Belkin USB products make advanced connectivity a pleasant stroll.**

© 1999 Belkin Components. All rights reserved. All trade names are registered trademarks of respective manufacturers listed. 99AD080

**iThink therefore iConnect™**

**1-800-326-5294**

<p><b>iSCSI USB-to-SCSI Cable</b> Use your existing SCSI devices with your iMac.</p> <p><b>iSerial USB-to-Serial Converter</b> Comes in 2 and 4-port models.</p> <p><b>PCI to USB Card</b> Install into your desktop PC and connect USB peripherals.</p> <p><b>iConnect 008, USB-to-Parallel Cable</b> For your old printers and other parallel devices.</p> <p><b>4 and 7 Port Hubs</b> Connect additional USB devices... Ideal for keyboard, mouse, joystick, etc.</p>	<p><b>PCI to USB Card</b></p> <p><b>iConnect 008</b></p> <p><b>Hubs</b></p> <p><b>iSerial</b></p> <p><b>iSCSI</b></p>
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------

<p><b>iSee</b> iSee Digital Camera Ideal for teleconferencing, web sites, motion &amp; still image capture &amp; security monitoring.</p> <p><b>iRIS Lenses</b> iRIS 5-Lens Kit (3.6mm to 8mm lens) Match your iSee camera to any iMac color.</p> <p><b>Podiki</b> Podiki 2-button USB mouse World's first for the Mac.</p> <p><b>Hermes</b> Hermes USB Gamepad Rated #1 for USB gaming, compatible with Virtual Game Station from Connectix.</p> <p><b>Ares</b> Ares USB Joystick Winner Editor's Choice Award gibbed.com.</p>	<p><b>iView</b> iView USB Flash Card Reader / Writer For Type II, Compact Flash &amp; SmartMedia.</p> <p><b>iRead</b> iRead USB Flash Card Reader / Writer For Type II, Compact Flash &amp; SmartMedia.</p>
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

**www.ariston.com**

Choose 410 at www.macworld.com/getinfo

**Introducing 4 new members of the iPeripherals family of products**

	<p><b>iDock II</b> Add a floppy drive, an ADB, two Serial, <b>four</b> USB ports, and a swivel base to your iMac!!</p>
	<p><b>mini-Geo • mini-ADB</b> Add two Apple serial Geo ports to your new Mac's with our new USB-Serial adapter! Add two switchable ADB ports to your iMac with our new USB-ADB adapter!</p>
	<p><b>USB-Mouse</b> A newly improved programmable two-button USB mouse!</p>

**www.compucable.com**  
Visit us at Macworld Booth #776

800.344.6921

CompuCable

[www.compucable.com](http://www.compucable.com)

CompuCable Mfg. Group  
210A McCormick Avenue • Costa Mesa, CA 92626

# The Best Selling USB Serial Adapter is Now Even Better!



*Compatible with more Apple printers!*

*Prints up to 4 times faster!*

### USB Twin Serial Adapter

Add 2 Mac serial ports to your iMac or "Blue" G3 (\$79)

- For use with tablets, modems, cameras and many printers
- Get two ports for the price of the single port solutions!

### USB PDA Adapter

Connect Palm organizers to your iMac, "Blue" G3 or Win98 PC (\$39)

**NEW**

### USB 4-Port Hub

Connect more USB devices to your iMac or "Blue" G3 (\$59)

### Keyspan USB Card

Add 2 USB ports to your PCI PowerMac (\$49)

### SX Pro Serial Card

Add 4 serial ports to your PCI PowerMac (\$179)

[www.keyspan.com](http://www.keyspan.com) (510) 222-0131



Visit us at MacWorld NY - Booth #1319

Choose 406 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

**macally**<sup>TM</sup>

Call us for dealers near you 1-800-644-1132

[www.macally.com](http://www.macally.com)



**USB Peripherals for Mac**

**NEW**

macally  
**iSweet**

Supports Keyboard boot-up

macally  
**iHub7**

Macally is proud to bring you the latest USB peripherals for Mac users. iMousepro, iMouse, iBall, iStick, iHub, iHub7, iKey and iSweet are specifically designed to pair with your Mac. Improve your productivity with Macally USB peripherals.

All trademark or registered trademarks are the property of their respective owners.

Choose 405 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

Got  
iMac  
Envy?

## Upgrade to USB

Easy USB installation makes  
adding new hardware a breeze!



USB Port  
for Desktops

Just install this internal PCI card into your Mac and instantly connect USB-based printers, modems, speakers, scanners and hundreds of other USB peripheral devices. MacOS 8.0 or higher. \$49

### USB Port for PowerBooks

Cardbus USB Host Adapter for Powerbook G3 (PCMCIA) MacOS 8.6 required. \$89

The Ultra Hub allows you to add four USB devices and daisy chain up to 127 more from just one USB port. The self-powered hub ensures that all of your peripherals get adequate power while its unique design prevents it from flipping over. USB Rev 1.1 compliant. \$59

USB Ultra Hub 4



Phone: 800-888-5244  
Fax: 562-926-0518  
[www.adstech.com](http://www.adstech.com)



13909 Bettencourt St.  
Cerritos, CA 90703

Choose 410 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

## CADMOVER® v.5.1

What good is a built in translator if it doesn't work?

You've worked hard and now it's time to use those files in another program. You try to import them & all you get is garbage. Not with CADMOVER - For over ten years we've been helping people beat their deadlines, no re-drawing, no touch-ups.

File formats: DWG, DXF, EPSF, PICT, CGM, IGES, HPGL, STL, MiniCAD, DDES2, etc... Internal Features: scaling, 2D/3D views, font mapping and more. With 16 decimal place accuracy redrawing is a thing of the past.

800-579-2244 • <http://www.kandusoftware.com/macworld>

KANDU  
software corporation

Choose 409 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

"MACWORLD CONSISTENTLY PRODUCES INQUIRIES AND RESULTS! NEW & REPEAT CUSTOMERS ALL SAY:  
"I SAW YOUR AD IN THE MACWORLD SHOPPER,"  
KEEP UP THE GOOD WORK!"

DAVID ASH

OWNER

MACSOLUTIONS

[WWW.MACSOLUTIONS.COM](http://WWW.MACSOLUTIONS.COM)

"THANKS TO THE MACWORLD SHOPPER SECTION OUR COMPANY HAS GROWN OVER 400% IN THE FEW SHORT MONTHS WE'VE ADVERTISED. AS A RESELLER OF HIGH-END QUALITY ERGONOMIC CHAIRS, I DEPEND ON MACWORLD TO HELP PUT ME IN TOUCH WITH EVERYONE FROM BANKERS TO MUSICIANS."

Jim McGaw

Owner

[www.sittingmachine.com](http://www.sittingmachine.com)

Think Windows.  
Think Macs.  
Think network.  
Think nightmare.  
Think again.

PC MACLAN\*  
A.K.A. & PC MIGRATOR

Connect. Rename. Migrate.

The complete solution for all of your Mac OS-to-Windows connectivity needs.

\* Now includes MacOpener, the leading solution to open, read and write Mac media on a PC.

1-877-462-2272

[www.miramarsys.com/products/olorder.htm](http://www.miramarsys.com/products/olorder.htm)



Miramar Systems

Choose 406 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

### biomorph

ergonomic computer desks  
biomorphdesk.com

**empower yourself!  
and work in comfort**

call now for catalog  
**888-302-DESK**  
desks • chairs • storage  
see us at SIGGRAPH 99  
FAX (212) 809-4324

### CD-R 8x Media:

Taiyo Mitsui spindle...\$1.27  
Yuden Mitsui jewel case...\$1.47  
printable spindle...\$1.27 Mitsui printable spindle...1.67  
Taiyo Yuden printable spindle...\$1.67  
Ritek 80 min spindle...\$1.59

ALL PRICES BASED ON 100 PIECES  
CD-RW...CALL  
CD-R Silk Screening Available.

### CD-RECORDER BUNDLES

Plexor \$499 Also Yamaha, Teac and Panasonic  
Rimage Printer Bndl...\$3,199

### CD-R BLANKS

as low as **89¢**

### SHIMADU

AFFEX CD Color \$1,399  
Printer 1440 dpi...\$1,399  
CD LabelMaker...\$29

### DUPLICATORS:

Replica MediaFORM SA1000 1CD-R CD5900 w/ 8CD Recorder...\$5,299  
\$949  
CD3704 Autoloader w/ 4 CD Recorder.... \$7,199  
CD3706P Autoloader w/ 6 CD Recorder Printer... \$15,999

FOR CD DUPLICATION...CALL  
1-888-4-SHIMAD toll free 888-474-4623  
PH. 650-493-1234  
FAX: 650-493-1333

### PLEXWRITER 8/20 FREE CD LABELING KIT!

# 8x CD-R

All drives include Adaptec Toast 3.5.6 & Direct CD, Cables, 8x compatible media, & Toll Free Support!

Get a free CD Stomper! with the purchase of your Plexor 8x Drive. The CD Stomper comes complete with applicator, labels, inlay cards and templates for all your favorite publishing programs.

**\$39 Value**

**\$459**  
External \$499

### BLANK CD-R MEDIA

Mitsui Silver in Bulk \$1.39  
Mitsui Silver in Jewel Case \$1.49  
MegaMedia on Bulk \$0.89  
Mitsui White Inkjet \$1.89  
Kodak Digital Audio \$3.99  
80m CD-R Media by Ritek \$1.49

All prices based on 200pc. Quantities

### SONY TDK

### Custom Printing!

Let Media Supply print custom logo or artwork on your CD-Rs. We offer 24hr. turnaround on single color orders, and high quality on full silk screen jobs.

**www.mediasupply.com**  
Shop 24 hours a day, 7 days a week!

800-944-4237  
410 Eagleview Blvd. • Exton, Pennsylvania 19341  
Phone: 610-458-9100 • Fax: 610-458-9464

### Custom ULTRA-2 LVD SCSI Cables - Terminators - Cases

If you want Ultra SCSI Performance use our Teflon Cables & Active Terminators. Our knowledgeable SCSI Technicians will solve all your SCSI problems...guaranteed!

#### SCSIVue™ Active Terminator

Four models available with optional Remote LED Pak. These are the finest terminators available, they fix SCSI problems and improve reliability.

Benefits: Improves SCSI Bus Performance, Less Errors; More Reliable Data Transfer, Diagnoses Problems • Analyzes Signal Quality

Features: Active Regulation • Fast 50 & Fast Wide 68 • Status Indicators • Gold Contacts

From: **\$59**

#### Active 2-1 SCSI Switch / Repeater

Benefits: Up to 14 Devices to 1 Computer, Share Devices Between 2 Computers

Features: 2-1 Active Digital Switch/Repeater, Regenerates SCSI Signal for Long Runs

From: **\$599**

#### Gold Diagnostic Adapters

Both 50 pin and 68 pin (all combinations)

From: **\$49**

#### SCSIVue™ Gold Diagnostic Cables

Benefits: No Loss of Important Data, Faster Performance, Test Cable Integrity

Features: Diagnostic Indicators • Large Ferrite Filters, Triple Shielding (Unique Design), Double Gold 20u" Plated Connectors, Extra Heavy 26 Gauge Wire • 100 Styles in Stock

From: **\$39**

#### Teflon 90 Ohm External Cables

Benefits: Ultra SCSI 40 MB/s operation, Fixes Ultra SCSI Cable Problems

Features: Perfect 90 Ohm Impedance Match, Triple Pronged Connector With Gold contacts

From: **\$159**

#### Hot Swap Powered Terminator

Now you can safely remove any SCSI device from a SCSI chain by simply flicking a switch. The Hot Swap Powered Terminator also has an optional Power Supply so that it can supply termination power to portable setups or when termination power is not being supplied.

From: **\$69**

#### Granite Cables Are The Best Because They're Engineered Right.

Granite Cables were designed by SCSI Engineers to be the Best Cables On The Market. Everything about them means better performance and higher reliability. Our design incorporates an exclusive shield that protects the Acknowledge and Request lines from noise. Large Ferrite beads are installed on all cables to protect them from static and noise. Every cable incorporates a LED indicator that lets you know it is operating properly. We also use more GOLD on every cable. Add to this our impedance matching techniques and you have most of what makes us THE BEST!

#### External Ultra SCSI Cases

4 Ultra SCSI Custom Teflon Cable Available  
Custom Enclosures in 1 Day for Raid & Array

From: **\$99**

#### Temperature ALARM! Automatic Monitor & Control

14 & 29 Bay Ultra SCSI Towers

From: **\$999**

#### Bay Cooler Kit keeps those HOT Ultra SCSI Drives GOLD as ICE

From: **\$39**

#### Hot Swap Pull Out Bays

Compatible with all 50 pin & 68 pin SCSI Buses up to Fast SCSI 2. From: **\$79**

#### (LVD)-I/O Teflon™ Internal Cables

Benefits: Less Errors, Ultimate Performance, Silver Wire Improves Signal Quality

From: **\$39**

Features: Perfect 90 or 132 Ohm Impedance • Custom in 1 Day, Triple Pronged Connector - Gold contacts Silver Wire

#### Active Digital SCSI Repeater

Benefits: Models for all SCSI types, Fixes SCSI Cable Problems

Features: Doubles Cable Length (up to 18')

From: **\$99**

#### SCSI Cable Tester - LED Readout

This Digital SCSI Cable Tester can test all the popular cable styles for opens, shorts, and unreliable operation. Battery powered for easy use anywhere you need it. Three models to choose from:

- 50 pin IDC
- 50 pin Centronics
- 68 pin MicroD

From: **\$39**

### FREE Technical Support!!!

Available to everyone, customer or not.

Online Catalog at... **www.scispro.com** The SCSI Solution Company

3101 Whipple Rd. Union City, CA. 94587 Ph: 510-471-6442 Fax 510-471-6267



Offer expires September 13, 1999

**EPSON OWNERS**  
**Buy 1 Get 1 FREE!**

**Specialty Inks:** Fits Epson Series

**Water Resistant/Smudge Resistant**

Black-400,440,600,640,700 Photo,Ex.....	\$25.99
Black-740,800,850,1520.....	\$27.99
3 Color All.....	\$29.99
5 Color Photo Ex.....	\$29.99

**Specialty Papers:**

Paper Canvas 10 pack.....	\$9.99
100 pack.....	\$49.98
Double Sided Brochure Paper 10 pack.....	\$8.99
100 pack.....	\$21.98

**INKY Shrinky** Heat Shrinkable Ink Jet Compatible Film. Use it to make Keychains, Name Badges, Christmas Ornaments, Jewelry and more!

10 pack.....	\$19.99
100 pack.....	\$99.98

**Ink 4 Art**  
PRINTING HAS NEVER BEEN SO MUCH FUN!  
Professional Quality Ink Products

**The Brand That Fits. Guaranteed!**

**ORDER ONLINE ANYTIME!**  
[www.Ink4Art.com](http://www.Ink4Art.com)

Or Call Toll Free  
**1-877-695-1477**

**Standard Inks:** Fits Epson Series

**INK4ART BRAND CARTRIDGES AEPSON**

Black-400,440,600,640,700.....	\$14.99
Black-740,800,850,1520.....	\$15.99
3 Color all above models.....	\$18.99
Photo Color Photo, Photo EX, 750,700.....	\$29.99

**ULTRA BRIGHT**  
**Now With Even Brighter Inks!**  
Call for pricing on cartridges for Cannon printers.

**PressMatch** Hot off the press! Make your ink jet print as good as a professional offset printer!

Text Weight.....	10 Pack.....	\$9.99
Cover Weight.....	100 Pack.....	\$12.99
Text Weight.....	100 Pack.....	\$34.98
Cover Weight.....	100 Pack.....	\$39.98

**T-Shirt Transfer Paper**

10 Pack.....	\$11.99
50 Pack.....	\$37.50
100 Pack.....	\$49.99

**inkfinity**  
The high capacity, low cost printing system.  
Turn Your EPSON™ Ink Jet Printer Into a High End Printing System For

**\$99.00** ea.

Check Our Website Regularly For Cool New Products! Like

Choose 416 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)



**800-883-9697**

[www.sittingmachine.com](http://www.sittingmachine.com)

Choose 415 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

# YOUR ONE-STOP CD-R SUPERSOURCE!

**CD-R DUPLICATORS**

**MEDIAFORM CD-5900**

The CD-5900 will duplicate up to 48 650mb CD-Rs per hour, and with add-on tower units can duplicate up to 16 CDs simultaneously. *That's almost 100 CDs per hour!* Call for details on this new low priced powerhouse from MediaFORM & AMC.

*MediaFORM Duplicators selected as i-Media Magazine's "Editor's Choice" 2 years in a row!*

**MediaFORM**

CD-5400 CD Duplicator (1-4).....	starts at \$2,199
CD-5900 CD Duplicator (1-8).....	starts at \$3,099
CD-5916 CD Duplicator (1-16).....	starts at \$4,299
CD-3702 100 CD Duplicator (1-2).....	starts at \$4,899
CD-3704 100 CD Duplicator (1-4).....	starts at \$5,999
CD-3706P 175 CD Duplicator w/Printer (1-6).....	starts at \$13,799

\* Offer good only on select MediaFORM CD-ROM Duplicators. Call for details.

**secure online ordering!**  
[www.amc-direct.com](http://www.amc-direct.com)

**CD-R PRINTERS**

**PRIMERA SIGNATURE II COLOR CD PRINTER** **\$1,049**

The Signature II CD Color Printer from PRIMERA is the perfect way to add a professional touch to your CD-Rs.

**PRIMERA TECHNOLOGY, INC.**

**CD-R MEDIA**

MITSUI DISC WRITE	RICOH
	

DiscWRITE Blank (no logo) 50 pk w/ jewel case.....\$69.99

Mitsui CD-R (silver) 25 pk w/jewel case.....\$45.00

Mitsui CD-R (silver) 100 pc spindle.....\$149.00

CMC CD-R Printable (white) 50 pc bulk.....\$59.99

Ricoh CD-RW 10 pk.....\$89.99

Samsung CD-R (silver) 100 pc bulk.....\$115.00

Verbatim CD-R (silver matte) 100 pc bulk.....\$169.00

AMC DiscWRITE special formulation CD-R Pens 4 pk.....\$6.95

**CD-ROM SERVICES**

**AMC/iS**

AMC's Imaging and Information Services division can provide you with:

- Mastering • CD-ROM Replication • Duplication
- CD-R Printing • Packaging • Silk-screening

Call us at **877.775.3280**  
or visit our Website at [www.amciis.com](http://www.amciis.com)

**iMAC PERIPHERALS**

**FOR USB - CALL AMC!**

AMC has a complete selection of USB peripherals for your iMac, including scanners, printers, digital cameras, joysticks, hubs, cables, etc.

*Check our Website for our complete selection today!*



Advanced Multimedia Concepts • P.O. Box 3456 • Redmond, Washington 98073-3456 • 877.775.3280 • [www.amc-direct.com](http://www.amc-direct.com)

**AD CODE: MW0999 CALL US TODAY! 877.775.3280**

Choose 417 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

# Peripheral Products Systems & Peripherals

# Macworld SHOPPER

## CD COPIER

**NEW!**

Fast **32X**  
Records Music.  
Easy to Use.



**\$999**

PRINCETON DISC from **800-426-0247**

www.princeton-disc.com

### An Art Department's Best Friend

You Always Want It Back or Know Who It Belongs To.



Custom Imprinted Zip<sup>®</sup>, Jaz<sup>®</sup>, CD's for the same price you're paying now!

24 Hour Turnaround  
No Minimums

All Related Accessories And More!

MYMARK ENTERPRISES  
Custom Imprinted Media Storage & Accessories

**1 877-2MYMARK**

Choose 419 at www.macworld.com/getinfo

## The Easy-switch

Introducing the *MoniSwitch*...  
Now you can share *monitor, mouse and keyboard* between several Macs with *Dr Bott's MoniSwitch*. You'll save space, money and best of all, your sanity.



**MoniSwitch2 • \$110**

Switches between 2 computers • Includes cables

**MoniSwitch4 • \$169**

Switches between 4 computers • Includes cables

PC compatibility kit also available

**Dr. Bott**

Phone: (503) 452-8101 • Fax: (503) 892-2475

Excellent opportunities for resellers!  
info@drbott.com • www.drbott.com

## THE BEST IN REMANUFACTURED Macintosh COMPUTERS & PARTS

### Summer Specials!

- Complete Power Mac Color System** WITH MONITOR AND KEYBOARD **\$529!**
- PowerBook G3/233** COLOR NOTEBOOK STARTING AT **\$1399!**
- PowerBook 160** WITH MODEM **\$299!**
- PowerBook 1400** WITH PPC 603e PROCESSOR, COLOR DISPLAY STARTING AT **\$925!**
- iMacs** STARTING AT **\$769!**

## Pre-Owned Electronics

**1-800-274-5343**

Offices: 781-778-4600  
Fax: 781-778-4848

www.preowned.com  
DISC074

## www.kiwimac.com

### Upgrades

Logic board upgrade prices are with exchange.

PowerMac 7200/90 to 7600/132mhz.....	\$375
PowerMac 7200/120 to 7600/132mhz.....	\$349
Performa Quadra 630 to 6300/100mhz.....	\$249
Performa Quadra 630 to 6360/160mhz.....	\$425
Performa 6200 to 6360/160mhz.....	\$325
Performa 6200 to 6500/275mhz.....	\$449
Performa 6300 & 6320 to 6360/160mhz.....	\$275
Performa 6360 & 6400 to 6500/275mhz.....	\$389
Performa 6360 & 6400 to 6500/275mhz.....	\$369
Performa 5200 to 5500/275mhz.....	\$449
Performa 5260 & 5300 to 5500/275mhz.....	\$389
Math Coprocessor for P630 & P575.....	\$65
iMac 233mhz upgrade to 333mhz.....	\$499
iMac 266mhz upgrade to 333mhz.....	\$399
Powerbook 190 series to 5300/100mhz.....	\$349
Powerbook 1400cs upgrade to active matrix.....	\$399

### Parts

Logic board prices are with exchange.

Performa 630 logic board.....	\$49
Performa 6200 logic board.....	\$149
Performa 6360 & 6400 logic board.....	\$288
PowerMac 7200/90mhz logic board.....	\$89
PowerMac 7200/120mhz logic board.....	\$135
PowerMac 6100 logic board.....	\$125
Performa 630/6200/6300 power supply.....	\$49
Performa 6400/6500 power supply.....	\$49
PowerMac 6100 power supply.....	\$59
1.44 internal floppy drive.....	\$28

Visa MasterCard/American Express No Surcharge

**1-800-334-5494**

www.kiwimac.com

Kiwi Computers • Established 1988

**COMPU AMERICA**  
"The Computer Specialist"

## 1-800-533-9005

We are open Mon-Sat, 9am-6pm

Fax Bids: (310) 475-7744 or email at SALES@COMPU-AMERICA.COM  
10435 Santa Monica Blvd., Los Angeles, CA 90025

Check out our Web!  
WWW.COMPU-AMERICA.COM

Government, University and Fortune 1000 P.O.'s are welcome!  
Business Leasing is Available!  
International Orders Please call tel: (310) 446-1771

### POWERMACS!

Starting at **\$599**

G3/450MT .. 128/9GW/24XCD .....	2699
G3/400MT .. 128/12GIG/24XCD/ZIP .....	2249
G3/400MT .. 64/4GIG/DVD .....	1799
G3/350MT .. 64/4GIG/24XCD .....	1449
G3/400MT .. 128/9GW/24XCD .....	CALL
G3/350MT .. 128/12G/24XCD/ZIP .....	CALL
G3/350MT .. 64/6G/DVD .....	CALL
G3/300MT .. 64/6G/24XCD .....	1349
G3/333MT .. 128/9GW/24X .....	CALL
G3/300MT .. 64/4GIG/24XCD .....	CALL
G3/266MT .. 128/4GW/24K .....	1599*
G3/266MT .. 32/6GIG/24X/ZIP .....	1499*
G3/266MT .. 32/4GIG/24XCD .....	1399*
G3/233MT .. 32/4GIG/24X/MODEM .....	1299*
G3/300MT .. 32/4GIG/24XCD/MODEM .....	CALL
9600/350 .. 64/4GIG/24XCD/ZIP .....	CALL
9600/300 .. 64/4GIG/24X/ZIP .....	CALL
9600/200 .. 32/4GIG/CD .....	CALL
6500/300 .. 32/4GIG/CD/FAX .....	CALL
6500/250 .. 32/4GIG/CD/FAX .....	CALL
4400/200 .. 32/2GIG/CD/DOS CARD .....	599

### WORKGROUP SERVERS

G3/400 .. 256/2.9G/24X/SHARE .....	CALL
G3/350 .. 128/9G/24X/SHARE .....	CALL
G3/333 .. 128/2.9G/24X/SHARE .....	CALL
G3/266 .. 128/4G/24X/SHARE .....	1599

### I-MACS

Starting at **\$899**

i-MAC G3/233 32/4G/24XCD/56K .....	899
i-MAC G3/266 32/6G/24XCD/56K/BLUE .....	999
i-MAC G3/266 32/6G/24XCD/56K/LIME .....	999
i-MAC G3/266 32/6G/24XCD/56K/STRAW .....	999
i-MAC G3/333 32/6G/24XCD/56K .....	1149

### POWERBOOKS

Starting at **\$599**

3400C/240 .. 16/3G/CD/MOD .....	1299*
3400C/200 .. 16/2G/CD/MOD .....	1199*
3400C/180 .. 16/1G/CD/MOD .....	1199*
2400C/180 .. 16/2G/CD .....	1199*
1400C/166 .. 16/2G/CD .....	1099*
1400C/166 .. 16/2G/CD .....	999*
1400C/133 .. 16/1G/CD .....	999*
1400C/133 .. 16/1G/CD .....	999*
5300C/117 .. 16/1GIG/14 MODEM .....	599*
5300C/100 .. 8/500 ..	549*

### NEW G3 POWERBOOK!

Starting at **\$1099**

G3/233 .. 32/2G/20K/12.15TH .....	CALL
G3/233 .. 32/2G/20K/12.15TH/56K .....	CALL
G3/250 .. 32/4G/20K/13.31FT/56K .....	CALL
G3/233 .. 32/2G/20K/14.11FT/56K .....	CALL
G3/266 .. 64/4G/20K/14.11FT/56K .....	CALL
G3/200 .. 64/8G/20K/14.11FT/56K .....	CALL
G3/300 .. 64/8G/DVD/14.11FT/56K .....	CALL
G3/333/NEW/64/4G/24X/14.11FT/56K .....	2279
G3/400(NEW) 64/6G/DVD/14.11FT/56K/149	

### SONY

Starting at **\$199**

Sony 110G5/210G5 .....	199/369
Sony 220G5/420G5/520G5 .....	399/599/899
Sony 200P5/400P5/500P5 .....	499/699/1049
Sony F-400/F-500 .....	CALL
Sony E-150 .....	CALL
Sony PRESANTION W7000/W9000 .....	CALL
Sony MARYKA F5D11/FD91 .....	469/649/899

### ViewSonic®

Starting at **\$134**

Q41 14" .....	129
Q51/Q53 15" .....	159/169
Q71/Q1010 .....	249/599
E771 .....	259
V73/V75 17" .....	319/379
V95/V115 .....	499/849
G771/G773 .....	329/379
G775/G790 .....	479/499
P775/P1775/P777 .....	499/549/549
G810/P810 .....	799/899
PT813/P815 .....	899/899
P817 .....	1299
VIEWSONIC WVPAN VPA138 .....	CALL
VIEWSONIC WVPAN VPA 145 .....	CALL
VIEWSONIC WVPAN VPA 150 .....	CALL
VIEWSONIC WVPAN VPA 180 18" .....	2499

### RASTEROPS

Superscan MC-801HR(1600X1200) 22DP ..	699
Superscan MC-6415 .....	429
Superscan MC-7515 .....	599
Superscan MC-8135 .....	1099
Superscan MC-8115 .....	969

### EPSON®

Starting at **\$199**

STYLUS COLOR 700/850 .....	229/269
STYLUS COLOR 740/740I/750 .....	229/259/279
STYLUS COLOR Photo-1200 .....	CALL
STYLUS PRO-XL .....	199*
STYLUS COLOR 1520 .....	449
STYLUS COLOR 3000 .....	799*/1099
EXPRESSION/636/ART .....	CALL
EXPRESSION/636/PRO .....	CALL
4000N/4000T .....	1099/1199
2100M/2100T .....	729/899
6MP .....	649*

### UMAX

Starting at **\$99**

VISTA Astra 6105 P .....	99
VISTA Astra 1200/1210 .....	149/159
VISTA Astra 2000U USB .....	129
VISTA Astra 2400S .....	329
POWERLOOK II .....	779

### intuos

Starting at **\$99**

INTUOS 4 X 5 (USB) .....	99
INTUOS 6 X 8 .....	299
INTUOS 9 X 12 .....	399
INTUOS 12 X 12 .....	CALL

### iomega

Starting at **\$79**

ZIP DRIVE 100 MB EXT (SCSI) .....	99
ZIP DRIVE 100 MB EXT (USB) .....	99
JAZZ DRIVE 1 GIG EXT (USB) .....	119
JAZZ DRIVE 2 GIG EXT (INT) .....	299/299
ZIP 100MB CART (10 PACK) .....	85
JAZZ CART 1 GIG .....	79
JAZZ CART 2 GIG .....	79

### GLOBAL VILLAGE

Global Village Plat 56K EXT .....	129
Global Village PLAT 56K INTERNAL(G-3) .....	99
Global Village PLAT 56K EXT (USB) .....	129
Global Village 56.6 PCMCIA .....	149
DATINA PCMCIA 56KMOD/10BT ETHERNET .....	149

## YOUR #1 COMPUTER SUPERSTORE!



All prices are cash discounted. \*\*\* denotes a refurbished product. Not responsible for typos. Apple, the Apple logo, GeoPort, HyperCard, ImageWriter, LaserWriter, Mac, Mac OS logo, Macintosh, MessagePad, Newton, OpenDoc, PowerMacintosh, PowerBook, QuickTake, QuickTime logo and StyleWriter are trademarks of Apple Computer, Inc., registered in the U.S. and other countries. All other names & logos are trademarks by their respective owners. We are Not Apple Authorized.

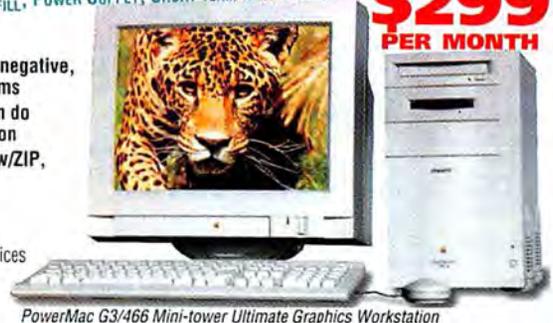
# The Lowest Finance Rate

## Ultimate Scan-Station (Drum scan quality)

Get the PowerMac G3/466MHZ or PowerTowerPro G3/466MHZ Scan-station for only \$299 per month! It includes the fastest Mac yet, and it comes with all the hardware tools you need to blast through production work. Save a bundle with this exclusive package!

**CERTIFIED REPAIR SERVICE CENTER**  
COMPUTER, MONITOR, LASER/PRINTER REPAIR, TONER REFILL, POWER SUPPLY, SHORT TERM RENTAL AVAILABLE.

**PLUG&PLAY**  
**\$299**  
**PER MONTH**



PowerMac G3/466 Mini-tower Ultimate Graphics Workstation

- Apple G3/466MHZ or PowerTowerPro G3/466MHZ
- Internal 32X CD-ROM
- **512MB RAM**
- 20 GB hard drive - AV /ATAPI
- Extended keyboard & Mouse
- **SONY 19", 1600 x 1280 monitor**
- ATI Rage 128 Graphic accelerator card, 1600x1200, w/16MB
- **UMAX PowerLook3000 - 3000 dpi color scanner w/ Transparency**

- PowerLook3000 can scan negative, reflective, slides & 4X5 films
- Binuscan PhotoPerfect can do professional color correction
- External combo drive w/ZIP, 9GB, CD-R
- Active SCSI terminator
- UPS Battery Back-Up
- Image Solutions Extended Services

\$289

\$5769

\$699

\$89



**COMBO Drives:**

9GB + CD-R Ext. SCSI	\$699
JAZ + CD-R Ext. SCSI	\$449
JAZ+ZIP+9GB+CD-R	\$1089
18GB AV + JAZ + CD-R	\$1099
36GB AV RAID + CD-R	\$1989

\$449!



**Software Specials**

Apple Mac OS 7.6/8/1/8.5 \$49/55/59/69  
AfterEffect/ Premiere V4.2/5 \$399/199/349  
Bryce3D/Poser3/Expression/RDStudio \$139  
Acrobat V3/ Claris EMailer/DRAW \$99 ea.  
Claris Works V4.5/AppleWorks \$49/59/89  
Claris Impact/Organizer/HomePage \$69 each  
Caere OmniPagePro V5.8/Direct\$89/189/29  
Director V5/6.5/Studio \$199/289/389/489  
DeBabelizer V3/ Dartz Retrospect4.1\$199/99  
Extensis MaskPro2/PortFolio \$199/109  
Extensis Preflight Pro/ PhotoFram \$289/89  
FileMaker Pro. V2.1/4/Server \$49/109/489  
Fontographer V4/Freehand V5 Studio \$249 ea  
Intini-D V4.5/ KPT 3/Painters \$ 439/79/99  
Microsoft Office4.2.1/97/98 \$99/179/199  
MediaCleanerPro4/NortonUtilities4\$289/59  
StrataStudioProV2.3/ SoundEdit16 \$635/249

**Basic Systems**

	Buy!	Lease!
G3/350 128/12GB/24XCD w/ 17" monitor, XKeyboard, Mouse	\$1899	\$47
G3/400 128/17GB/ZIP/24XCD w/ 19" monitor, XKeyboard, Mouse	\$2799	\$74
G3/ 450 256/20GB/ZIP/24XCD w/ SONY 21", XKeyboard, Mouse	\$4399	\$129
UMAX S900 -G3 96MB/9GB/CD w/ 19" monitor, XKeyboard, Mouse	\$2399	\$59
PM8100-Targa 2000/96/4GB/CD Video Edit. w/ 15" monitor, XKeyboard, Mouse	\$1899	\$47

**Display & AV Card, XKeyboard**

ATI Xclaim VR VideoEdit/ ATI RAGE 128 16MB \$99/289  
Apple AV - In&Out -Exchange/PremiereLE \$289/99  
Targa 1000PCI / 2000 NuBus -Demo \$1489\*/\$789\*  
Targa 2000PCI / 2000PCI Pro - Demo \$2489\*/\$2889\*  
Targa 2000 PCI RTX / SDX -Demo \$4889\*/\$5889\*  
MiroDC30\*/MotoDV/Targa Break out box\* \$589/689\*  
XKeyboard w/Touch PAD / 56K Int. modem \$49/99  
Extended Keyboard - Japanese / English \$69/\$39  
 Kensington 2-Button Mouse / Turbo Mouse \$29/95  
Apple USB Keyboard / 68-68 SCSI III Cable \$49/35

**PowerMac PM9600/G3 Video Editing Station**

- PowerMac 9600 / G3 - 466MHZ
- 256 MB RAM, 6 PCI Slots
- iXMicro UltimaRez 8MB display
- Internal 24 x CD-ROM
- Quantum Atlas II 9GB SCSI III hard drive
- Extended keyboard & Kensington Mouse
- Sony 17" color multisync monitor
- JackHammer PCI SCSI III Differential
- 36GB RAID + JAZ + CD-R + ZIP COMBO Drive
- TrueVision Targa 2000 Pro Audio/Video Capture Editing PCI
- Epson 1200 Color Printer
- Premiere V5 & After Effect
- UMAX S1220 Scanner

**PLUG&PLAY \$299 PER MONTH**  
**\$9.99 A DAY!**

**Super RAID- Quantum or Seagate SCSI III Fast & Wide, LVD**

- AV Qualified High Performance Disk Array
- Low Voltage Differential Drive allows 12" SCSI Chain
- High Quality Construction. Gold Plated Connections.
- Features built in Cooling fan, SCSI ID, Metal frame.
- Grab handles of Removable drive for easy Plug In-out.
- Key locking door to prevent unwanted removal.
- Stripping software - REMUS for RAID 0,1 & 5. - \$149
- Adaptec 2940U2W upto 80MB/sec. - \$335
- Adaptec 8945 FireWire & UltraWide SCSI - \$529
- JackHammer SCSI Fast&Wide Diff. \$399
- 16GB RAID - \$ 1189
- 36GB RAID - \$ 2089
- 54GB RAID - \$ 2989
- 72GB RAID - \$ 3689
- 144GB RAID - \$ 7399
- Add \$499 for Removable

Get M.S. Office 98 for \$199 w/ any drive purchase

\$99!

SCSI Ext. Case Half/ Full Height

\$29/49\*

**JAZ/ZIP, Hard DR. & CDR Devices**

	SCSI External	Turbo
400MB/1GB/2GB/3GB	\$99/159/189/209	+\$29
4GB/6GB/9GB/18GB	\$259/329/339/699	+\$29
Quantum Atlas II 4GB/9GB	\$299/489	+\$39
Quantum Viking LVD 9GB/18GB	\$459/729	+\$49
Quantum Atlas III 9GB/18GB	\$589/759	+\$59
Seagate 4GB Hawk/Barracuda	\$279/299	+\$39
Seagate 9GB Elite/Barracuda	\$349/469	+\$39
Seagate Cheeta 4GB/9GB	\$449/569	+\$49
Seagate 18GB Barracuda/Cheetah	\$769/989	+\$59
Jaz ext. Dr. 1GB/2GB	\$219/\$339	+\$29
Zip Dr. w/Cart. Int. / Ext.	\$109/\$125	+\$29
Teac 8X/12X w/Toast	\$449	+\$19
Yamaha CD-RW 4X/4X/16Xw/Toast	\$349	+\$29
Apple DVD-ROM Dr. w/MPEG Decoder	\$399	+\$29
ORB 2GB/DVD-RAM 5.2GB SCSI	\$195/\$699	+\$39



JAZ Int. Dr. \$199!

**Close-Out Specials**

MAC IICX/ II/PF405 as low as \$169  
PM 6116CD 16MB/1GB/CDS389  
PM 7200 16MB/1GB/CD \$489  
PM 6500 32MB/3GB/CD \$889  
PM 9500 32MB/1GB/CD \$989  
8GB F&W DiskArray \$689  
SyQuest 270/200MB Ext. Drive\$249/199  
Fujitsu 230MB MO / WANG DAT \$199 ea.  
SONY 650MB/1.3GB M.O. Dr. \$589/989  
Apple Japanese/Chinese Language Kits\$89  
Illustrator V5.5/6/7 \$149/199/249/299  
PageMaker V6/6.5/6.5+ \$199/259/329  
PageMill V2/V3/ PhotoShop.LF \$89 ea.



Philips 2X/4X CD-R Dr. only \$199!

**Processor Upgrade**

604E 120/150	\$49/69
604E200/225	\$189/229
UMAX 2nd -250MHz \$249	
G3 233/250	\$299/329
G3 266/300	\$349/389
G3 366/400	\$589/689

**OMEAGA CARTRIDGES**

1.0GB Jaz \$65\*  
100MB Zip \$10\*  
\$10\*!

**Memory**

	8MB	16MB	32MB	64MB	128MB	256MB
30/72 Pin 168 pin G3	\$29	\$45	\$79	\$119	\$299	\$489
	\$25	\$39	\$69	\$119	\$199	\$489

**800-352-3420**

Fax: 310-782-5974

http://www.imagesolutions4U.com  
385 Van Ness Ave. #110 • Torrance, CA 90501



Order from 7 to 6 weekdays, Saturday from 10 to 12. Visit our showroom 9 to 6 weekdays, weekends by appointment.  
Prices subject to change without notice. Not responsible for typographical errors. 24 hour replacement limited to products in stock.

**Image Solutions**  
The solution provider for print shops, service bureaus and imaging professionals

**MacSurplus**

**Monitors  
Blowout!**



Supermatch 20" Color Display	\$499
Supermatch 21" Color Display	\$599
Supermatch 21" Platinum TPO	\$399
Supermatch 21" TXL 1600*1200	\$699
Radius 20" Intelicolor	\$699
Radius 21" Precision Color Display	\$749
Radius 21" Multiview	\$699
Radius 21" Precisionview	\$749
Radius 21" Pressview 21SR	\$1549
Hitachi 21" Cm2198 (new)	\$749
Ikegami 21" 1600*1200 (new)	\$749
Radius 15" Grayscale Pivot	\$79
Radius 15" Precision Color Pivot	\$199

**Video Card Blowout!  
Nubus and PCI**

**NUBUS CARDS**

Radius PrecisionColor 24xp 832*624	\$149
Radius Thunder II GX*1152*1600	from \$149
Radius Thunder IV GX*1152*1600	from \$249
SuperMac Spectrum 24 Series V1024*768	\$199
SuperMac Spectrum 8*24 P00	\$99
SuperMac Thunder 24 1152*870	\$199
RasterOps Paintboard Prism GT	\$249
RasterOps Paintboard Lightning1024*768	\$149

All Radius, SuperMac and RasterOps Cards Available

**PCI CARDS**

Radius Thunder 30/1152	\$299
Radius Thunder 30/1600	\$399
Radius ThunderColor 30/1152	\$299
Radius ThunderColor 30/1600	\$399
Radius ThunderColor 30/1920	\$599
Radius PrecisionColor 24/1600	\$349
Radius Thunder 3D	\$649

**Broadcast Quality  
Digital Video  
for less than a \$1000**

**VideoVision Studio**

• Broadcast quality video output  
• Proven Non-Linear Video editing Technology

**VideoVision Telecast**

• Ask how to qualify for an additional \$100 discount!

**Spigot Pro AV and Power AV**

• \$269 for 6500V, 8400V, 81000A, 71000A, 81000V

300 South 13th St., Waco, TX 76791 Monday thru Friday 9AM to 7PM CST Saturday 10AM-4PM Sales Dept Only Domestic Sales

Fax 254.750.9050 Consultants/Dealers 254.754.2120 International Sales 254.754.2120 sales@ocrsystems.com

Prices reflect 7% cash discount. Prices subject to change. Not valid for transportation items. Dealers and consultants call for pricing. See the elsewhere.

All monitors, printers, and CPUs are factory refurbished unless otherwise noted. Call for latest pricing & availability on NEW options. Taxes not included with prices.



**Printers**

**ProofPositive Color Printer**

• Continuous Tone, Photo-Realistic  
• Full Page & Two Page Options Available

DMS 1700 600DPI 17ppm \$599

DMS PS1500 300dpi 15ppm \$499

**800-444-9088**

BUSINESS INDIVIDUAL EDUCATION

your **complete**  
used **Mac** resource



Mac of All Trades takes the fear out of buying and selling used equipment.

Mac-savvy advisors

Fast turn on payments

Custom configurations

We accept POs

Refurbished and tested...

Guaranteed in writing!

**800-304-4639**



**MAC  
OF ALL  
TRADES**

Direct: 404-355-5713

Fax: 404-355-5461

500 Bishop Street, Suite E-3

Atlanta, Georgia 30318

macofalltrades.com

**www.PowerBook1.com**  
**Secure Online Ordering!**

Your Source for PowerBook Upgrades, Accessories and Solutions

**MCE POWERBOOK PRODUCTS**

**MCE MobileStor**  
High Capacity PowerBook Drive Solutions

For use in PB G3 Series, G3, 3400, 2400, 1400, 5300, 190, 150 & Duo 2300	
MobileStar 4300t	4.3GB TOSHIBA 3yr wty \$179
MobileStar 4300i	4.3GB IBM, 3yr wty \$199
MobileStar 6400t	6.4GB TOSHIBA 3yr wty \$249
MobileStar 6400i	6.4GB IBM, 3yr wty \$279
MobileStar 10Gt	10GB TOSHIBA 3yr wty \$449
MobileStar 14Gt	14GB IBM, 3yr wty \$649
For use in PB 500 Series, Duo 2XX Series, and PB 140 through 180c (except 150)	
MobileStar 4300SCSI	4.3GB 2yr wty \$349
MobileStar 6400SCSI	6.4GB 2yr wty \$429

**WOW!! SCSI 4 & 6GB**

**COOL!!** MobileStar drives come with everything you need for installation!

Included FREE with every MCE MobileStar hard drive solution is the complete MCE PowerBook Hard Drive Installation Kit which includes an installation manual, and all of the tools and appropriate brackets needed for the proper installation of your new drive.

**MCE Xcarret**  
Media Bay Hard Drives

for PB G3 original, 3400, 5300, 190; Xcarret Pro for PB G3 Series	
10GB	\$599
6GB	\$399
4GB	\$329
0GB kit	\$149

**newer tech**  
NUppwr 1400/G3 233MHz/512K \$279  
NUppwr 1400/G3 250MHz/1MB \$379  
VIEWppwr 1400 (16-bit Video out) \$239  
BookEndz Dock 3400/G3 Series \$189/199

**Vimage** Ask about bundle discounts!  
Vppwr 2400/G3 320MHz/1MB cache \$799

**RATOC Systems**  
CBFW2 FireWire CardBus PC Card \$279  
VST 14GB FireWire Hard Drive please call

**Zip Drives & Power Accessories**

PB 1400 Zip	\$199
PB 3400, G3, 5300, 190 Zip	\$219
PB G3 Series Zip	\$219
PB 3400/G3 Li-Ion Battery w/Charger	\$269
PB G3 Series Li-Ion Battery w/Charger	\$269

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**MEMORY Components**

PB G3 Series	64MB \$129	128MB \$229
PB G3 Original	\$149	\$249
PB 3400	\$149	\$249
PB 2400	\$129	

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

**CapSure Card \$129**  
**Kritter Cam \$239**  
640x480, 30fps  
Video for G3 Series/G3/2400/2400

**ixMICRO Road Rocket PC Card \$239**  
24-bit Video Output for PowerBook G3 Series

**48MB module for PB 1400\*pls call**

**Call for latest pricing!**

**Zip Drives & Power Accessories**

# SHREVE Systems

For all this and more check out our website!

<http://www.shrevesystems.com>



**WE BUY MACS & MAC STUFF (318) 424-9791**  
**WE STOCK MAC PARTS!**  
**1-800-227-3971**

FAX (318) 424.9771 • Technical Support (318) 424.7987  
 Customer Service (318) 424.9791 • Purchasing/Information (318) 424.9791  
 1200 Marshall Street • Shreveport, Louisiana 71101

**Newton 130**  
 • ARM 610 RISC processor at 20 MHz  
 • Back-Light LCD display  
 • 8 MB RAM, 2.5 MB ROM  
 • FREE W/ PURCHASE  
 • Newton Fax Modem **\$179**  
 & Leather Newton Carry Case  
Lid not included



**PowerMac 6500/275**  
 • 48MB of RAM  
 • Iomega ZIP™ Drive  
 • 6GB Hard Drive  
 • 24X CD-ROM  
 • 275-MHz PowerPC 603e  
 • Refurbished  
**IN STOCK! \$849**



**PowerBook 5300cs**  
 • Supports ext. video  
 • 24MB RAM  
 • 750 Hard Drive  
 • 100-MHz 603e  
 • Dual-scan color  
 • Refurbished  
**FREE!** Carrying Case!  
**\$599**



**Macintosh LC580**  
**Internet Ready! \$399**  
 • 33-MHz MC68LC040  
 • 8MB of RAM  
 • 800MB Hard Drive  
 • 28.8 Motorola Modem  
**\$499 with Internal 4XCD**



## PowerMac Upgrades

**Quadra/Centris 610 to PowerMac 6100/60 (refurbished)**  
**As low as \$199!**  
 with exchange of your working board

**Quadra/Centris 650 to PowerMac 7100/80 Upgrade (refurbished)**  
**As low as \$199!**  
 with exchange of your working board

**Quadra 800/840av to PowerMac 8100/80 (refurbished)**  
**As low as \$249!**  
 with exchange of your working board

**PowerMac 7200 to PowerMac 8500/132 (refurbished)**  
**As low as \$399!**  
 with exchange of your working board

**Performa 6200/75 120-MHz Upgrade (refurbished)**  
**As low as \$299!**  
 with exchange of your working board

## 6500/225

32 MB RAM  
 2 GB hard drive  
 12x CD Rom drive



**CALL!**

Factory Refurbished

## PowerMac 8500/132

**bundle**  
 • 16/1GB/4X CD  
 • 16" Trinitron Display  
 • Apple keyboard & mouse  
 refurbished **\$849**

## G3 Logic Board

No Processor



only **\$399**

## Quadra 950

• 8MB of RAM  
 • 68040 33-MHz  
 • 5 Nubus Slots  
**NEW! \$349**



## MACINTOSH LOGIC BOARDS

G3 logic board, No Processor, No ROM	\$399.
7200/90 logic board, refurbished	\$299.
LC logic board, refurbished	\$49.
LC II logic board, refurbished	\$149.
Mac LCIII logic board, refurbished, exchange	\$199.
Performa 630, No Processor, refurbished	\$99.
7500 logic board, no exchange	\$379.
8500 logic board, exchange	\$449.
9500 logic board, exchange	\$649.
Quadra 950 logic board, refurbished	\$199.

## PRINTERS

Apple 11x17 Color Inkjet Printer NEW, #M9500	\$249.
Apple StyleWriter 1200, refurbished	\$149.
Apple StyleWriter 4800, factory refurbished	\$199.
Apple Color StyleWriter 2400, refurbished	\$199.
Color StyleWriter 4500, refurbished	\$269.
LaserWriter 8500 (tabletop, fast engine) refurbished	\$1149.
LaserWriter IIx, refurbished w/ Toner	\$199.
LaserWriter III w/ 5MB RAM, refurbished	\$549.
LaserWriter IIg w/ 5MB RAM, refurbished	\$649.
Texas Instruments Micro Caster Pro E NEW	\$599.
NEC SilentWriter 1765, 17ppm NEW	\$899.

Laser toner cartridges sold separately

## Color LaserWriter 12/600PS

• 600-dpi  
 • 12 ppm  
 • Color Photograde  
 • LocalTalk, Ethernet  
 • Mac, DOS, Unix or Windows  
 • Toner included  
**Refurbished \$1299**



## VIDEO CARDS

ATI XClaimVR RAGE II 2MB with FREE TV Option \$149.  
 E-Machines DoubleColor SX Nubus Card NEW \$49.  
 RasterOps 24MX NEW, 24-bit Nubus \$149.  
 Supermac 8.24 PDQ Plus, 24-bit Nubus card \$449.  
 \*PowerMac HPV Card (1MB) \$79.  
 \*PowerMac A/V Card (2MB) \$199.

## MONITORS

AppleVision 850 Display, refurbished \$899.  
 Apple 14" AV NEW \$249.  
 Apple 14" Multiscan, refurbished \$149.  
 Apple 15" Multiscan, refurbished \$229.  
 Apple 15" AV, factory refurbished \$279.  
 Apple MultiScan 17", refurbished \$249.  
 Apple 20" Multiscan, refurbished \$699.  
 Radius IntelliColor/20a, factory refurbished \$999.  
 Voxon 14" Multiscan NEW \$179.  
 Voxon 15" Multiscan NEW \$229.  
 Radius Color Pivot LE, refurbished \$299.

## APPLE PC COMPATIBILITY CARDS

Pentium 100-MHz, refurbished \$149.  
 Pentium 166-MHz, 12 PC card, refurbished \$299.  
 586 100-MHz, 7" PC card, refurbished \$99.  
 486 66-MHz for 6100 series NEW \$29.  
**FREE PC CD pack with PC Card Purchase!**

## NUBUS ADAPTERS

Quadra 660AV NuBus Adapter \$79.  
 Quadra 610 NuBus Adapter \$79.  
 IIsi NuBus adapter with math co-processor \$69.

## IMAGING PRODUCTS

Apple Color OneScanner, refurbished \$199.  
 UMAX UC840 Scanner NEW \$199.  
 Apple QuickTake 200 refurbished \$219.  
 Apple QuickTake 150 refurbished \$199.

## PowerMac CPU SALE!

<b>4400/200</b> 32/2GB/CD <b>\$699</b> refurbished	<b>6500/250</b> 32/4GB/CD <b>\$799</b> refurbished
<b>9500/120MP</b> 16/1GB/4X <b>\$999</b> refurbished	<b>7250/120</b> 32/2GB/8XCD <b>\$799</b> NEW!
<b>8500/132</b> 0/0/0 <b>\$599</b> refurbished	<b>6500/300</b> 64/6GB/CD/Zip/56k <b>\$1049</b> refurbished

## REFURBISHED POWERBOOKS

<b>540c</b> 12MB/320MB/ Color Active-matrix	\$599
<b>PowerBook 3400c/180</b> 16MB/1GB/12XCD, Color active-matrix	\$1199
<b>PowerBook 150</b> 4MB/120MB	\$429
<b>PowerBook 3400c/240</b> 16MB/3GB/12XCD, Color Active-matrix	\$1399
<b>PowerBook 1400cs</b> 16MB/1GB/6XCD, Active-matrix color	\$1099

# Save A Mac Foundation

**MacAilly Extended Keyboard**



**NEW!**



**NEW 7200/75 LOGIC BOARD ONLY \$99**

## Logic Board Blowout!!!

IIfx logic board, refurbished	\$49.
Centris 650 logic board, refurbished	\$99.
Quadra 800 logic board, *refurbished no processor	\$99.
Quadra 840AV logic board, *refurbished no processor	\$99.
Quadra 900 logic board, *refurbished no processor	\$99.
Performa 630 logic board, refurbished no processor	\$99.
PowerBook 520 logic board, refurbished	\$99.
PowerBook 540 logic board, refurbished	\$99.

## 1.44 SuperDrives



**STARTING AT \$49!**  
**NEW!**  
**NO EXCHANGE REQUIRED!**



**\$39**  
 Genuine Apple ADB Mouse II  
**NEW!**



**ATI**  
**XClaim VR with FREE XClaim TV!**  
**NEW OEM \$149**  
 • 3D RAGE II, 2MB VRAM



**G3 Upgrade Cards**  
 Is your computer too slow?  
 Speed up your Mac and shatter the speed barrier!



**ClarisWorks 4 Internet Edition**  
**NEW!**  
**FREE Claris HomePage!**

**QuickTake Cameras**  
 Refurbished



**STARTING AT \$129!!**

\*Products are refurbished unless indicated as "new". Prices reflect a 2% cash discount and are subject to change without notice. Returns are subject to a 15% restocking fee. Not responsible for typographical errors. All trade-ins MUST BE in working condition. Refurbished systems may include like-new components and may also include cosmetic blemishes which do not functionally impair performance of the hardware.

# FOR MEMBERS ONLY



Only Macintosh User Group members enjoy access to a very special Apple-sponsored web site with super discounts on all the latest Mac stuff, MUG product awards and much more. Not a member? Find out how you can get these great deals by calling PowerMax at 800-689-8191.

[www.applemugstore.com](http://www.applemugstore.com)



**MUG STORE**  
Apple You like

The MUG Store. A cooperative venture between Apple and PowerMax to bring MUG members exclusive deals on the latest Mac® products, as well as special offers on discontinued and factory refurbished Macintosh® computers.

PowerMax is a division of Computer Stores NW, Corvallis, OR.

# CALL THE MAC EXPERTS!

Your one-stop source for everything Macintosh®. Friendly help and expert advice is our specialty! Call for the absolute lowest prices and immediate delivery on over 30,000 Mac® products!

## Produce Commercial-Quality Video!



Filming and editing commercial-quality video has never been easier! Just add a Canon camera (many models available), a 21" Apple Display®, Final Cut Pro software, FireWire cables and expert advice from your PowerMax consultant, and you're set to produce video like you never thought possible!

Only **\$3,599** or just **\$137 per month!**

**TradeUp**  
with  
**PowerMax!**

The Northwest's largest Mac-only reseller!

We'll take your Mac OS computer in trade toward the purchase of any product we sell! Call one of our expert Mac consultants for full details!

## PowerMax Hard Drives

PowerMax Hard Drives contain only top-quality cables, power supplies and internal mechanisms. Satisfaction guaranteed or your money back!

1.2 GB EXTERNAL APPLE QUANTUM .....\$149  
2 GB EXTERNAL 7200 RPM SEAGATE .....\$269  
9 GB EXTERNAL 7200 RPM SEAGATE .....\$388



10 GB USB drive only \$299!

And even more fabulous specials:

- External CD-ROM Drive .....\$39
- Conflict Catcher 8.0 .....\$69
- Norton Utilities 4.0 .....\$75
- Newton MessagePad .....\$99
- Internal 56k G3 Modem .....\$99
- WarCraft II Game .....\$12
- ATI Xclaim TV Tuner .....\$59
- JackHammer F/W SCSI .....\$99
- Imega 250 Mb Zip Drive ..\$179

## Software Blowouts!

Adobe Photoshop 5.0  
Only **\$288!**  
Full Retail Office 98  
Only **\$299!**

These are only the tip of the iceberg! Call for great deals, expert advice and unparalleled service on Everything Mac. PowerMax: where real people always answer the phone!!

## Complete System Specialists!

- Professionally bench-tested Macs at low, low pricing.
- Sensational warranties - buy with confidence!
- Wide selection of G3 upgradable models - our Mac experts will go over every detail with you!
- With used and refurbished Macs you get: better expansion, price/performance and upgradability!
- Most non-G3 Macs are fully G3 upgradable!
- Huge selection with new models available every day!

Just a few of the pre-owned and refurbished Macs we have as of press time. See our web site for complete descriptions and the latest list!

6100/60 16/250	\$249	Bondi iMac G3-233 32/4	SColl!
7100/80 AV 24/700	\$299	Refurbished iMac Blowout!	SColl!
7200/75 8/500	\$349	Pwbk G3-233 32/2 13.3"	\$1449
PowerCurve 24/800/CD	\$349	Pwbk G3-233 32/2 14.1"	\$1669
7200/90 8/500	\$369	G3-300 Yosemite 64/6	\$1349
Pwbk 5300C/100 24/750	\$499	G3-266 Plat 128/4 Gb UW	\$1499
5260/100 16/1.6 all-in-1	\$499	G3-266 Plat 64/4 Gb/Zip	\$1499
4400/200 32/2 Gb	\$539	G3-300 DT 32/4/DVD	\$1649
7600/120 16/1 Gb	\$639	G3-300 Plat 64/4 gb UW	\$1688
8500/132 16/1 Gb	\$649	Pwbk G3-300 64/8/DVD	\$2588
9500/233 32/4 Gb	SColl!		

## PowerMax Trinitron® Blowout!

20" **\$449!**  
17" **\$349!**

Now for a limited time only, buy the highest quality displays possible at huge, huge savings! The PLUS 17 features a 75hz .25mm Trinitron® tube with a maximum resolution of 1600x1280. This is simply the best-looking 17" display we've ever sold! The 20" display features a .30mm tube also made with Sony's legendary quality — we bought up huge volumes of both models and are passing the savings on to you! Complete with Mac-ready cables and adapters, a five year warranty and our satisfaction guarantee: if the monitor is not just right, we'll replace it for you!

**POWER MAX**  
Knowledge is Power

**800-613-2072**

Local: (503) 624-1827 • Fax (503) 624-1635  
email: [sales@powermax.com](mailto:sales@powermax.com)

Prices subject to change without notice. Prices reflect cash discount. Credit card orders strictly verified against fraudulent use. With use of credit card as payment customer acknowledges that some products are subject to final sale. Many prices are limited to stock on hand. All brand or product names are registered trademarks of their respective holders. \* Some restrictions apply. † During business hours. Even experts have to get some sleep!

Apple Studio Displays<sup>®</sup>  
17" **\$398!**  
21" **\$1129!**

AppleDesign Stereo Speakers  
Only **\$49!**

4x4x16 Yamaha CD-R Drive

Wacom 6x8 ArtZ II ADB Tablet<sup>®</sup>  
Only **\$169!**

Epson Stylus 3000<sup>®</sup>  
Only **\$349!**

Pen Partner 4x5 only **\$59!**  
\*Factory refurbished to new specifications

Only **\$888!**

Visit [WWW.POWERMAX.COM](http://WWW.POWERMAX.COM)  
For the very best deals on all the latest Mac equipment!



Authorized Reseller

We accept educational and corporate purchase orders and are experts in financing for virtually any size business!



## Infinity Micro

800-589-1234

\$1295.\*

\$849.\*

\*http: www.infinity-micro.com  
Email us at: Sales@infinity-micro.com

Int. (310) 470-9426 Fax: (310) 470-4956  
2289 Westwood Blvd. Los Angeles, CA. 90064

### PowerMacs

G3/450 128/5G2/CD "NEW"	2249
G3/400 128/12G/CD/ZIP "NEW"	1795
G3/400 64/6GB/DVD "NEW"	1429
G3/350 64/6GB/CD "NEW"	849
IMAC G3/233 32/4GB/24X/15"	1095/1195
G3/233 32/4GB/24X/CD/15" BLTIN'	1295
G3/266T 32/4GIG/24XCD*	1195
G3/300MT 64/8GIG/24XCD/6MB*	1195
G3/333MT 128/9GIG/24XCD*	2295
G3/300MT 64/6GB/CD	1295
G3/350MT 64/6GB/DVD	1695
G3/350MT 128/12G/CD/ZIP	2095
G3/400MT 128/9GB/CD	2495
9600/350 64/4GIG/24X/CD/Zip	2495
8600/300 32/4GB/24X/CD	2495
7300/200 32/2GIG/24XCD*	CALL
7100/80 8/500/CD	895
6500/300 32/4GB/12XCD/56K/ZIP	249
6500/275 32/6GB/24XCD/56K/ZIP	995
4400/200 32/2GB/CD/DOS	895
5500/225 32/2GB/12x15"	695
7200/90 24/500/8XCD	995
7200/120 32/2/6XCD*	249

### POWERBOOKS

G3/400 64/8GB/DVD/56K/14.1"	3295
G3/333 64/6GB/24X/56K/14.1"	2395
G3/300 64/8G/CD/56K/14.1"	2495
G3/292 64/8G/DVD/56K/14.1"	2995
G3/266 64/4G/20X/56K/14.1"	2495
G3/250 32/5G/20XCD/56K/13.1"	1495
G3/233 32/2G/20X/56K/14.1"	1595
G3/233 32/2G/20XCD/13.3"	1495
G3/233 32/2G/20X/56K/12.1"	1295
G3/233 32/2G/20X/12.1"	1195
3400C/240 16/3GB/12XCD	1395
3400C/200 16/2GB/12XCD	1295
3400C/180 16/1.3GB/8XCD	1295
1400C/133 16/1.3GB/8XCD*	1195
5300C 16/1GIG	595
5300C 16/750	445
2400C/180 16/1.3GIG	695
540C 32/500/19.2MDM	1195
180 14/120/14.4 Fax*	595
Apple Duo Dock IIPLUS	275



### HEWLETT PACKARD

LaserJet 6MP/4MV	597/997
LaserJet 55MX	1397
LaserJet 2100M/2100TN	737/927
LaserJet 4000/4000TN	847/1297
LaserJet 4050N/4050	1297/1237
LaserJet 4050T/5000	1227/1387
LaserJet 5000N	1847
LaserJet 5000GN	2079
LaserJet 8000	1877
LaserJet 8000DN	2989
LaserJet 8000N	2277
LaserJet 8100	2497
LaserJet 8100DN	3347
LaserJet 8100N	2827

### AGFA

DuoScan SOLO/DuoScan T1200	2249/559
SnapScan 1212U/1235S	116/159
SnapScan 1236/600	Call
SnapScan Touch USB	117

### EPSON

Expression 800 ART/EXE/PRO	679/589/899
Expression 836XL	2099
Perfection 636/636U	259/199

### MICROTEK

ScanMaker 35T PLUS	499
ScanMaker 4FL / 4G3	609/619
ScanMaker 5 DUAL PSLE	2169
ScanMaker 6400XL DUAL	898
ScanMaker 9600XL	1299
ScanMaker X6/X6USB/X6EL	136/135/209

### UMAX

Astra 610s/1200S/1220U	59/118/119
Astra 2000U/2100U	118/149
Astra 1220S/2400S	128/279
Mirage II/III/SE PHT/II/SE	1699/1079/799
PowerLock 3000/IIADV	589/949
PowerLock III/SE/II	CALL/565

### EPSON

Stylus 500/1520	Call/449
Stylus 3000	1095/789*
Stylus 740/740i	239/269
Stylus 850/850NE	269/449
Stylus Pro-XL 11x17	199
Stylus 900/900N	409/609
Photo 1200/700/750	474/237/289
BOCA/GLOBAL VILLAGE	
TELEPORT 56K USB Mac	119
TELEPORT 56K V.90 G3/MAC	99
POWERPORT 56K PC/MCIA	149
19.2 FAX MDM/PB-500 Series	39

### SONY

SONY 100ES/100GS	165/199
SONY 110GS/420GS	189/589
SONY 200ES/200GS	309/549
SONY 200PS/400PS	549/689
SONY 500PS/220GS	1069/409
SONY 520GS/120VS	959/309
SONY GDM-W900 24"	1999
SONY F400 19"/F500 21"	949/1689

### APPLE PRINTERS

ColorStyleWriter 4500*	199
LaserWriter 12/640*	795
LaserWriter Color 12/660	1095
LaserWriter 8500	1995

### DIGITAL CAMERA'S

SONY MAVICA FD91/FD73	905/472
SONY MAVICA FD88/FD71	847/631
AGFA EPHOTO 1680	576
AGFA EPHOTO SMILE DIGITAL C	127
AGFA EPHOTO CL30/CL50	364/699
AGFA EPHOTO 780C	183

### PRINCETON

E0400/DPP500/APPP50	154/818/1015
E0500/ULTRAS2B/95	167/176/418
E0500/ULTRA 52/75B	167/155/255
E0500/DPP500/550	182/949/938
E0750/ED/705/AGX750	391/241/405
E0720/EO710/EO705	303/293/241
E0700/EO930/EO900	279/485/475
E0200/EO2010/ULTRA 100	793/830/783

### EPSON STYLUS

COLOR PRO-XL 11x17  
\$199.97  
Postscript option only \$229.

### TRADE IN YOUR MAC

TOWARDS A NEW ONE!  
WE WILL BEAT YOUR BEST PRICE!

## MAC GLOBAL

SYSTEMS AND PERIPHERALS • SALES AND SERVICE

4750 ALAMEN EXPRESSWAY STE # M • SAN JOSE, CA 95118

PowerMacs	Powerbook
G3 233 DT \$1175	520 4/160 \$325
G3 266 DT \$1375	520c 12/240/19.2 \$450
6100 8/500 \$225	540 12/240 \$375
7200 8/500 \$325	540c 12/320/19.2 \$575
7500 16/500 Call	5400cs 8/500 \$575
8500 16/1G Call	1400c 117/133/166 Call
9500 32/2G Call	
Memory	Performs
4Mb 72-pin \$8	410/466/476 Call
8Mb 72-pin \$15	580 5/500/CD Call
16Mb 72-pin \$30	631 8/500/CD Call
32Mb 72-pin \$60	6200 8/1G/CD \$399
	5200 8/500/CD \$699
Printers	Quadrads
StylWrt II \$175	630 B/250 Call
StylWrt 1200 \$155	650/800/840/950
Laser 300 \$299	
Laser 320 \$449	
Laser 4600 Call	
Software	Monitors
Mac OS 8.1 \$15.99	13" RGB \$89
*The reason Macs!	14" Color \$149
	15" Appl. Mult. \$189
	17" Appl. Mult. \$315
	20" Apple Mult. \$550

TOP DOLLAR Paid for Memory, Powerbooks, and CPUs

1-800-722-8864  
PHONE: 408-265-6653  
FAX: 408-265-6660  
WWW.GLOBALDEALS.COM

## Mac Sales

www.macs4sale.com

### Radius 21"

Color Multiscans  
-with CPU purchase \$399

### Computers

Centris 610 8/230	\$179
Centris 650 16/230	\$199
Quadra 800 32/230/CD	\$249
PowerMac 7100/80 16/700/CD	\$399
PowerMac 8100/80 32/500/CD	\$449
PowerMac 7500/80 32/1gb/CD	\$699
PowerMac 8500/80 32/1gb/CD	\$899

### Monitors

13" Apple Color Monitor	\$99
14" Apple Color Display	\$149
17" Apple Color Multiscan	\$299
20" Apple Color Multiscan	\$549

### Laser Printers

Pers. Laserwriter 300DPI	\$179
Laserwriter IIint 300DPI	\$199
Laserwriter 600 600DPI	\$499

### Extras

16mb 72pin RAM	\$29
PowerBook Duo 20mb Ram	\$69
Duo Dock with upgrade Lid	\$59

\*Much More in Stock\*

## 1-888-MACSALE

Buy • Sell • Repair • Parts

Toll Free 1-888-622-7253

Does not include tax, shipping, and handling

## Urban Computer

DISTRIBUTION

- G3 Specialists
- Component-Level Repair
- Largest Inventory in Silicon Valley
- 10 Years Experience

Visit online at:  
www.urbancomputer.com

101 East Alma Ave, San Jose, CA 95112  
Phone: 408-280-1133  
Fax: 408-280-6840  
E-mail: sales@urbancomputer.com

SERVING MAC USERS SINCE 1987

Authorized Dealer

## MacBYTE

GREAT DEALS ON USED MACS NOW!

PC100	for Blue & White Yosemite G3	64 mb \$50	128 mb \$90
SDRAM	for Beige Desktop & MiniTower G3	64 mb \$50	128 mb \$90
iMac RAM		64 mb \$53	128 mb \$98

www.computeraddict.com

## 800-432-2983

1024 Harding Ave., #203, Venice, CA  
Fax: 310/448-4494

## Mac POWER

Sales & Service, Inc.

BUY • SELL • TRADE  
UPGRADE • REPAIR

New • Used • Refurbished

- Powerbooks
- PowerMacs
- Performas
- MacII-LC
- Monitors
- Printers
- Peripherals
- Ram
- Parts

www.macpowerinc.com

## 888-275-POWER

Fax: 408-448-6132  
San Jose, California, 95123



The Manufacturer Of G3 Upgrades, Award Wining Video Cards And a Complete Line Of USB And Firewire Peripheral.



### G3 UPGRADES FOR ALL POWERMACS

POWER JOLT G3 SERIES TO FIT FOLLOWING MODELS:

APPLE: 7300,7500,7600,8500,8600,9500,9500, & 9600'S  
POWER COMPUTING: POWER CENTER, POWER CENTER PRO,  
POWER TOWER, POWER CURVE / UMAX: J700 & S900 SERIES  
DAYSTAR: GENESIS 360,400,528,600,720,800,900,932

POWERJOLT G3/266MHz W/512K CACHE AT 133MHz .....	\$239.00
POWERJOLT G3/333MHz W/512K CACHE AT 166MHz ....	\$299.00
POWERJOLT G3/333MHz W/1MB CACHE AT 222MHz .....	\$399.00
POWERJOLT G3/366MHz W/1MB CACHE AT 183MHz .....	\$549.00
POWERJOLT G3/400MHz W/1MB CACHE AT 200MHz .....	\$649.00

### PowerJolt

Power boosts up to **450%**  
Two year limited warranty

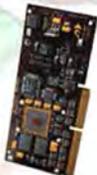


POWERJOLT OVERDRIVE SERIES TO FIT THE FOLLOWING SYSTEMS:  
APPLE: G3 ORIGINAL SERIES & G3 1999 SERIES (YOSEMITE)

OVERDRIVE G3/366MHz W/1MB CACHE AT 183MHz .....	\$499.00
OVERDRIVE G3/400MHz W/1MB CACHE AT 200MHz .....	\$599.00
OVERDRIVE G3/466MHz W/1MB CACHE AT 225MHz .....	\$699.00

### VISION 3D PCI VIDEO GRAPHICS CARDS

VISION3D PRO II LITE 8MB/ SVGA .....	SCall
VISION3D ULTRA 8MB/ SVGA & MAC .....	SCall
VISION3D PRO II 24MB/ SVGA & MAC .....	\$399.00
VISION3D PRO II 16MB VRAM UPGRADE(24MB TOTAL) .....	\$149.00



Call For The Next Generation Pricing.

### USB PRODUCT LINE

iBus USB 4PORT HUB .....	\$49.95
iBus USB HOST ADAPTER FOR POWER MACINTOSH SYTEMS .....	\$39.95

### USB LEGACY PORT ADAPTERS

iParallel USB PRINTER ADAPTER .....	\$49.95
iParallel USB PRINTER ADAPTER WITH MACJET SOFTWARE (BUNDLE) .....	\$79.95
iGame USB STANDARD GAMEPORT CONVERTER .....	\$24.95
iDrive USB 1.4MB FLOPPY DRIVE W/SOFTWARE AND CABLE .....	\$99.95



**iDrive USB**  
1.4MB FLOPPY DRIVE WITH SOFTWARE AND CABLE **\$84.95**

**iMaccessories**



## FIREPOWER



**FIREDRIVE**  
HDD 18GB/ 9.5 ACCESS/ 512K CACHE  
RUNNING AT 7200RPM

**\$499.99**

### FIREWIRE TECHNOLOGY

FIREDRIVE HDD 8.4GB/ 9.5 ACCESS/ 512K CACHE/ RUNNING AT 5400RPM .....	\$349.99
FIREDRIVE HDD 9.1GB/ 9.5 ACCESS/ 512K CACHE/ RUNNING AT 7200RPM .....	\$399.99
FIREDRIVE HDD 13.5GB/ 9.5 ACCESS/ 512K CACHE/ RUNNING AT 7200RPM .....	\$449.99
FIREDRIVE HDD 18GB/ 9.5 ACCESS/ 2MB / RUNNING AT 7200RPM .....	\$499.99
FIREDRIVE HDD 22GB/ 9.5 ACCESS/ 2MB / RUNNING AT 7200RPM .....	\$599.99
FIREDRIVE CDRW 4x4x16 .....	\$399.99
FIREDRIVE MAGNETO OPTICAL 640MB DRIVE Includes Cartridge .....	\$499.99
FIREDRIVE DAT 6GB DRIVE Includes Tape .....	\$799.99

### USB INPUT DEVICES

iMac Compatible USB Ergonomic KEYBOARD .....	\$79.95
iMac Compatible USB KEYPAD .....	\$39.95
iTrack USB PROBALL .....	\$39.95
iPoint USB MOUSE .....	\$19.95



**iMac USB COMPATIBLE  
ERGONOMIC KEYBOARD**

**\$79.95**



**iNet 5 Port Hub**

iMac Compatible  
10MB Ethernet Hub **\$39.95**

**iBus USB  
4 PORT HUB**  
**\$49.95**



### USB JOYSTICKS AND GAMEPADS

iPad USB REVERSIBLE GAME CONTROLLER .....	\$29.95
iPad USB DELUXE MULTIFUNCTION ARCADE CONTROLLER .....	\$39.95
iStick USB DELUXE MULTIFUNCTION FLIGHT STICK .....	\$49.95

**iStick USB FLIGHT  
DELUXE MULTIFUNCTION  
COMMAND STICK**  
**\$49.95**



Call ICN At: **1.800.472.4921 • 310-445-6600 • icn@icni.com**

# www.icni.com

Offering Computer Solutions For All Industries At Affordable Prices

G3 SPECIALIST, CALL US FOR G3 SYSTEMS BELOW WHOLE SALE PRICES

HUGE SELECTION OF MAC, TOSHIBA, IBM, COMPAQ AND SPARE PARTS IN-STOCK



**ICN**  
INNOVATIVE COMPUTER & NETWORKING, INC.

**PowerMac 9600**  
400MHz(G3)/64MB  
4GB/CD/KB  
**\$1989\***

**PowerMac 7500**  
120MHz/16MB/1GB/CD/KB  
Upgradable To G3  
**\$599\***

**Performa 6360**  
160MHz/16MB/1GB/CD/KB  
**\$469\***

**PowerMac 7100**  
80MHz/8MB/250HD/CD  
**\$199\***

**Apple Monitor**  
15" AV **\$109\***  
17" 720Multi. **\$189\***

**Apple Original**  
SCSI Internal  
24xCD-ROM **\$129**  
12xCD-ROM **\$89**

**POWER MACS**  
RECONDITIONED

	G3 266MHz 32/6GB/CD/KB .....	\$1399
	G3 233MHz 32/4GB/CD/KB .....	\$1195
	9600 300MHz 64/4GB/CD/VC/KB .....	\$1829
	9600 400MHz 64/4GB/CD/VC/KB .....	\$1989
	9600 200MHz 64/4GB/CD/VC/KB .....	\$1395
	9500 180 MP 32/2GB/CD/VC/KB .....	\$999
	9500 120MHz 32/1GB/CD/VC/KB .....	\$899
	8600 250 Mhz 32/4GB/CD/KB .....	\$1349
	8600 200 Mhz 32/2GB/CD/KB .....	\$1095
	8500 180MHz 32/2GB/CD/KB .....	\$899
	8500 120MHz 32/1GB/CD/KB .....	\$799
	7600 120 Mhz 16/1GB/CD/KB .....	\$649
	7500 100 Mhz 16/1GB/CD/KB .....	\$599
	7300 180 Mhz 16/2GB/CD/KB .....	\$869
	7200 120 Mhz 16/1GB/CD/KB .....	\$389
	7200 90MHz 8/500MB/CD/KB .....	\$329
	6500 275MHz 32/4GB/CD/KB/MOD .....	\$879
	6500 250MHz 32/4GB/CD/KB/MOD .....	\$849
	6500 225MHz 32/3GB/CD/KB .....	\$639
	4400 200MHz 32/2GB/CD/KB .....	\$499

**PERFORMAS**

6400 200MHz 16/2GB/CD/KB .....	\$539*
6400 180MHz 16/1GB/CD/KB .....	\$449*
6360 160MHz 16/1GB/CD/KB .....	\$469*
6300 100MHz 16/1GB/CD/KB .....	\$399*
5300 100MHz 16/800MB/CD/KB/15" .....	\$649*

**Apple CD-ROM & DVD Drives**

APPLE SCSI CD-ROM Drive 2xCD .....	\$39
APPLE SCSI CD-ROM Drive 4xCD .....	\$59
APPLE SCSI CD-ROM Drive 12xCD .....	\$79
APPLE SCSI CD-ROM Drive 24xCD .....	\$129
APPLE IDE CD-ROM Drive 24xCD .....	\$159
APPLE 12xCD-ROM Drive For PB3400c .....	\$55
APPLE PowerBook G3 Series DVD-Video ...	\$489
APPLE DVD-ROM Drive, 2x ATAPI (For Biege G3)	\$199

**POWERBOOKS & DUOS**  
RECONDITIONED

G3 300MHz 64/8GB/CD/14.1"A/ETH/56K .....	\$2595
G3 250MHz 64/4GB/CD/13.1"A/ETH/56K .....	\$1595
G3 233MHz 32/2GB/CD/14.1"A/ETH/56K .....	\$1490
G3 233MHz 32/2GB/CD/12.1"A/ETH .....	\$1249
3400c 240MHz 16/3GB/12XCD/Modem/ETH .....	\$1449
3400c 200MHz 16/2GB/6XCD/Modem/ETH .....	\$1295
3400c 180MHz 16/1GB/6XCD .....	\$1179
1400c 133MHz 16/1GB/8xCD .....	\$1179
520c 33MHz 4/160/Modem .....	\$379*
170 25MHz 4/40/Modem .....	\$199*
5300ce 117MHz 32/1GB .....	\$679
5300c 100MHz 16/750MB .....	\$529
540c 33MHz 8MB/320MB/Modem .....	\$469
DUO 2300c 100MHz 20MB/1GB/Modem .....	\$629
DUO 280c 33MHz 4MB/120/Modem .....	\$199*
DUO 270c 33MHz 4MB/120/Modem .....	\$179*
DUO Dock .....	\$69

**POWERMACS (NUBUS)**  
RECONDITIONED

8100 110MHz 16/1GB/CD .....	\$569
8100 100MHz 16/700MB/CD .....	\$395
8100 80MHz 16/500MB/CD .....	\$329
7100 80MHz 8/250MB/CD .....	\$199
6100 66MHz 8/250MB .....	\$199

**MACINTOSH MEMORIES**  
LIFE TIME WARRANTY

POWER MAC G3 S-DRAM (PC100) (YOSEMITE)	
128MB-SDRAM .....	\$99
256MB-SDRAM .....	\$239
POWER MAC G3 SDRAM (66MHZ) (BEIGE G3'S)	
64MB-SDRAM .....	\$59
128MB-SDRAM .....	\$119
256MB-SDRAM .....	\$279
G3 POWER BOOKS, WALL ST., MAIN ST.	
128MB-SDRAM .....	\$99
256MB-SDRAM .....	\$299

CALL FOR ALL OTHER MODEL MEMORIES. WE HAVE THE LOWEST PRICES AND LARGEST SELECTION.

**MONITORS**

APPLE Studio 21" .....	\$1389
APPLE VISION 850AV 20" .....	\$895*
APPLE VISION 850 20" .....	\$879*
APPLE Multiple Scan 20" .....	\$395*
APPLE Studio 17" .....	\$395
APPLE Vision Colorsync 17" .....	\$379*
APPLE Vision 750 17" .....	\$339*
APPLE Vision 1710 17" .....	\$249*
APPLE Multiple Scan 720 17" .....	\$189*
APPLE Multiple Scan 15AV 15" .....	\$109*
APPLE Multiple Scan 15" .....	\$99*

**PRINTERS**

APPLE LaserWriter 8500 .....	\$1049*
APPLE LaserWriter 16/600 .....	\$899*
APPLE LaserWriter 12/640PS .....	\$799*
APPLE LaserWriter INTX .....	\$169*
APPLE LaserWriter IINT .....	\$139*
APPLE LaserWriter IINT .....	\$139*
APPLE Personal LW NT .....	\$149*
APPLE StyleWriter 2500 .....	\$159*
APPLE StyleWriter 2200 .....	\$129*
APPLE ImageWriter II .....	\$79*

**APPLE PARTS & DRIVES**

APPLE 1.44 Floppy Drive .....	\$35
APPLE ADB II Mouse .....	\$35
APPLE 28.8 Modem For PF (Internal) .....	\$19
APPLE DUO Floppy Adapter .....	\$35
APPLE DUO AC Adapter .....	\$35
APPLE DUO Express Modem .....	\$19
APPLE 1.2GB 3.5" SCSI HD .....	\$98
APPLE 750 2.5" IDE (PB) .....	\$69

**1.800.472.4921**

Fax: (310) 445-6611 Tel: (310) 445-6600  
FAX TOLL FREE FROM JAPAN: 00-31-114211  
11755 Exposition Blvd., Los Angeles CA 90064  
Major Cross Streets Olympic Blvd. and Barrington

Prices Subject to Change Without Notice • All Prices reflect 3% Cash Discount • \* Refurbished \*\*Upgraded Machines  
ICN Is Not An Authorized Apple Dealer • All Trademarks Are Property Of Their Respective Companies.



**HAWKE**  
SYSTEMS  
2550-A Chimney Rock Rd  
Hendersonville, NC 28792  
(800) 875-2610  
*Specialist in Refurbished  
Macintosh Computer Equipment*  
**Overstock Clearance**  
All 68030, 68040  
All PowerMac Models  
All PowerBooks  
Monitors - Printers - Parts  
Complete list on our Web Site at  
[www.MacHawke.com](http://www.MacHawke.com)  
Six Month System Warranty

Choose 424 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

**MEGA** *MACS.COM*

- MacOS 8.5 OEM \$39
- Norton Utilities 4.0 \$21
- 3Com Sportster 56K \$89
- IBM 4GB SCSI HD \$149
- Zip SCSI Internal \$69
- Visioneer Paperport \$89
- Gold 56K External \$75

We have over 100 Software Titles for \$9.99 ea.  
918-664-MACS(6227)

All Prices reflect 3% Cash Discount

**Mac Pro Systems & Software**  
*Since 1988*

Buy • Sell • Trade • Upgrade • Repair  
New • Used • Refurbished

**Small Ad** **Lowest Prices**

*Any Ad is a Mac Pro Ad*  
Check out our Wholesale Specials @  
**www.mac-pro.com**

**800-525-3888**  
**fax: 408-369-1205**

Choose 423 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

**USED MACS & POWERBOOKS**  
**WANTED!**  
**WE BUY USED MACS!**  
**TOP \$\$\$ PAID**



Any Quantity  
FedEx check delivery  
Fax a list for a quote  
310 966-4433  
11933 Wilshire Blvd.  
W. Los Angeles, CA 90025  
[sales@macsolutions.com](mailto:sales@macsolutions.com)  
**(800) 80-WE-BUY**

*Special MacWorld Expo Savings from DataTech*

**POWERMAC 7300**

**\$699**  
7300/180  
16/2G/CD

- POWERMACS\***
- 7600/132 16/1G/CD ..... \$599
  - 8600/200 32/2G/CD ..... \$899
  - 8600/300 32/4G/CD ..... \$1099
- \*All CPUs include mouse

**RAM SPECIALS**

- 32MB 168 pin DIMM ... \$45
- 64MB 168 pin DIMM ... \$85
- 32MB for PB 3400 ..... \$50

**POWERBOOK**

3400c/180  
16/1.3G/CD **\$999**  
Add 32MB RAM ..... \$50  
Leather Carrying Case ..... \$29



**MONITORS**

- AppleVision 1710 Display **\$249**
- 21" Radius PrecisionView ..... \$399
- ThunderPower 30/1920 PCI Video Card ..... \$149



All products reconditioned by qualified technicians • 6-month warranty • VISA & MasterCard accepted

TO ORDER CALL

**1-800-281-3661**

**DataTech**  
REMARKETING, INC.

Tel: 615-860-4422  
Fax-On-Demand: 615-860-0109  
Fax: 615-860-0390  
Web: [www.datatech-rmk.com](http://www.datatech-rmk.com)  
471 Myatt Dr., Madison, TN 37115

Corporate names and trademarks are the property of their respective owners.



**ixMicro ix3D Ultimate Rez**  
**PCI Video Cards**

**8 Megabyte VRAM, PCI, Twin Turbo 128-3D**  
**5 Year Manufacturer Warranty!**

**"Freakin  
Awesome"  
MacAddict  
-Sep'98**

**"A High Speed Graphics Accelerator Like  
The Ultimate Rez is The Easiest and Most  
Economical Way to Speed Up Your Mac!"**

**Click Us:**  
**[www.MacResQ.com](http://www.MacResQ.com)**

**or**  
**Call Us: 1-888-447-3728**

**Only \$89!**

Or Only \$79 w/trade in



Choose 436 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

# MacWorks 800-482-2705

e-mail: sales@macworks.com

Voice 913.599.6227 • Fax 913.599.6111 • 8am-6pm Mon-Fri CST  
Prices Subject to Change • Visa/MasterCard/AmEx  
We ship FedEx • 15% minimum restocking fee on all returns

## Apple/Motorola G3/333 MHz ZIF Processor Cards

- 333/167 MHz
- 1MB backside cache
- Brand New
- 2-Year MacWorks warranty
- \$20 trade-in for your old (working) ZIF module
- Upgrades G3 desktop or minitower; upgrades PCI PowerMacs with a ZIF carrier card



ONLY **\$229<sup>99</sup>**

## Performa 6400/180

- 16/1 6GB/8x/CD/28.8
- Upgrade to Sony 12x/CD at no extra charge!
- 30-day warranty



ONLY **\$499<sup>99</sup>**

## PowerMac 7200/120

- 32/1 2GB/8x/CD\*
- Upgrade to Sony 12x/CD at no extra charge!
- 30-day warranty



ONLY **\$499<sup>99</sup>**

## PowerMac Bundles

Includes monitor, keyboard, mouse, modem. Upgrade any bundled CD to a Sony 12x FREE! Add Color StyleWriter 2500 for only \$149\*\*

- 7500/100 24/500/4x/17" **\$899<sup>99</sup>**
- 6400/180 16/1 6GB/8x/17" **\$699<sup>99</sup>**
- 7200/120 32/1 2GB/8x/17" **\$699<sup>99</sup>**
- 7100/80 16/500/2x/17" **\$649<sup>99</sup>**
- 7100/66 24/500/2x/17" **\$549<sup>99</sup>**
- 6100/60 8/1160/13" RGB\*\* **\$299<sup>99</sup>**

FROM **\$299<sup>99</sup>**

## Apple Monitors

- 20" ColorSync **\$999<sup>99</sup>**
- 17" ColorSync **\$499<sup>99</sup>**
- 17" MultiScan **\$299<sup>99</sup>**
- 17" AppleVision 1710av **\$299<sup>99</sup>**
- 17" MultiScan 720 **\$279<sup>99</sup>**
- 14" Color Display **\$129<sup>99</sup>**
- 14" Color Plus Display **\$99<sup>99</sup>**
- 13" Hi-Res RGB **\$99<sup>99</sup>**
- 12" RGB **\$49<sup>99</sup>**
- 12" Monochrome **\$39<sup>99</sup>**

FROM **\$39<sup>99</sup>**

## RocketFire 6-Port FireWire Hub



- Brand New, 1394a-Compliant
- Mac & PC Hot-Pluggable
- Data Transfer Rates up to 400 Mbps
- 1-Year MacWorks Warranty

ONLY **\$399<sup>99</sup>**

## Sony 12x CD-ROM

- New, Internal
- Includes FWB
- Mac OS bootable
- Uses Apple Mounting Kits (\$25)
- 90-day warranty



ONLY **\$79<sup>99</sup>**

## Apple Upgrades

- ATI XClaim 3D 4MB PCI Video **\$89<sup>99</sup>**
- ATI XClaim VR 4MB VRAM **\$49<sup>99</sup>**
- Apple TV/Video System **\$49<sup>99</sup>**
- Apple MPEG Media System **\$49<sup>99</sup>**
- 6-Inch DOS Card w/ Win 3.1 **\$39<sup>99</sup>**
- LaptoColor Vid/Em for PB 5300 **\$99<sup>99</sup>**
- 6x CD-ROM for PB 3400 **\$69<sup>99</sup>**
- PB Duo Replacement Keyboard **\$59<sup>99</sup>**
- PB Duo 14.4 Express Modem **\$49<sup>99</sup>**
- PB Duo AC Adapter **\$49<sup>99</sup>**
- PB Duo Ext. Batt. Recharger **\$19<sup>99</sup>**

## Apple GeoPort Adapter I

**\$19<sup>99</sup>**

## Parts/Accessories

- Replacement Logic Boards **CALL**
- Power Supplies **CALL**
- 3.6V Lithium Battery **\$19<sup>99</sup>**
- Internal Floppy Drives **\$49<sup>99</sup>/579<sup>99</sup>**
- Apple Extended Keyboard **\$39<sup>99</sup>**
- Apple Design Keyboard **\$19<sup>99</sup>**
- Apple Desktop Bus Mouse II **\$49<sup>99</sup>**
- MacPower 2-Button Mouse **\$29<sup>99</sup>**
- Apple Microphones **from \$9<sup>99</sup>**

## Newton 120

- 2mb/modem **\$179<sup>99</sup>**
- 1mb **\$139<sup>99</sup>**
- software bundle **\$49<sup>99</sup>**



## Software Bargains

- AppleShare 4.1 **\$149<sup>99</sup>**
- Mac OS 8.1 CD-ROM **\$49<sup>99</sup>**
- Mac OS 7.6 w/ClarisWorks 4 **\$49<sup>99</sup>**
- Apple Internet Server Solution I **\$49<sup>99</sup>**
- ClarisWorks 5.0EM **\$39<sup>99</sup>**
- Norton Utilities 4x OEM **\$39<sup>99</sup>**
- SimCity 2000 CD-ROM **\$12<sup>99</sup>**
- Apple Font Pack **\$9<sup>99</sup>**
- Apple Personal Diagnostics **\$7<sup>99</sup>**
- Children's Software **from \$9<sup>99</sup>**
- Stock Photo CD-ROMs **from \$9<sup>99</sup>**
- PTS Training CD-ROMs **from \$9<sup>99</sup>**

## Printer Accessories

- Color LW 250-Sheet Feeder **\$99<sup>99</sup>**
- LW 12/640 500-Sheet Feeder **\$99<sup>99</sup>**
- LW Select 500-Sheet Feeder **\$99<sup>99</sup>**
- LW Pro 6x Envelope Feeder **\$69<sup>99</sup>**
- Personal LW 250-Sheet Feed. **\$29<sup>99</sup>**
- Color SW 2200 Batt. Attach. **\$49<sup>99</sup>**
- Color SW 2200 Battery **\$19<sup>99</sup>**
- Color SW 2200 Black Ink **\$14<sup>99</sup>**
- Color SW 2200 Color Ink **\$14<sup>99</sup>**
- Apple Color Printer Black Ink **\$14<sup>99</sup>**
- Apple Color Printer CMY Inks **\$9<sup>99</sup>**
- Color SW Pro Black Ink **\$9<sup>99</sup>**

## LaserWriter 8500

- 600dpi, 20ppm
- 1x17, Ethernet
- PostScript 3
- Used
- 30-day warranty
- No toner; add a new toner cartridge for \$100 more



ONLY **\$999<sup>99</sup>**

## Color StyleWriter 2500

- Refurbished, New Ink
- 90-day Warranty

**\$179<sup>99</sup>**

## Quantum Fireball 4.3GB SCSI

- Manufacturer Refurbished
- Internal SCSI Hard Drive
- Quantum Model #ST433011

ONLY **\$199<sup>99</sup>**

**www.macworks.com**

Choose 438 at www.macworld.com/getinfo

## DIGITAL PREPRESS SYSTEMS

# Specializing in Rebuild Imagesetters

(714) 892-5290 Fax: (714) 892-4361

## ALL MAKES & MODELS Complete Prepress Systems

e-mail: prepress77@hotmail.com  
Huntington Beach, California USA

SPOT COLOR SYSTEM	SAPHIR SCANNERS	HARLEQUIN RIP	PROCESS COLOR SYSTEM	SILKSCREENING
INCLUDES: G3-MAC, Scanner, RIP, Imagesetter, Proof Printer, Processor & Software <b>\$16,250</b>	FACTORY REFURB: 1 yr. Wnty, Saphir, Saphir Ultra, Ultra 2, Hi-Res, Opal Linocolor from <b>\$850</b>	Software, PS Level 3 MAC OS, WIN 95, WIN NT Compatible for most Imagesetters <b>\$4,995</b>	INCLUDES: G3-MAC, Scanner, RIP, Imagesetter, Proof Printer, Processor & Software <b>\$22,500</b>	IMAGESetter: Agfa or Linotype 18" wide Hi-Quality Film - Pos Separations <b>\$15,000</b>
PLATEMAKING SYSTEM	HOWTEK DRUM CANNER	SCITEX DOLEV	ECRM-NEW & REFURB	BEST OF THE REST
Refurb-Digital Platemaking Imagesetter, PS RIP Processor, Densitometer, Calibration Software <b>150 LPI. From \$10,000</b>	D4000: 4000 dpi, 3.9 Dyn Range, 6 bit, CYMK, RGB, Factory Refurb, Desktop Size <b>\$9,950</b>	SCITEX DOLEV Drum Imagesetter: 200 - 2Up <b>\$12,000</b> 400 - 4Up <b>\$18,000</b> 800 - 8Up <b>CALL</b>	MARLIN: 18" w/Punch & Harlequin RIP. New <b>\$56K</b> MAKO 4625: Best Priced New 18" Imagesetter w/ Harlequin SW RIP <b>\$33,300</b>	Macintosh G3, PC Pentiums, All Prepress Software, File Servers, Networking Hubs & Switches, Color Proofing Printers & Match Print Equipment

voice: 925-689-9488 fax: 925-689-9487

PRICES & QUANTITIES SUBJECT TO CHANGE

Place Your Orders OnLine!

# www.macresq.com • MacResQ • 1-888-447-3728

## APPLE CPU'S

- Perf. 6100/60 8/700/2x/CD.....\$199
- Perf. 6200/75 16/1 Gig/4x/CD.....\$299
- PM 7200/120 32/1.2 Gig/12x/CD.....\$399
- PM 8500/120's.....from \$799
- BEIGE G3's.....STARTING at only \$999
- G3/300 MT 64/4 Gig/24x/CD.....\$1699



## Hard Drives & CD Roms

- Apple 4.3 Gig 3.5" Int. SCSI...\$179!
- 3.2 Gig SCSI.....\$139
- 6.4 Gig SCSI.....\$189
- 10.2 Gig IDE.....\$199
- Sony 12x int. CD Rom...\$79!
- Apple 2x (tray) int.....\$79
- Apple 8x int.....\$129
- Apple 12x int.....\$149

**GV Modems!**  
**33.6- \$49**  
**56k- \$79**  
• external •

## PowerBooks & Parts

- Call for most recent powerbooks in stock! (100 series, duo's, 500 series, 3400's & G3's)
- FLOPPIES:
  - 661-0474 (auto) \$49
  - 661-0121 (manual) \$59
  - 661-1651 (PB 100 ser.) \$89
  - 661-0994 (PB 500 ser.) \$99
- call for price & availability

\*some models require exchg.

## System Software!



- Mac OS 8.5.....\$49
- Norton 4.0.....\$29
- Mac OS 7.6 w/ Claris 4.0.....\$39
- Mac OS 8.1.....\$29
- ClarisWorks 5.0.....\$29

## Monitors & Printers

- Apple 14" Color Plus Display.....\$99
- AppleVision 720 (17") Display.....\$299
- Apple ColorSync 17" Display.....\$399
- SuperMac SuperMatch 21".....\$599
- Apple Color Stylewriter 2500.....\$199
- HP LaserJet 4M (w/toner).....\$349



**\$89**



15% re-stocking fee-ALL ITEMS REFURBISHED UNLESS NOTED AS NEW • All Parts Sold With + 90 Day MacResQ Exchange Warranty • Exch. Required For SOME Power Supplies • All Major Credit Cards With NO Surcharge •

Choose 439 at www.macworld.com/getinfo

**TRADE YOUR MAC FOR A NEW ONE. We Pay Top \$\$\$ For Your Mac & Mem.**  
**CALL FOR UPGRADES BUY • SELL • TRADE (310)441-4771**  
 Email: cgn @ cgnusa.com

<b>PowerMacs</b>	<b>Powerbooks</b>	<b>Upgrades</b>	<b>Demo Macs</b>	<b>Storage</b>	<b>Parts</b>
G3 400 Mhz 128/12gb 2475 G3 350 Mhz 64/4/CD 1490 G3 300 Mhz 64/4/CD 1390 G3 233 Mhz 32/4GB 1390 9600 300 MHz 1790 G3 350 MT 1550 7200 16/500 299	G3 400 Mhz DVD 3290 G3 300 Mhz CD 2490 G3 266 Mhz CD 1650 G3 233 Mhz CD 1395 G3 250 Mhz CD 1195 <b>PB 233 32/4/CD 1350</b>	Same day Upgrade No down Time!! PB 3400 to PB G3 250 599 7200 to 7600 395 8100 to 8500 459 7500 to G3 250 Mhz 450 CALL for G3 Upgrades !!! Perf 63xx to 6500 225 399 9600 to G3 350Mhz Call Q 610/660 to 6100 159 Q800-840 to 8100 349 Call for PowerBook Upg. Call for Upgrades not listed	8500 32-1gb-cd 695 7600 32-500-cd 595 7200 16/500/cd 350 9600 200 1390 7300 180/16/1/CD 799 G3 233 16/4/CD 1099 9600 300 1775 Quad. 610 \$ 79	CD 2X-4X-12X-24X Call CD Recod. Yamaha 4x2x6 435 Yamaha 400AT 329 Apple 2GB HD 165 <u>Exchange ON :</u> Logic Boards, Power Supply Call	Floppy 1.44 45 POWER SUPPLIES CALL AV Card \$150 Power supply Cx Ci 7100 35 Call for Logic Boards & more
<b>Call for G3 Units</b>	<b>Demo Powerbooks</b>		<b>Special</b>		<b>Computer Graphics &amp; Networking</b>
G3 266 Mhz 1390 7200 /75/90/120 CALL Call for config. not listed	1400CS 16/1. 2gb 875 540C 12/500/Mod 450 5300c 16/750 599 520 -170 -180c-165c CALL <b>PB 1400 16/1/CD 875</b>		Quadra 610 \$ 99 Quadra 630 \$199		All prices Reflect cash Discount Visa, Mastercard, Amex Accepted << Prices are subject to Change >>

**TEL: 310-441-4771 10922 W. Pico Blvd. Los Angeles, CA 90064 Fax: 310-441-4770**

If you want the best prices and service around, call us today! **BUY/SELL/TRADE** **MediaGuide** **BUY/SELL/TRADE** Prices Listed Reflect a 3% Cash Discount

**SHOP ONLINE! BUY ONLINE!**  
**OUR HUGE INVENTORY OF NEW & USED MACS, PARTS, PERIPHERALS & MORE:**  
**www.MediaGuide.com**

<b>OLDER MACS</b> Wide selection... Rock-bottom prices... Call for details!	<b>POWERBOOKS</b> PB 140 4/40/14.4...\$159 PB 170 8/80...\$199 Powerbook 165 12/160/14.4...\$269 Powerbook 180 8/120/14.4...\$359 Powerbook Duo 230 12/120/14.4...\$159 Powerbook Duo 270c 32/320/14.4...\$299 Powerbook Duo 280c 40/750/14.4...\$399 Powerbook 520 12/160/19.2...\$399 Powerbook 540 12/240/19.2...\$449 Powerbook 1400's & 3400's...BEST PRICES!	<b>MISCELLANEOUS</b> 1.44 floppy drives.....from \$49 Apple 2x tray-loaded CD-ROM (int).....\$49 Apple 8x internal CD-ROM drive.....\$79 New Sony 24x CD-ROM.....int \$89 / ext \$119 256K L2 cache for 6100/7100.....\$9 Ethernet cards.....from \$19 AAUI 10BaseT transceivers.....\$19 1MB 30-pin SIMM...\$5 4MB 30-pin SIMM...\$12	<b>SOFTWARE</b> MS Excel '98.....\$98 MS Office '98...\$299
<b>QUADRA &amp; CENTRIS</b> Nearly every model in stock - Custom-configured to your exact needs!	<b>MONITORS</b> Apple 13" RGB...\$129 Apple 14"....\$149 Apple 15" MS...\$179 Apple 16" RGB...\$179 Apple 17" MS...\$299 Third Party...\$CALL	<b>POWERBOOK ACCESSORIES</b> Powerbook 5xx internal floppy drive.....\$99 Duo Dock power supply.....\$49 Apple 14.4 modem for PB Duo.....\$79 Logic boards, Power supplies, RAM — CALL! Parts, Accessories, other CPUs — CALL!	
<b>POWER MACS</b> 6100/60 8/230/CD.....\$299 7100/66 8/425/CD.....\$349 7100/80 8/425/CD.....\$379 8100/80 8/425/CD.....\$419 7200/75 8/500/CD.....\$429 7200/90 8/500/CD.....\$459 7500/100 16/1gig/CD.....\$649 8500/120 16/2gig/CD.....\$799 Many other Power Macs in stock...CALL!!	<b>PRINTERS</b> From Imagewriters to Stylewriters to Laserwriters to new inkjets, we've got 'em!		

**or Call toll free: (888) 466-2271**

**SUPER SPECIALS!!**  
 Mac OS 8.5 OEM CD-ROM...\$49 !!!  
 Mac OS 8.1 CD-ROM  
 OEM...\$29 -or- Retail...\$39  
 New Sony 24x CD-ROM drive  
 with FWB CD-ROM Toolkit 3.0  
 Internal...\$89 External...\$119  
 IX Micro UltimateRez 8MB  
 PCI video card...\$99  
 ClarisWorks 5.0 OEM CD...\$29 !!

**BUNDLE SPECIALS**  
 (listed CPU plus 13" or 14" monitor, KB, mouse)  
 Ilic 8/425...\$179 Ilic 9/230...\$169  
 Ilicx 8/425...\$159 Ilicx 8/425...\$199  
 Centris 610 16/230/CD.....\$259  
 Quadra 630 20/250/CD.....\$299  
 Quadra 650 16/425/CD.....\$299

Fax: (303) 571-5020 • Local & Int'l: (303) 571-1900 • Hours: M-F 8-6, SAT 10-5 MST • 777 N. Santa Fe Dr., Denver, CO 80204  
 Sales E-mail: Sales@MediaGuide.com • Purchasing E-mail: Purchasing@MediaGuide.com • http://www.medialoguide.com

**STOP!  
GO BACK!**

Check out the Shopper's **USB** section, starting on Page 159!  
 Chock-full of everything "U" want for **USB**.  
 Don't miss out on any of the **hot** deals on the hottest **USB** products!

## Think COMPUTER REVELATIONS



ALL APPLE PARTS & ACCESSORIES IN STOCK

Leasing Rentals / Supplies Service available in NYC area

1 800 275-9924 in NY 516 737-0800 FAX 516 737-0923

331E Dante Court Holbrook, New York 11741

NEW & USED BOUGHT & SOLD

Choose 445 at www.macworld.com/getinfo

Online Micro 800-720-4400 www.onlinemicro.com (714) 338-1900 Fax(714) 338-1905 Email: sales@onlinemicro.com

### Desktop & Tower

7200/90*	8/500/CD	\$329	G3/250/13.1**32/4GB/CD	\$1449
7500/100*	16/500/CD	\$529	G3/266/14.1**32/4GB/CD	\$1899
7300/180*	16/1.2/CD	\$799	G3/292/14.1**64/8GB/CD	\$2099
4400/200*	16/2GB/CD	\$499	G3/300/14.1**32/4GB/CD	\$2399
8500/120*	16/1GB/CD	\$649	DUO DOCK PLUS	\$189
8500/150*	16/1GB/CD	\$799	Duo 2300c 20/1GB/Mod.	\$649
8600/200*	16/2GB/CD	\$1199	Printers	
8600/300*	32/2GB/CD	\$1599	SW4500	\$219
9500/132*	16/1GB/CD	\$799	LW12/640*	\$799
9500/200*	32/2GB/CD	\$1199	LW8500*	\$999
9600/233*	64/4GB/CD	\$1599	ALPS GLIDEPOINT TRACKPAD ADD*	\$799
9600/300*	64/4GB/CD	\$2099	FREE	\$999
9600/350*	64/4GB/CD/Z	\$2499	Monitors	
G3/233DT*	32/4GB/CD	\$1049	15" /15" av*	\$139/\$179
G3/266DT*	32/4GB/CD	\$1149	750*/850/850av	\$299/\$699/\$799
G3/266MT*	64/6GB/CD	\$1299	20" Colorsync*	\$999
G3/300MT*	64/8GB/CD	\$1499	ViewSonic G810 21"	\$889
G3/333MT*	64/8GB/CD	\$1899	SONY 220GS/420PS	\$449/\$669
6360/160*	16/1.2GB/CD	\$459	SONY 520GS 21"	\$969
6400/180*	16/1.6GB/CD	\$489	HARD DRIVE	
6400/200*	16/1.6GB/CD	\$549	IBM 4.0GB 50 pins SCSI	\$149
6500/250*	32/2GB/CD	\$659	Apple 4.0GB UW SCSI	\$249
5200/75*	8/500/CD	\$599	Seagate 18GB UW SCSI	\$699
5400/200	32/1.6GB/CD	\$649	USB 10GB external	\$259
7100/80*	8/500/CD	\$329	MEMORY	
8100/100*	16/1GB/CD	\$489	64MB SDRAM/PC100	\$89/\$89
			128MB SDRAM/PC100	\$129/\$109
			256MB SDRAM/PC100	\$429/\$659

### Notebook

1400CS/166**16/1.3/CD	\$799
3400C/180**16/1.3GB/CD	\$1029
G3/233/13.1**32/2GB/CD	\$1339

Prices reflect cash discounts & subject to change without notice. No return on shipping charges or special order items. Restocking fee may apply on returned items. Online Micro is not an authorized apple dealer. Reconditioned w/30 day OM warranty unless specified. We ship anywhere in the world. Resellers welcome.

Choose 443 at www.macworld.com/getinfo

## Think Mac Liquidation

Contact Us TOLL FREE 877-638-2822 thinkmacliquidation.com

### Macintosh CPUs

\$69 < Macintosh LCII 4.80 >	\$69
\$69 < Macintosh IIfx 5.80 >	\$69
\$99 < Macintosh IIfx 4.80 >	\$99
\$249 < Macintosh TV 8/160 CD >	\$249
\$249 < Macintosh Quadra 650 16/230 CD >	\$249
\$199 < Macintosh Quadra 900 16/230 >	\$199
\$299 < Power Mac 6100/66 24/500 CD >	\$299
\$299 < Power Mac 7100/66 24/500 CD >	\$299
\$399 < Power Mac 7100/80AV 24/500 CD >	\$399
\$399 < Power Mac 7200/90 24/500 CD >	\$399
\$799 < Power Mac 8500/110 32/2GB CD >	\$799
\$899 < Power Mac 9500/132 32/2GB CD >	\$899
\$3499 < 20th Anniversary Macintosh 32/2GB CD >	\$3499
\$399 < Apple Powerbook 520c 12/160/19.2 >	\$399
\$449 < Apple Powerbook 540c 12/320/19.2 >	\$449
\$799 < Apple Powerbook 1400c 16/1GB >	\$799
\$899 < Apple Powerbook 1400c 16/1GB >	\$899

### Apple Monitors

\$79 < Apple 12" RGB Display >	\$79
\$99 < Apple 13" RGB Display >	\$99
\$129 < Apple 14" Color Plus Display >	\$129
\$149 < Apple 14" Color Display >	\$149
\$179 < Apple 14" Multiscan Display >	\$179
\$199 < Apple 15" Multiscan Display >	\$199
\$199 < Apple 16" Color Display >	\$199
\$249 < Apple 17" Multiscan Display >	\$249
\$199 < Apple Multiscan 1705 Display >	\$199
\$549 < Apple 20" Multiscan Display >	\$549
\$699 < Apple 21" Color Display >	\$699

(And many others to choose from)

### Apple Printers

\$99 < HP Deskwriter >	\$99
\$199 < Apple Color Printer (11x17) >	\$199
\$699 < Apple Laserwriter Select 360 >	\$699
\$29 < Apple Personal Laserwriter Sheet Feeder >	\$29

©1999 © Silicon Graphics Indigo2 200MHz 128/2GB Sony 20" Monitor > \$2995

Compu Kid, Inc., 1035 Kaminette Blvd, Suite C • Murfreesboro, TN 37129  
PH: 615-904-1979 FAX: 615-905-1970 EMAIL: sales@thinkmacliquidation.com  
All brand or product names are registered trademarks of their respective holders.

## 800-673-MACS

916-652-1880 FAX 916-652-1881 800-673-6227

www.poweron.com

Visit our Online Catalog

### PowerMac 6400/180

16/1.2GB/CD

\$499

G3 Upgradeable

### Apple 15" Monitor

15 Multiscan

\$179

15AV Multiscan \$199



Your Choice \$29

Macintosh Ready! BOOTABLE Includes Driver Software

intech CD-ROM speedtools \$109 External \$79 Internal

### Power Macs

PowerMac 6100-60 8/240 (U)

Power PC 601 60MHz Upgradeable to G3 \$199

PowerMac 7100-80 8/500 (U)

Power PC 601 80MHz Upgradeable to G3 \$299

PM 7600-120 16/1.2G/CD (U)

Power PC 604 120MHz Includes Ethernet \$679

PM 6100/60 24/1.2G/CD Mouse (U) 329.99

PM 7100/80 24/1.2G/CD Mouse (U) 429.99

PM 7600/120 16/1.2G/CD Mouse (U) 679.99

PM 8500/120 16/1.2G/CD Mouse (U) 699.99

Quadra 800 8/250 K&M (U) 99.99

Quadra 950 8/250 K&M (U) 149.99

### HDs & CDs

Apple Logo CD \$99

ZIP/HDD/CDROM Install Kits IN STOCK

CD External Cases-SCSI ch1 incl (N) 29.99

HD External Cases-SCSI ch1 incl (N) 49.99

Panasonic 2x CDROM-External (U) 49.99

Apple 2x 300i+ CDROM-Internal (U) 49.99

Apple 4x 600i+ CDROM-Internal (U) 79.99

Apple 12x 1800i+ CDROM-Int.(P) 99.99

Apple 24x 3600i+ CDROM-Int.BLK(P) 129.99

Apple 500 MB SCSI-Internal 3.5" (P) 59.99

2 GB SCSI-Int 3.5" (P) 129.99

4 GB SCSI-Int 3.5" (P) 199.99

Apple Floppy Drives-Auto (N) 99.99

Apple Floppy Drives-Manual (P) 59.99

### PowerBooks

PB160 8/80/Modem (U)

68030 25MHz 1.44 FDHD 10" Supertwin LCD \$199

PBDuo 2300c 20/750 (U)

603c 100MHz W/Duo Dock 9.5" Active Matrix LCD \$599

PB 160: 8/80 batt, AC adapter (U) 199.99

PB 160: 12/120 batt, AC adapter (U) 249.99

PB 540 20/240 batt, AC adapter (U) 449.99

PB Duo 2300c 12/750 w/Dock (U) 599.99

PB5300c 32/1.1G batt, AC adapt (U) 799.99

Mac OS 8.5 FREE W/ AfterLife & FullThrottle

8 \$49

### Keyboard/Mice

Apple Mouse I: 22.99 JoyStick-MacOnly (N) 29.99

Apple Mouse II 32.99 Gamepad-MacOnly 29.99

Mouse, 1 button-N: 16.50 Trackball-MacOnly 29.99

Mouse, 2 button (N) 25.99 Apple ExtKeyboard I (U) 29.99

Apple ExtKeyboard I (U) 25.99 Ext Keyboard (N) 29.99

USB iKey Keyboard (N) 39.99 USB iMouse (N) 29.99

USB iHub (N) 49.99 USB iBall (N) 39.99

Apple Mouse I: 22.99 JoyStick-MacOnly (N) 29.99

Apple Mouse II 32.99 Gamepad-MacOnly 29.99

Mouse, 1 button-N: 16.50 Trackball-MacOnly 29.99

Mouse, 2 button (N) 25.99 Apple ExtKeyboard I (U) 29.99

Apple ExtKeyboard I (U) 25.99 Ext Keyboard (N) 29.99

USB iKey Keyboard (N) 39.99 USB iMouse (N) 29.99

### Monitors

Apple 13" RGB External (U) 99.99

Apple 14" M1212 Display (U) 119.99

Apple 15" Multiscan Display (U) 149.99

Apple 15" AV Multiscan Display (U) 179.99

Apple 17" 1705MS Display (U) 279.99

Radius 20" Precisioncolor 20v (U) 299.99

Radius 20" Intellicolor 20e (U) 399.99

ATI MACH 64-4MB PCI (OEM) 59.99

iXMicro 3D Ultimate Rez PCI (OEM) 89.99

### WE BUY MACS

FAX TO 916-652-1881

All Sales Final. No Cash Refunds Given

All Prices include 2% cash discount

Prices subject to change without notice

Govt & School PO's Accepted

All brand or product names are registered trademarks of their respective holders and are respectfully acknowledged.

Discover MasterCard

Visa

### Networking

56K v90 GOLD Ext. Modem (N) 79.99

TDK 33.6 Modem PCMCIA (U) 39.99

GlobalVillage 28.8 modem PCMCIA(N) 59.99

Farallon Ethernet 10BT PCMCIA (U) 49.99

5Port Ethernet HUB 10BT (N) 49.99

# MEMORY

WE'LL BEAT ANY PRICE!

ABSOLUTELY, POSITIVELY,  
**THE BEST PRICES!**

Plus, Lifetime Warranty on all RAM!

Special Web Site Pricing  
available only at [www.macsolutions.com](http://www.macsolutions.com)

YOSEMITE - PC 100		iMAC RAM		G3 SDRAM - In Stock!!	
32 mb	\$ 28	32 mb	\$ 27	32 mb	\$ 28
64 mb	42	64 mb	45	64 mb	42
128 mb	79	128 mb	88	128 mb	79
256 mb	475	256 mb	448	256 mb	248
PowerBook G3 (98-99)		168 Pin DIMMs		SIMMs 72 & 30 pin	
32 mb	\$ 27	16 mb	\$ 18	4 mb 30 pin	\$ 8
64 mb	45	32 mb	47	16 mb 30 pin	19
128 mb	88	64 mb	93	16 mb 72 pin	20
256 mb	448	128 mb	190	32 mb 72 pin	40

## NEW & PRE-OWNED MACS & POWERBOOKS!

BLAZING FAST NEW MACS\* - INSANELY GREAT!

iMac 333 MHz	32/6gb/24x/56k	<del>\$ 1,199</del>
G3 350 Yosemite	64/6gb/32x	<del>1,599</del>
G3 400 Yosemite	64/6gb/DVD	<del>1,999</del>
G3 450 Yosemite	128/12gb/32x/Zip	<del>2,499</del>
G3 450 Yosemite	128/9gb UW/32x	<del>2,999</del>
PB-G3/333TFT/14.1	64/4gb/24x/56k	<del>2,499</del>
PB-G3/400TFT/14.1	64/6gb/DVD/56k	<del>3,499</del>

### CHECK OUT THESE GREAT DEALS ON USED MACHINES

8600/200	32/2gb/12x	\$ 995
9500/132	16/1gb/4x	875
8500/120	16/1gb/4x	700
6500/300	32/4gb/12x/Zip	800
6400/180	16/3.2gb/8x	600
6360/160	16/3.2gb/8x	525
6300/100	16/2.4gb/4x	400
PwrBook 3400c/200	16/2gb/12x	1,100
PwrBook 1400c/117	16/1gb/6x	1,050
PwrBook 1400cs/117	16/750/6x	995
PwrBook 5300c/100	16/500	675
PwrBook 540c/33	20/320/mdm	525

**WE BUY, SELL & TRADE MACS!**  
**CALL 800-80-WE-BUY**

Pre-owned machines subject to prior sale. Inventory changes daily. call for availability. \*New Apple product available in-store only.

## HARD DRIVES & SPECIALS



IBM 1 gb SCSI	\$ 99
Quantum 1.2 gb SCSI	125
Seagate 4.5 gb Medalist Pro SCSI	195
IBM 9.1 gb SCSI	350
Quantum 9.1 gb ATLAS IV Wide SCSI	375
Seagate 9.1 gb Barracuda Wide SCSI	379
Seagate 9.1 gb Cheetah Wide SCSI	555
Quantum 18.1 gb ATLAS IV Wide SCSI	699
Seagate 18.1 gb Barracuda Wide SCSI	719
Seagate 18.1 gb Cheetah Wide SCSI	895
IBM 36 gb Wide SCSI	1,195
Quantum 3.2 gb IDE	135
Quantum 4.3 gb IDE	183
Quantum 6.4 gb IDE	155
IBM 16 gb IDE	225
TEAC 6x2 CD-R with TOAST	335
<b>SOFTWARE &amp; PERIPHERAL SPECIALS</b>	
Apple OS X Server	460
Apple Final Cut Pro	999
Epson 740i color ink jet printer	279
Epson 740 color ink jet printer	225
MacAlly iMouse	25
MacAlly iHub	49
MacAlly iBall	49
VST USB Floppy Drive	80

Apple Authorized Dealer   Apple Specialist   Apple Authorized Service Provider

**(800) 873-3RAM**

MacSolutions, Inc. Fax: (310) 966-4433  
11933 Wilshire Blvd. West Los Angeles, CA 90025  
University & School P.O.'s Welcome.

Secure Online Ordering at

**[www.macsolutions.com](http://www.macsolutions.com)**



**MAC Solutions**

All prices are subject to change. Merchandise subject to prior sale. Please call for up-to-the-minute info and availability. Not responsible for typographic errors. Limited to stock on hand. Ad Code #616

# MEMORY

The Best Memory Prices & Guarantee

800-662-7466

Secure online ordering: [datamem.com](http://datamem.com)

Lifetime Memory Replacement Guarantee

DMS will meet or beat anyone's price!



**MEMORY UPGRADES**  
Computers • Printers  
Notebooks • Digital Cameras



Pentium® Computer System Specials

USB Scanners/Printers & Accessories



DMS ACCEPTS GOVERNMENT, EDUCATIONAL & CORPORATE P.O.s WITH PRIOR APPROVAL

FAX P.O.s 24 HOURS TO DMS @ 603.898.6585

Open M-F 9a.m. 'til 9p.m.

Choose 451 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

WHY IS THE COMPETITION SHAKING?

BECAUSE  
**1-800-4-MEMORY**  
IS HERE

WE CAN **BEAT**

ANY QUOTED PRICE ON ANY MEMORY FOR ANY COMPUTER

(NOTEBOOK, DESKTOP, PRINTERS) ANYWHERE... PERIOD!

- LIFETIME WARRANTY
- FREE TECH SUPPORT
- NO CREDIT CARD SURCHARGE
- MOST ORDERS SHIPPED SAME DAY

CALL AROUND THEN CALL US

CHECK OUR WEB SITE FOR SPECIALS  
[WWW.18004MEMORY.COM](http://WWW.18004MEMORY.COM)

# MEMORY SPECIALISTS



Serving the Mac Users memory needs since 1991. We sell only NEW, Grade A, Full Apple Spec RAM

800-307-3434

Fax 775-823-2200

5301 Longley Lane, Reno, NV 89511

[www.tahoeperipherals.com](http://www.tahoeperipherals.com)

Choose 450 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

# MEMORY BUY/SELL/TRADE

Lowest Prices - Lifetime Warranty



Secure ON-LINE ordering up to **10% OFF**

Website Promo's/Discounts/Free Gifts

800-718-7755

[www.MEMORYLIQUIDATORS.com](http://www.MEMORYLIQUIDATORS.com)

22825 Lockness Ave., Torrance, CA 90501

310-326-5656 • Fax 310-326-7790

E-mail: [sales@memoryliquidators.com](mailto:sales@memoryliquidators.com)

Choose 448 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

# MEMORY MADNESS

The LLB Company, Inc.  
1-800-848-8967

## DIMMs

\$99 128MB

POWERMAC G3  
PC66-10NS

32MB 4x64.....\$35

64MB 8x64.....\$55

128MB 16x64.....\$99

256MB 32x64.....\$399

\$169 64MB

8x64x60EDO 3.3V

16MB 2x64.....\$49

32MB 4x64.....\$78

64MB 8x64.....\$169

\$110 64MB

8x64x60EDO 5V

16MB 2x64.....\$40

32MB 4x64.....\$55

64MB 8x64.....\$110

## DIMMs

\$52 64MB

NEW POWERMAC  
G3 8X64-8  
(PC100-8NS)

64MB 8x64.....\$52

128MB 16x64.....\$99

2546MB 32x64.....\$485

\$58 32MB

168-PIN FPM DIMM

32MB 4x64.....\$58

64MB 8x64.....\$110

128MB 16x64.....\$275

## SIMMs

\$55 32MB

72-PIN SIMM

8MB 2x32.....\$21

16MB 4x32.....\$29

32MB 8x32.....\$55

## FROM THE LLB COMPANY

### IOMEGA

Zip Drive \$119

Zip Drive USB \$151

ZIP 100 disk \$10

ZIP 100 disks -3-pk \$28

ZIP 100 disks -10-pk \$69

Jaz 1GB disk \$89

Jaz 1GB disks - 5-pk \$405

Jaz 1GB disks - 20-pk \$1524

### NEWER TECHNOLOGY

For the PowerMac 6100 Series

Maxpowr G3 240/266MHz/1MB Cache \$397

NEW For the PowerMac 7500/8500/ Etc.

Maxpowr G3 366MHz/1MB Cache \$617

Maxpowr G3 400MHz/1MB Cache \$726

NEW For the PowerMac G3 Series

Maxpowr G3 366MHz/1MB Cache \$615

Maxpowr G3 400MHz/1MB Cache \$679

Maxpowr G3 466MHz/1MB Cache \$817

## Powerbook

WALL ST./IMAC

128MB \$105

64MB \$55

32MB \$34

16MB \$29

PB DUO SERIES

36MB \$212

28MB \$110

20MB \$98

14MB \$85

PB 500 SERIES

32MB \$120

16MB \$62

8MB \$45

4MB \$40

PB3400 G3

128MB \$235

64MB \$160

32MB \$94

16MB \$83

PB 3400 SERIES

128MB \$235

96MB \$180

64MB \$164

32MB \$68

PB 5300 SERIES

48MB \$189

32MB \$133

16MB \$60

8MB \$55

PB1400 SERIES

48MB Kit \$189

24MB \$102

16MB \$69

8MB \$52

PB 2400 SERIES

64MB \$135

32MB \$95

24MB \$80

16MB \$75

## COMPARE OUR LOW SHIPPING RATES

E-Mail: [sales@llb.com](mailto:sales@llb.com)

PO's accepted upon approval

No surcharge on credit cards

• Returns subject to restocking fee

• Prices subject to change, not responsible for errors

• International orders welcome

Mail PO's to:

2513 152nd Avenue N.E.

Redmond, WA 98052

## DESKTOP/MINITOWER

IMAC 233 32/4GB/24X CD/56K \$999

IMAC 333 32/6GB/24X CD/56K \$1179

G3/300 (MT) 64/6GB/24X CD \$1537

G3/350 (MT) 64/6GB/DVD \$1976

G3/400 (MT) 128/9GB/24X \$2882

## POWERBOOKS

G3/333 64/4GB/20X14.1 TFT \$2424

G3/400 64/8GB/20X14.1 TFT \$3399

G3/266 64/2GB/20X14.1 TFT \$2200

G3/300 64/8GB/20X14.1 TFT \$2999

[www.llb.com](http://www.llb.com) International: 425.881.1880 Fax: 425.881.1930

Choose 449 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

# AWARD-WINNING UPGRADES!



**SONNET™**  
SIMPLY FAST™



**G3 for PCI  
as low as  
\$249<sup>95</sup>**



Sonnet™ Technologies manufactures the finest Macintosh processor upgrade cards for a wide range of computers including 68040, NuBus, PCI, and G3 Power Macs.

- Match or beat the CPU performance of a new G3 system.
- 100% software compatible.
- Plug-and-play installation.
- No switches or control panels to set.
- Backed by a three-year warranty.

We now have video card support for the 6100AV. If you have a 7100 or 8100 with a video card in the PDS slot just install one of our 7100 or 8100 Adapter Kits. Or install a Sonata Pro 24 for comparable or superior performance to the Apple PDS AV and High Performance Video Cards.

Other PCI Power Macs (upgrade-challenged) can now be upgraded through the Level 2 (L2) cache slot.

Got a Quadra or Centris? You can now run Mac OS 8.5 and realize all the performance of PowerPC native applications.

## CRESCENDO G3 CARDS FOR NUBUS MACS (FITS IN PDS SLOT)

Power Mac 6100/7100/8100/8115 • Wrkgp Srvr 6150/8150/9150  
Performa 6110/6112/6115/6116/6117/6118 • Power 100/120 • Radius 81/110

Crescendo G3/NuBus 250 MHz/125 MHz/512K Cache	\$299 <sup>95</sup>
Crescendo G3/NuBus 266 MHz/133 MHz/1MB Cache	\$399 <sup>95</sup>
Crescendo G3/NuBus 300 MHz/150 MHz/1MB Cache (80,110 & 120 MHz machines)	\$499 <sup>95</sup>
Crescendo G3/NuBus 400 MHz/200 MHz/1MB Cache (80 & 120 MHz machines)	\$699 <sup>95</sup>

**Video Options**

7100 PDS AV/HPV Video Adapter Kit for Crescendo G3	\$99 <sup>95</sup>
8100 PDS AV/HPV Video Adapter Kit for Crescendo G3	\$99 <sup>95</sup>
7100/8100 Sonata Pro 24 NuBus Video Card	\$199 <sup>95</sup>

## CRESCENDO G3 CARDS FOR PCI MACS (FITS IN PROCESSOR SLOT)

Power Mac 7300/7500/7600/8500/8515/8600/9500/9515/9600  
Wrkgp Srvr 7350/8550/9650 • DayStar Genesis • PowerCenter  
PowerCenter Pro • PowerCurve • Power Tower • PowerTower Pro  
PowerWave • UMAX J700/S900

Crescendo G3/PCI 250 MHz/125 MHz/512K Cache	\$249 <sup>95</sup>
Crescendo G3/PCI 300 MHz/150 MHz/512K Cache	\$299 <sup>95</sup>
Crescendo G3/PCI 300 MHz/150 MHz/1MB Cache	\$499 <sup>95</sup>
Crescendo G3/PCI 333 MHz/166 MHz/1MB Cache	\$549 <sup>95</sup>
Crescendo G3/PCI 400 MHz/200 MHz/1MB Cache	\$699 <sup>95</sup>
Crescendo G3/PCI 466 MHz/233 MHz/1MB Cache	\$899 <sup>95</sup>

## CRESCENDO G3 UPGRADES FOR "UPGRADE-CHALLENGED"

### PCI POWER MACS (FITS IN L2 CACHE SLOT)

POWER MAC 54/55/6500 • PERFORMA 54XX/6360/64XX •  
2300 ADVN. MAC • POWERBASE DESKTOP

Crescendo G3/L2 250/125 MHz/512K Cache	\$299 <sup>95</sup>
Crescendo G3/L2 300/150 MHz/512K Cache	\$399 <sup>95</sup>
Crescendo G3/L2 300/150 MHz/1MB Cache	\$499 <sup>95</sup>
Crescendo G3/L2 400/200 MHz/1MB Cache (55/6500, TAM only)	\$699 <sup>95</sup>

Power Mac 4400 • StarMax 3000/4000

Crescendo G3/L2 250/125 MHz/512K Cache	\$299 <sup>95</sup>
Crescendo G3/L2 300/150 MHz/512K Cache	\$399 <sup>95</sup>
Crescendo G3/L2 300/150 MHz/1MB Cache	\$499 <sup>95</sup>

## ENCORE G3 CARDS FOR G3 POWER MACS (FITS IN ZIF SOCKET)

Power Mac G3 All-in-one/Blue & White/Desktop/Tower/Server  
Encore G3 466/233 MHz/1 MB Cache

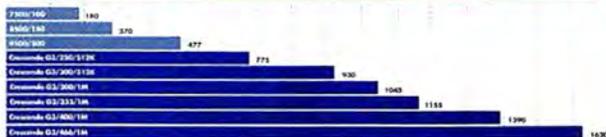
	\$799 <sup>95</sup>
--	---------------------

## PRESTO PPC UPGRADES FOR QUADRA & CENTRIS (FITS IN PDS SLOT)

Quadra 700/800/900/950 • Quadra/Centris 610/650  
(610 Requires Adapter)

Presto PPC 100 MHz/1MB Cache	\$299 <sup>95</sup>
Quadra/Centris 610 Adapter	\$49 <sup>95</sup>

### G3 Speeds Up to 900% Faster for Your PCI Power Mac!



Performance results based on MacBench 4.0 processor scores.

### Run Your NuBus Power Mac at G3 Speeds Up to 1400% Faster!



Performance results based on MacBench 4.0 processor scores.

### Now Supports 6100 AV!

**Sonnet Technologies, Inc.**  
18004 Sky Park Circle, Irvine, CA 92614-6428  
Tel: 949-261-2800 Fax: 949-261-2461  
E-mail: sales@sonnettech.com



**800-786-6260**

<http://www.sonnettech.com>

Visa, MasterCard and American Express no surcharge. Government, corporate and education PO's welcome. Sonnet products are covered by a three-year limited warranty. Prices are subject to change without notice. Returns require an authorization and are subject to a restocking fee. Sonnet, the Sonnet logotype, Crescendo, Encore, Presto, and the Simply Fast logotype are trademarks of Sonnet Technologies, Inc. ©1998 Sonnet Technologies, Inc.

Open Monday-Friday: 9am-8pm & Saturday: 10am-5pm CST E-Mail Us at: owc@macsales.com

# Other World Computing

Serving the Mac Universe Since 1988

School/University/Government/Corporate Purchase Orders Gladly Accepted (subject to credit approval)



**800-275-4576**



www.macsales.com has Easy, Fast, Secure Internet Ordering Now.

**On Web Commerce**

24hr. Online Ordering & Product Info Daily Updated Prices & Specials

Competitive Prices, Quality Products and NEVER a Surcharge for Credit Cards!

## Snap Fast G3 Power into your PowerMac with the right G3 Processor card from Other World.



**G3 Upgrades for PowerMac 6100/7100/8100/8150/9150/ Radius; Performa 61IX Series**

**SONNET Crescendo Nubus Series from \$295**

G3/250mhz 512k - \$295  
G3/300mhz 512k - \$389  
G3/300mhz 1024k - \$485

**NEW! G3/400mhz 1024k - \$679**

**G3 Upgrades for PowerMac 7500/7600/8500/8600/9500/9600s; WGS 7350/8550/8650/9650; PowerCenter/PowerWave/PowerTower; UMax S900/J700**

**SONNET Crescendo PCI Series from \$245**

G3/250mhz 512k - \$245  
G3/300mhz 512k - \$299  
G3/300mhz 1024k - \$485  
G3/400mhz 1024k - \$665  
G3/466mhz 1024k - \$875 **NEW 10X Technology**

**G3 Upgrades for PowerMac 4400/5500/6360/6400/6500/ 20th Anniversary Mac; PowerBase; Umax C500/600 StarMax 3000/4000/5000 Series; Most Motorola Clones**

**SONNET Banker G3 Series from \$285**

G3/250mhz 512k - \$285  
G3/300mhz 512k - \$385  
G3/300mhz 1024k - \$485  
G3/400mhz 1024k - \$659

**NEW! OWC**

**DaughterCard Gives Your PCI Mac ZIF Upgradeability!**

**Go G3 Now and Easily Upgrade to the New G4 ZIF Processors In The Future!**

**Interex XLR8 ZIF Carrier PCI DaughterCards**

XLR8 G3ZIF Carrier w/o Processor \$175  
XLR8 G3ZIF Carrier w/Mercury 233mhz 512k 2:1 \$225  
XLR8 G3ZIF Carrier w/Mercury 266mhz 512k 2:1 \$269  
XLR8 G3ZIF Carrier w/Mercury 300mhz 1024k 2:1 \$365  
XLR8 G3ZIF Carrier w/Mercury 366mhz 1024k 2:1 \$459  
XLR8 G3ZIF Carrier w/Mercury 400mhz 1024k 2:1 \$695

**ZIF G3 PROCESSOR UPGRADES**

**G3 ZIF Upgrades for Apple G3 Desktop, Minitowers, Servers, All-In-Ones, Blue & White G3 PowerMacs**

OWC Mercury3z G3/366mhz/1024k 2:1 Cache - \$299  
Vimage ZIF G3/400mhz/1024k 2:1 Cache - \$529  
OWC Mercury G3/466mhz/1024k 2:1 Cache - \$625

**Apple IBM 4.3gb \$159 int. \$215 ext.**

5400rpm 8.5ms w/lyr

**Norton Utilities 4.0 ONLY \$29**

**SCSI Hard Drives**

**SAVE@OWC 2.1gb Barracuda \$99 \$149**

**Quantum**

9.1gb Atlas II 7200rpm 7.9ms	\$269	\$319
9.1gb Atlas III 7200rpm 7.5ms	\$375	\$429
18.2gb AtlasIII 7200rpm 7.5ms	\$629	\$675

**Seagate**

4.5gb Medalist Pro	\$225	\$279
9.1gb Medalist Pro/7200rpm 7.5ms	\$299	\$359
18gb Barracuda 7200rpm 7.1ms	\$675	\$729

**IBM**

4.5gb UltraStor 7.5ms/7200rpm	\$225	\$279
9.1gb UltraStor 7.5ms/7200rpm	\$335	\$389
18gb DeskStar 7.5ms	\$669	\$719

**ixMicro Ultimate Rez 128 PCI**

**Video Card SPECIAL! \$69**

With 8mb of V-Ram  
NEW WITH 5 YEAR WARRANTY

www.fastermacs.com

for more upgrade options to Make your Mac a FasterMac! Upgrades for Older Macs too!

www.macsales.com

for more Mac products, information, AND get FREE DELIVERY\* when you place your order online!!!!!!

Visit us for USB, Monitors, Printers, Great Deals on USED PowerPCs & More....

**IDE Hard Drives**

**4.5gb Seagate Medalist 5400rpm \$109**

IBM	Seagate	Quantum
13.5 - \$235	6.4gb - \$139	6.4gb - \$145
16.8 - \$319	10.2gb - \$185	8.4gb - \$165
25.0 - \$449		13.0gb - \$245

**SCSI ACCELERATION SPECIAL!**

**ATTO UltraSCSI PCI SCSI Card \$119**

Compatible with ANY Mac Computer with PCI Slots and fully bootable. Supports up to 14 SCSI Devices. Supports SCSI I/III/III Narrow & UltraWide. 50 pin/68 pin for up to 40mb/Second Transfers!

**Mac Memory**

72 Pin Simms

8mb - \$15	16mb - \$29	32mb - \$49
------------	-------------	-------------

168 Pin Dimms

	5V	5V Edo	3.3v Edo
16mb	\$36	\$36	\$45
32mb	\$55	\$56	\$89
64mb	\$99	\$99	\$179
128mb	\$239	\$269	N/A

**Removable SCSI Drives**

	Bare	Internal	External
lomega Zip 100 SCSI	\$79	\$99	\$99
lomega Zip 250 Plus			\$175
lomega Jaz 2gb SCSI	\$319	\$329	\$329

Zip 100mb Carts - \$9 each / \$85 per 10  
Jaz 1gb Carts - \$79 Jaz 2gb Carts - \$85

**SDRAMs Apple Spec PC100 Memory for ALL Beige G3 Desktops, Minitowers, All-In-Ones, & New Blue & White G3 Computers (work with PC's too)**

32mb - \$29	64mb - \$49	128mb - \$89
256mb(66mhz) \$339	256mb(100mhz) \$549	

**IDE PowerBook Hard Drives**

for PowerBook150; 190/1400/5300/3400; G3 PowerBooks; Duo 2300 and 2400 Series. 4200rpm with 3 year warranty

810Mb IBM Sonata Slim	\$85
4.3gb Toshiba Slim	\$139
6.4gb Toshiba Slim	\$199
6.4gb IBM Slim	\$229
8.1gb IBM Slim	\$319
10.1gb Toshiba Slim	\$329
14gb IBM Non-Slim	\$499

**Panasonic 4x8 CDR \$209 \$279 \$309**

**Yamaha CDRW4x4x16 \$249 \$309 \$359**

CDR & CDRW Internal and External Drives Include Toast Software and Media.  
CDR 74 Minute Silver Media w/Jewel Case - 10 for \$15 / 50 for \$69.95 / 100 for \$129

**WallStreet & Lombard / iMac (All Speeds)**

32mb - \$29
64mb - \$49
128mb - \$95

Call or visit www.macsales.com for V-Ram and Video Card upgrades.

OWC is a Techworks Authorized Reseller. Call or Visit our website at www.macsales.com for the best prices on Techworks Brand Memory.

**Other World Computing**

224 West Judd St., Woodstock, IL 60098  
International: (815) 338-8685  
Fax: (815) 338-3332

Other World Computing

Other World Computing



©1999 TRC

**877-4MY-DATA**  
WHATEVER IT TAKES.™

Total Recall™  
The Data Recovery Company™  
www.totalrecall.com  
2462 Waynoka Rd. Colorado Springs, CO 80915  
(719) 380-1616 • 380-7022 fax

Choose 456 at www.macworld.com/getinfo

# Data Recovery in hours.

- Over 10 years of experience with clients worldwide including Apple, NASA, HP, and FedEx.
- We've recovered more than half-a-million megabytes of Mac Data alone.
- You only pay when there's a recovery.
- Express One-Day Service is available.
- Call 24 hours a day.

415-495-5556 • FAX 415-495-5553 • RESTRICTIONS MAY APPLY  
361 Clementina Street • San Francisco, California 94103



**LAZARUS**  
DATA RECOVERY

Working at the speed of business.

**800-341-DATA**

Choose 457 at www.macworld.com/getinfo



www.macworld.com/  
getinfo

## Macworld's Online Reader Service

# DATA RECOVERY: 800-440-1904

## 7 good reasons to choose DriveSavers:



Since 1989

INTL: 415-382-2000

1. We are the fastest, most trusted, and most successful data recovery professionals.
2. Retrieve recovered data instantly with DATAEXPRESS™ over secured Internet lines.
3. Recommended and certified by all drive companies to maintain your warranty.
4. 24-hour, onsite, and weekend service available.
5. Advanced, proprietary recovery techniques.
6. Featured by CNN, BBC, Forbes, and others.
7. Federal and State Contracts (GSA, CMAS.)

## Visit us at MacWorld New York Business Solutions Pavilion Booth #1925

### Reseller & Service Providers:

ASK US ABOUT OUR DRIVESAVERS' REFERRAL PROGRAM,  
PICK-UP YOUR RESELLER APPLICATION FROM OUR BOOTH.

**www.drivesavers.com**

Choose 458 at www.macworld.com/getinfo



## CD MANUFACTURING AND PACKAGING

COMPLETE TURNKEY - JUST SEND US YOUR  
MASTER CD-R AND GRAPHICS FILES!

CATALOGIC.

### We Are Your Source For:

- CD & DVD Replication
- CD-R Duplication
- CD-R Silkscreening
- CD-R Media and Labeling Kits
- CD-R Duplicator Sales



We sell and use  
**8x write media.**



**100 Short-Run CD-Rs**  
\$775 Complete

Dupe up to 200Mb with four color label, single-sided four color insert and tray card, jewel box.

**500 Imprinted CD-Rs**  
\$1120 Complete

One color silkscreened blank CD-R, spindle packed. Ready to burn at 2x, 4x, 6x, or 8x.

**1000 Retail-ready CDs**  
\$1699 Complete

Two color silkscreened discs, four color glossy insert & tray cards, jewel box, and poly wrap.

### CHOOSE CATALOGIC —

- Friendly, knowledgeable staff
- Rush and packaging options to meet your needs
- Serving business, education, and government since 1992

See us at  
**SI99GRAPH**  
Los Angeles  
August 10-12, 1999  
Booth 1067

990 Richard Ave Ste 103 • Santa Clara, CA 95050 • Tel: 408-486-0800 • Fax: 408-486-0809

CLICK: **WWW.CATALOGIC.COM**

OR CALL: **(800) 255-4020**



## WHOLESALE WATERLESS COLOR PRINTING FROM YOUR COMPUTER FILES

**1000 FULL COLOR BUSINESS CARDS FOR \$100** Sug. retail price \$179  
**1000 FULL COLOR POSTCARDS FOR \$149** Sug. retail price \$249

Printed waterless at 300 line screen from your computer files on Super Premium 10pt. Kromekote with our FREE scratch-resistant aqueous coating.



**Try Our Fast 4/C Print Quotes!**

- BUSINESS CARDS
- POSTCARDS
- CD INSERTS
- CD TRAY LINERS
- BROCHURES
- BOOKLETS
- NEWSLETTERS
- POSTERS & MORE

# RAINBOW

Shrink Wrap Company

James Spayk  
Sales Rep

806-707-2366  
www.shrinkwrap.com

## FEATURING 300 LINE SCREEN WATERLESS OFFSET PRINTING

Rates for Brochures, Booklets and Flat Sheets are also available.

**4-COLOR WATERLESS SPECIAL** **5,000 8.5x11 BROCHURES** **\$799**  
 8.5" x 11" 4-Color Brochures printed 4/4 from your computer files on 80 lb. gloss text. Includes full bleed, folding and FREE aqueous coating.  
**Get 10,000 Brochures for only \$1,199**  
SUGGESTED RETAIL \$1,229



GRAPHIC ARTS AVAILABLE



PRINTERS, INC.  
 4413 82nd Street • Lubbock, TX 79424 • FAX: 806.798.8190

Email your requests for printing quotes to request@copycraft.com

**1.800.794.5594**

CALL TODAY FOR A FREE COPY OF OUR NEW 32-PAGE FULL COLOR CATALOG

Visit [www.copycraft.com](http://www.copycraft.com) for more Waterless Specials!

Choose 463 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

## 800-WE-FIX-MACS

Free Diagnostics • Best Prices • Best Warranties • Huge Inventory

7100 Logic Board...from \$129	6100 8/0..... from \$99	<b>Apple 24x CD Rom \$99</b>
6400 Logic Board...from \$299	7100 8/0.....from \$199	
6500 Logic Board...from \$299	8100 8/500..... from \$399	
7500 Logic Board...from \$199	20th Anniversary	
8500 Logic Board...from \$199	Base & Unit..... \$1499	
8600 Logic Board...from \$299		
9500 Logic Board...from \$299		<b>Apple 4GB SCSI HD \$179</b>
9600 Logic Board...from \$299		<b>Apple 1GB SCSI HD \$99</b>

**G3/iMac Parts In Stock!** **PowerComputing Specialists**

2202 N. First Street San Jose, CA 95131 • 800 933-4962 • [www.allmac.com](http://www.allmac.com)



[www.imagers.com](http://www.imagers.com)  
 Free Shipping...Call for details

Send PC/Mac files by FTP or Priority Air Express to Imagers and for most output services, your finished work is in your hands the very next morning.

- Digital Short-Run Printing
- Photo CD Film Scanning
- Digital Posters & Banners
- Fuji Digital Photo Prints
- Slides & Overheads
- New Media Services
- Prepress Support Team!



**Fuji**



We guarantee our work!

1575 Northside Dr. Ste. 490 Atlanta 30318

800.672.7029/404.351.5800

Choose 461 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

## BIG POSTERS & HUGE DISCOUNTS FROM YOUR COMPUTER FILES

HIGHEST QUALITY PRINTS AT THE BEST VALUE ANYWHERE • STATE OF THE ART EQUIPMENT • UP TO 50% OFF

<b>24" x 36"</b> Full color print on 7 mil high or low gloss paper <b>\$25</b> <small>NO MINIMUMS VOLUME DISCOUNTS</small>	<b>36" x 48"</b> Full color print on 7 mil high or low gloss paper <b>\$50</b> <small>NO MINIMUMS VOLUME DISCOUNTS</small>	<b>48" x 72"</b> Full color print on 7 mil high or low gloss paper <b>\$125</b> <small>NO MINIMUMS VOLUME DISCOUNTS</small>
-------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------

FOR MORE INFO & PRICING VISIT OUR WEBSITE  
[www.BIGPOSTERS.com](http://www.BIGPOSTERS.com)  
 CREATIVE JUICES PRINTING & GRAPHICS INC.  
(In New York) Tel: 516-220-4533 Fax: 516-220-4534 • 24 Wilkoff Rd., Levittown, NY 11756

**1-888-880-HUGE**

Choose 462 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

## Digital Imaging

Slides & Negatives \$3.75  
 4x5 Chromes/Negs \$30  
 Large Posters & Displays \$45  
 Scanning: Hi & Lo Res  
 Photo CD Scans & LVT Output  
 Short Run 1200 dpi Color Output  
 Quantity Prints, Slides, Overheads

Show & Tell 39 W 38th St., NY, NY 10018  
 212 840-2912 • 212-840-7953 (fax)

Choose 460 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

**ALSO IN CALIFORNIA**

# DATA RECOVERY

For **MAC** - (Hard Drives, Opticals, Removables)

By Nick Majors' DATA RECOVERY LABS  
"The Best Data Recovery Service available Anywhere - at any Price!"

Dedicated in-house MAC specialists are available to work on your emergency data recovery. Complete facility with clean rooms and full MAC capabilities.

Free evaluations. All recoveries are 100% satisfaction guaranteed. Complicated / top priority projects are our specialty.

**Datarec.com**  
DATA RECOVERY LABS

USA • Canada • Japan

**1-800-563-1167**  
[www.datarec.com](http://www.datarec.com)

# Colorprints.com

Virtual home of the  
**¢39**  
digital color print

visit our website at [www.colorprints.com](http://www.colorprints.com) for the lowest prices on digital color prints

Choose 466 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

## MAC REPAIR & UPGRADE

24 HOUR SERVICE TURNAROUND • LONGER WARRANTY  
FREE DIAGNOSTIC • COMPETITIVE PRICE

**DT & T**  
**MACINTOSH SERVICES, INC.**

- \* Specialize in component repairs:
  - Power Mac • Power Book • Logic boards
- \* Advance Exchanges

# 800-622-7977

3095 Osgood Court, Fremont, CA 94539 • Tel: 510-661-0999 • Fax: 510-661-6788  
<http://www.dttservice.com>

Choose 465 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)

# data recovery

[www.mcrecovery.com](http://www.mcrecovery.com)

When you absolutely, positively have to get your data back...

- 24hr. Emergency Data Recovery
- Worldwide Services

**MICROCOM**  
20802 Plummer St. Chatsworth, CA 91311 • 818 718-1200  
**800 469-2549**

# MacTECHS

INTERNATIONAL

Macintosh Repair, Sales & Upgrades

24 Hour Turnaround

Powerbook Specialists

\$99 iMac Floppy Drive

Great Memory & Hard Drive prices

3337 El Camino Real  
Palo Alto, CA 94306  
Phone: 650.845.6400  
Fax: 650.845.6411  
[www.mactechsinc.com](http://www.mactechsinc.com)

# 1-888-622-3493

WE GET TO THE CORE OF THE PROBLEM

# FULL COLOR!

1000 POSTCARDS \$145

1000 BIZCARDS \$60!

• Super thick card  
• Ready in 5-7 days!  
• Glossy UV coating  
• No film charge

**postcardpress**  
Easily orders to already types

[www.postcardpress.com](http://www.postcardpress.com)  
Preferred by over 5,000 businesses!

# 1-800-957-5787

PRODUCT INDEX			
Category	Page No.	Category	Page No.
<b>Business Operations</b> . . . . .	156-157	<b>Peripheral Products</b> . . . . .	162-164
Bar Code		Cables	
Inventory Management		Digital Media	
		Printing Supplies	
<b>Communications/</b>		<b>Services</b> . . . . .	180-182
<b>Networking</b> . . . . .	161	Data Recovery	
Cross Platform		Digital Production	
		Printing	
<b>Education/</b>		Repair	
<b>Entertainment</b> . . . . .	157-158	<b>Systems &amp; Peripherals</b> . . . . .	164-175
Discount Software		<b>USB</b> . . . . .	159-161
<b>Graphics</b> . . . . .	161	<b>Account Manager:</b>	
<b>Memory &amp; Upgrades</b> . . . . .	176-179	Carol Johnstone.....415.243.3691 <a href="mailto:carol_johnstone@macworld.com">carol_johnstone@macworld.com</a>	
<b>Digital Advertising Coordinator:</b>		<b>Account Manager:</b>	
Russ Nordmeyer ....415.243.3511		Niki Stranz.....415.243.3664 <a href="mailto:niki_stranz@macworld.com">niki_stranz@macworld.com</a>	
<a href="mailto:production@macworld.com">production@macworld.com</a>		<b>Assistant:</b>	
		Alissa Mach.....415.243.3628 <a href="mailto:alissa_mach@macworld.com">alissa_mach@macworld.com</a>	



"Macworld Lab has proven to be one of the most pristine and controlled lab environments to which we've provided our scanners and software for testing."

Jon Guerrigue, Marketing Manager  
Heidelberg Color Publishing Solutions

the most rigorous



in the  
**industry**

#1. Planning. Researching. Testing. Analyzing.

Re-testing. Double-checking. Nobody adheres to stricter, more

rigorous guidelines than the lab specialists whose work

is dedicated to Mac product testing at Macworld Lab.

Macworld Lab is the largest independent testing facility for Mac OS products and systems. Our lab specialists apply more than 30 years' combined experience to ensure that testing methodologies represent a product's real-world use.



Macworld

Macworld  
LAB TEST

Macworld  
●●●●●

# The Desktop Critic

by David Pogue

## Stealing for a Better Tomorrow

WHAT THE MAC OS AND WINDOWS CAN LEARN FROM EACH OTHER

SOONER OR LATER, STEVE Jobs and Bill Gates will be hauled into that big principal's office in the sky. "You've been bad boys," Saint Peter will boom. "Haven't you ever heard that thou shalt not steal look-and-feel?"

Steve will shuffle his feet and point accusingly at Bill. "He started it!"

He'll be right: for years, Microsoft Windows engineers have shamelessly ripped off Apple's best design ideas. But after lawsuits proved to be futile, Apple began helping itself to a few features of its own. Mac OS 8.5, for example, could almost be Windows 98's better-looking brother: the Favorites menu, draggable window edges, proportional scroll boxes, the little arrow "badge" on an alias icon, program switching via  $\mathbb{N}$ -tab, daylight saving time self-correction, and the Network Browser all debuted in Windows.

Now Apple and Microsoft are both gearing up for massive OS overhauls: Mac OS X and Windows 2000. In the interest of better computing for all, I wholeheartedly applaud their dueling intellectual-property raids. Here's what's worth pilfering from each company's rival OS . . . that hasn't already been stolen.

### What Apple Should Steal

In Windows, you can press Windows key-M to jump to the desktop. All windows in all programs are instantly hidden, giving you uncluttered access to your icons, disks, and the Recycle Bin. Wouldn't that be nice?

Furthermore, in Windows, you can assign a keystroke to any alias; you don't have to buy QuickKeys just to get program launching from the keyboard.

The Calculator, the Mac's handy but antediluvian desk accessory, hasn't changed since Reagan was president. The Windows calculator has bigger buttons,

memory functions, a clear-error key, and a complete HP scientific-calculator mode.

The Windows Start menu is an obvious rip-off of our Apple menu—and now it's payback time. Apple should add a Programs menu item, like the one in the Start menu, to the Apple menu. It lists every program on your hard drive, which saves everyone, novices and experts alike, infinite window burrowing.

In Windows, little underlines tell you what keystrokes activate menu commands, check boxes, and radio buttons.



Apple has always resisted giving us such total keyboard control. But now that large numbers of Mac buyers are refugees from Windows, it's time to reconsider. (If Apple's worried about cluttering up the screen, it should do what Claris used to do: make the little underlines appear only when you're pressing the  $\mathbb{N}$  key.)

### What Microsoft Should Steal

Windows desperately needs a title-bar doodad, like the Mac's zoom box, that resizes windows so they're exactly large enough to contain the icons in them.

Windows PCs don't come with a system-software start-up CD-ROM like

every Mac does; older models can't even boot from a CD. If your Windows folder gets corrupted, get ready for three hours on the phone with a tech-support rep.

Despite the fact that Windows 98 is supposed to be able to handle file names up to 255 characters long, the vast majority of files provided by Microsoft itself still have stupid names like F\_WINIT.DLL. For heaven's sake, Microsoft: you've got the space, now give self-explanatory names to your own files, as Apple does. Or come up with an equivalent to the Mac's Extensions Manager, to help us figure out what all this lint is.

AppleScript. Enough said.

Hard though it may be to believe, when you quit a Windows program, some of its windows may remain open, stranded on your screen—a complication of Windows' window-centric approach. The Mac's application orientation works better.

Finally, despite all its recent talk about simplicity, Microsoft still believes that what makes a better Windows is more features. The Microsoft credo, "If you upgrade it, they will come," only aggravates the worst

aspects of Windows—bloat and complexity. On the other hand, it's been years since Apple foisted useless, porcine features on us (remember OpenDoc and PowerTalk?). These days, the Mac's designers consider new OS features much more carefully, weighing how each will affect the whole. When it comes to enhancing system software, Microsoft is still years away from stealing—or even noticing—Apple's crown jewel: knowing when to stop. ■

DAVID POGUE is a coauthor, with Adam C. Engst, of the forthcoming *Crossing Platforms: A Mac↔Windows Dictionary* (O'Reilly, 1999).



Sometimes Newer Is Better Than New.



Some people think you don't need a floppy drive.  
Boy, they really do think different.

To make your iMac fully functional, you need a Newer Technology uDrive. It matches your iMac, is inexpensive, and gives you the flexibility to transport files and install software with ease. Simply plug it into a USB port on your iMac and pop in a floppy - it's that easy. Pick up a Newer Technology uDrive, or any of our family of stackable USB peripherals, and start getting the most out of your iMac.

**uHub™**

This seven port hub keeps all your USB devices organized, making it easy to connect keyboards, mice, printers, monitors, cameras, speakers, storage devices and other USB peripherals.



**uColors™**

Make your peripherals the same flavor as your iMac with uColors, snap-on color adapters for your uDrive and uHub in all five iMac styles: strawberry, blueberry, grape, tangerine and lime.



**uFlash-CF™ and uFlash-SM™**

Acting as removable disk drives for Compact Flash media and SmartMedia cards, these readers will transfer digital camera data up to 80 times faster than serial cables.



**uSCSI™**

This SCSI to USB converter allows SCSI storage devices to plug into USB ports for true plug and play capabilities.



To learn how to get the most from your Mac, visit us at [www.newertech.com](http://www.newertech.com).

# bDifferent.



Say hello to the extended family. Looks aside, personality traits like comfort, functionality, and plug-and-play simplicity are all Kensington. Guess you could say the apple doesn't fall far from the tree... sorry, couldn't resist. To get the scoop on our USB products for the iMac™ visit [www.kensington.com/imac](http://www.kensington.com/imac) or your favorite iMac dealer.

**KENSINGTON**

Smart design at work.

Kensington is a registered trademark of ADDO World Corporation. All other registered and unregistered trademarks are the property of their respective owners. Mac is a trademark of Apple Computer, Inc. Kensington sells mice and trackballs that are compatible with Apple's Macintosh computers. No endorsement of these products by Apple Computer, Inc. is intended or implied. ©1999 Kensington Technology Group, a division of ADDO Brands, Inc.

Choose 1 at [www.macworld.com/getinfo](http://www.macworld.com/getinfo)