Motorola's New Mac: How the StarMax Rates...page 33

http://www.macuser.com/

ZD ZIFF-DAVIS PUBLISHING COMPANY

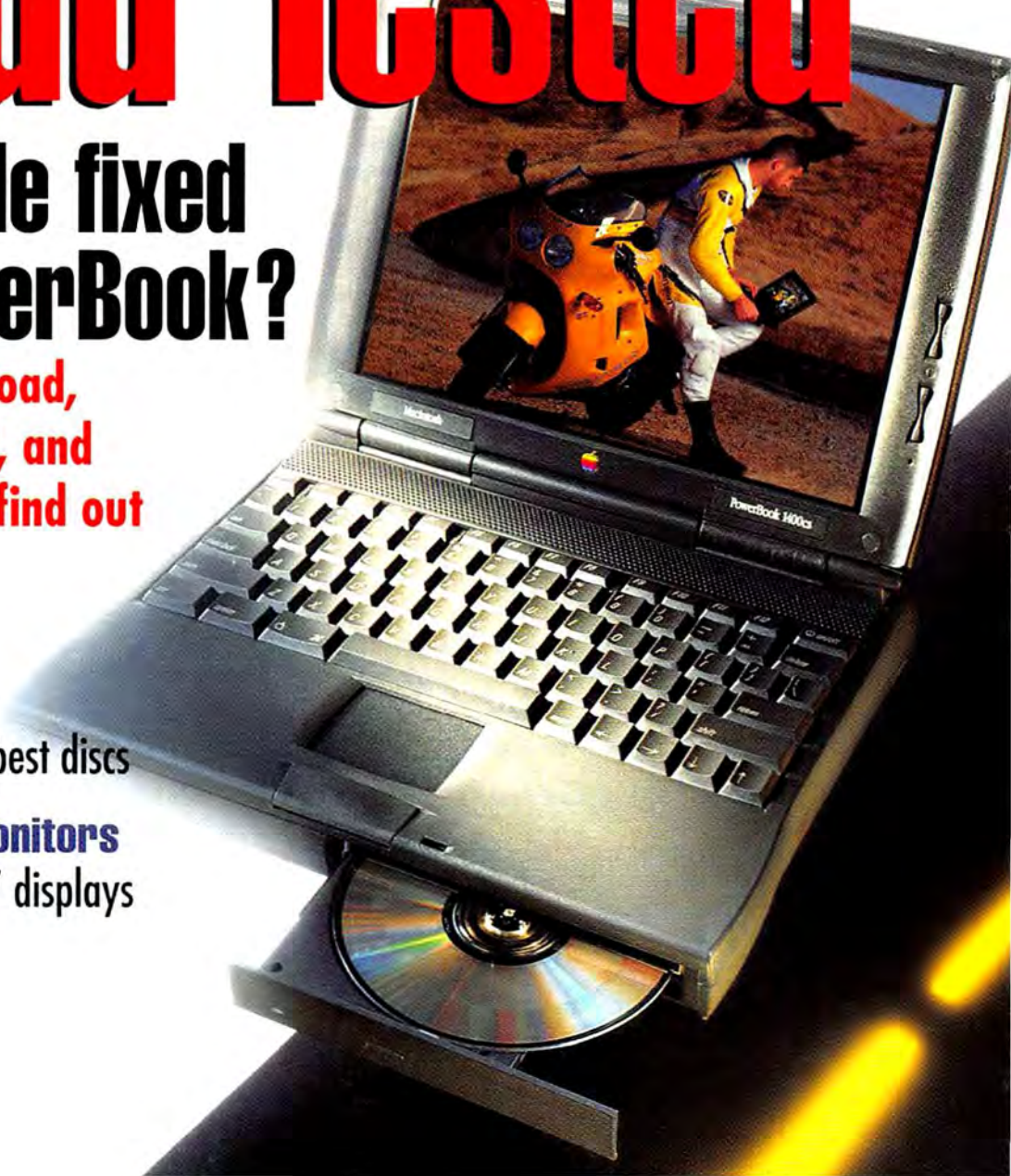
MacUser

NEW! PowerBook 1400

Road Tested

Has Apple fixed the PowerBook?

We go on the road, under the hood, and into the lab to find out



PLUS

Top 50 CD-ROMs
We spin the year's best discs

17-Inch Color Monitors
Buyer's Guide of 47 displays

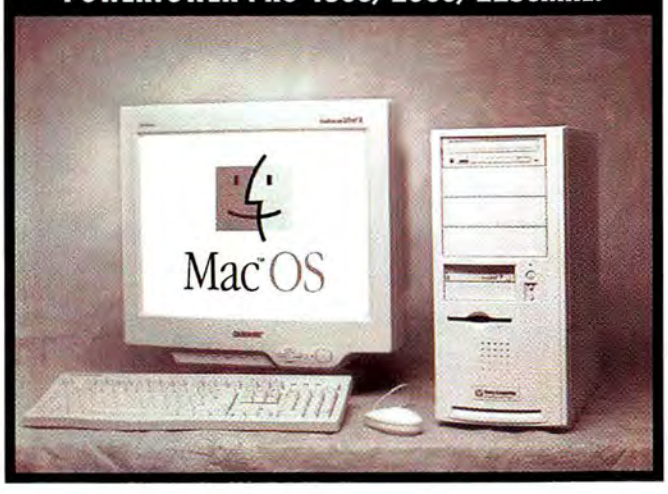
$3.99 US & INTL / $4.99 CAN

12>

0 09281 02579 5

FAST. WICKED FAST. AND

POWERTOWER PRO 180e/200e/225eMHz.

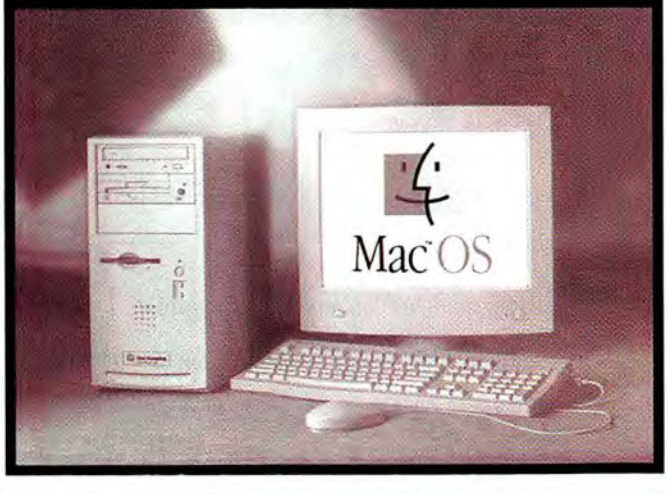


"THE POWERTOWER PRO SERIES SOARS ABOVE ALL MAC RIVALS....MAC POWERUSERS WILL SOON BECOME POWER COMPUTING USERS IN DROVES"— MacWEEK Magazine 7.22.96

"POWER COMPUTING HAS THE CLEAR AND UNDISPUTED EDGE OVER APPLE IN BOTH PRICE & PERFORMANCE. YOU WANT A POWERTOWER PRO."
— MacUser Magazine SEPT '96

Hot Picks Best of Show · MacUser ZD LABS · MacWeek

POWERTOWER 180e/200eMHz.



"IF YOU REQUIRE MAXIMUM PERFORMANCE, NO CURRENT APPLE SYSTEM CAN TOUCH THE POWERTOWERS."
— MacWEEK Magazine

"POWER COMPUTING HAS FIELDED SOME KILLER MACHINES. APPLE WILL BE HARD PRESSED TO CATCH-UP."
— MacUser Magazine July, 1996

MacUser ZD LABS · MacWeek · MW Editors' Choice

POWERCENTER 132/150/166/180MHz.

"PERFORMANCE AND PRICE COMBINE TO MAKE THE POWERCENTER THE MOST SENSIBLE CHOICE FOR BUSINESS AND GRAPHICS." – Macworld Magazine, July, 1996

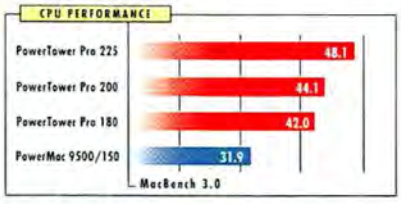
"POWER COMPUTING'S AWARD-WINNING PRODUCT LINE IS WELL POSITIONED. POWERCENTER IS THE BEST ENTRY LEVEL, UPGRADEABLE POWERPC 604 SYSTEM ON THE MARKET."

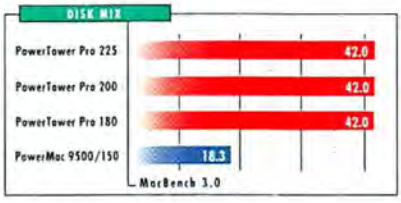
MW Editors' Choice · MacWeek · MW ★★★★

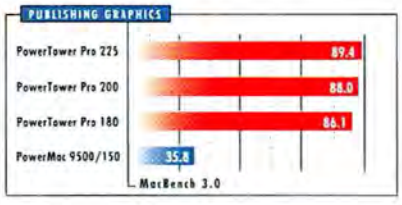
OF COURSE, INSANELY FAST.

POWERTOWER™ PRO - TORQUED FOR TOP SPEED AND EXPANSION.

PowerTower Pro features the new PowerPC 604e at 225, 200 or 180 MHz. No other system currently on the market can match those clock speeds. 6 PCI slots. A 1 MB Level 2 cache. Interleaved memory. 8MB of VRAM. A 2 GB 7200 RPM AV-capable hard drive. And nine expansion bays. PowerTower Pro features an upgradeable CPU - making future upgrades, including dual-processors, a snap.

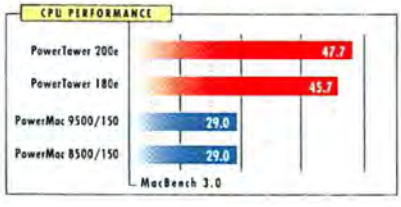


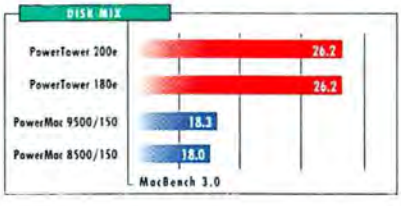


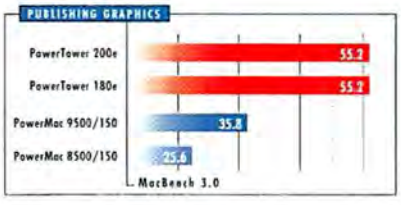


POWERTOWER - THE MOST AFFORDABLE HIGH PERFORMANCE SYSTEMS.

The PowerTower is a graphics workhorse the pundits are quickly recognizing as the next logical step beyond Apple's PowerMac. Just compare the overall performance, speed and price. PowerTowers ship with plenty of RAM and VRAM, a large L2 cache & valuable software. And of course, we'll configure your PowerTower exactly the way you want - delivering it direct from our factory to your door.

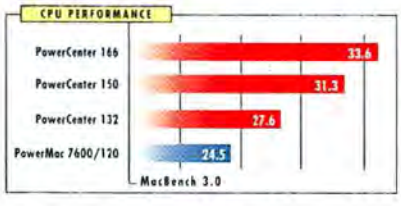


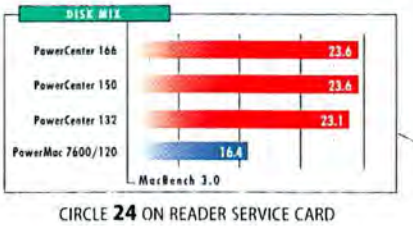


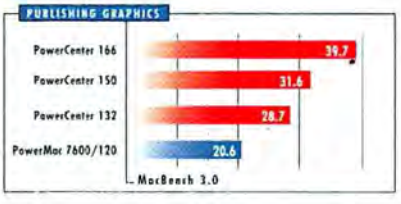


POWERCENTER™ - FINALLY, POWERPC 604 PERFORMANCE FOR THE MASSES.

Don't settle for a 601 PowerPC CPU. The best place to start is with a PowerCenter. Power Computing's mid-range systems that are comparable to competing high-end machines. PowerCenters ship with 180, 166, 150 and 132MHz upgradeable 604 CPUs, 16MB of RAM, 3 PCI expansion slots, and a free software bundle makeing it the obvious choice for small-office, home-office, enterprise and graphics users.







CIRCLE **24** ON READER SERVICE CARD

NOW THE FASTEST DESKTOP PC ON THE PLANET IS A MAC OS™ SYSTEM.

THE POWERTOWER™ PRO 225 MHz.
SIX PCI SLOTS. INTERLEAVED MEMORY. FAST SCSI. 8X CD-ROM.

Power Computing is fighting to put the MacOS on top!

We love the Mac, just like you. In fact, most of us here at Power Computing have spent our entire adult lives working for and with Apple Computer - designing and engineering the Macintosh systems you've worked and lived with since 1984.

"THE POWERTOWER PRO SERIES SOARS ABOVE ALL MAC RIVALS....MAC POWERUSERS WILL SOON BECOME POWER COMPUTING USERS IN DROVES"— MacWEEK Magazine 7.22.96

**"POWER COMPUTING HAS THE CLEAR AND UNDISPUTED EDGE OVER APPLE IN BOTH PRICE & PERFORMANCE. YOU WANT A POWERTOWER PRO."
— MacUser Magazine SEPT '96**

Power Computing's goal is simple: provide the Macintosh market with more choice, power and performance. Take our PowerTower Pro series featuring the new PowerPC 604e RISC processor. It's not only the fastest and most expandable Mac OS system ever, it's also faster than any Intel Pentium or Pentium Pro system on the market.

♦♦♦♦♦ MacWeek

♦♦♦♦♦ MacUser ZD LABS

Custom configuration anyway you want it.

Finally, you can customize more than just your desktop icons. Power builds every system exactly to your specs. Need more RAM or a larger hard drive? Want internal RAID or AV options? Not a problem - we'll build and ship it directly to your door. That's the way we do business - direct, from the factory, just like Dell and Gateway.

Order direct from the manufacturer and save.

And best of all, you'll save time and lots of money going direct. Give us a call, and let us help you configure your dream system.

PowerComputing
800-405-7693

Apple, Macintosh and Mac are registered trademarks, and the MacOS logo is a trademark of Apple Computer, Inc. PowerTower and PowerCenter are registered trademarks of Power Computing Corporation. All other brand and/or product names are the property of their respective holders. Prices and specifications are valid in the U.S. only and are subject to change without notice.

POWERTOWER PRO: THE FASTEST, MOST EXPANDABLE MAC OS SYSTEM

PowerTower Pro 225e Starter
225MHz PowerPC 604e Processor
- 16 MB RAM (1 GB Max)
- 2 GB 7200 RPM AV Capable Hard Drive
- 8X CD-ROM Drive
- 1 MB Level 2 Cache
- IMS Twin Turbo 128M graphics accelerator with 8MB VRAM
- 6 PCI Expansion Slots
- Interleaved Memory
- 9 Drive Bays
- Dual (Fast 10 MB/Sec) SCSI
- Connectix Speed Doubler
- Extended Keyboard and Mouse
- Add Sony 20" Trinitron 20sfII $1795

$4995

PowerTower Pro 200e Starter
200MHz PowerPC 604e Processor
- 16 MB RAM (1 GB Max)
- 2 GB 7200 RPM AV Capable Hard Drive
- 8X CD-ROM Drive
- 1 MB Level 2 Cache
- IMS Twin Turbo 128M graphics accelerator with 8MB VRAM
- 6 PCI Expansion Slots
- Interleaved Memory
- 9 Drive Bays
- Dual (Fast 10 MB/Sec) SCSI
- Extended Keyboard and Mouse
- Add Miro Motion JPEG Video I/O Card for $549

$4495

PowerTower Pro 180e Starter
180MHz PowerPC 604e Processor
- 16 MB RAM (1 GB Max)
- 2 GB 7200 RPM AV Capable Hard Drive
- 8X CD-ROM Drive
- 1 MB Level 2 Cache
- IMS Twin Turbo 128M graphics accelerator with 8MB VRAM
- 6 PCI Expansion Slots
- Interleaved Memory
- 9 Drive Bays
- Dual (Fast 10 MB/Sec) SCSI
- Extended Keyboard and Mouse
- Add Miro Motion JPEG Video I/O Card for $549

$4195

POWERTOWER: AFFORDABLE HIGH-PERFORMANCE MAC OS SYSTEMS

PowerTower 200e Starter
200MHz PowerPC 604e Processor
- 16 MB RAM (512 MB Max)
- 2 GB 7200 RPM AV Capable Hard Drive
- 8x CD-ROM Drive
- 1MB Level 2 Cache
- 2 MB VRAM On-Board (4 MB Max)
- 3 PCI Expansion Slots
- Connectix Speed Doubler
- Mini-Tower Enclosure
- Extended Keyboard and Mouse
- Add Sony 17" Trinitron 17sfII $875
- Add Iomega Jaz 1 GB Drive $395

$3595

PowerTower 180e Hot Pick
180MHz PowerPC 604e Processor
- 32 MB RAM (512 MB Max)
- 2 GB 7200 RPM AV Capable Hard Drive
- 8x CD-ROM Drive
- 1MB Level 2 Cache
- 2 MB VRAM On-Board (4 MB Max)
- 3 PCI Expansion Slots
- Power 15" Multimedia Display
- Iomega Zip 100MB Drive
- Connectix Speed Doubler
- Mini-Tower Enclosure
- Extended Keyboard and Mouse

$3955 NEW LOW PRICE

PowerTower 180e Starter
180MHz PowerPC 604e Processor
- 16 MB RAM (512 MB Max)
- 2 GB 7200 RPM AV Capable Hard Drive
- 8x CD-ROM Drive
- 1MB Level 2 Cache
- 2 MB VRAM On-Board (4 MB Max)
- 3 PCI Expansion Slots
- Connectix Speed Doubler
- Mini-Tower Enclosure
- Extended Keyboard and Mouse
- Add Sony 17" Trinitron 17sfII $875
- Add Iomega Zip 100MB Drive for $145

$3295 NEW LOW PRICE

POWERCENTER: THE MOST AFFORDABLE 604s YOU CAN BUY

PowerCenter 166 Starter
166 MHz PowerPC 604 Processor
- 16 MB RAM (512 MB Max)
- 2 GB Hard Drive
- 8x CD-ROM Drive
- 512K Level 2 Cache
- 1 MB VRAM On-Board (4 MB Max)
- 3 PCI Expansion Slots
- Extended Keyboard and Mouse
- Mini-tower Enclosure
- Add Iomega Zip 100MB Drive for $145
- Add Power 17" Display for $695
- Add Miro Motion JPEG Video Card for $549

$2395 UPGRADE TO 180MHZ FOR $400 MORE.

PowerCenter 150 Starter
150 MHz PowerPC 604 Processor
- 16 MB RAM (512 MB Max)
- 1 GB Hard Drive
- 8x CD-ROM Drive
- 512K Level 2 Cache
- 1 MB VRAM On-Board (4 MB Max)
- 3 PCI Expansion Slots
- Extended Keyboard and Mouse
- Low-Profile Enclosure
- For Mini-tower Enclosure Add $100
- Add Labtec Speakers Starting At $29
- Add 28.8 Modem & Internet Kit $159

$2095 NEW LOW PRICE

PowerCenter 132 Starter
132MHz PowerPC 604 Processor
- 16 MB RAM (512 MB Max)
- 1 GB Hard Drive
- 8x CD-ROM Drive
- 512K Level 2 Cache
- 1 MB VRAM On-Board (4 MB Max)
- 3 PCI Expansion Slots
- Extended Keyboard and Mouse
- Low-Profile Enclosure
- For Mini-tower Enclosure Add $100
- Add 28.8 Modem & Internet Kit $159
- Add Power 15" Display for $379

$1895 NEW LOW PRICE

Apple, Macintosh and Mac are registered trademarks, and the MacOS logo is a trademark of Apple Computer, Inc. PowerTower and PowerCenter are registered trademarks of Power Computing Corporation. All other brand and/or product names are the property of their respective holders. Prices and specifications are valid in the U.S. only and are subject to change without notice.

CONFIGURE YOUR DREAM SYSTEM THE WAY YOU WANT IT WITH ANY OF THESE GREAT OPTIONS:

- MIRO MOTION JPEG VIDEO I/O CARD WITH 4 TIMES RESOLUTION OF APPLE CINEMA CARD JUST $549.
- IOMEGA 100MB ZIP JUST $145 MORE
- ULTRA SCSI/RAID SOLUTIONS
- IOMEGA 1GB JAZ JUST $395 MORE
- GV 28.8 MODEM & INTERNET KIT $159
- MACROMEDIA BUNDLE
- MICROSOFT OFFICE
- NEW POWER COMPUTING MONITORS

GET $1,200 WORTH OF FREE SOFTWARE WITH EVERY POWER COMPUTING SYSTEM.

SERVICE & SUPPORT

- 30 day money back Guarantee
- Toll-free lifetime technical support
- 1, 2, or 3-year on-site service available, starting at $49.

ORDER DIRECT
800-405-7693

http://www.powercc.com
2555 North IH 35, Round Rock, TX 78664-2015
Tel. 512/388-6868 Fax. 512/388-6799
Internet: info@powercc.com

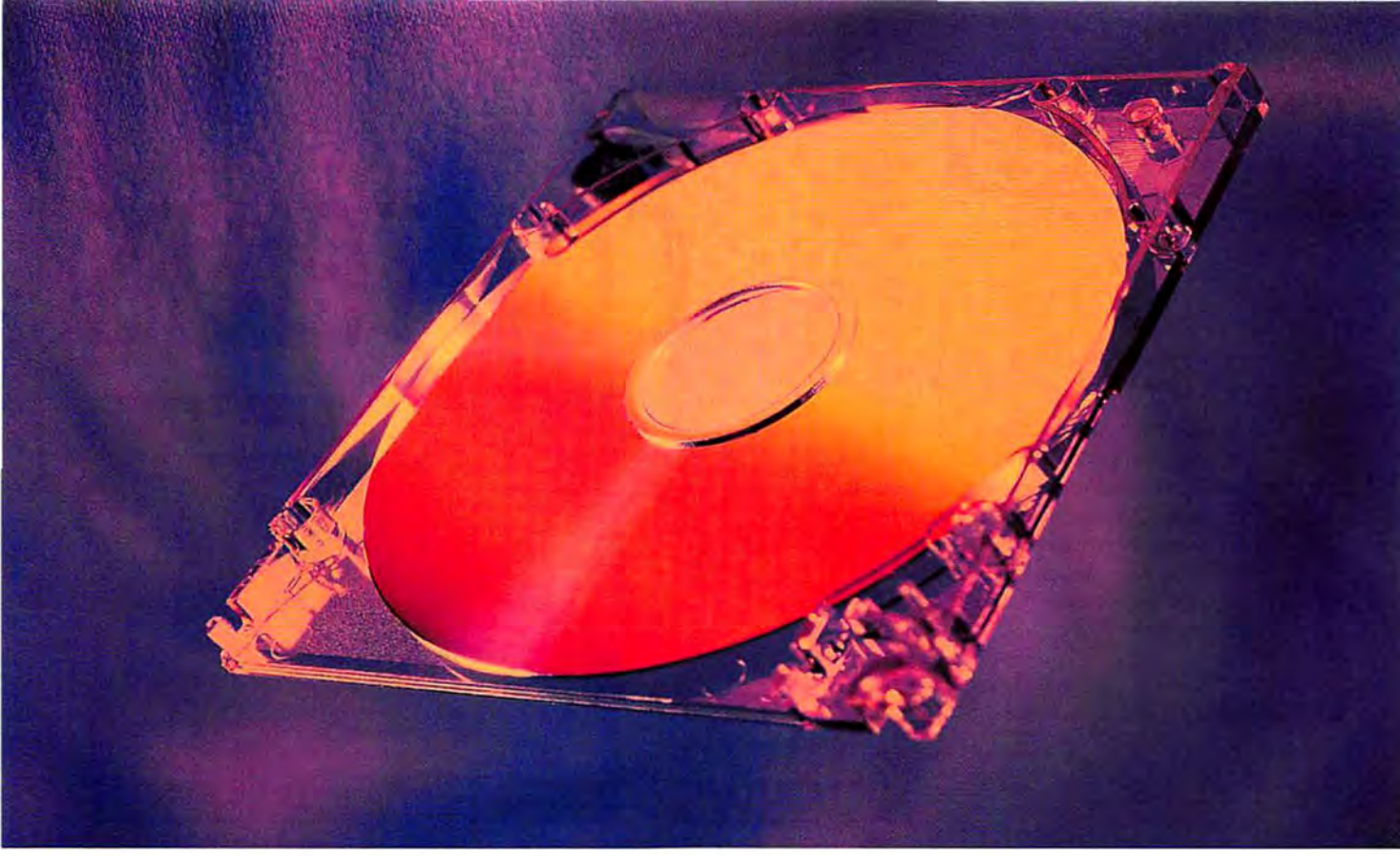
Unlike most

hard drives

it's removable.

Unlike most

removables it



Don't worry, if one cartridge fills up there are millions left.

There seems to be an unwritten rule with computers. No matter how large the hard drive, you'll eventually find a way to max it out. Unless, of course, you get one that never really fills up, right? For example, the EZFlyer™ 230, the latest removable cartridge hard drive from SyQuest.® Don't let the small 3.5 inch cartridge deceive you, this thing is huge. 230 megs that rip along at twice the speed of any removable in its class.

The reason for our blistering performance is pretty simple. It works like a hard drive because it is one. Sluggish technologies from tape drives to high-capacity floppies just can't keep up. Use the EZFlyer™ 230 the same way you would with any hard drive, with a nice little bonus–it's removable. So you can add on to your system limitlessly, 230 megs at a time, till the end of time.

SyQuest® Save the world™

Weighing a mere 1.6 pounds, the trimmed-up drive can hit the road as well and features a self-sealing door to protect cartridges from dust and other disturbing things. When you feel the urge to change cartridges, hit the eject button and you're out of here. Applications and files stored on your cartridges are ready to run instantly. Own the Internet, throw on large chunks of video, colossal scans, the meaning of life or maybe just a CD-ROM game. Keep things you don't need. Back up things you do. It even saves money, storing your world at 10 cents per megabyte. Hmm. When you think about it, the possibilities are as endless as its capacity. Now available at Comp USA,Computer City, Best Buy and a bunch of other places. 1-800-245-2278 or http://www.syquest.com.

s a hard drive.

CIRCLE **30** ON READER SERVICE CARD

©1996 SyQuest® Technology

MacUser
DECEMBER 1996 / VOLUME 12 NUMBER 12

CONTENTS

NEWS

Harmony 1997 system-software release integrates Internet and OpenDoc. / **First Looks** Quicken Deluxe 7.0, FreeHand 7.0. / **Clone Watch** Multiprocessor madness. / **Digital Cameras** A pen-controlled camera that records your voice. / **Visual Cafe** Instant Java. / **Business-Software Boom** Featuring some new and made-over faces. / **Plus** Macintosh price index. / 23

Online Ten top downloads, online-event calendar, Install Tracker, and more. / 30

REVIEWS

Motorola StarMax 3000/160 DT, 3000/200 MT, 4000/160 DT, and **4000/200 MT** Finally! A major player enters the Mac-clone market with a solid line of PowerPC-based Macs and a story to tell. / 33

Claris Home Page Visual HTML editor makes Web-site creation Claris-simple. / 36

RAM Doubler 2 and **RAM Charger 3.0** Memory boosters let you do more with your existing RAM. / 38

ColorSynergy 2.0 Color coordination at a cool price. / 41

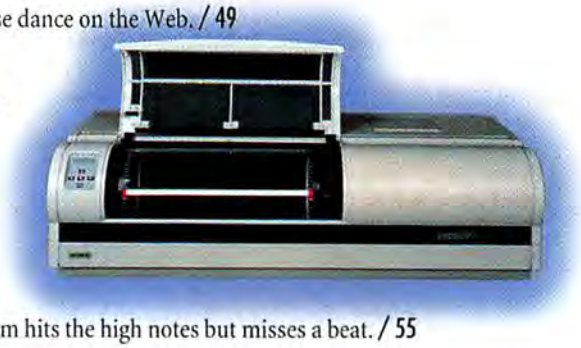
PowerBuilder 4.0 for Macintosh Create customized client/server databases easily with this object-oriented development tool. / 42

EZ-Speak Control your Mac with a collection of voice commands that make PlainTalk usable. / 44

Live Picture Overdrive Just what you need to layer and composite multiple large Photoshop images — at a price that's right. / 44

Tango for FileMaker Make your database dance on the Web. / 49

Howtek Scanmaster 7500 Pro Desktop drum scanner gives great results for inexperienced and expert operators alike. / 50



MasterJuggler Pro 2.0 Font-juggling program drops the ball on interface improvement. / 54

Nightingale 3.0 Music-notation program hits the high notes but misses a beat. / 55

Retrieve It! 2.5 Find files fast — locally or on the Internet. / 57

Infini-D 3.5 Solid update will please new and veteran users of this integrated 3-D-modeling, -rendering, and -animation program. / 58

COLUMNS

Letters Crybabies, catalogs, and convert confessions. / 13

Pamela Pfiffner A teacher for the Apple. / 21

Andy Ihnatko Living with Live Objects. / 230

How to Reach Us / 8

Product Index / 192

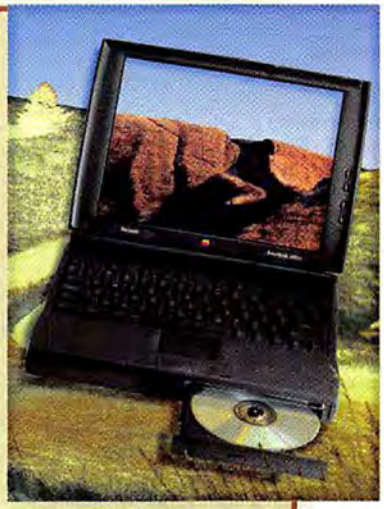
Advertiser Index / 196

Marketplace / 203

On the cover / The PowerBook 1400 has a removable BookCover that lets you customize your Mac. Check out our free BookCover cutout, on page 73.
Cover photo / Steven Underwood
Screen photo / Giampiero Benvenuti

COVER STORY

ROAD TEST: THE APPLE POWERBOOK 1400



Is the latest incarnation of the PowerBook the one you'll take on the road?

Apple needed to burn rubber in order to make up for its last foray into the PowerBook realm. The PowerBook 5300 was plagued with problems from the get-go. Is the PowerBook 1400 the comeback kid? We hit the road to find out. **By Andrew Gore / 70**

FEATURES

MacUser's 1996 Top 50 CD-ROMs

We've upped the ante on quality, basing our judgments on content, production quality, ease of navigation, innovation, and enjoyability. And only those CD-ROMs that qualified as four-mousers made the final cut. We're sure you'll find several you'll want to take for a spin. **By the editors of *MacUser* / 82**

The Burden of Proof

There's no question about it: Color proofs save desktop publishers time and money. But which dye-sublimation proofing printers give you the colors you want to see come off the press? We took eight to the lab, where the proof was in the printing. **By Roman Loyola / 96**

17-Inch Monitors: The Bigger Picture

We rounded up almost four dozen 17-inch monitors and put each one through an arduous screen test, judging color tracking, brightness, MTF sharpness, and more. **By Jeff Pittelkau / 108**

DEPARTMENTS

DESKTOP MEDIA

A Desktop-Video Primer Tips on assembling a Mac-based video-capture and -editing system that will make you look like an auteur. / 123

Graphics How-To Superimposing images can be tricky — but it's easier if you tap the power of Photoshop's color channels. Here's how. / 128

Expert Tips Bob and Chuck post their holiday wish list. Santa, are you listening? / 130

NETWORKING

ISDN On-Ramp Here's how to get wired and blast through the Internet at warp speed. / 139

Net Traveler Safe surfin' and free speech. / 147

HANDS ON

Easy Hard-Drive Maintenance What to do — and not to do — to protect your precious data. / 149

Help Folder Bob and Chris answer all your questions. / 153

PERSONAL MAC

The *MacUser* Editors' Gift Guide What we're giving or hoping to get (that's a hint, Mom). / 157

The Two Dads Touch-typing programs for little (and big) kids. / 160

The Game Room Don't Quit Your Day Job — and more. / 162

MacUser (ISSN 0884-0997) is published monthly by Ziff-Davis Publishing Company, L.P., One Park Avenue, New York, NY 10016. Editorial Offices: 50 Beale Street, 12th Floor, San Francisco, CA 94105. Telephone: 415-547-8600. U.S. subscription rates are $27 for 12 issues, $45 for 24 issues, and $62 for 36 issues. Additional postage for Canada: Add $16 per year to the U.S. rates for surface mail. Single-copy price is $3.99 (Canada, $4.99). Canadian GST registration #14049 6720 RT. Canada Post International Publications Mail Product (Canadian Distribution) Sales Agreement No. 278521. POSTMASTER: Send address changes to *MacUser*, P.O. Box 56986, Boulder, CO 80322-6986. Periodicals postage paid at New York, NY 10016, and at other mailing offices.
Printed in the USA.

DRAW *like no other* CAD

"Productivity has never been more fun."
—*Steve Mouzon*

You want drawings that look like the ones you've always done by hand—or better. Exquisitely detailed. Perfect arrows. Crisp lines. Or maybe a squiggly sketch. You don't want it to look like it was done on a computer.

PowerCADD lets you draw like that, and it doesn't get in your way. Draw floor plans. Machinery. Charts. Sketch a bush. Doodle a cloud. A flower.

You can draw anything with PowerCADD. And it's easy.

Draw The World
PowerCADD

Turn your genius loose. Put some fun back into your life. Order PowerCADD.

Call 910-299-4843 In Canada: 204-453-8111
ENGINEERED SOFTWARE
http:// www.engsw.com Fax: 910-852-2067

CIRCLE **73** ON READER SERVICE CARD

MacUser

Group Publisher
John Blake

Editor in Chief
Pamela Pfiffner

Editorial
Editor **Andrew Gore**
Managing Editor **Nancy Groth**
Technical Director **Henry Bortman**
Executive Editors **Susan Janus, Rik Myslewski**
Senior Editors **Karen J. Ohlson, Jim Shatz-Akin**
Senior Associate Managing Editor **Claire H. Breen**
Chief Copy Editor **Eva Langfeldt**
Associate Technical Editor **Rhoda Simmons**
Associate Editors **Carolyn Bickford, Shelly Brisbin, Roman Loyola, Nancy Peterson**
Copy Editor **Jon Zobenica**
Assistant Editors **LaMont Ridgell, Scholle Sawyer, Brooke C. Wheeler**
Contributing Editors **Sharon Zardetto Aker, David Biedny, Christopher Breen, Don Crabb, Shelley Cryan, Bruce Fraser, Andy Ihnatko, Ted Landau, Bob LeVitus, John Rizzo, Bob Schaffel, Michael Swaine, Gregory Wasson, Chuck Weger, Kelli Wiseth**
Executive Assistant to Editor in Chief
Teresa Bojorquez

MacUser Labs
Group Labs Director **Jeffrey S. Pittelkau**
Associate Labs Director **Nathan Garcia**
Senior Project Leaders **Kristina De Nike, Jeffrey K. Milstead**
Project Leader **Rick Oldano**
Technical Specialists **James Galbraith, Martin Wong**
Lab Administrator **Chris Moreno**

ZD Labs
Director **Robert W. Kane**

MacUser Online
Editor, Online **James S. Bradbury**
Senior Editor, Online **Jason Snell**
Associate Editors, Online **Philip W. Dyer, Jodi Naas**

Design
Art & Design Director **Lisa Orsini**
Senior Art Director **Diane Dempsey**
Art Production Manager **Jan McKenzie Rogers**
Assistant Art Director **Stephani Finks**
Art Production Assistant **David G. Simoni**

Advertising/Sales
Advertising Coordinators **Rick Sandoval, Jennifer Weiss**

Production
Production Director **Carlos Lugo**
Production Manager **Jill Waldman Foxe**
Production Coordinator **Corina Youdelman**

Marketing
Group Marketing Director **Laurel Clark Skillman**
Group Research Manager **Timothy O. Gaughan**
Marketing Manager **Renee Bula**
Sales Development Manager **Debra Cains**
Marketing Coordinator **Stephanie Walter**
Sales and Marketing Assistant **Jasmin Araneta**

Operations
Group Business Manager **Mary E. Colbert**
Group Business Analyst **Christine Finn**
Assistant to Group Publisher **Beth Ina**
Assistant to Associate Group Publisher **Annie Purinton**

ZIFF-DAVIS PUBLISHING
Chairman and CEO **Eric Hippeau**
President, U.S. Publications **Ronni Sonnenberg**
President, Interactive Media and Development Group **Jeffrey Ballowe**
President, International Media Group **J. B. Holston III**
President, Computer Intelligence/InfoCorp **Bob Brown**
President, Training and Support Publishing Group **William Rosenthal**
Vice President, Chief Financial Officer **Timothy C. O'Brien**
Vice President, General Counsel, and Secretary **J. Malcolm Morris**
Vice President, Human Resources **Rayna Brown**
Vice President, Planning **Daryl R. Otte**
Vice President, Production **Roger Herrmann**
Vice President, Controller **Mark Moyer**
Treasurer **Thomas L. Wright**

U.S. Publications Group
President, U.S. Publications **Ronni Sonnenberg**
President, Business Media Group **Claude P. Sheer**
President, Consumer Media Group **J. Scott Briggs**
Senior Vice President, Consumer Advertising **Lawrence C. Burstein**
Senior Vice President, Circulation **Baird Davis**
Executive Vice President, Business Media Group **Don Byrnes**
Vice President, Business Manager **Tom McGrade**
Vice President, Marketing Services **Jim Manning**
Vice President, Central Advertising Sales **Bob Bader**
Vice President, Product Testing **Mark Van Name**
Vice President, Circulation Services **James F. Ramaley**
Vice Presidents **Al DiGuido, Michael Miller, Paul Somerson**
Executive Director, Licensing **Gertrud Borchardt**
Director, ZD Labs **Robert W. Kane**
Director, Benchmark Operation **Bill Catchings**
Vice President, Managing Director, Ziff-Davis Magazine Network **Joe Gillespie**
Executive Director, Ziff-Davis Magazine Network **Alicia Saribalis**
Marketing Director, Ziff-Davis Magazine Network **Michael Perkowski**
Directors, Ziff-Davis Magazine Network **Ken Beach, Michael Bird, Jeff Bruce, Kelly Lowman, Melinda Maginn, Debbie Moss, Julie Tuttle**

Interactive Media and Development Group
President, Interactive Media and Development Group **Jeffrey Ballowe**
Executive Vice President **David Shnaider**
Executive Vice President, Internet Publishing Group **Daniel Rosensweig**
Vice President, Business Development **T. L. Thompson**
Vice President, Editor in Chief, ZD Net **Daniel Farber**
Vice President, General Manager, ZD Net **James Savage**
Vice President, ZDTV **Richard Fisher**
Vice President, Creative Services **Herbert Stern**
Vice President, Research **Elda Vale**
Editorial Director, New Products **Bill Machrone**
Group Business Manager **Jocelyn Grayson**
Director, Public Relations **Gregory Jarboe**

Ziff-Davis Publishing Company, A Softbank Company

In memory of **John J. Anderson** 1956 – 1989
and **Derek Van Alstyne** 1967 – 1989

The Audit Bureau BPA

Entire contents © 1996 Ziff-Davis Publishing Company, L.P. All rights reserved; reproduction in whole or in part without permission is prohibited. *MacUser* is a registered trademark of Ziff-Davis Publishing Company, L.P. *MacUser* is an independent journal, not affiliated in any way with Apple Computer, Inc.

You may not have heard of us, but...

UMAX SuperMac S900L

Powered by the IMS TwinTurbo128 4MB

"The fastest Mac... speeds to top of Mac Pack."
— MacWorld

Apple PowerMac 9500

Powered by the IMS TwinTurbo128

The original multimedia speed-demon.

PowerComputing PowerTower Pro 225

Powered by the IMS TwinTurbo128 8MB

"The fastest-ever desktop computer."
— MacUser

INTEGRATED MICRO SOLUTIONS

Call 1-888-IMS-8282 or visit www.integratedmicro.com

©1996 Integrated Micro Solutions, Inc. All rights reserved. All brand, product and service names are trademarks of their respective owners.

we've been hanging out in some pretty fast company.

In fact, our award winning Twin Turbo 128 Series of Graphics Accelerators power some of the fastest Mac O/S machines on the planet. The Twin Turbo 128 features a 128-bit graphics memory architecture and a PCI interface. That's why we get the fastest graphics scores in the Macintosh arena. Powered by our very own state-of-the-art graphics engine, Twin Turbos can process over 100 million pixels a second. And they provide photo realistic image quality from 640 X 480 to 1920 X 1080 and enough processing power to move 24-bit images in real-time. Plus you get dedicated QuickTime compatible acceleration for true-color, full-screen real-time video playback. So if you're a demanding user who wants the best graphics and video performance available get the Twin Turbo 128.Available with 2MB, 4MB, or 8MB of VRAM. Works on any PCI Mac or compatible.

Twin Turbo · 128 ·

CIRCLE **43** ON READER SERVICE CARD

MacWEEK

MacUser

PC PCWEEK Windows PCComputing
COMPUTER SHOPPER MacUser MacWEEK

"We need to show numbers that substantiate our recommendations. As always, yours are the benchmarks that people listen to."

Don Kemper Jr.
Distribution Platform Manager
US Bank
Gresham, OR

Winstone
WinBench
NetBench
ServerBench
MacBench

ZD Ziff-Davis Benchmarks: The Whole World Watches

FREE! Download our benchmarks from ZD Net/CompuServe (GO ZDBOP) or from our home page at http://www.zdnet.com/zdbop. Or, for a CD-ROM ($5 each for shipping and handling) fax your credit card information to 919-380-2879 or send a check to ZDBOp. Allow 4 to 6 weeks for regular delivery or enclose your FedEx number.

Ziff-Davis Benchmark Operation, 1001 Aviation Parkway, Suite 400, Morrisville, NC 27560

MacUser

How to Reach Us

THE EDITORS of *MacUser* want to hear from you. Send your questions, tips, kudos, comments, or complaints to *MacUser*, 50 Beale Street, 12th Floor, San Francisco, CA 94105; 415-547-8600. Send e-mail to letters@macuser.com (Internet). We are, unfortunately, unable to look up stories from past issues, recommend products, or diagnose your Macintosh problems by telephone. Contact Apple toll-free at 800-538-9696, ext. 500, for information on user groups in your area.

IF YOU SUBMIT A TIP to *MacUser* (and we hope you do), please be advised that you agree that Ziff-Davis Publishing Company, L.P., and its affiliates and licensees can reproduce, publish, display, and distribute your tip worldwide in all print and electronic media and in all other forms, manner, and media now known or hereinafter devised.

Subscription Inquiries/Change of Address

FOR SUBSCRIPTION-SERVICE questions, address changes, or ordering information, please write to *MacUser*, P.O. Box 56986, Boulder, CO 80322-6986. New subscriptions and address changes can take six to eight weeks. For back issues (subject to availability), send $7 per issue, $8 outside the U.S., to Back Issues Dept., Ziff-Davis Publishing Company, L.P., P.O. Box 53131, Boulder, CO 80322-3131. We periodically make lists of our customers available to carefully screened mailers of quality goods and services. If you do not wish to receive such mailings, please let us know by writing to us at *MacUser*, P.O. Box 56986, Boulder, CO 80322-6986. *MacUser* (ISSN 0884-0997) is published monthly by Ziff-Davis Publishing Company, L.P., One Park Avenue, New York, NY 10016. Editorial Offices: 50 Beale Street, 12th Floor, San Francisco, CA 94105. Telephone: 415-547-8600. U.S. subscription rates are $27 for 12 issues, $45 for 24 issues, and $62 for 36 issues. Additional postage for Canada: Add $16 per year to the U.S. rates for surface mail. Single-copy price is $3.99 (Canada, $4.99). Canadian GST registration #14049 6720 RT. Canada Post International Publications Mail Product (Canadian Distribution) Sales Agreement No. 278521.

POSTMASTER: Send address changes to *MacUser*, P.O. Box 56986, Boulder, CO 80322-6986. Periodicals Mail postage paid at New York, NY 10016, and at other mailing offices.

ZD Net/Mac: MacUser Online

ZD NET/MAC is a commercial online service that provides selected articles, reviews, and electronic supplements to *MacUser*. In addition, you will find thousands of reviewed shareware files and have a chance to interact with editors. To order a free starter kit to access ZD Net/Mac, hosted on CompuServe, call 800-848-8199. On **CompuServe,** simply type GO ZMC :MACUSER. On **America Online,** use keyword MACUSER. Or check out *MacUser*'s home on the **World Wide Web,** at http://www.macuser.com/.

MacUser on CD-ROM

FIND *MACUSER* ON Computer Select, a CD-ROM from Computer Library. To subscribe, call 800-827-7889, ext. 708. If you're calling from Canada, 212-503-4400; from Europe, 44-344-710091; or from anywhere else, 212-503-4425.

Complaints About Advertisers

MACUSER EDITORS are not responsible for the contents of the advertisements in the magazine. However, if you bought a product advertised in *MacUser*, are dissatisfied, and can't resolve the problem, write to Ad Department, *MacUser*, 50 Beale Street, 12th Floor, San Francisco, CA 94105.

Permissions and Reprints

MATERIAL IN THIS PUBLICATION may not be reproduced in any form without permission. Written requests for permission should be addressed to Chantal Tucker, Ziff-Davis Publishing Company, One Park Avenue, New York, NY 10016, or faxed to 212-503-5475.

MacUser Reprints For Reprint Price Quotes, Call 800-825-4237

Product Announcements and Updates

SEND PRODUCT INFORMATION to News Editor and send new products to Reviews Editor at *MacUser*, 50 Beale Street, 12th Floor, San Francisco, CA 94105.

binuscan® ColorPro

Professional software for automatic high quality image processing

It's not good...

...it is perfect!

We cannot tell you any more because this $1999 package is so unbelievable that no words are strong enough to describe it. Try it yourself: download a copy of the professional demo version today from:

http://www.binuscan.com

HOT PRODUCT 1993 · PC World Årets Data-produkt '93 · Macworld MW ★★★★ · MacUser 4 4 4 4 · AppleTime ★★★★ · SVM Mac

a special version of binuscan is bundled with all the **UMAX** high-end scanners

a special version of binuscan is freely available for every Kodak Pro Master Photo CD

binuscan PhotoPerfect

binuscan - International Sales Division
4-6, Av. Prince Héréditaire Albert - MC-98000 MONACO
+377 92 05 37 62 - Fax: +377 92 05 74 63

binuscan, Inc. - US Sales Office
505 5th Avenue - New York, NY. 10017
1 800 881-2352 / 1 212 681-0600 - Fax: 1 212 681-0603

WANT TO SEE HOW MUCH MORE MICROSOFT OFFICE CAN DO?

JUST ADD A LITTLE MORE MEMORY.

For more information call us at

(8 0 0) 5 8 8 - 5 4 2 7

or look for us on the Net:

http://www.kingston.com/msft.html

Kingston Technology Corporation, 17600 Newhope Street, Fountain Valley, CA 92708 USA, (714) 435-2600, Fax (714) 435-2699. © 1996 Kingston Technology Corporation. All rights reserved. Kingston is a registered trademark and Computing Without Limits is a

C O M P U T I N G W I T H O U T L I M I T S™

When you add more memory to Microsoft® Office, interesting things begin to happen. Suddenly, you're scanning powerful images into your presentation. And moving complex graphics around at will. You can download data from the Internet to support your cogent analysis. Then e-mail the whole thing to your grateful associates in London. All before lunch. Since you've already invested in Microsoft software, you should make sure you have the finest memory to match: Kingston® memory. Kingston design engineers use exactly the same specifications system manufacturers, like Apple,® use. So compatibility is assured. And we test every cell on every chip on every module. (On a 16 megabyte module, that's 128 million cells.) And now, with a special offer from Microsoft and Kingston, registered Macintosh® users of Microsoft Office can purchase 8 megabytes of Kingston memory for only $69.* Call (800) 588-5427 today. And get ready to move mountains.

Microsoft®

Kingston® TECHNOLOGY CORPORATION

ademark of Kingston Technology Corporation. All other trademarks are the property of their respective owners. *Offer for 8 megabytes available to PowerBook™ users for only $149. Valid in the U.S. and Canada only. Not for resale. Prices subject to change after December 31, 1996.

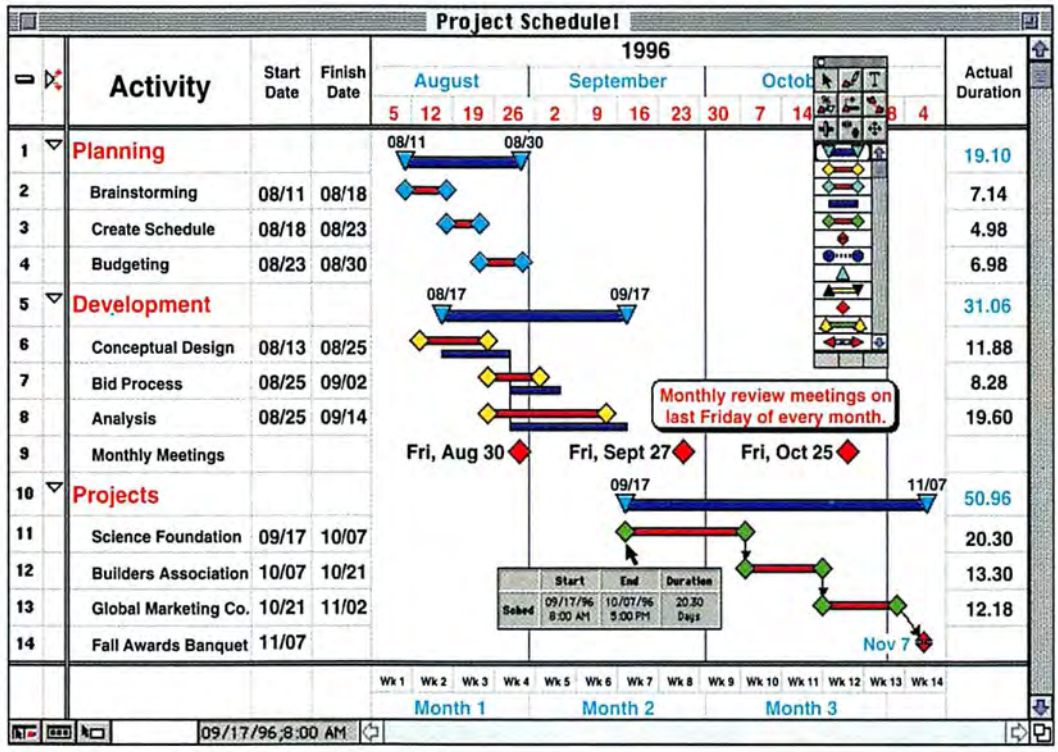
CIRCLE **80** ON READER SERVICE CARD

New Version 4.0

Project Scheduling Made Easy.

Mac™ OS

Accelerated for Power Macintosh

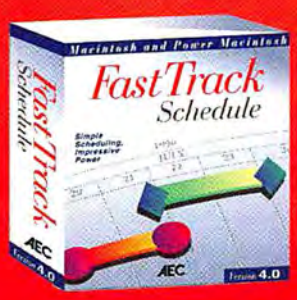


"If you're looking for a quick and easy way to create Gantt charts, this program might be just the one for you."

MacUser

"...An excellent choice for anyone whose primary need is to create precise, presentation-quality Gantt charts."

MacWEEK



FastTrack Schedule™ 4.0

You can't stay on schedule if you don't have one!

FastTrack Schedule 4.0 lets you create and update presentation-quality schedules quickly and easily. Whether you need a quick scheduler or a full tracking system, FastTrack Schedule 4.0 offers the combination of flexibility, ease of use and power all in one program! Take a quick look at some of the features found in FastTrack Schedule 4.0. Simple scheduling and impressive power are as easy as...1,2,3.

1 Flexibility

- Timescales from Hours to Fiscal Years
- Link Options • Find & Replace
- Paste in Graphics & Add Textblocks
- Custom Bar and Milestone Styles
- Page Breaks • Shift Items in Work Units
- Capture Schedule Defaults • Hide Graph
- Layout Options for Multi-columnar Reports
- Durations in Work Hours & Work Days

2 Ease of Use

- On Line Help Systems • Tool Tips
- Balloon Help • Action Columns
- Control Palette • Auto Scrolling
- Bar Tracking Window • Select All
- Interactive Page Preview Layer
- Cursor Tracking Window • Quick Corner
- Templates • Floating Toolbox
- Autofit Schedule • Auto Resize Row Height

3 Power

- Scheduled, Revised & Actual Dates
- Custom Work Calendar
- Filters & Sorts • Task Dependencies
- Outline tasks to show sublevels
- Import & Export Data as ASCII text
- Network Versions - File Locking, Passwording
- Available for Macintosh, Power Macintosh, Windows 3.1, NT 3.51, NT 4.0 and 95

Call to order, for more information or download a free demo today!

(800) 450-1983

http://www.aecsoft.com

CIRCLE **15** ON READER SERVICE CARD

30 DAY MONEY BACK GUARANTEE

AEC Software, Inc., 22611-113 Markey Ct., Sterling, VA 20166 USA • Phone (703) 450-1980 • FAX (703) 450-9786 • http://www.aecsoft.com

©1996 AEC Software, Inc. All rights reserved.
Windows, Windows 95 and Windows NT are registered trademarks of Microsoft Corporation. Macintosh is a registered trademark, and Power Macintosh is a trademark of Apple Computer, Inc.

LETTERS

A Bunch of Crybabies

APPLE JUST CAN'T WIN! Two years ago, you folks in the press were crying that Apple should be embarrassed because there weren't any clone makers. Last year you were crying that Apple should be embarrassed because there weren't *enough* clone makers. And now, you're crying that Apple should be embarrassed because a clone maker is being successful with innovative Mac OS products (Mac OS Systems, September '96, page 37). Why should Apple be embarrassed by the success of a technology that it invented and that it will see into the next century?

Your glowing review of the Power machine just goes to show that the press — even the *Macintosh* press — loves to take even the best news about Apple technology and turn it into something negative. Apple should be proud of Power's awesome achievements with the Mac OS. Product diversity and innovation are the whole reason for having clones. As is so often pointed out by the media, Apple cannot do *everything*.

David Simerly
beowulf@ponyexpress.com

Apple's Shelf Life

ONE OF YOUR READERS suggested that Apple should ask retailers to display mail-order catalogs next to the Macs they sell (Letters, September '96, page 13). Why not go one better and include a mail-order catalog for, say, MacWarehouse with every Macintosh sold? Or if Apple wants to avoid being partisan, it could include catalogs for several major mail-order retailers. That way, people would know right off the bat that there is a lot of software available. And when Cyberdog is bundled with the Mac OS, Apple could even put Cyberian Outpost's and MacMall's URLs into the default notebook.

I think Apple does need to convince developers that they should stay, but more urgently, it needs to convince buyers and potential buyers that there is a whole bunch of software available — you just have to go mail-order.

Noah Daniels
ndaniel1@swarthmore.edu

IT INFURIATES ME THAT Apple is slipping slowly from the scene. It is absolutely true that the Apple section (hardware or software) in most computer stores is almost nonexistent and that if people have a computer at home, it is usually a PC clone.

Even my most die-hard Mac friends are moving to the Windows environment. They have no choice. The letter commenting about software available in the catalog environment does not cut it. (Even in the MacConnection catalog, the amount of software listed for PCs as compared to Macs is much greater.) The catalog environment is not where the public buys its stuff. The public goes to the local discount store. People may become catalog buyers later, but when they shop for a computer, they start looking in the closest computer store. True, most CD-ROMs are still being written to be compatible with Macs as well as PCs — but for how long?

Right now, I am considering buying a computer for my son and his family, who do home schooling. Frankly, I may have to consider a Windows-based machine. I can get a new 100-MHz Wintel system, complete with a monitor, a CD-ROM, a fax modem, telephony capabilities, and lots of software, for $999. Local retailers always carry specials on Packard Bells, Compaqs, Gateway 2000s, or some such total system that includes tons of software. They only occasionally carry Macintosh ads, and when they do, the ads often say to "call for pricing."

WRITE TO LETTERS

c/o MacUser
50 Beale Street, 12th Floor
San Francisco, CA 94105
letters@macuser.com

All letters become the property of *MacUser*, and we reserve the right to edit any letters we print. Include a return address and a daytime phone number. If you write to us via e-mail, please specify whether you want your electronic address printed.

ILLUSTRATION / MARGARET MCMULLIN

Open Folder

As humankind has evolved and as Mac users have ascended to the top of the biological pyramid, certain body parts and organs (tonsils, pinkie toes, the appendix, the funny bone) have become vestigial in us higher primates. *The funny bone?!* you ask. Unfortunately, yes. Judging by several readers' response to our September Open Folder, humankind's sense of humor is going the way of the prehensile tail. Our misquoting of the Beach Boys and misnaming of the vintage TV show *Car 54, Where Are You?* were intentional, for those of you wondering what that whooshing sound was just overhead. We admit that the gag was not our biggest rib-tickler ever, but it was a gag nonetheless. (Speaking of old TV, remember that episode of *Gilligan's Island* — the one in which the castaways hatch a plot to get off the island but just when they're about to succeed, Gilligan does something stupid and ruins everything?)

Advertisers, beware: The advanced evolutionary state of Mac users makes your marketing attempts at humor as dangerous as our editorial attempts. Big Island Communications, maker of the YoYo telephony package, got a stern finger shaking from reader Ruth Foss, who objected to the company's ad in our October issue. The ad, for those who don't remember or didn't get it, makes light of that societal linchpin, The Mother-in-Law. And although it might not exemplify the highest form of human thought, we appreciated the ad's anthropological value — it's a bit of living history.

However, an ad in the July 21 *Toronto Sun* best demonstrates the relationship between humor and evolution. The piece, from Jeffrey Stephen, reads, "Bill Gates Unplugged: Come Hear How a Man and His Mouse Revolutionized the World." Revolutionized the world? Now *that's* funny, and it further supports the notion that ontogeny recapitulates phylogeny. For as Bill Gates and his kingdom of *Micro sapiens* grow to full development, they're exhibiting not only the technical prowess but also the sense of humor that was characteristic of the proto Mac user.

The Mac truly has been a much better machine, and I shudder to think of the millions (billions?) of taxpayer dollars that have been spent in the education sector teaching people how to use DOS and Windows when everyone could have been using Macs all these years.

Apple doesn't seem to realize that the world is not what it was when the Mac came out. Buyers today are saying, "A Mac? I thought Apple went out of business." I heard such comments almost daily this spring in my college — and not from the computer literati poking fun at me but from the lay public, students, and staff. It was not a dig. It was what they really believed.

Ruth Miller
Camino, CA

Oh Lord, Won't You Buy Me a Mercedes-Benz?

MY FATHER-IN-LAW recently gave me a nice AMD 133 PC with all the fixings. He was showing me all the stuff it could do, such as telephony, faxing, and videoconferencing. The problem was that this didn't impress me, because I had been able to do this stuff on my Mac for a long time. The interesting part is that he can do everything I can do on mine, but it ends up costing him more time and money in every instance. Not to mention that he has to become an expert on every aspect of how everything works, just in order to make it work.

Sure, you can find more software for the PC than for the Macintosh. That's because there are more PCs out there. On the other hand, there are a lot more Fords out there than there are Mercedes. Mercedes is more about quality and engineering than market share. Mercedes sells a superior product for more-scrutinizing clients, who expect more than just a thing that gets you from here to there. That's what the Mac is all about. Let's hope so at least.

Dee Golden
via the Internet

Confessions of a Convert

I'M CONSIDERING apostasy. Although I still profess Macintosh to my friends, my heart feels a strong tug toward Windows. In the past, my household, our Mac, and I endured against all kinds of persecution. But this time around, I feel like I'm faltering.

I've worked for the last six years in computer sales and tech support for Macs and PCs. I've been using Macs since 1984, and like most people who have been forced to use both Macs and PCs, I still prefer the Mac.

Here's the shocker, though: I recently did a thorough comparison between the top-equipped Macs and their Pentium counterparts. I couldn't believe the difference in price, *for the same stuff or better.*

I still think the Mac OS is superior to any Windows OS. But that's just about all the Mac has to its credit anymore. Nowadays, you can do just about anything on a PC that you can on a Mac. Even the time it takes to configure a PC has greatly decreased. I know. I set up PCs at work. In real-life usage, PCs run as fast as or faster than Macs — and at almost $2,000 less! Even most mainline Mac software is available for the PC.

So, comparing apples to apples (no pun intended), why would I *want* to buy a Mac next time? Why would anyone do it, unless they had lots of extra money to throw around to get their favorite OS. Apple (and the rest) have been and *still are* charging too much for a dying Mac religion. I hope the company can wake up before it's too late.

Rick J. Vogel
via AOL

Back to the Future

SUPERB UPDATE ON THE current state of Apple and where it's heading ("Looking into Apple's Future," October '96, page 66). My faith has taken some hits lately, but after reading this feature, many others and I are sure to be rejuvenated.

Communicating established advantages and up-and-coming technologies to potential customers is essential to the Mac's long-term success.

Brian T. McNamara
brimac@onramp.net

StrongARM Tactics

IN THE NEWTON PORTION of "Looking into Apple's Future," you stated that the StrongARM processor will arrive at 160 MHz and is expected to be available before long in excess of 200 MHz. Your readers should be aware that Digital is currently shipping a 200-MHz version that consumes only half a watt of power at full speed. You can find relevant information on the Digital Web site: http://www.digital.com:80/info/semiconductor/dsc-sa-110.html.

Steve Bakke
bakke@ma.ultranet.com

Director Miscast?

IN READING YOUR recent comparative review of Macromedia's Director and mFactory's mTropolis ("mTropolis Upstages Director," September '96, page 68), I was very disappointed to see that there were several errors and omissions in the article, including the following: The article states that Director has no text-to-bitmap conversion. This is not true. Director supports this feature. The article states that Director does not support palettes. Palettes have been supported by Director since 1987. The article states that Director doesn't support drag and drop between casts. Director does support drag and drop between casts as well as into Director from the desktop. Also, Director supports an unlimited number of multiple external casts. The article says that Director does not support object messaging. Actually, Director has supported object messaging, through Lingo, since 1990. The article fails to say that any new mTropolis object requires creation in C or C++. Most creative professionals are not programmers, and the statement "no scripting is required with mTropolis" is false for any reasonable title. More significant than any of the features reviewed is cross-platform authoring and delivery as well as delivery on the Web. mTropolis fails on all scores, despite repeated promises to the contrary.

In recent issues of your magazine, mTropolis was given a rating of 3.5 mice (see review, July '96, page 46) and Director 5.0 was given a rating of 4 mice (see review, August '96, page 44). In the comparative article, however, mTropolis' rating was bumped up to 4.5 mice. As you know, many people look to *MacUser* as their source for impartial, well-researched product reviews. Articles such as this one do a disservice to your readers by failing to present a complete comparison of the two products.

Bud Colligan, Chairman and CEO, Macromedia
San Francisco, CA

/ You're right and we were wrong on the first two counts — Director does convert text to a bitmap as it creates a player file, and it does have palettes. However, you can't drag and drop objects between two projects, as you are able to with mTropolis, because Director allows only one file to be open at a time. And our point about object messaging emphasizes a key advantage of mTropolis' object-oriented architecture — interactive titles can be built without scripting. Its architecture is what makes mTropolis the tool of choice for constructing sophisticated video games and other complex commercial

COMPETITIVE UPGRADE

WHICH PICTURE'S PRETTIER?

$149.95

"Canvas 5 adds a host of new capabilities that make it far more than the solid illustration player it is today. For about $600, you get many of the functions that would cost almost $2,000 if you stock-piled Adobe System Inc.'s Photoshop, Illustrator and Pagemaker."
Mark Hall
Editor in Chief
Macweek
July 24, 1995

"Canvas 5, what a product! Image editing, page layout, presentation and tech illustration wrapped into one easy to use interface. This is the true Swiss Army Knife of any graphics applications out there. Deneba has done everything the graphics community has asked for."
Keith Boncek
Director of Computing
Cornell University
August, 1995

Created with Canvas™ 5. List price $599.

Created with Illustrator®, Photoshop™, PageMaker®. List price $2,385.

DUH.

Good news for people with brains: now there's Canvas™ 5, the only fully integrated graphics program that delivers all the goodies you want at the price you need. | Canvas wrote the book on precision illustration. Now we've added incredible photo design and image editing capabilities—from feathered selections to 24 alpha channels. While Illustrator and FreeHand™ claim to "support" images, only Canvas 5 lets you create them and apply filters to selected areas. Canvas even supports all Photoshop compatible third-party plug-ins. | For publishing, you get the works: auto margins, multi-column guides, left and right master pages (you can even fill text with gradients or textures and still edit it). Our advanced typographic and document control features let you create the next wave in design, or just make day-to-day projects easier. | Once done, create process separations, slide presentations or share your creations with the world by saving them in GIF, JPEG or PDF, and hurling them onto the web. | Canvas 5 is fast, easy, flexible and versatile (at a price that's got the competition crying). | As a great philosopher once said, "What's not to like?"

SELECTING THE BEST GRAPHICS PROGRAM JUST BECAME A NO-BRAINER.

If you own a graphics program, trade up to Canvas 5 for just $149.95 (so little to spend, so much to gain). See your favorite reseller, or order securely online by surfing to http://www.deneba.com/orders/. For a Canvas dealer near you or to order by phone, call 1-800-622-6827 or dial (305) 596-5644. (outside the United States)

800.6.CANVAS

CANVAS 5

COMPLETE ILLUSTRATION, PHOTO EDITING AND PAGE DESIGN

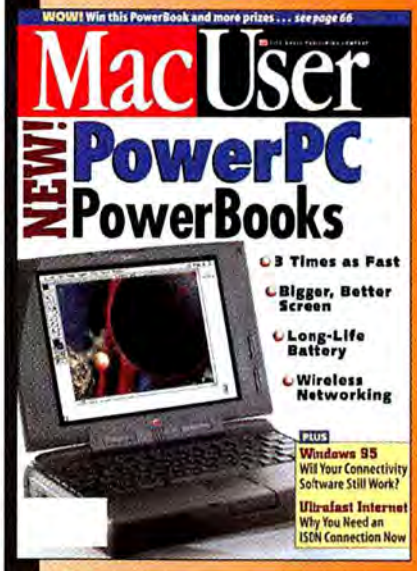
CIRCLE **125** ON READER SERVICE CARD

DENEBA

MacOS

TWICE AWARDED TWICE AWARDED BYTE WINNER Best Application Software MW EDITORS' CHOICE

© 1996 Deneba Software. Canvas is a trademark of Deneba Software. All other company names, product names, trademarks and registered trademarks are the property of their respective holders. Limited time offer subject to change without notice.

MacUser
You're already reading it.


Now start saving on it.
Special Subscription Price – call today!
Get POWERFUL SAVINGS and a FREE GIFT too, from the world's #1 resource for Macintosh users.
To reserve BIG SAVINGS call 1-800-627-2247 right away.
FREE GIFT WHEN YOU SUBSCRIBE
FREE GIFT WHEN YOU SUBSCRIBE
FREE GIFT WHEN YOU SUBSCRIBE
FREE GIFT WHEN YOU SUBSCRIBE

titles. Director, on the other hand, remains an excellent tool for creating interactive business applications. By the way, the apparent discrepancy in mouse ratings for mTropolis is not really a discrepancy at all — we gave 3.5 mice to version 1.0 of mTropolis in July; the September article rated version 1.1 of the product. / SJ

Eudora Pros and Cons

I READ AND AGREED with your review of Eudora Pro 3.0 (see review, October '96, page 61). But by seemingly comparing it only with Claris Emailer and neglecting Netscape Navigator, you missed the bigger picture.

I too scoffed at Navigator's mail functionality when the browser first appeared. However, the product has grown considerably in features and in the quality of its user interface. In fact, about half the people in my office have switched from Eudora Light or UNIX Pine to Navigator as their e-mail client software. Navigator's ability to render HTML within a mail message is a very nice feature, especially for folks who make their living creating Web sites. With Navigator's Java, JavaScript, and HTTP capabilities, you can create incredibly rich e-mail messages and versatile work-flow solutions for little money.

Navigator has come this far in a little less than two years; it took Qualcomm almost three years to come up with Eudora 3.0, which is at best a more refined and extensible version of 2.0. The rate of innovation at Qualcomm isn't keeping up with Netscape's pace, and I'm afraid that Eudora doesn't have the rich variety of other technologies upon which it can leverage itself.

However, your readers may never give Navigator's e-mail capability a try because they'll have been led to believe that the race is between only Eudora and Emailer.

Blake Sobiloff
via the Internet

/ We'll have to call it a difference of opinion. I see very little use for Java and JavaScript within e-mail right now, and I consider Navigator's e-mail interface so poor that I'd never recommend it over Eudora Light, let alone Eudora Pro. You may be right that momentum is on the side of Netscape and other vendors of e-mail client software, but right now Eudora Pro is still my POP e-mail client software of choice. / JS

Et Tu, Epson?

AFTER READING ABOUT the Epson PhotoPC for Mac camera ("Idiotproof Imaging," September '96, page 26), I called a local computer store to inquire about the product. I was told that the PhotoPC is only for PCs. I then called Epson directly. What I discovered was annoying and somewhat contrary to what had been printed in *MacUser*. The PhotoPC sells at a suggested price of $499 and comes equipped with everything you need to take and download pictures *if* you own a PC. If you own a Mac, however, you must pay an additional $69 to get the Mac version of the software and the appropriate cable.

The Epson sales rep explained to me that the added cost is due to the proprietary nature of Mac hardware and because the bulk of the company's customers are PC users. This is just another case of a company treating Mac users as second-class citizens. Epson should have simply offered the PhotoPC in both a PC and a Mac version at the same price. Needless to say, I will not purchase this or any other Epson product.

Terry Spontarelli
spont@rt66.com

Starter Home (Page)

YOUR ARTICLE "Instant Home Page" (September '96, page 99) made quite an impression on me. I went from being intimidated by the whole Web thing to downloading your page in source text and then buying a Laura Lemay book and shopping for a new service provider so I can use Netscape Navigator! Thanks! (I didn't need sleep anyway.)

Thomas Cray
Groovjuice@aol.com

HyperCard's Gone Native

THE LAST TWO ISSUES of *MacUser* have mentioned that HyperCard 3.0 is going to be PowerPC-native, implying that HyperCard isn't already. Ever since version 2.3, HyperCard has been PowerPC-native.

Kevin Calhoun
jkc@apple.com

A Forum of One's Own

WOW! FINALLY there's an AOL forum (keyword MACUSER) that is awesome and a short artwork download. I love your magazine and editorials, especially Help Folder (which saved my Performa 405 from early execution). I look forward to getting your magazine every month, and now I can get updated info any time of the day. It's about time you guys hooked up with AOL. Keep up the good work!

S. Buckland
IrishFan10@aol.com

The difference between backing up and restoring.

Retrospect saves all your preferences, everything. So you don't have to spend countless hours restoring whatever masterpiece is on your hard drive.

Nobody backs up just for fun. You do it for the day your hard drive goes soft and it's time to restore. That's when you see the difference between Retrospect® and the rest. Only Retrospect easily restores all your data to its former glory.

1. *Beware of dragging files.* If you've been "backing up" by dragging files, you'll have an unpleasant discovery when it's time to restore. Even if you've kept up to date with all your files (sure, sure), what you'll still be missing is every preference, configuration, and font – all the stuff that reflects the way you work.

Think about this the next time you're "backing up" by dragging: Retrospect can scan 200 files a second to see which files have changed. Can you?

2. *Recovery tools don't recover everything.* At best, it's a partial recovery. At worst, you have a fire, flood, or theft, and those tools won't recover anything.

3. *Other backup software leaves you exposed.* You're forced to individually restore each incremental backup. The dentist's more fun than that. Only Retrospect has SnapShot™ technology that tracks the most recent state of your hard drive. So complete restoration is accomplished in just one step, in only minutes.

4. *Don't play the odds, you'll lose.* Half of you are going to lose a file, a document, or everything this year. Think about it: one single file could be worth more than Retrospect's entire price tag.

5. *The world's foremost restoration artists.* Don't leave yourself wide open to disaster. Buy the software with the awards, the raves, and support for almost every SCSI tape drive ever made. And every Retrospect benefit is multiplied many times over with Retrospect Remote®– our backup answer for network users. Call us at 800-95-BACKUP for our *Top Ten Backup Tips.*

Do it before it's too late.

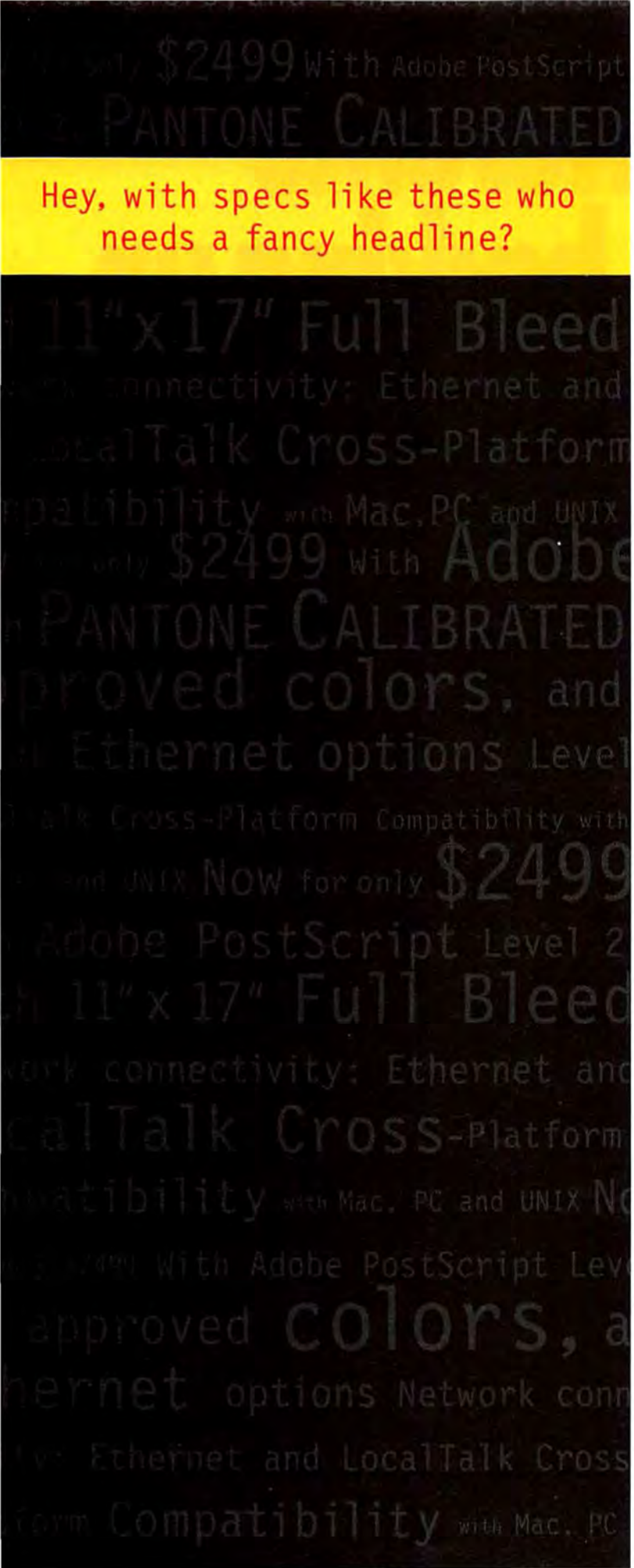
Easy Script

Answer a few questions and Retrospect's new EasyScript™ creates a customized backup strategy that includes backup frequency, scheduling, and media rotation.

CIRCLE **28** ON READER SERVICE CARD

dantz® *To go forward, you must backup.®*

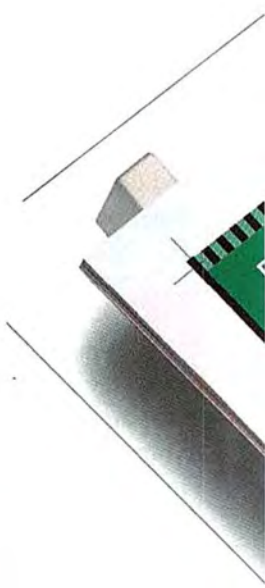
©1995 Retrospect and Retrospect Remote are registered trademarks of Dantz Development Corporation. All other trademarks are property of their respective holders. Dantz Development Corporation. 4 Orinda Way, Building C, Orinda, CA 94563. Phone: 510.253.3000 Fax: 510.253.9099. Internet: info @ dantz.com.



Hey, with specs like these who needs a fancy headline?

THE EPSON STYLUS® PRO XL. FINALLY, COMPS AS BIG, BOLD AND BRILLIANT AS YOUR IDEAS.

Imagine. Stunning 11" x 17" full-bleed spreads with unbelievable impact. 720 x 720 dpi and Micro-dot technology for PhotoQuality color with precise shading and gradation. And options to print in 180, 360 or 720 dpi modes for fast, clean comps. All for just $2,499, including Adobe® PostScript® Level 2 with PANTONE® CALIBRATED™ approved colors and internal Ethernet software. Buy now, and get free Live Picture SE software—complete with a full-color tutorial book and step-by-step video to help you create and edit images in real time. No more waiting for a color copier. No more service bureaus. Just you and your gorgeous color comps. From the printer designed just for designers.

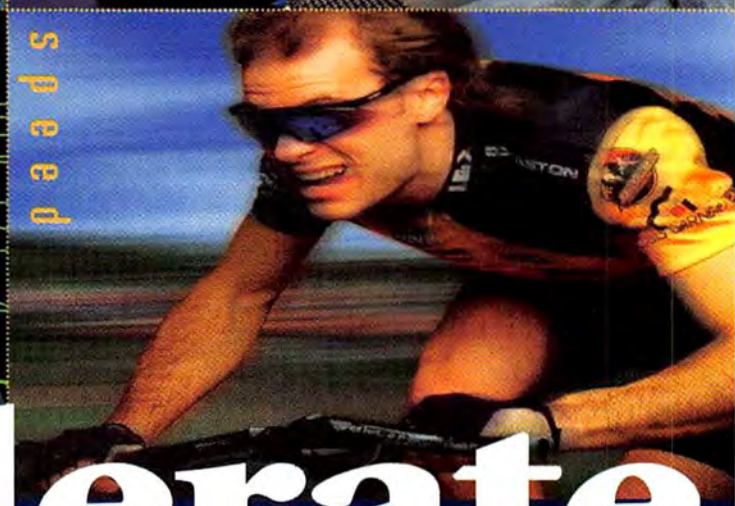


PANTONE CALIBRATED™

POSTSCRIPT Software From Adobe

YOU'VE GOT TO SEE IT IN EPSON COLOR™

Street price may vary. Limited time Live Picture offer. See dealer for details. Live Picture SE is a Macintosh-based software application. EPSON and EPSON Stylus are registered trademarks of Seiko Epson Corp. All other trademarks and registered trademarks are the property of their respective owners. ©1996 Epson America, Inc. **www.epson.com**



Accelerate

it all

You want to do it all. Fly through mega photoshop files. Create dazzling 3D designs and high-impact multimedia titles. With the MGA Millennium graphics accelerator you'll get the power you need to breeze through all this and more. At only $269 (ESP) for the 4MB version, it's the only card to offer MAC and PC price parity.

MGA Millennium's advanced state of the art features include a fully optimized PCI design, and the award winning MGA 64-bit processor. In addition, its faster, Window RAM (WRAM) memory ensures consistently high performance no matter what resolution or color depth you're working in.

Benefit from ultra high resolution displays of up to 1440 x 1080 in true 24-bit color or 1600 x 1200 in 16 bit color.

And as the only graphics accelerator to offer affordable hardware accelerated Quick Draw™3D, you'll be on the cutting edge of 3D design. Render Gouraud shaded 3D designs, logos, animations and VRML scenes all in real-time.

With MGA Millennium you can have it all. Blinding speed. Brilliant true color. Real-time 3D design. And the latest in multimedia. Don't settle for anything less.

- New low price!
- True color, 3D design and multimedia
- Hardware accelerated Quick Draw™3D
- Faster Window RAM (WRAM) memory
- 4MB PCI base board upgradeable to 8MB
- 8MB PCI base board (not upgradeable)

Get MGA Millennium for PCI Power Mac

1996 BYTE READERS' CHOICE AWARD

MacConnection 1-800-800-9478
MacWAREHOUSE 1-800-255-6227
GTI 1-800 999-9382
ICG 1-800-659-4244
INGRAM MICRO 1-800-456-8000
Tech Data 1-800-237-8931

1-800-660-1873

http://www.matrox.com/mga

matrox

Matrox Graphics Inc. 1025 St. Regis Blvd. Dorval, QC H9P 2T4 Canada Tel: (514) 969-6320 Fax: (514) 969-6363 In Quebec, call: (514) 969-6330

MacBench 3.0 publishing graphics mix test performed on Power Mac 9500/132 with 40MB of RAM @ 1152 x 870 in 16.7 million colors with Matrox Millennium for PCI Power Mac, Diamond Javelin, ATI Xclaim and Radius Thunder 3D/1600

CIRCLE **94** ON READER SERVICE CARD

PAMELA PFIFFNER

Dangerous Minds

I ADMIT IT: I'm a subversive. Sure, as leader of the *MacUser* pack, I do more than my share of proselytizing. Vendors who have been on the receiving end of my fervent opinions will tell you that I do so with evangelistic zeal. But that's not the only place I preach the Mac gospel. My other pulpit is the classroom. When it comes to the Mac, I'm a teacher as well as a preacher.

I teach at the Graduate School of Journalism at the University of California at Berkeley. OK, so my students aren't a bunch of cherubic apple-cheeked tots, but my class of graduate students does serve as an object lesson about what's still right with the Mac and Apple.

My class is virtually a Mac monastery, while outside these hallowed halls, the debate pitting Windows against the Mac OS rages on. The entire Graduate School of Journalism is a model of how Macs are the premier platform for producing content. Students use them for writing deadline stories, for publishing weekly newspapers, for designing magazine projects, for surfing the Net, for researching stories via the Net, for building student Web sites, and for creating special video effects in the television lab. And, of course, for drawing up that all-important job résumé. Best of all, while the "old boy" media school writes about how companies are replacing their Macs with PCs, the Graduate School of Journalism — which is training the next generation of mainstream reporters and editors — actually replaced dozens of PCs with Macs.

I teach students how to make publications, from design to layout to production on deadline. In addition to taking reporting, copy-editing, and photojournalism classes, students produce weekly newspapers. Other students of mine, working in the Clay Felker Magazine Center, have created four-color magazines, one of which (*Frontera*) has made the commercial leap to the corner newsstand and at least one of which has made the transition to the Web (check out the e-zine The Nerve!, at http://www.journalism.berkeley.edu/magazines/nerve/). Pretty cool, eh?

But I'm just as thrilled to have seen the level of Mac sophistication among my students grow in the six years I've been teaching. In the early '90s, I'd have to start the course by familiarizing pupils with the Mac OS. Now, the vast majority of my students have been working on Macs for years — a clear payoff from Apple's efforts to seed K – 12 schools.

Because my class is for graduates, whose ages range from 22 to 40+ years, not all the students have reaped the benefits of Apple's education harvest. That's where the Mac's ease of use is a big help. A brief discourse on the Mac's menu architecture, a quick lesson on the difference between double-click and click-and-drag, and a stern polemic on the necessity of Command-Z, and the class is ready to move on to the intricacies of QuarkXPress and Adobe Photoshop.

I'm amazed at how much abuse these machines withstand. Each of the school's 100+ students boots up and shuts down several times a day. Oh yeah, these Macs do freeze — "Save, and save often, people" — so they suffer the indignity of hard restarts from panicked reporters on deadline. But even then, it's possible to troubleshoot the system without too much Sturm und Drang — which further enhances my reputation as a technical genius.

But while I protect my little Mac sanctuary, I realize that the pressures outside the school are great. UC-Berkeley is, after all, a publicly funded institution subject to massive budget cuts. When these Macs are put to rest (it may take years), I know low-cost Wintel boxes will look appealing. At a faculty dinner to discuss new directions in cross-media instruction, I got into a spirited debate with the director of another department's multimedia lab who planned to replace its Macs with Pentium-based PCs. "Have you seen Premiere run on a Pentium Pro?" he asked. "It screams." I countered that it's pretty darn fast on a Mac, too, and, in fact, benchmarks show that it runs a good deal faster on multiprocessor Macs, such as those from DayStar, than any Pentium Pro could ever dream of. And, unless he's ready to take the whole shebang to Windows NT, multiprocessing is still one Mac advantage Windows 95 can't hope to rival.

And furthermore (I was on a roll now), I asked why he would want to convert all his hardware and software to a platform that requires so much technical hand-holding, especially when it comes to video drivers? Students would focus less on creation and more on problem solving. His answer? "Because Apple's going out of business. There's no sense investing in a dead platform." Well, that's the sort of circular logic that would get a first-year graduate student booted out on his thesis.

Today's students aren't stupid. They do ask about Windows PCs. They ask if you can do desktop publishing or access the Internet on the PC, and I tell them the truth. You can, but that's not the point. The point, this subversive Berkeley professor says, is which would you rather do all those things on? Which helps you do those things faster and easier? And, let's face it, which is more fun?

ILLUSTRATION / JAMES YANG

Your Modems Are Served.

NEW Timbuktu® Pro 3.0 for Macintosh!

Upgrade today for as little as $19.95*

Order Today

Let NEW Timbuktu Pro 3.0 satisfy your craving for remote control software that gives you the power to connect any way you want. With Timbuktu Pro 3.0 you've got all flavors of remote access —modem-to-modem over regular phone and ISDN lines, ARA dial-up, the Internet, LANs, or WANs. Since Timbuktu Pro 3.0 contains all the functionality of 2.0 and Timbuktu/Remote you can truly connect, communicate, and collaborate with any Mac, any user, anytime, anywhere. So whether you need to collaborate over the Internet with a client in Paris or simply connect to your home computer to retrieve a forgotten file, Timbuktu Pro 3.0 is all you need! And don't forget the special of the day—Timbuktu Pro is the only remote control software with cross-platform functionality between Macs and Windows PCs.

Packed With New Features

You'll love Timbuktu Pro 3.0's new features which enhance collaboration and communication: **Dial Direct** for modem-to-modem communications. **Real-time Interactive Chat** for instant collaboration and communication. **Notify When Active** to alert you when another user becomes active on their machine. **Ask for Permission** to connect to another user's machine. **Netscape Plug-in** so you can collaborate over the Internet. **AppleGuide On-line Interactive Help** to get—and keep—you up and running quickly and easily.

Today's Fresh Catch:
Free ARA Personal Server or Doom II game
Daily Specials:
Timbuktu Pro 2.0 users upgrade only **$19.95***
Timbuktu/Remote users upgrade only **$49.95**
All other Timbuktu users upgrade only **$49.95**
ARA users upgrade only **$49.95**

Purchase today and put the power of Timbuktu Pro 3.0 on your plate along with a FREE ARA Personal Server or Doom II game. Our waiters are standing by to take your order.

1-800-678-5075
or order on line
http://www.farallon.com

I thought they were only working on Windows stuff!

Now contains Timbuktu/Remote functionality!

Mac OS · Accelerated for Power Macintosh · yes It runs with NetWare · INTERNET SAVVY

© 1996 Farallon Communications, Inc. Cross-platform screen-sharing technology in Timbuktu is covered by US Patent Number 5,241,625. All rights reserved. v.896

Farallon®

*ARA Personal Server or Doom II game is an additional $10.00 for Timbuktu Pro 2.0 customers. Limited time offer good while supplies last. Please give your waiter VIP code 926B.

NEWS

Apple Alters OS Plans — Again

Some improvements can't wait for Mac OS 8, so Apple will release OS upgrades twice a year.

THE LONG-AWAITED MAC OS 8, previously known as Copland, will never ship — at least not as originally conceived. Instead of releasing mega-upgrades that come in roughly three-year intervals (remember System 7?), Apple now plans to release a new system-software version every six months, each January and July.

The first such release, scheduled for January 1997, is code-named Harmony. The major new feature of Harmony will be the integration of OpenDoc and Cyberdog into the Mac OS. OpenDoc is Apple's component-software architecture; Cyberdog is a suite of Internet functions based on OpenDoc (see "Walking the Cyberdog," July '96, page 69). Come January 1997, Cyberdog will be Apple's vehicle for delivering Internet capability in the OS.

This is a mixed blessing. On the plus side, Cyberdog enables users to more fully integrate the Internet with the Finder and with OpenDoc-savvy applications. For example, with Cyberdog installed, users can drag CyberItems representing URLs to the desktop and access Web sites directly by double-clicking on the CyberItems. Cyberdog also lets users embed a Web browser or a Finder-like listing of the contents of an FTP site directly within a document.

In the minus column, Cyberdog's Web-browser features fall far short of those in Netscape Navigator and Microsoft's Internet Explorer. Apple has signed an agreement with Netscape to replace Cyberdog's current browser with an OpenDoc implementation of Netscape's browser, to be called Netscape Navigator for Cyberdog. Unfortunately, it probably won't be ready in time to include in Harmony.

The January 1997 Harmony release will deliver several other incremental improvements to 7.5.3:

One benefit of the upcoming Harmony release of the Mac OS will be a greatly improved Extensions Manager.

BETTER VIRTUAL MEMORY. Apple claims that this new version of VM will be faster and will work better with multimedia titles when they're played on low-RAM systems.

LASERWRITER 8.4. First shipped with the Apple LaserWriter 12/640 in June of this year, this new printer driver is significantly faster than previous versions and delivers many of the features of QuickDraw GX printing without requiring you to install GX. It puts a printer menu in the menu bar, for example, that lets you instantly switch printers on the fly.

NEW EXTENSIONS MANAGER. Version 4.0 of Extensions Manager will give users who suffer from extension bloating new tools for managing that painful malady. The new version will provide more-detailed information about extensions — their size and location, for example — as well as more-flexible viewing choices. "Feature clustering" will make it easier to turn on and off groups of extensions that are associated with the same application.

UPDATED MULTIMEDIA CAPABILITY. Harmony will install the latest and greatest versions of QuickTime (2.5) and QuickDraw 3D (1.5).

What you should not look for in Harmony is the new 3-D desktop look or any of the Finder enhancements Apple previously promoted as features of Mac OS 8. Those will most likely appear in the July 1997 edition.

And then there are the core OS changes that are intended to lift the Mac OS into the modern era (and make it stop crashing as much as it does): preemptive multitasking, protected memory, symmetric multiprocessing, a new system-patching mechanism, a new file system, and so on. The odds in Las Vegas against any of this stuff appearing before January 1998 are running about 250 to 1. */ HENRY BORTMAN*

FUTURE TECH

Data Distinctions Due to Disappear

THERE'S NO GOOD REASON why your Mac needs one channel for accessing local storage devices (hard drives, RAID arrays) and another for accessing network devices (servers, other Macs) — no good reason, that is, except for the limitations of current technology. Storage-access channels such as SCSI are fast but are short and essentially single-purpose; network channels such as Ethernet are long-distance and multipurpose but slow.

These limitations, however, are disappearing. Storage-channel improvements such as FC-AL (fibre channel – arbitrated loop) and SSA (serial storage architecture) allow multiple storage devices and computers to hook up on common long-distance links. Technologies such as ATM (asynchronous transfer mode) and gigabit Ethernet make data-transfer rates for network channels comparable to those of storage-access channels.

As storage channels and network channels become more and more alike in their capacities and capabilities, a new concept is emerging to describe technology that allows them to interconnect: *fabric*. *Fabric* (or *switched fabric*) is a term that was originally used to describe an intelligent switching system that connected two complex networks. Today, as network channels and storage channels converge, the term is being used to describe devices that let different channels and protocols seamlessly interconnect — or even to describe the entire interconnected system itself.

In either case, the goal of fabric technology is to handle all the media switching, protocol juggling, error checking, and other black magic needed for instantaneous, transparent access to any data from any device — no matter if that data is a Photoshop file from your departmental RAID array, a sales report from the corporate mainframe, or an e-mail message from ol' Uncle Casmir in Warsaw. The distinction between storage channels and network channels will disappear. */ RIK MYSLEWSKI*

NEW & NOTABLE

SOFTWARE

Myrmidon. Using only the Print command, turn any existing document from any application, either text-based or graphics-based, into an HTML document. $49.95. TerryMorse Software: 415-858-1017; http://www.terrymorse.com/.

World Wide Web Weaver. This HTML editor uses floating palettes and a global scratch pad to keep your favorite HTML tags and frequently used text close at hand. $89. Miracle Software: 315-265-0930; http://www.miracleinc.com/.

▼ **Internet Phone.** An animated assistant guides your calls over the Internet; automatic voice activation and caller ID are just two of several other functions. $49.95. VocalTec: 201-768-9400; http://www.vocaltec.com/.

DigiPhone for Mac. A free extra registration pack for this Internet-phone application allows a friend to sign on. Other features include text messaging and call encryption for additional privacy. $19.95. Third Planet Publishing: 214-713-2640; http://www.digiphone.com/.

iSDN Manager 4.0. The latest version of this popular ISDN-file-transfer software adds a new protocol called MLPPP (MultiLink Point to Point Protocol) that is additionally compatible with older protocols. $2,795. 4 Sight: 800-243-0532 or 515-221-3000; http://www.4sight.com/.

SAM 4.5. The new version of this antivirus software includes the SafeZone, which automatically scans shareware and files while they download from the Internet. $60; upgrade, $30. Symantec: 800-441-7234 or 541-334-6054; http://www.symantec.com/.

Spell Catcher. Clean up your act with this upgrade to Thunder 7, a combination spelling checker, thesaurus, and glossary that works in all applications, including e-mail and Web browsers. $55.95. Casady & Greene: 800-359-4920 or 408-484-9228; http://www.casadyg.com/.

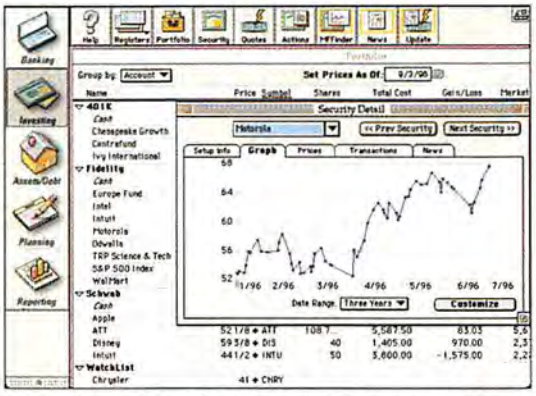
CometPage and CometSite. Build Web pages with your own library of templates and macros, and then test them without needing to download them to the server. $89 and $149, respectively. Digital Comet: 415-231-5551; http://www.digitalcomet.com/. / *BROOKE C. WHEELER*

FIRST LOOKS

Quicken Deluxe 7.0:

Friendly, Powerful Money Manager

OUR FIRST LOOK at the soon-to-be-released Quicken Deluxe 7.0 shows using it to be one of the friendlier ways to help your dollars make sense. This latest version of the market-leading personal-finance application puts stronger emphasis on planning and on learning how to better manage your money. Investment tracking and online banking also get a boost, all showcased in a cleaner, more customizable interface.



Quicken Deluxe 7.0's online Investor Insight service provides details on specific securities.

A new left-hand menu bar simplifies your options by putting them into five main topics: Banking, Investing, Assets/Debt, Planning, and Reporting. The Planning section includes a new set of snazzy, interactive Financial Fitness questionnaires that guide you through audio-explained steps analyzing your net worth, distilling your overall financial situation, and creating action plans for debt reduction and retirement planning.

Investment tracking has also received attention. The new online Investor Insight program ($9.95 per month) lets you receive updated quotes for 500 different stocks and tracks your securities in specific lots. You can get selected financial news in addition to price updates.

Online banking gets a few tweaks, with more financial institutions having signed on, but it's still a long way from the universal usefulness we hope for. Many items (such as the Registers) remain largely unchanged, with only a minor tweak or two. / *BROOKE C. WHEELER*

PROS: Useful new planners help you understand the Big Picture.
CONS: Online banking still limited and a bit of a hassle.
INFO: $59.95; upgrade, $39.95. Intuit: 800-642-8742 or 415-944-6000; http://www.intuit.com/

Newer Accelerates Everything

YOUR POWER MAC'S system bus — the communication channel between processor and RAM — runs at a safe and sane 40 MHz. According to Roger Kasten, Newer Technology's chief technology officer, Apple designed the bus to support clock rates of up to 60 MHz but runs it at the lower speed to ensure stability. As processor clock rates get higher, however, they're increasingly constrained by a low-speed bus. A 200-MHz processor, for example, runs five times as fast as a 40-MHz system bus; it has a *bus multiple* of 5.

The lower the bus multiple, the higher the performance of the entire system — and the just released MAXpowr 180-, 200-, and 225-MHz 604e processor-upgrade cards from Newer allow you to choose a lower one. Each card can be set to one of four bus multiples, in increments of .5 — the 180-MHz card ranges from 3 to 4.5, the 200-MHz card from 3.5 to 5, and the 225-MHz card from 4 to 5.5.

If, for example, you set the 200-MHz card to a bus multiple of 3.5, your system bus will blaze along at over 57 MHz — that's over 40 percent faster than the standard 40 MHz but still within the 60-MHz maximum for which Newer claims Apple designed the bus. Not only will you enjoy the power of a faster processor but your entire system will also benefit from the faster system bus. And if your Mac balks at the high bus speed — an old, slow cache might choke, for example — simply set the MAXpowr card to a higher multiple.

MAXpowr cards are available for the Power Mac 9500, 8500, 7600, and 7500. Although the current cards also fit SuperMac clones, smaller ones designed for Power Computing systems won't ship until this winter. 180-MHz card, $885; 200-MHz card, $1,075. At press time, pricing was not set for the 225-MHz card. 800-678-3726 or 316-943-0222; http://www.newertech.com/. / *RIK MYSLEWSKI*

FreeHand 7.0:
Look Out, Illustrator, Here It Comes

PROS: Superior production tools and drawing enhancements give this program a real edge.
CONS: Some file formats aren't handled with finesse, but we found little else to criticize.
INFO: $599; upgrade, $149. Macromedia: 800-326-2128 or 415-252-2000; http://www.macromedia.com/.

IN THE COMPETITION for best illustration tool, Adobe Illustrator has generally led Macromedia FreeHand by a nose — or half a mouse. But this fall FreeHand will challenge Illustrator like never before. FreeHand 7.0 (yes, it skipped up from 5.5) answers almost every criticism brought against its predecessor, adding interface improvements, compatibility with more programs and file formats, and improved drawing features.

You'll know something's changed as soon as you see the new interface. Where once there was clutter, there are now tabbed palettes similar to those in Adobe Photoshop. Behind the scenes, an Xtras manager, similar to Apple's Extensions Manager, reins in a previously confusing jumble.

FreeHand 7.0 will offer drag-and-drop ability with Adobe Photoshop and PageMill and will support more file formats, including GIF and JPEG. Not all formats are handled with finesse, however — FreeHand 7.0 parses foreign EPS files if you open them separately but not if you try to import them into a drawing. FreeHand 7.0 also doesn't offer an automatic mask option to preserve the shape of converted images.

FreeHand 7.0 sports a streamlined interface and new features such as full-color autotracing, enveloping effects, and the ability to blend along a path.

FreeHand 7.0 clearly surges ahead of Illustrator in one area — production features. The enhanced Print menu lets you save style sheets for various printers — a big help for service bureaus and for those who use them. To save updating time, you can link images to external files, much as you can with a page-layout program.

On the design front, you'll be able to blend multiple objects along a path as well as search for and replace object attributes such as shape and fill. FreeHand 7.0's profoundly enhanced autotracing features will pose the first real threat to Adobe Streamline ($199).

FreeHand 7.0 will be available separately or as part of the FreeHand Graphics Studio, which will also include new versions of xRes, Extreme 3D, and Fontographer. / *SCHOLLE SAWYER*

IN BRIEF

Apple, Microsoft Join Forces

"A NEW ERA of cooperation" is how Marco Landi, Apple's executive VP and COO, describes a new agreement with Microsoft. The two companies are combining promotion and customer-support efforts for a pair of Power Macs — the 7600/132 and the 8200/120 — that will come bundled with Microsoft Office 4.2.1. Don't call your stateside dealer, though: This bundle will be offered only in Europe. / *RIK MYSLEWSKI*

Low-Cost Agfa Scanners

AGFA IMAGING EXPERTISE is now affordable. Agfa's $389 SnapScan scans originals of up to 8.5 x 11.7 inches at a 300-x-600-ppi optical resolution and has MicroFrontier's Color It! image-editing software. The $985 StudioStar scans originals as large as 8 x 14 inches at a 600-x-1,200-ppi optical resolution and includes Adobe Photoshop. Agfa: 800-879-2432 or 201-440-2500; http://www.agfa.com/. / *CAROLYN BICKFORD*

QuickTime VR Gets Net-Savvy

THE VIRTUAL WORLD of the World Wide Web will get a little more real this fall. Although the current QuickTime 1.0 browser plug-in lets you view QuickTime Virtual Reality scenes from within a Navigator window, version 1.1 will also enable those pannable, zoomable QTVR scenes to be image maps that link to other sites. Look for the latest at http://qtvr.quicktime.apple.com/. / *SCHOLLE SAWYER*

File-Server Speedup

FAST FILE SERVERS for fast file service — that's the promise of Apple's new Network Server 700/200 and Workgroup Server 8550/200, which both sport a 200-MHz 604e processor and beefed up RAM and storage. Network Server 700/200 prices start at $15,000. The Workgroup Server 8550/200 ($6,000 to $7,500) replaces the original WGS 8550. Apple will also offer processor upgrades for current WGS 8550 and Network Server 700 users. / *SHELLY BRISBIN*

CLONE WATCH

Everybody's Now Aboard the Multiprocessor Bandwagon

IT'S A PERFECT late-night cable-TV ad: "Multiprocessor madness! More processors! More power!! More values!!!"

This August, Apple announced its Power Macintosh 9500/180 MP system. Only a few weeks later, Power Computing officially joined the MP club. Its PowerTower Pro 200 and 225 MP systems contain dual 200- and 225-MHz PowerPC 604e chips, respectively. Expect to find a PowerTower Pro 200 MP system with 32 MB of RAM, a 2-GB hard-disk drive, and an 8-MB IMS TwinTurbo accelerated-graphics card for around $5,650. Similarly configured PowerTower Pro 225 MP systems are expected to be approximately $6,350.

DayStar Digital continues to offer the broadest range of MP systems and the only four-processor ones. Although DayStar systems aren't cheap, their prices have dropped precipitously in the last few months. DayStar's top-of-the-line Genesis MP 800+ (which has four 200-MHz 604e chips), for example, is now around $12,000, configured with 32 MB of RAM, a 2-GB hard-disk drive, and a Radius Thunder 30/1600 graphics card.

DayStar also offers the 720+ (four 180-MHz 604e chips); the 600+ (four 150-MHz 604 chips); and the 360+ (two 180-MHz 604e chips). If you are looking to add MP power to an existing Apple Power Macintosh or a UMAX SuperMac S900, DayStar is your only source for a dual-processor upgrade card.

Expect to see announcements soon of two additional dual-processor solutions for UMAX's SuperMac systems. For existing SuperMac S900 150-, 180-, and 200-MHz systems, UMAX will offer cards that can be installed in those systems' unique second processor slots. UMAX will also offer a dual-processor SuperMac system containing a single dual-processor card based on DayStar's nPOWER technology. / *HENRY BORTMAN*

NEW & NOTABLE

HARDWARE

Hewlett-Packard DeskJet 870Cse and 870Cxi. These inkjet replacements for the 850C and 855C models promise 8-ppm printing speed for black-and-white output and 4 ppm for color output. $599 each. 800-752-0900 or 415-857-1501; http://www.hp.com/.

Hewlett-Packard LaserJet 6P and 6MP. These speedy replacements of the HP LaserJet 5P and 5MP deliver 8-ppm print speed and improved graphics capabilities for lower prices than their predecessors. $800 and $950, respectively. 800-752-0900 or 415-857-1501; http://www.hp.com/.

◀ **Logicode Quicktel II.** This speakerphone voice/fax modem includes convenient functions such as voice mail, Caller ID, and message forwarding to a pager or other phone numbers. $299. Logicode Technology: 800-735-6442 or 805-383-2500; http://www.logicode.com/.

Tektronix Phaser 350. Get high-quality phase-change color printing for about half the cost of a color laser printer. $3,495. 800-835-9433 or 503-682-3411; http://www.tek.com/.

Epson Expression 636. The appeal of Epson's new flatbed scanner is in the scanner's ability to deliver quality 36-bit-color images without destroying your bank account. A transparency adapter is optional. $999. 800-289-3776 or 310-782-0770; http://www.epson.com/.

Nikon Scantouch 210. Fill prepress, graphics-intensive scanning needs with this single-pass color flatbed scanner. A transparency adapter is optional. $1,049. 800-526-4566 or 516-547-4200; http://www.nikonusa.com/.

Village Tronic MacPicasso 520. This affordable 64-bit graphics-accelerator card from Germany-based Village Tronic comes with a Cirrus Logic Alpine graphics engine and is available for PCI- and NuBus-based Macs. $266. 510-735-6001; http://www.phone.net/~mwm/picasso/.

Alps MD-4000. This color printer has an integrated 600-dpi, single-pass 24-bit color scanner and comes bundled with Adobe PhotoDeluxe and Alps Copy Studio, for one-stop image processing. The printer uses Alps' newly patented Micro Dry waterproof, fade-proof inks. $699. Alps Electric USA: 800-825-2577 or 408-432-6000; http://www.alpsusa.com/.

Mitsubishi Diamond Pro 91TXM. This 21-inch DiamondTron monitor has an improved aperture-grille frame and beam-gun design for a crisper, brighter picture. $1,699. 800-843-2515 or 714-220-2500; http://www.mitsubishi-display.com/. / *BROOKE C. WHEELER*

Imaging Avalanche

A batch of new digital cameras announced by Nikon, Sony, Olympus, and Canon round out a year of innovation.

WE'LL REMEMBER 1996 as the year in which every major camera maker joined the digital revolution — and when the more ingenious of them created units that were more than mere digital replicas of their film-based forebears.

NIKON COOLPIX 300 ▶. Easily the most innovative digital camera we've seen is the Nikon CoolPix 300, which should cost around $1,000 when it's released early next year. Its color LCD panel displays images and serves as the interface to a pen-based operating system. Handwritten and audio notes can be linked to an image, and up to 125 640-x-480-pixel images can be downloaded to your Mac or displayed on a TV.

◀ **NIKON COOLPIX 100.** Sharing the same high-quality optics, autoexposure features, and auto built-in flash as the CoolPix 300, the tiny CoolPix 100 slips out of its battery pack and into your PowerBook's PC Card slot to download its forty 512-x-480-pixel images. Expect it to cost around $500. 800-645-6872 or 516-547-4200; http://www.nikonusa.com/.

SONY DSC-F1 ▶. The $849 Sony DSC-F1, which comes with a flash and an LCD view panel, can record up to four 640-x-480-pixel images per second or can split an image into nine segments, the segments captured 1/30 second apart. Too bad the Mac can't take advantage of its high-speed IrDA infrared interface, as some PCs can. 800-352-7669 or 408-432-1600; http://www.sony.com/image.

OLYMPUS D-200L. At around $500, the Olympus D-200L couples point-and-shoot simplicity with an LCD view panel, a built-in flash, and a bundled copy of Adobe PhotoDeluxe. Eighty 640-x-480-pixel images can be downloaded to your Macintosh through the included serial cable.

OLYMPUS D-300L ▼. The D-200L's big brother, the under-$900 D-300L, shares the identical LCD-panel and flash design, but it is able to capture 120 images at 1,024 x 768 pixels, the highest resolution in its class. 516-844-5000; http://www.olympusamerica.com/.

CANON POWERSHOT 600 ▼. The autofocus, autoflash Canon PowerShot 600 stores 18 832-x-608-pixel images in its built-in RAM, but it also accepts Type I, II, and III PC Cards — a 170-MB Type III card can hold 3,000 images. Canon says a Mac-compatible PowerShot 600 will be appearing "soon." 800-848-4123 or 714-438-7100; http://www.ccsi.canon.com/.

/ *RIK MYSLEWSKI*

Java Now Easier to Brew

PROGRAMMERS AND WEB developers tired of peering into the murky depths of most current Java development environments will get an eyeful from Symantec's Visual Cafe. And if it takes more than a cup of coffee to get you going in the morning, you can always start your day with a quick shot of the latest version of Metrowerks' CodeWarrior.

Visual Cafe ($199) is a Java-only RAD (Rapid Application Development) environment with graphical tools such as a GUI (Graphical User Interface) builder, a Component Library, and an Interaction Wizard. Developers can build applications using visual tools; Java code is generated automatically. Visual Cafe differs from Symantec's previous Java tool, Cafe, in that the development interface of the former is completely graphical and forms-based. Upgrades from Cafe are $99. 800-441-7234 or 541-334-6054; http://www.symantec.com/.

Metrowerks has added a graphical class browser to CodeWarrior, the firm's development environment, and now includes a Java-applet construction tool as well. This new version, CodeWarrior 10, also adds development tools for General Magic's MagicCap. 800-377-5416 or 512-873-4700; http://www.metrowerks.com/. / *SHELLY BRISBIN*

NET.CETERA

Fly Through the Web

Apple's HotSauce: A whole new way to navigate the Web.

BROWSING THROUGH WEB SITES — even well-designed ones — can be a mouse-click marathon: Click on a link, click on the Back button, click on *another* link, click on the Back button, ad infinitum. Apple is trying to relieve the tedium with what it hopes is an easier way to navigate the World Wide Web: HotSauce.

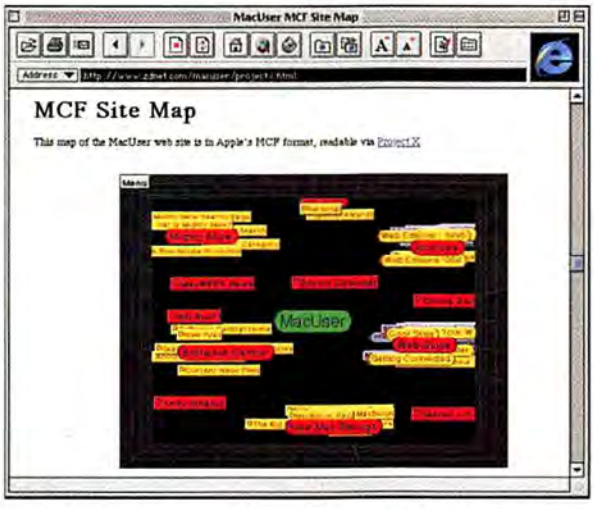
You read that right. HotSauce. Must be some stiff competition within Apple's Department of Funny Names: The genius who thought up *Cyberdog* is still the reigning champ — but barely.

Formerly known as Project X and heavily promoted by Apple at every opportunity, the HotSauce browser plug-in (available both for the Mac OS and for Windows at http://hotsauce.apple.com/) lets a Web page include an embedded *X space* that you can fly through. Each X space graphically displays a hierarchy of information, so you can float around on the surface or tunnel deep into any area that strikes your fancy.

Since you can see an entire Web site at one glance (none of that click-back-click stuff), HotSauce can be a useful navigation tool once — or *if* — you get used to it. You may find that you just don't like how HotSauce represents a Web site's contents. Aesthetically speaking, it's rather crude, and navigation to distant links can be tedious and time-consuming.

There's more to HotSauce, however, than fancy information fly-throughs: Underlying it is the Apple-created Meta-Content Format, or MCF, a text-based code that describes how various items relate to one another. Apple hopes that MCF will become a standard — on the Internet and off — for describing how elements in information collections relate to one another. Using HotSauce is only one way of showing those relationships. Just as Web browsers can render HTML pages in various ways, so too can MCF viewers display relationships. In addition to its distinctive 3-D view, for example, HotSauce also offers a familiar Finder-style outline view.

If MCF catches on, the Net might finally settle on a standardized way of describing related information. But since Apple has so much work to do before it can clearly define its full Internet strategy, you've got to wonder why the company is spending so much of its energy merely trying to build a better site map. / *JASON SNELL*



The HotSauce plug-in, available for both the Mac OS and Windows, lets users fly through *X spaces* from within their browser.

The Geek Beat

INTERNET HARDWARE. It's a Web server, it's a DNS, it's a router — it's the InterJet, from Whistle Communications. With a UNIX-based computer at its core, modem or ISDN connections to an ISP, and Ethernet for LAN access, the InterJet is an Internet server designed for small businesses. It includes support for POP mail, Web access, and publishing and is managed through a Web-based interface. Customers must purchase the InterJet and Net access from an ISP for $1,995 (Netcom and PSI were the first to sign up with Whistle). 888-494-4785 or 415-577-7000; http://www.whistle.com/.

INTERNET SOFTWARE. LiveCard is a CGI application that allows you to serve HyperCard stacks via the Web. Web surfers need no browser plug-ins, and stacks can be served to Mac OS, Windows, or UNIX users. $149. Royal Software: 800-888-7667 or 813-581-6422; http://www.royalsoftware.com/livecard.html. WebDBC is a development tool and gateway for Webmasters who want to connect their sites to ODBC databases. The development software is free on the Web; the gateway product sells for $595. Nomad: 206-812-0177; http://www.ndev.com/. ClearWay Technologies' FireSite ($499) accelerates access for sites served by 28.8-kbps modem lines. The WebStar-compatible plug-in uploads GIF and JPEG images to an ISP-based Web server, taking advantage of the ISP's faster connection to the Internet. 888-552-5327 or 617-973-5001; http://www.clearway.com/.

POWER MANAGEMENT. LanSafe III, version 2, from Deltec, monitors networks for any unusual power fluctuations and is able to gracefully save open documents and shut down networked Macs in the event of a power loss. LanSafe works with Deltec UPS (uninterruptible power supply) hardware. 800-426-2448 or 612-633-2556. / *SHELLY BRISBIN*

New Design Standard for Web and Print Publishing

IT'S THE CURRENT CONUNDRUM in the publishing field: How can you make documents that are destined for print available for the World Wide Web in a format that takes advantage of all the bells and whistles the medium has to offer? Converters for existing publications are limited, and starting from scratch requires too much time — and too much HTML coding. What if you could design content for both the printed page and the Web and have it automatically prepare itself for its destination on the fly? That's the promise of NuDoc, a new page-description technology from Archetype, a provider of database tools for publishers.

NuDoc is a flexible, object-oriented technology that lets you create content independent of that content's final destination. Tags embedded within the content specify media type (text, pictures, movies) and output format (PostScript for print, HTML for the Web). When you want to publish the content, the NuDoc imaging engine reads the tags and pours the content into the appropriate *container*, as Archetype calls the document templates. Archetype has licensed Bitstream's TrueDoc technology to handle typographic conversions.

Publishers design the container with Archetype's PageFlex application, slated for release by mid-1997. PageFlex will let you preview the document before output and can contain links to databases holding frequently updated information. Archetype says NuDoc plug-ins for Netscape Navigator will soon be available, allowing publishers to edit content in the browser.

Both Apple and publishing integrator SII plan to adopt NuDoc. Archetype promises to publish the specifications for making NuDoc containers before the new year. 617-299-6650. / *PAMELA PFIFFNER*

NEW & NOTABLE

RESOURCES

PM-to-QX Xtension. This handy utility can convert Adobe PageMaker files into QuarkXPress files while retaining the originals' layout and attributes. Really. $99. Markzware: 800-300-3532 or 714-756-5100; http://www.markzware.com/.

▼ **The Grammar of Ornament, Professional Artists' Edition.** This CD-ROM, based on an 1856 book commissioned by the British government to ensure design quality during the Industrial Revolution, contains more than 2,300 pattern designs from 20 different regions and cultures, including Egypt, Assyria, China, Turkey, and Renaissance Europe. $199. Direct Imagination: 818-793-8387; http://www.dimagin.com/.

ReelTextures. Add animated backgrounds to video projects with this CD-ROM collection of 40 broadcast-quality QuickTime clips, mattes, wipes, and stills. $349. Artbeats: 800-444-9392 or 541-863-4429; http://www.artbeats.com/.

web.STIR Artkit. Choose from 500 images, icons, backgrounds, dividers, buttons, and bullets in this CD-ROM library of 8-bit clip art for the Web. The files are ready to drag right into your HTML editor. $150. Letraset: 800-526-9073 or 201-845-6100; http://www.letraset.com/.

WildRiverSSK. A suite of seven Photoshop filters and plug-ins lets you simulate 3-D effects; create multicolor frames; and add effects such as textures, backlighting, shadows, and TV static to Photoshop images. $99.95. DataStream: 606-255-6686; http://www.datastrem.com/.

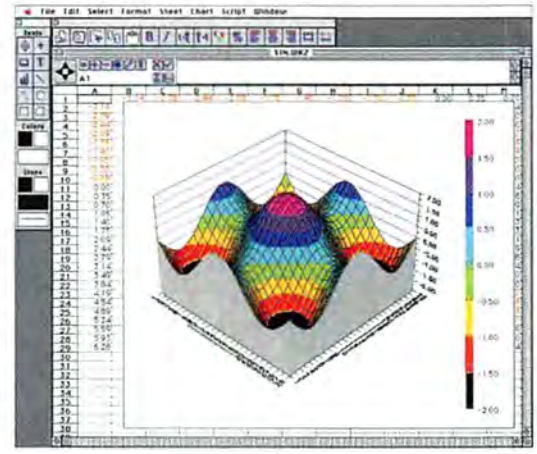
GymnastXT. This cross-platform plug-in translates Adobe Acrobat PDF files from the Mac OS, Windows, and UNIX into EPS files for importing into QuarkXPress. $99.95. DataStream: 606-255-6686; http://www.datastrem.com/.

FutureSplash Animator. FutureWave's popular SmartSketch drawing technology is integrated into this package that lets you create vector-based cartoons, logos, images, buttons, and streaming animations for the Web. $250. FutureWave: 800-619-6193 or 619-552-7680; http://www.futurewave.com/.

ClearVideo. Compress video content to one-fifth its original file size and data rates to as low as 10 kbps, with smoother results than you'd get with other compression applications. Fine-tune frame size and rate and target data rate, and ClearVideo does the rest. $995. Iterated Systems: 800-437-2285 or 404-264-8000; http://www.iterated.com/. / *BROOKE C. WHEELER*

Mac Business Boom

A flock of new business software arrives.



PUBLISHING, VIDEO, and Internet applications may hog the headlines, but Mac-software developers are boldly marching into a battleground long thought lost to the Wintel hoards: business. Witness, for example, the reappearance of Wingz, the power user's spreadsheet program, as well as the arrival of several other innovative or revamped business applications.

WINGZ 2.1 ▶. Often admired for its powerful built-in scripting, its excellent 3-D charts, and — admittedly — the fact that it wasn't Microsoft Excel, Wingz now has an interface that includes a floating toolbox and redesigned menus, the ability to manipulate chart objects directly on a worksheet, and support for over 400 new HyperScript commands and functions. Wingz 2.1's parent, Investment Intelligence Systems, also offers a utility that lets you tie Wingz into a SQL database. A Wingz update planned for early next year will add more graph styles, support for Excel macros, and the ability to display a Wingz worksheet over the Web. $399. 800-494-9464 or 913-663-4472; http://www.wingz.com/.

CONNECTED 3.0. EveryWare's industrial-strength accounting program, Connected 3.0, now lets you customize its forms, set up recurring invoices, and create POs from sales orders automatically. Single-user, $895; multiuser, $1,795. 905-819-1173; http://www.everyware.com/.

OMNIFORM. Caere's OmniForm for Macintosh database software has an OCR engine that reads your business forms' design elements and converts them into data-entry fields, tables, and borders. $349. 800-543-0334 or 408-395-7000; http://www.caere.com/.

WATCH IT! Hi Resolution's Watch It! extension unobtrusively monitors how long you or (if you're on a network) people in your workgroup are actively working on each project. $99. 800-455-0888 or 508-543-6955.

POST-ON-THE-FLY CONFERENCE. Corporate collaboration could take an Internet turn with HomeCom Communications' Post-on-the-Fly Conference, which lets colleagues and customers use the Internet to upload audio, video, graphics, and word-processor documents into electronic-conference groups. Post-on-the-Fly Conference will be available for the Mac early next year. No price has been set. 404-237-4646; http://www.homecom.com/.

OFFICEMATE. If you just need a few business-document templates to get you started, you can try out SoftKey's OfficeMate, a collection of over 500 customizable Microsoft Word and Excel templates for invoices, expense reports, 401K planners, and more. $30. 510-792-2101.

MODEL BUSINESS LETTERS. If 500 document templates aren't enough for you, there are 575 more in ModelOffice's Model Business Letters, which includes sample apologies, announcements, and cover letters. $39.95. 800-801-3880 or 512-302-3888. / *CAROLYN BICKFORD*

THE OFF BEAT

Twist and Shout

DO THE TWIST with this futuristic — and enormous — color monitor. Abandon the tedium of scrolling through documents: Just take hold of the steering-wheel-like handle of this 20-inch monitor and twist it to landscape or portrait mode for a complete view of even tabloid-sized pages. Not only does this monitor perform its switcheroo on the fly but it can also accommodate 24-bit, 1,600-x-1,200-dpi video. In line with monitors of similar size and quality, it's priced near $3,000 — but you'll have to wait until the spring of 1997 to be the first on your block to have one. Portrait Displays: 800-858-7744 or 510-227-2700; http://www.portrait.com/. / *NANCY PETERSON*

PIManiacs, Rejoice!

Personal organizers now provide a smile with your schedule.

FLAMING TRASH CANS, wacky patterns, and useful features distinguish these five revamped PIMs.

CLARIS ORGANIZER 2.0. The new built-in patterns in Claris Organizer 2.0 include sober as well as zany designs — even a caveman motif. More seriously, it has several innovations, such as the ability to search for a contact by using only initials and to launch a word processor or e-mail program from within a contact's record. $69. 800-544-8554 or 408-987-7000; http://www.claris.com/.

LOTUS ORGANIZER. The group scheduler Lotus Organizer will finally be available for the Mac this coming January. Among its notable features are three levels of password protection; integration with Lotus' cc:Mail LAN-mail system; and the ability to accept, decline, or delegate appointments. It also has an amusing trash can that incinerates items. About $80. 800-343-5414 or 617-577-8500.

FRANKLIN QUEST ASCEND 4.0. Based on the hard-copy Franklin Quest Day Planner, Ascend 4.0 is gaining on its more sophisticated electronic competition. It can link tasks and appointments to contacts and has a multiday view that can show seven weeks of appointments, tasks, and notes. Franklin Quest claims Ascend is the only PIM that can print its records in every size and style of the Franklin Day Planner system. $99.95. 801-975-1776.

DAY-TIMER ORGANIZER 2.1. Like Franklin Quest Ascend 4.0, Day-Timer Organizer 2.1 is descended from a binder-based system and is also improved. It can now automatically fill in a record after you type the first few letters, it supports mail-merge with ClarisWorks and Microsoft Word, and it totals time and expenses for you. $59.95. 415-572-6260.

Fun backgrounds and innovative features mark Claris Organizer 2.0.

DATEVIEW 2.6. Although the Prairie Group acquired DateView well over a year ago, version 2.6 can boast only modest improvements — such as better reliability and improved integration with its address-book counterpart, InTouch. $49.95; bundled with InTouch, $79.95. 800-346-5392 or 515-225-3720; http://members.aol.com/prairiesft/index.html. / *CAROLYN BICKFORD*

MACINTOSH PRICE INDEX

THE UNITED COMPUTER EXCHANGE index reflects average sales prices of new and used Macs as of September 2, 1996. Prices (other than those for compact models, Performas, and LCs) do not include a monitor or a keyboard. The United Computer Exchange is a national clearinghouse of used microcomputer equipment.

MAC MODEL	NEW	USED
Classic II (4/40)	•	$225
LC III (4/80)	•	$250
Performa 5215CD (8/1GB)	•	$1,100
Performa 6220CD (16/1GB)	•	$1,200
IIsi (5/80)	•	$200
IIci (4/80)	•	$275
IIfx (4/80)	•	$375
Quadra 610 (8/160)	•	$450
Quadra 630 (4/250)	•	$475
Quadra 650 (8/230)	•	$550
Quadra 800 (8/230)	•	$800
Quadra 840AV (8/230/CD)	•	$1,000
Quadra 950 (8/230)	•	$900
Power Mac 6100/66 (8/350/CD)	•	$625
Power Mac 7100/80 (8/700/CD)	•	$900
Power Mac 7200/90 (8/500/CD)	•	$1,150
Power Mac 7500/100 (16/1GB/CD)	•	$1,950
Power Mac 8100/100 (16/1GB/CD)	•	$1,500
Power Mac 8500/120 (16/2GB/CD)	•	$2,450
Power Mac 9500/132 (16/2GB)	•	$2,700
PowerBook 180 (4/120)	•	$750
PowerBook 190cs/66 (8/500)	•	$1,025
PowerBook 520c (4/160)	•	$1,100
PowerBook 540c (4/320)	•	$1,200
PowerBook 5300cs (8/500)	•	$1,600
Duo 250 (4/200)	•	$675
Duo 280c (4/320)	•	$1,300
Duo 2300c/100 (8/750)	$2,499	$1,850
Power Computing Power 100 (16/1GB/CD)	•	$975
Power Computing PowerWave 604/150 CD (8/1GB)	•	$2,300

• = discontinued model

For more pricing information on these and other models, call 800-755-3033 or 770-955-0569 or visit http://www.uce.com/. And find it on ZD Net, in Library 1 (Special Reports) of the MacUser Forum (GO ZMC :MACUSER).

CD-ROMS

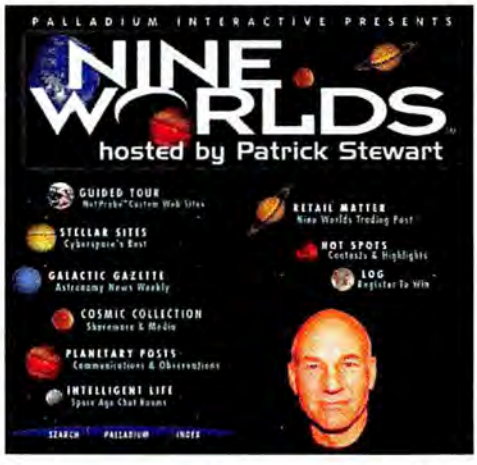
From Silver Screen to Silver Disc

WHEN THE RENT'S DUE and the residual checks are late, today's out-of-work actors make ends meet with a quickie CD-ROM gig.

KIYEKO AND THE LOST NIGHT. Academy Award winner Ben Kingsley had enough clout to land a respectable role as the English-language narrator of this charming story, set long ago and far away in the Amazon rain forest. You can hear and read it in French, German, Italian, and Spanish. $29.95. Ubi Soft Entertainment: 800-454-9356 or 415-547-5000; http://www.ubisoft.com/.

TREASURE QUEST. *Star Trek: Deep Space Nine*'s Terry Farrel seems to be merely running through old drama-class exercises as she portrays the ghost of a murdered woman who apparently communicates by impersonating an assortment of stock-character stereotypes. You have a chance to win $1,000,000 if you solve this so-called mystery, but it would help if the mystery were entertaining and not just pretentiously cryptic. $50. Sirius Publishing: 602-951-3288; http://www.treasurequest.com/.

NINE WORLDS ▶. *Star Trek: The Next Generation* may be off the air, but Patrick Stewart is still cashing in on the final-frontier shtick. Here he leads you through highlights of astronomy, the solar system, and a fun — if somewhat silly — travel section that includes, for instance, info on how much you'd weigh on another planet. You can continue learning on your own with an excellent resource section that includes Internet links to a myriad of astronomy Web pages, astronomy shareware, and contact information for astronomy clubs. $39.95. Palladium Interactive: 800-910-2696 or 415-464-5500; http://www.palladiumnet.com/. / *CAROLYN BICKFORD*



ONLINE

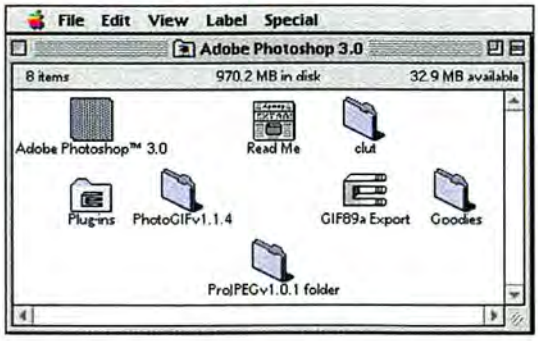
HEARD ON THE NET

"I am convinced that if General Motors could eliminate [Microsoft] Office from their entire company, they could get the 1999 cars out next year at half price."

— Sun Microsystems' CEO, Scott McNealy, on The Site (http://www.thesite.com/0796w3/work/mcnealy_tr.html)

Apple Achin' Spring

SO WHAT IF *Copland* has been ditched as System 8's official moniker and there won't even *be* a System 8 as we know it? That doesn't mean your Macintosh has to remain stuck in System 7 until that far-off day when Macintosh OS 8 finally arrives in some form. Here's some shareware that can make your desktop look like you're running System 8, complete with 3-D icons, built-in window shades, and more:



There's only one **Aaron** ▶ (★★★★★). Greg Landweber's and Edward Voas' legendary $10 system extension replaces your system font, modifies menu bars, changes system icons, and much more. Simply drag the Aaron extension into your Extensions folder, and restart. You'll be amazed at how complete the change in appearance can be.

If the Copland look doesn't fit your style, check out Landweber's **BeView** (★★★★), which makes the Mac OS look like the Be OS.

For those who insist on having matching custom icons and interfaces, Erik Selke's free **Virtual Copland** (★★★) is a suite of AppleScript applets that automatically replaces system icons with Copland-style ones. There's also a great full-color startup screen and replacements for over 100 icon styles.

Although not for the timid (we found that it sometimes caused Macs to behave strangely), Chris Thomas' **MenuTasking Enabler** (★★) hacks System 7 to perform at least one behavior promised for OS 8. Once you've installed this utility, your Mac no longer grinds to a halt when you pull down a menu; instead, it speeds along as if your mouse button had never been clicked. / *JODI NAAS*

TOP OF THE CHARTS

SOFTWARE DOWNLOADS

1. **QuickTime 2.5** / Apple's multimedia extension
2. **FreePPP 2.5v2** / Internet connectivity tool
3. **TechTool 1.1.1** / Rebuilds desktops and zaps your PRAM
4. **StuffIt Expander 4.0.1** / Extracts compressed and encoded files
5. **The DiskTools Collection 3.3.1** / Five useful DAs

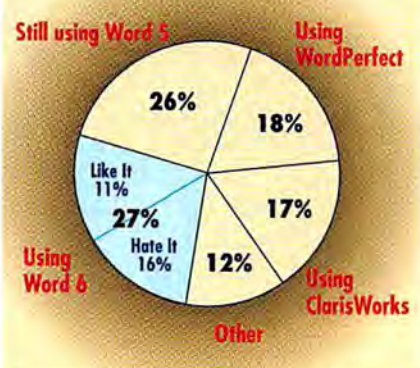
INTERNET DOWNLOADS

1. **FreePPP 2.5v2** / Internet connectivity tool
2. **MacWeather 2.0.4** / Weather info over the Net
3. **Eudora Light 1.5.4** / Free POP/SMTP e-mail client
4. **Fetch 3.0.1** / Internet FTP client
5. **Anarchie 1.6** / Internet FTP client

Ranking based on download counts from *MacUser*'s Software Central on the Web (http://www.zdnet.com/macuser/software/).

ONLINE POLL

Q. After all the controversy over Word 6, what word processor are you using? If you're using Word, how do you feel about it?



To participate in *MacUser*'s online polls, go to http://www.zdnet.com/macuser/poll.html.

MACUSER UTILITY OF THE MONTH

Deinstall Your Files with Ease

DO YOU EVER HESITATE before installing a new software package, worried that if you decide to get rid of it later, you'll never be able to find all the files scattered throughout your System Folder?

Now you'll worry no more, thanks to *MacUser*'s Install Tracker. When you drag installer applications onto Install Tracker's icon, the utility carefully watches where every file is placed. When you want to remove the software from your hard disk, Install Tracker lists all the installed files and lets you move them to the Trash with just one button click.

Install Tracker was written by Mark Batten and will be available beginning October 30 from *MacUser*'s homes on CompuServe (GO ZMC:MACUSER), on the Web (http://www.zdnet.com/macuser/software/), and on America Online (keyword MACUSER).

MACUSER ONLINE-EVENT CALENDAR

DATE	TIME	EVENT
November 7	9 P.M. EST	The Web: *MacUser*'s online editors
November 14	10 P.M. EST	Hot Mac Games: Roman Loyola
November 19	9 P.M. EST	New PowerBooks: Andrew Gore
November 25	9 P.M. EST	Help Folder: Mac advice with Bob and Chris

All events will take place on America Online. Times and guests are subject to change. For up-to-date event information and locations, check out keyword MACUSER or http://www.zdnet.com/zdi/talk/talkcal.html.

MACUSER ONLINE

Web: http://www.macuser.com
AOL: keyword MACUSER
CompuServe: GO ZMC:MACUSER
Send letters to the editor to letters@macuser.com.
To subscribe to the *MacUser* Web bulletin, e-mail macuserweb@macuser.com, using the subject *subscribe*.

What kind of person can get Hootie & The Blowfish, Tori Amos, *and* Collective Soul on his calendar?

You. And no recording industry experience required. Announcing Now Up-to-Date,™ the only schedule and contact manager that brings you the world of the Web.

Take off to sites like Atlantic Records. With a single drag and drop, you can add your favorite artist's concert dates, even a whole group of them, to your calendar. Find Tori Amos' tour date for your home town and simply drag it into your calendar, along with a hot link back to the Atlantic site. No typing. No extra steps.

Need someone's e-mail address? Surf over to the Four11 site, where you can add it into your Now Up-to-Date address book in a single drag and drop operation.

Got an intranet at work? Now Up-to-Date Web Publisher lets you post calendars and address listings with absolutely no HTML programming. Everyone has easy access to employee directories, client lists and project schedules through their Web browser—Windows 95, 3.1 and Mac OS alike.

To download a free trial of Now Up-to-Date, visit the Now Software Time Management Network at http://www.nowsoft.com/trial1. You'll find everything you need to get started, including links to the growing list of Web sites already publishing calendars and address books.

To find out how Now Up-to-Date can get you connected, call 1-800-544-2599.

Sunglasses optional.

Mac OS

Designed for Microsoft Windows 95

ATLANTIC

1 *Visit www.atlantic-records.com*

2 *Now drag-and-drop*

3 *any event into your personal calendar.*

Now Up-to-Date, the Now Software logo, and "It's about time." are trademarks of Now Software, Inc.; Windows is a trademark of Microsoft Corp.; Macintosh and Mac OS are trademarks of Apple Computer, Inc.; the Atlantic Records logo is a trademark of Atlantic Recording Corporation; Four11 is a trademark of Four11 Corp.

CIRCLE **82** ON READER SERVICE CARD

No other digital camera puts as much focus on the output.

Epson PhotoPC Digital Camera

"It blew the socks off everyone I showed it to."—Jason Shane, Technical Consultant, Coldwell Banker

"Epson's PhotoPC is just as impressive as it is inexpensive."—PC Magazine

"The PhotoPC's quality is outstanding, even compared to digital cameras costing twice as much."—Jon Pepper, Family PC

NOW JUST $399 ESTIMATED SELLING PRICE

- High-quality, 24 bit color images
- True 640x480 pixel resolution
- Epson's advanced ColorTrue™ System for more accurate and brilliant color pictures
- Store 32 standard or 16 high resolution pictures in base unit
- Expand storage up to 160 pictures with optional memory modules
- Store pictures for up to 1 year without battery power
- Accepts optional lenses and filters
- Easy to use PhotoPC software
  - Preview pictures taken
  - Transfer and delete pictures
  - Organize, edit and enhance pictures
- TWAIN compliant
- Pictures in standard JPEG format
  - No need to convert from proprietary format
  - Ready to use with Web pages
  - Smaller files for easy storage and faster downloads
- Built-in flash for low lighting conditions
- Auto shut-off to conserve power

PhotoPC

With the PhotoPC digital camera, capturing the image is just the beginning. Thanks to ColorTrue, Epson's advanced in-camera processing system, you can see the same brilliant images on paper that you see on-screen.

All you do is point, shoot and download images into your computer. With ColorTrue, and actual 640x480 pixel resolution, you'll get perfect output every time.

Whether at work, on the road, or at home, you can create electrifying newsletters, presentations, reports and e-mail.

Since the PhotoPC is Internet ready, it's the perfect tool for enhancing Web sites. Your images are stored as JPEG files, so you can put them right into a Web page without wasting time on conversion.

For more details, call 1-800-GO-EPSON. Ask for operator 3050. Or to experience PhotoPC image quality, visit our Web site (http://www.epson.com). Download a few brilliant images from our Digital Photo Gallery, and see the difference for yourself.

SEYBOLD EDITORS' HOT PICKS

YOU'VE GOT TO SEE IT IN EPSON COLOR.™

Epson is a registered trademark of Seiko Epson Corp. PhotoPC and ColorTrue are trademarks of Epson America, Inc. All other trademarks are the property of their respective owners. ©1996 Epson America, Inc.

J&R COMPUTER WORLD · CDW · PC/Mac Connection · ClubMac · The Mac Zone · MacMall · MacWAREHOUSE

REVIEWS

Motorola Mac OS Clones

StarMax 3000/160 DT ★★★★

StarMax 3000/200 MT ★★★★

StarMax 4000/160 DT ★★★½

StarMax 4000/200 MT ★★★½

Motorola's solid new line of Mac OS clones takes aim at the dwindling corporate-Mac market.

PHOTOGRAPHY / LON CLARK

WELCOME ABOARD, MOTOROLA. Lining up alongside Power Computing, UMAX, and DayStar Digital, the multibillion-dollar electronics giant has become the latest — and largest — initiate in the elite club of Mac OS system vendors and the first with the manufacturing and marketing muscle to extend the reach of the Mac OS into large corporate sites and international accounts.

Motorola offers eight StarMax systems, divided into two lines. StarMax 3000s are based on the PowerPC 603e processor. StarMax 4000s are based on the higher-end PowerPC 604e processor. In each line, you can choose between a 160-MHz and a 200-MHz processor and between a desktop and a minitower design. Desktop systems have three PCI slots; minitower designs have five, plus more room than the desktop systems for internal drive expansion.

All eight StarMax systems are built around the same logic board, a design known as Tanzania, developed jointly with Apple and including some interesting features not seen before. In addition to having a standard Mac ADB port, for example, the back panel of a Tanzania system is also graced with PS/2 mouse and keyboard ports. Yes, we tried them. Yes, they worked. And, no, there's no driver provided for the second mouse button on a dual-button mouse. What happens if you press the right button? Nothing.

Also intriguing: StarMax logic boards don't contain Mac monitor ports, only SVGA ports. They worked fine, too, after we scrambled around for some SVGA-to-Mac video adapters. Motorola won't be providing these inexpensive adapters with StarMax systems — a penny-wise, pound-foolish decision. The other ports are more Mac-like: 16-bit stereo in and -out, SCSI, and dual serial — but you won't find an Ethernet port on any model.

Another disappointment is that all StarMax systems have their processors soldered to their logic boards. If you're looking to upgrade your processor down the road — as is possible with most Mac OS systems these days — you won't want a StarMax. StarMax 3000- and 4000-series machines also contain only three DIMM sockets, so RAM upgradability is limited. And, as you might have guessed from the odd number of sockets, RAM isn't interleaved.

All StarMax systems come with an 8x IDE (it's actually an ATAPI) CD-ROM drive, a keyboard, and a mouse. Monitors are not included. All systems also have a five-year warranty, by far the best standard warranty of any Mac OS system on the market. (Apple and Power both offer standard one-year warranties; if you want to extend a warranty, you'll have to fork over extra bucks.)

StarMax desktop models (identifiable by a DT at the end of their names) come with 16 MB of RAM and a 1.2-GB IDE hard drive. Minitower models (which sport an MT suffix) come with 32 MB of RAM and a 2.5-GB IDE hard drive.

Series-4000 systems include a 256K L2 cache and 2 MB of built-in graphics RAM. Series-3000 systems include a 256K L2 cache and 1 MB of built-in graphics RAM, which, like that of the Series-4000 systems, is upgradable to 4 MB. Series-3000 models also come with a 28.8-kbps Motorola data/fax modem and a software bundle that stands up quite well against Apple's and Power Computing's bundles.

Included in the 3000-series software bundle are the latest versions of

REVIEWS RATING KEY	
★★★★★	OUTSTANDING
★★★★	VERY GOOD
★★★	ACCEPTABLE
★★	POOR
★	SERIOUSLY FLAWED
💣	DANGEROUS

THE NEWEST CLONES / Motorola's StarMax systems stack up well against the competition

Motorola has entered the Mac-clone fray with a line of systems based on the company's own PowerPC 603e and 604e processors. MacUser Labs performed our MacBench 3.0 suite of benchmark tests on Motorola's offerings and discovered that they perform comparably to similar systems from Apple and Power Computing. Systems were configured as detailed at the end of this review.

All MacBench 3.0 scores are relative to those of an Apple Power Macintosh 6100/60 (with a 250-MB Quantum internal hard-disk drive and with built-in graphics hardware), which is assigned a score of 10.0 in each test.

Because StarMax systems contain ATAPI 8x CD-ROM drives (ATAPI is a derivative of IDE), which have never before been used in Mac OS systems, we were unable to perform MacBench's CD-ROM Mix test, which was designed for use with SCSI drives.

Download a copy of MacBench from http://www.zdnet.com/zdbop/ or from ZD Net/CompuServe Edition (GO ZDBENCH). Or, for a CD-ROM, send $5 (for shipping and handling) to ZDBOp, 1001 Aviation Pkwy., Ste. 400, Morrisville, NC 27560.

MACBENCH 3.0 SCORES

	Processor	Floating Point	Disk Mix	Publishing Disk Mix	Graphics Mix	Publishing Graphics Mix
Motorola StarMax 3000/160 DT	27	26	18	14	30	23
Apple Performa 6400/180	19	24	20	15	14	11
Power PowerBase 180	29	29	17	15	36	28
Motorola StarMax 3000/200 MT	30	31	21	16	37	27
Apple Performa 6400/200	27	31	25	16	19	15
Power PowerBase 200	30	31	17	15	37	29
Motorola StarMax 4000/160 DT	31	35	19	15	38	28
Apple Power Mac 8500/150	27	30	27	18	29	25
Power PowerTower 180e	45	40	33	17	*	*
Motorola StarMax 4000/200 MT	35	43	22	16	49	35
Apple Power Mac 9500/200	41	44	25	17	67	49
Power PowerTower 200e	47	44	32	17	*	*

SCORE BETTER

*Data for the Power Computing PowerTower 180e and 200e were unavailable.

ClarisWorks, Now Contact and Up-to-Date, Quicken, Netscape Navigator, AOL software, Conflict Catcher, SAM, DiskFit Direct, Norton Utilities, FWB's HD ToolKit and CD-ROM ToolKit, and several CD-ROM titles.

But enough of this specsmanship. You wanna know how fast they are, right? So did we, and to find out, we ran our industry-standard benchmark suite, MacBench 3.0, on four of Motorola's StarMax systems: the 3000/160 DT, the 3000/200 MT, the 4000/160 DT, and the 4000/200 MT.

Although the StarMax 3000/160 DT's processor clocks 20 MHz slower than that of the Power Computing PowerBase 180, the 3000/160 DT's speed is off by only about 7 percent in the Processor test. Both systems leave Apple's Performa 6400/180, which ships without an L2 cache, in the dust. The PowerBase 180 has more graphics RAM and turns in significantly better graphics speed than the Performa 6400/180 and noticeably better speed than the StarMax 3000/160 DT.

In other Processor results, we see a similar photo-finish race between Motorola's StarMax 3000/200 MT and the minitower model of Power's PowerBase 200, with Apple's Performa 6400/200 again back in the pack. The main advantage of the StarMax 3000/200 MT over the PowerBase 200 is that the former has just over twice the hard-drive capacity and turns in a significantly better Disk Mix score.

The StarMax 4000/160 DT doesn't hold up quite as well against its nearest Power Computing competitor, the PowerTower 180e. Although the PowerTower's 604e processor clocks only 20 MHz faster than the 4000/160 DT's processor, the PowerTower runs circles around the 4000/160 DT in the Processor test — a result of the difference in logic-board design and the larger (1 MB) cache in the PowerTower 180e. The 4000/160 DT also turns in unimpressive Disk Mix results.

Apple's closest competitor to the StarMax 4000/160 DT, the Power Mac 8500/150, is quite a different beast. Its main claim to fame is its built-in digital-video capability. But it also costs a cool kilobuck more than the 4000/160 DT — there are several good digital-video cards that can be had for less.

What's intriguing about the 4000/160 DT is that, pricewise ($2,595, or $700 less than the PowerTower 180e), it's in a class by itself among systems containing PowerPC 604e processors. But it comes bundled with no software other than the operating system, and despite its low cost for a 604e-based system, you can get a StarMax 3000/200 MT that performs nearly as well for $200 less.

Moto's top-of-the-line StarMax 4000/200 MT undersells Power's PowerTower 200e by only about $150. But the performance penalty you pay for the modest price differential isn't worth the savings. Power's system is a full one-third faster than Motorola's on the MacBench Processor test. The PowerTower 200e outperforms the StarMax 4000/200 MT on our Disk Mix tests as well.

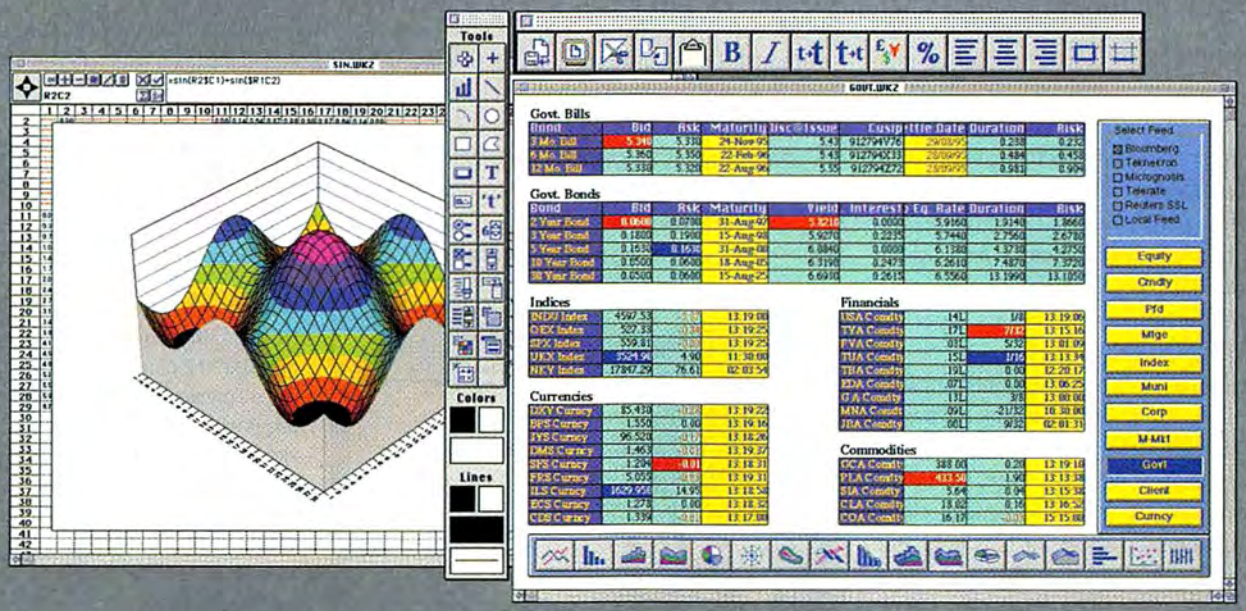
The Bottom Line

Comparing its offerings to those of Apple, Motorola has a compelling story to tell. Its systems, in general, turn in solid performance and offer a price advantage over Apple's Power Macintosh and Performa lines. Compared to Power Computing's offerings, StarMax systems look a bit paler. However, at corporate sites, an established track record such as Motorola's — backed by a five-year warranty — counts as much as a price or performance advantage.

IS Managers are likely to turn a blind eye, however, toward systems with truncated upgrade paths. Omitting a processor-upgrade slot may be Motorola's single biggest mistake with its first round of StarMax systems. Fortunately, the company is considering a solution to this problem: Future incarnations of the StarMax line may contain a BGA (ball grid array) processor socket, similar to those found in Windows systems. Let's hope this improvement comes soon. / Henry Bortman

Motorola StarMax 3000/160 DT with 16 MB of RAM, 1.2-GB hard drive, 256K L2 cache, and 1 MB of graphics RAM, $1,595; **Motorola StarMax 3000/200 MT** with 32 MB of RAM, 2.5-GB hard drive, 256K L2 cache, and 1 MB of graphics RAM, $2,395; **Motorola StarMax 4000/160 DT** with 16 MB of RAM, 1.2-GB hard drive, 256K L2 cache, and 2 MB of graphics RAM, $2,595; **Motorola StarMax 4000/200 MT** with 32 MB of RAM, 2.5-GB hard drive, 256K L2 cache, and 2 MB of graphics RAM, $3,595. **Company:** Motorola Computer Group, Tempe, AZ; 800-759-1107 or 512-434-1526; http://www.mot.com/GSS/MCG/. **Reader Service:** Circle #401.

The second generation of the largest, fastest Mac spreadsheet has arrived.



Introducing Wingz 2.1

This new release of Wingz provides major enhancements in the area of performance, flexibility and ease of use. The architecture of the worksheet has been further extended to allow the most demanding data sets, and the user interface has been redesigned making it easier than ever to tap into the vast analytical power of the Wingz environment.

Some Wingz 2.1 features:

- Dynamic Arrays
- Improved Recalculation
- ODBC Support
- Enhanced Reporting
- Floating Toolbox
- Intelligent Color Indicators
- Chart Defaults
- Bound-in Externals
- Point & Click Linking
- Direct Chart Manipulation
- Links to Unopened Worksheets
- Real-time Formula Builder
- HyperCon Palettes
- Dialog Mode Switching
- 3d Light Sources
- Menu Confidence Levels

... and over 400 New Commands and Functions

Built for Speed and Versatility

As the reigning speed demon of Macintosh spreadsheets, Wingz has always maximized the potential of your graphical workstation. This latest release of Wingz has added new features and boosted performance without adding unnecessary bulk. This means that choosing Wingz as your spreadsheet is decision without compromise.

The Scaleable Spreadsheet Solution

With its powerful HyperScript language, Wingz provides unmatched versatility for creation of custom applications. An upgrade to HyperScript Tools is available for more advanced development needs. Flexible screen painters and a feature-rich graphical debugger give HST the vital components for serious programming. A runtime module also is included for deployment of standalone applications. Multiplatform support allows Wingz and HST programs to run unmodified in Macintosh, Windows and UNIX environments.

For live data capture and manipulation, Real-time versions also are available.

Upgrade Now and Save

For a limited time, existing Wingz users can upgrade to version 2.1 for the remarkably low price of $89. Hyperscript Tools upgrades are available for only $179. If you use another spreadsheet, please ask us about our competitive upgrade plan. You must act quickly, however, as this opportunity will not last.

WINGZ

Call 1-800-494-WINGZ today.
Or visit us at http://www.wingz.com

INVESTMENT INTELLIGENCE SYSTEMS GROUP

London +44(0)171 628 6960 • Paris +33 1 45 23 13 72 • New York +1 (1)212 697 WINGZ • Kansas City +1(1)913 663 4472

© 1996 IISC All brand names are trademarks or registered trademarks of their respective companies

CIRCLE **128** ON READER SERVICE CARD

Claris Home Page

3½

Easy-to-use page editor can't show you your work.

THE PROSPECT OF A WEB authoring tool from Claris is enticing: Imagine a product that brings the well-thought-out interfaces we've come to expect from Claris to the Web, which can be a nightmare of bizarre HTML tags and other strange Web formats. Claris Home Page meets many of our expectations. It's an excellent visual HTML editor for people new to the Web. But its quirks will limit its appeal to more-advanced Web authors.

When it comes to basic Web authoring features, Claris Home Page covers all the bases. You can apply styles to all the text on your pages by clicking on Home Page's attractive tool-bar buttons or by using menu commands. (Common styles, such as bold and italic, can also be applied via keyboard shortcuts, but overall we wished Home Page let us do more from the keyboard.)

Applying color to text is particularly easy: Highlight the target text, and then choose a color from a pop-up menu in the tool bar. You get five standard color options, listed by name (a boon to the color-blind — and to authors with grayscale PowerBooks), and an Other option, which invokes the Color Picker. We would have liked a way to add colors to the menu, and to change the definitions of others, in case our conception of red didn't match the program's designers'.

In Home Page, you specify the attributes of objects such as text, graphics, table cells, or form elements by using one of two floating palettes. The first of these, the link editor — for adding hypertext links to items — is so simple that it scarcely needed to be a standalone tool; it might have been better off integrated into another portion of the interface.

Home Page's other tool palette, the object editor, is where the program gets down to business. From this palette, you can add borders to images, specify cell alignments within tables, and make all the other modifications you'd expect from an HTML tool. Home Page conveniently hides esoteric HTML options that would confuse novices — such as tools for creating image maps within GIF files, and multicolumn headers within tables, for instance — but it keeps them readily accessible. Clicking on a triangle at the bottom of the palette expands the window to provide access to the expert options.

One major drawback of Home Page's palettes: They're too wide. Even on a 17-inch monitor, the palettes got in the way and forced us to open and close them constantly as we worked.

Although this is only version 1.0, Claris Home Page supports most of the latest HTML options, such as variable text sizes, text colors, text wrap around graphics, and tables. This support will give novice Claris Home Page users an acceptable level of layout control for creating Web pages. But as the saying goes, the devil is in the details, and Home Page has some gaps that will frustrate intermediate and advanced authors.

Claris Home Page's palettes let you control objects on your page, but the program doesn't let you preview what your Web pages will look like when viewed by a browser. (Note that the expert options in the bottom of the control palette at the right can be hidden by a click on a Finder-style expand/collapse triangle.)

WYS Isn't WYG

Key among Home Page problems is its failure to accurately display what a Web page will look like when viewed by a browser. The program can't show you how your page will look with text wrapped around a graphic, for instance. This means Home Page is nearly useless as a visual-design tool if you've got any wrapped images. Home Page also doesn't allow you to color table cells or specify fonts for text. And although Web browsers make an HTML table and its component rows and columns only as tall and as wide as they need to be to accommodate their contents, Home Page forces tables to the width of the editing window and displays all columns with equal widths.

Home Page does provide the ability to create frames, a Netscape innovation that allows a browser to display several HTML pages at once in different panes. However, Home Page lets you edit only the frame set itself: You can't place HTML pages in those panes and edit the pages from there. That means you have to constantly switch to a browser to see what your pages will *really* look like.

One feature in Claris Home Page is so important that it should be used every time anyone creates a Web page: When you select Document Statistics, Home Page calculates how long it will take for your page — including all placed graphics — to download. That way, Home Page can let you know when you're going overboard with the GIFs and JPEGs.

Home Page also lets you use FTP to transfer files to a remote Web server over the Internet — though this feature is inexplicably hidden: You have to hold down Option while clicking on the File menu to open or save files remotely.

The Bottom Line

Claris Home Page is a simple, attractive tool that can make the process of building Web sites easy for novice Web authors. More-advanced users will be happy with its support of advanced HTML tags, but its recurring failure to display HTML pages accurately hinders its usability as a visual-prototyping tool. Home Page 1.0 is a clear improvement over Adobe PageMill 1.0, but with PageMill 2.0 waiting in the wings, Claris has some work to do if Home Page is ever to be the graphical Web authoring tool of choice. / Jason Snell

Claris Home Page 1.0, $99 (list). **Company:** Claris, Santa Clara, CA; 800-325-2747 or 408-727-8227; http://www.claris.com/. **Reader Service:** Circle #402.

NEW ATI XCLAIM VR.

It's more graphics upgrade than you've ever seen on A SINGLE CARD.

Bring your PCI Mac roaring into the multimedia age with new ATI XCLAIM™ VR, the only graphics upgrade combining five must-have functions in one product. **MAC2TV Video Out:** Plug your MAC into your big screen TV for in-your-face, arcade-style game playing and riveting full-screen presentations. **Video In:** Capture frames and QuickTime movies from your VCR or camcorder, and use them in other documents. **QuickTime Acceleration:** At last, you can get truly usable, full-screen, full-motion QuickTime video playback. **QuickDraw 3D Acceleration:** See richly textured 3D, rendered at blinding speed, for amazing gaming action and incredible VRML Web browsing. **2D Graphic Acceleration:** Get screen resolutions up to 1152x870. See up to 16.7 million brilliant colors. Turn your PCI Mac into an amazing graphics and multimedia powerhouse with new ATI XCLAIM VR. It's just $269.* See your dealer today. Or check out all the details at www.atitech.ca.

ATi 3D

MAC2TV

NOW YOU SEE IT.™

© ATI Technologies Inc., 1996. ATI, XCLAIM and NOW YOU SEE IT are trademarks and/or registered trademarks of ATI Technologies Inc. All other company and/or product names are trademarks and/or registered trademarks of their respective manufacturers. *Based on US suggested retail price of 2MB version at time of printing. Dealer may sell for less.

CIRCLE **20** ON READER SERVICE CARD

Memory Managers

RAM Doubler 2 ★★★★★

RAM Charger 3.0 ★★★½

Software add-ons let you do more with less RAM.

WHEN YOUR MAC WANTS more memory but your budget says no, two software alternatives can come to your rescue: the newly upgraded RAM Doubler, version 2, and the freshly repackaged RAM Charger, version 3.0. Both work well, but RAM Doubler 2 shines brighter.

RAM Doubler 2 Triples Your RAM

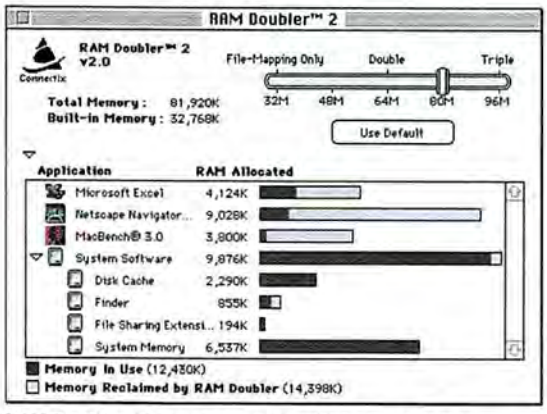
Our first-draft write-up of Connectix's RAM Doubler 2 was among the shortest *MacUser* reviews ever: "Get it. You won't regret it."

But we figured you'd need more convincing. Fair enough; we'll elaborate. Like the original version, RAM Doubler 2 increases the amount of your computer's apparent memory — a 16-MB Mac acts as if it were a 32-MB Mac. It's similar to Apple's virtual memory, only it's faster and requires less disk space.

The new version goes a big step further: It triples, rather than merely doubles, your RAM — up to a maximum of 256 MB. And it does it without any perceptible speed penalty beyond the small one you get with the original RAM Doubler. Even with RAM at today's bargain-basement prices, that's still a super deal. Just bear in mind that RAM Doubler 2 works best when you use it to open more applications rather than to give an enormous amount of RAM to just one application.

Unlike the original RAM Doubler, this version is a control panel, not an extension, and it lets you select the size of your RAM boost in five increments, from triple the installed memory to no boost at all. Even this last option has a benefit for users of PowerPC-based systems, especially those with PowerPC PowerBooks: It lets you dispense with RAM Doubler's battery-intensive use of the hard drive for virtual memory but still provides the file mapping that PowerPC-native applications use to conserve memory when virtual memory or RAM Doubler is turned on.

Our testing of RAM Doubler 2 revealed remarkable stability, even on systems loaded with extensions and other control panels. And if Connectix issues fixes as promptly as it did with the original RAM Doubler, any conflicts that do arise should be short-lived.



RAM Doubler 2's new control panel lets you decide how much RAM you want to add — and shows you how you're using the memory you've got.

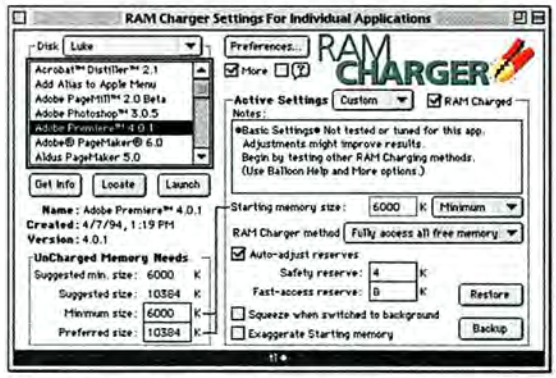
RAM Charger 3.0 Curbs RAM Hunger

Instead of giving your Mac more memory, RAM Charger 3.0 works by "tuning" your applications so that they use less memory. Programs open at or near their minimum required level, with RAM Charger continually adjusting their RAM allotment as needed, in ways the standard Mac OS cannot on its own.

The benefits of using RAM Charger may not be as immediately obvious as they are with RAM Doubler, but they are significant. In our tests, half a dozen popular apps that would normally have required 16 MB of RAM, for example, needed only about 11 MB with RAM Charger. RAM Charger's approach can actually be more effective with the RAM-hungry apps that are RAM Doubler's weak spot. It also avoids the slowdowns associated with RAM Doubler and works with older Macs that can't use RAM Doubler.

But there's a catch: With RAM Charger, you must make a separate "charging" decision for every application. Fortunately, if you stick to basics, RAM Charger takes most of the hassle out of this process. It comes with a database of customized settings for most popular apps. If you have a program that is not in its database, RAM Charger's Standard setting will work in most cases. (A few apps do not work with RAM Charger and should not be "charged" at all). A heads-up display remains on your screen at all times (unless you choose to get rid of it) to alert you to basic statistics about your memory savings. If all goes well, that's all there is to it.

But if problems develop or if you want to fine-tune RAM Charger to get every possible savings from a program, you have to fiddle with a series of adjustments in the RAM Charger control panel. Few people will even bother to learn these options, let alone actually use them. It's just not worth the effort. The Settings Wizard option can make recommendations after seeing how you use a program, but its advice is often too general.



RAM Charger 3.0's imposing control panel is needed only when you want to "tune" the settings of a program.

If you already own RAM Charger, be aware that this version is not really an upgrade. Syncronys Softcorp has simply repackaged the version formerly marketed by Jump Development (only the graphics have changed).

The Bottom Line

Either of these programs will give your memory a boost. Since they work in different ways, you can buy both and get more memory savings than you would with either one alone.

But there's a good reason why RAM Doubler has far outsold RAM Charger, even though RAM Charger was first to market. RAM Doubler is as close to a free lunch as you will ever find. In contrast, RAM Charger makes you work harder for generally less benefit. At current prices, you might be better off simply buying more RAM. / Ted Landau

RAM Charger 3.0, $39.95 (list). **Company:** Syncronys Softcorp, Culver City, CA; 888-777-5600 or 305-228-5202; http://www.syncronys.com/. **Reader Service:** Circle #403.

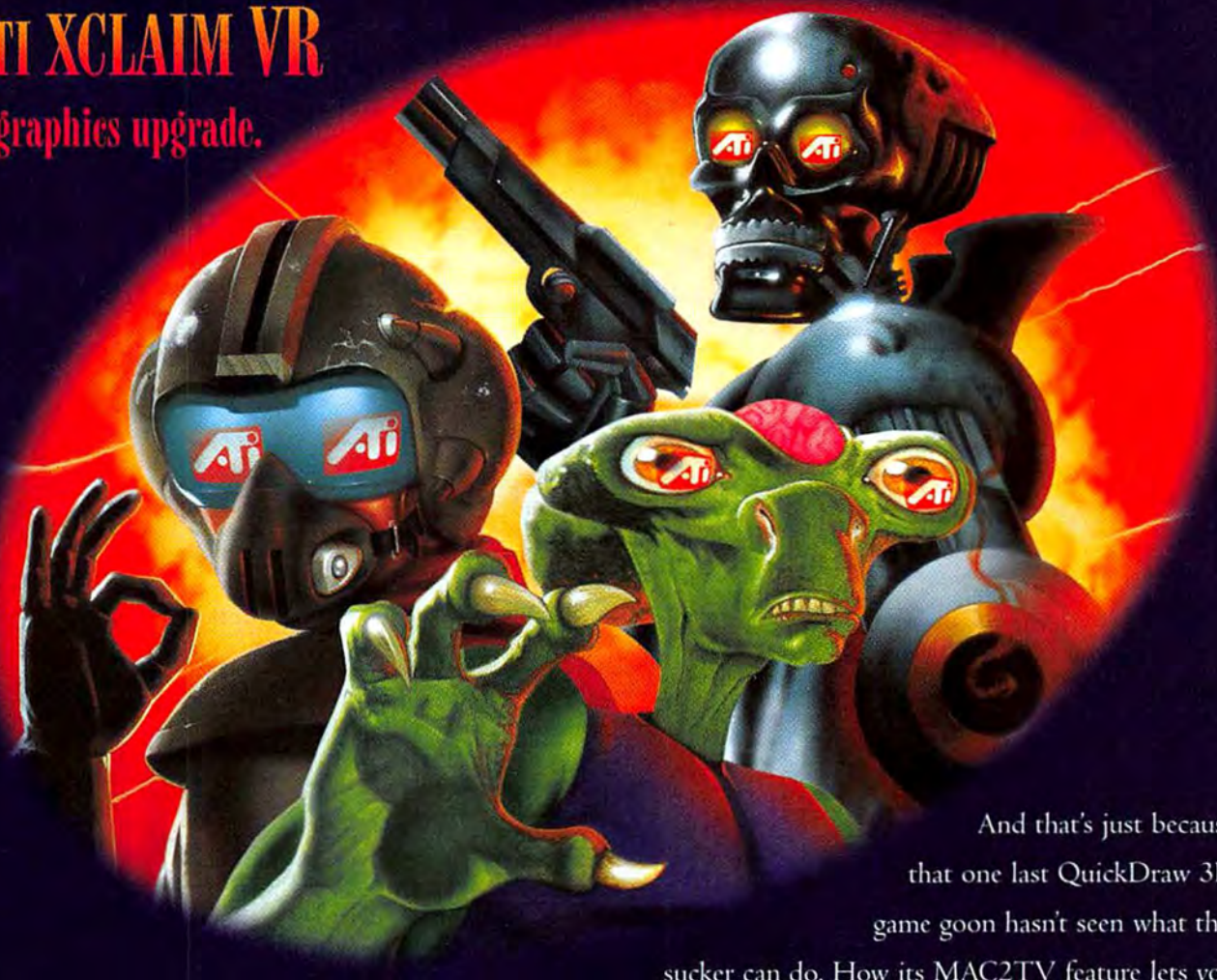
RAM Doubler 2, $99 (list). **Company:** Connectix, San Mateo, CA; 800-950-5880 or 415-571-5100; http://www.connectix.com/. **Reader Service:** Circle #404.

3 OUT OF 4 GAME CHARACTERS SURVEYED

would rather humiliate and destroy you while playing on a MAC with an

ATI XCLAIM VR

graphics upgrade.



And that's just because that one last QuickDraw 3D game goon hasn't seen what this sucker can do. How its MAC2TV feature lets you plug your Mac right into your TV for the ultimate big screen spine-chiller that blows away arcade games once and for all. How its new ATI 3D technology breathes life into everything on screen. With face-blasting speed, butter-smooth 3D detail and full-screen QuickTime video. Oh yeah, just in case your left brain demands some sensible reason to run right out and get one, XCLAIM™ VR does mean business apps, too. And in-your-boss's-face big screen presentations. And video capture from camcorders and VCRs. And VR on the Web. And because it's really five upgrades in one, you get more performance and features than a Power Mac 8500. On the other hand, XCLAIM VR costs just $269,* so chill out! See your dealer, or see more about it at www.atitech.ca.

MAC2TV

NOW YOU SEE IT.™

© ATI Technologies Inc., 1996. ATI, XCLAIM and NOW YOU SEE IT are trademarks and/or registered trademarks of ATI Technologies Inc. All other company and/or product names are trademarks and/or registered trademarks of their respective manufacturers. *Based on US suggested retail price of 2MB version at time of printing. Dealer may sell for less.

CIRCLE 21 ON READER SERVICE CARD

Go through life with less baggage.

Introducing the MessagePad 130 with Newton 2.0.

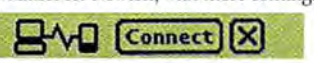
The farther we go, it seems, the more we're asked to bring with us. The names and numbers of clients past and present. Dates, times, and notes from countless meetings. Not to mention a way to get your e-mail.

The new Apple® MessagePad® 130 was designed to lighten your load by making it easier than ever to schedule work, take notes, send and receive e-mails and faxes—or hop on the Internet—from wherever you happen to be. Even in the dark, thanks to its backlit screen.

http://www.info.apple.com

The Newton 2.0 operating system: learn less, do more. The award-winning Newton® 2.0 provides a surprisingly familiar way of working that encapsulates all you do now in a simpler, more concise form. Instead of loading you with complex commands, Newton works the way you do. It even reads your handwriting.

Dozens of new and well-known applications, such as Now Contact, ACT!, Quicken, CompuServe, Meeting Maker, and Eudora Pro, are available for Newton, with more coming. Making it easy to transfer information to and from your PC.



Pick up a MessagePad and get going! So put down whatever you're doing, and go see the Apple MessagePad 130 at your nearest dealer. Or get our faxback information kit, with details on the complete line of MessagePad products and the latest software. See just how little you have to carry, to have it all.

To get your information kit, visit our Web site or call Apple today!

http://www.info.apple.com/newton/
1 800 364-0766, ext. 1025

Newton®

Apple®

©1996 Apple Computer, Inc. All rights reserved. Apple, the Apple logo, the light bulb logo, MessagePad, and Newton are registered trademarks of Apple Computer, Inc.

ColorSynergy 2.0

4 4 4 4

Affordable color-management tool gets modest upgrade.

CANDELA'S COLORSYNERGY WAS one of the first tools that allowed users to create ColorSync profiles for input devices, monitors, and output devices all in a single package, and it's still one of the least expensive, at $495. We commended the original version for its wide support of color-measurement devices, including Light Source's Colortron and Colortron II and X-Rite's DTP 22, and for its innovative use of a calibrated scanner as a fast and inexpensive alternative to handheld measuring instruments. ColorSynergy 2.0 adds some useful new features and offers much-improved documentation, but it also lacks some fixes we'd hoped for, so overall we have to say it's a worthwhile but relatively modest upgrade.

Like its predecessor, ColorSynergy 2.0 is a complete product for creating ColorSync profiles: It lets you profile reflective and transparency scanners, monitors, and virtually every type of output device, whether it's a CMYK inkjet printer, press, or proofing system; a three-color CMY dye-sublimation or thermal-wax printer; or even an RGB film recorder.

Scanner calibration is the simplest task: You scan an IT8 target (a reflective target is included in the package) or a transmissive target (you can get one from Candela as well as from Kodak and Agfa) and then open the scan in ColorSynergy along with a data reference for the target. ColorSynergy compares the colors the scanner detected with the reference file and creates a "fingerprint" of the scanner's behavior.

For monitor calibration, ColorSynergy supports both Light Source's Colortron and X-Rite's DTP 92 Monitor Optimizer as hardware measurement options, and you can type in measurements taken with a nonsupported instrument. In case you don't have a hardware calibrator, ColorSynergy also lets you calibrate by eye. We found this method rather crude and much less useful than hardware calibration.

For output-device calibration, you first determine whether you're dealing with a three- or four-color device — some CMYK printers accept only RGB input and must therefore be dealt with as RGB devices — by printing a test file generated by the application. Once you've identified your printer type, you print out an appropriate RGB or CMYK target file.

Next, you measure the target, either with an instrument such as a spectrophotometer or colorimeter or by scanning it on a calibrated scanner. The new version of ColorSynergy adds support for X-Rite's DTP 51 Auto Scan Colorimeter, a "strip-reader" that reads an entire strip of patches automatically — and quickly. Using a calibrated scanner is the fastest method of all, however, and we obtained some surprisingly good results with midrange scanners such as Microtek's ScanMaker III and UMAX's PowerLook, but even the best scanners are generally less accurate than spectrophotometers or colorimeters.

ColorSynergy's preview window lets you view simulations of your output, using various rendering and tone-compression methods.

With RGB printers, that's the whole process, but for CMYK printers, you need to take one additional step, setting the black generation and the total ink limit. Press manufacturers commonly supply recommendations for these settings, but if you're dealing with output devices such as dye-sublimation or color laser printers, you'll almost certainly have to go through a great deal of trial and error: ColorSynergy's manual is disappointingly silent on this important subject.

Once you've saved your profiles in ColorSynergy's own format, you can export them as ColorSync profiles; as Photoshop Monitor and Separation Table preference files; or in the case of output profiles, as PostScript Level 2 Color Rendering Dictionaries. You can also export chains of profiles — scanner to printer, or monitor to press to proofing printer, for example.

ColorSynergy 2.0 improves on earlier versions with the addition of support for spot colors: You can measure them directly with a spectrophotometer and then add them to a palette that's calibrated for a specific device. This allows you to manage your color even in applications that don't support color management, such as Adobe Illustrator and Macromedia FreeHand.

Another new feature allows you to create new reference data files for IT8 targets by measuring the targets. In theory, you could do this anyway as long as you had a measuring instrument, but ColorSynergy makes the process much easier, by taking the values directly from the instrument and producing a correctly formatted data file. Longtime prepress pros will find this handy for restoring the values to targets whose data files are lost or that are so old that their data files may be outdated.

One annoying aspect of the Export window hasn't been fixed in ColorSynergy 2.0. You must choose the kind of file you want to export before you choose any other settings, because when you change the export type, all other settings you've specified in the window get wiped out. We often found ourselves needing to export both a ColorSync profile and a Photoshop table, and having to reset all the parameters gets old fast.

Two ColorSynergy add-ons, the batch-processing application ColorCircuitQ and the Photoshop plug-in CandelaCCT, are unchanged in this upgrade. They provide results that are slightly better than those from ColorSync, but only at the expense of much longer processing times.

The Bottom Line

This upgrade is hardly earth-shattering, but the new features are welcome additions to a very capable package. ColorSynergy 2.0 is by far the least expensive complete package for ColorSync profile creation, and although it doesn't make profile generation completely automatic, neither does any other package we've seen, including ones costing ten times as much. For users who simply want to profile their printer and scanner and who don't want to enter the brave new world of spectrophotometry, ColorSynergy 2.0's use of a calibrated scanner for measurement makes the program a particularly good deal. / Bruce Fraser

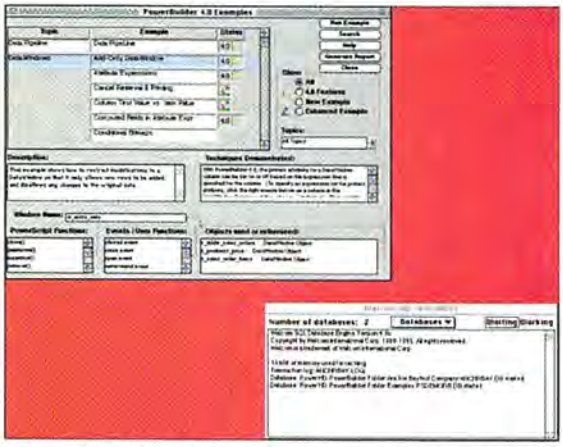
ColorSynergy 2.0, $495 (list). **Company:** Candela, Burnsville, MN; 612-894-8890; http://www.candelamn.com/. **Reader Service:** Circle #406.

PowerBuilder 4.0 for Macintosh

Client/server veteran makes promising Mac OS debut.

ONE BY ONE, THE GREAT client/server database-development tools Windows users have enjoyed for years are migrating to the Mac OS. PowerBuilder, a popular Windows product since 1991, is the latest tool to make the leap, and version 4.0 (the version number is derived from the Windows product) is an impressively robust tool for client/server-database developers. But it lags behind its Windows counterpart — and several Mac competitors — in several key areas.

Object-oriented, powerful, and pricey, at $3,295, PowerBuilder for Macintosh, from Powersoft, is not for keeping your address lists. Like its main Mac OS rivals — ACI US's 4th Dimension, Blyth's Omnis 7, and Microsoft's FoxPro — PowerBuilder is a tool for creating custom applications that use data already stored in big corporate SQL (structured-query language) or ODBC (Open Database Connectivity) databases. What's more, PowerBuilder offers excellent documentation and, given its long history, is more mature and easier to use than most other debut products.



Interactive help and examples in PowerBuilder's electronic documentation let programmers learn the program quickly.

However, it's also not PowerPC-native, despite the five-year wait Mac databasers have had to endure. Furthermore, it's a generation behind the latest version of PowerBuilder for Windows (version 5.0), slower than even the outdated PowerBuilder 4.0 for Windows, and lacking several key features offered by its Windows sibling.

For your three grand, you get the basic PowerBuilder for Macintosh development environment; the Infobase library of tech notes; and Watcom SQL, a database that enables you to build PowerBuilder databases when you're not connected to a database server. You also get native drivers for Oracle 6 and Oracle 7 and Sybase SQL Server 4 and 10 databases, along with an ODBC driver for those of you with Microsoft SQL Server and similar databases to connect to. You will, however, require proprietary vendor middleware in order to connect to most other databases — for example, connecting Oracle or SQL*Net clients to Oracle 6 or 7 databases will cost you extra.

PowerBuilder uses two main components to link your application with that big database you're trying to manipulate — DataWindow and transaction objects. Transaction objects define the nature of the data that's accessible from your application — which lists or fields you'll be able to see, for example. DataWindow objects organize the data you've retrieved and present it to users of your application in the manner you specify. A DataWindow can display database tables and a variety of other stored-data constructs, from SQL statements to previously stored queries. DataWindows let you display retrieved results in table, graph, spreadsheet-grid, or just about any other format — including some that feed into other Mac apps for further manipulation. This ability is truly impressive.

Crossed Platforms?

You can use PowerBuilder to create applications that run under the Mac OS, Windows, or UNIX — but the Mac version of the program isn't as platform-independent as its Windows counterpart: Applications created with PowerBuilder for Mac lack support for Windows' Dynamic Data Exchange (DDE), Object Linking and Embedding (OLE), and connection to third-party source-code-control systems. The program also lacks OpenDoc support.

Because versions of PowerBuilder for various platforms differ in their cross-platform capabilities, you'll essentially have to keep separate libraries of controls for each platform if you're a cross-platform developer — a major project-management hassle. You'll also need to own a copy of PowerBuilder for each of your platforms, because each saved application includes platform-specific information. So much for real cross-platform development.

Note that PowerBuilder for Macintosh does *not* support the Mac as a PowerBuilder application server or allow Macintosh PowerBuilder clients to access server applications on non-Mac platforms — a big omission for cross-platform environments.

As you'd expect, PowerBuilder provides its own development language, called PowerScript. It looks a lot like the C language, and it's not all that hard to learn if you're already an experienced developer. If not, learning PowerScript will be a chore. But once you've got it down, you'll be able to take advantage of PowerBuilder's object-based design by linking scripts to events and objects. To help in this effort, Powersoft supplies a solid debugger and class libraries that allow objects to inherit properties, which saves a lot of coding.

Since it's a costly database-development system, you would expect PowerBuilder for Macintosh to come with great documentation, help, and support. It does not disappoint. The online help is superb and the manuals complete — although the Macintosh-specific "Using PowerBuilder" guide is largely a compilation of instances where Mac OS-specific procedures differ from those in the more generic "Building Applications" manual. Still, you get a full set of examples to help you get started and comprehensive reference materials, and you can buy a variety of additional support programs as well.

The Bottom Line

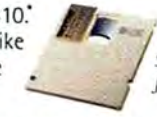
PowerBuilder provides a powerful and highly versatile set of tools for developing client/server databases. And its object-oriented design and good documentation make it relatively easy to use, given its inherent complexity. But it's not PowerPC-native (a serious flaw that Powersoft will correct in the forthcoming PowerBuilder 5.0 for Macintosh), so its database access is sluggish. And even worse, its cross-platform functionality is spotty. PowerBuilder 4.0 for Macintosh is a promising start, but the program has a ways to go before it's a top-tier Mac product. / Don Crabb

PowerBuilder 4.0 for Macintosh, $3,295 (list). **Company:** Powersoft, Concord, MA; 800-395-3525 or 508-287-1500; http://www.powersoft.com/. **Reader Service:** Circle #407.

Everyone who wants to save big on removable storage, raise your hand.

Low-cost, high-capacity storage is always within reach with the SYS.230™ Personal Storage System.

That's because it packs up to 230 MB onto a single rewritable-optical cartridge that costs only $10.* Compared to the price for any of today's magnetic removables, there's simply no comparison. And unlike magnetic removables, rewritable-optical media is almost indestructible. Which means you never have to worry about data loss due to dust, magnetic fields, shock — or even airport security.



Save 230 MB for just $10!

Plus, you can take the Universal SYS.230 System with you anywhere and use it with whatever you want. It's small enough to slip into the palm of your hand, and it's only portable solution that works as both a SCSI and a parallel device. So you can use it with your laptop and your desktop, your Macintosh or your PC.

All of which makes the SYS.230 System perfect for storing and transporting images from the Internet, your digital camera or scanner — or for any other data-intensive application.

Why not join the millions who already rely on rewritable-optical storage? Call **800-347-4027** today for more information about the SYS.230 Personal Storage System.

Because if you'd like to save big in more ways than one, we have to hand it to you.

OLYMPUS
OPTICAL CO., LTD.

The SYS.230 Personal Storage System can be purchased through the following resellers: CDW (800-334-4CDW), MacWarehouse (800-255-6227), MacZone (800-248-0800), MicroSystems Warehouse (800-660-3222) and PrePress Direct (800-443-6600). Resellers, call Ingram Micro (800-456-8000), Optical Laser (800-776-9215) or TechData (800-237-8931).

*When purchased in package of five at suggested retail price of $49.95. SYS.230 is a trademark of Olympus Optical Company, Ltd. All other brand or product names mentioned herein are trademarks or registered trademarks of their respective holders. ©1996 Olympus Optical Co., Ltd.

CIRCLE **69** ON READER SERVICE CARD

EZ-Speak

★★★½

PlainTalk macros help Macs listen up.

REMEMBER WHEN CASPER was still alive? Not the affable phantasm — Apple's speech-recognition technology: It caused a minor stir at its 1993 debut and then faded to near invisibility amid chilly user response. Since then, Apple has been quietly updating and extending the capabilities of Casper, now called PlainTalk, into a utility that's cool and fun.

Unfortunately, *useful* cannot be readily added to that list of descriptions — largely because the voice-commands included with PlainTalk are too limited. That's where Scantron Quality Computers' EZ-Speak comes in.

EZ-Speak is a collection of over 200 voice commands, including an extended set of Finder commands, such as Make New Folder, Restart, Shut Down, and Get Info; standard application commands, such as Cut, Copy, Paste, Undo, Open Document, and Quit This Application; and commands for five of the Mac's most popular applications: Microsoft Word, Microsoft Excel, Microsoft PowerPoint, ClarisWorks, and Netscape Navigator. EZ-Speak also installs over 100 Web-site voice macros for use in Navigator, and there is a command for adding voice-command bookmarks, or Voicemarks, for any Web sites. The selection of sites is impressive and, in combination with Voicemark, is one of EZ-Speak's most useful commands (no more typing in those long URLs or fussing with bookmarks).

Strictly speaking, EZ-Speak doesn't give you anything you can't get by stringing together the dozen or so Finder commands that ship with PlainTalk or programming voice-command applets in AppleScript. But even if you know how to program in AppleScript, creating your own voice commands can be time-consuming. (EZ-Speak helps out even here, by supplying a handy AppleScript template for creating voice-command macros.)

EZ-Speak's many new commands are cool, but they do come at a price: Adding hundreds of macros to PlainTalk's Speakable Items list really slows speech recognition down. The accuracy and performance of Apple's voice technology have improved tremendously in the last couple of years, but because PlainTalk must still compare what it thinks you said with each voice command in its repertoire, all those EZ-Speak macros can slow response time down from a second or two to several seconds on a 150-MHz 604-based Power Mac.

Luckily, not many users will need all the commands included with EZ-Speak, and a little judicious pruning, especially of voice-command synonyms (such as Check Spelling and Spell Check) will bring performance back to acceptable levels. We just wish Scantron had used a customizable installer script so users could choose which application macros to install and thus avoid this tedious process.

The Bottom Line

Even with the addition of EZ-Speak, there really isn't anything you can do with PlainTalk that you couldn't do with a combination of key commands, bookmarks, and aliases. However, one of the great things about using voice control, besides the coolness factor, is that it doesn't take up any space on your desktop or on your menus.

EZ-Speak does a great job of extending the functionality of PlainTalk and for $49.95 is well worth it to save you the trouble of creating your own macros. The addition of clever voice commands such as Voicemark and the inclusion of an AppleScript template for creating your own voice applets (a major time-saver) make EZ-Speak a must-have for anyone interested in using voice commands on the Mac. / Andrew Gore

EZ-Speak, $49.95 (list). **Company:** Scantron Quality Computers, St. Claire Shores, MI; 810-774-7200; http://www.sqc.com/. **Reader Service:** Circle #408.

Live Picture Overdrive

★★★★

Affordable Photoshop companion speeds handling of big files.

IN THEIR NEVER ENDING SEARCH for more speed, Photoshop users typically turn to hardware enhancements: More RAM, faster CPUs, dedicated scratch disks, and multiprocessor or DSP accelerators are all effective — and expensive — ways of getting better performance for high-end, memory-intensive Photoshop work. For users who want a cheaper approach, Live Picture Overdrive provides a software-based option that offers a speedy, efficient means of creating composites and collages from large images that typically sap Photoshop's speed.

Overdrive is a stripped-down version of Live Picture's Live Picture 2.5, a $695 professional application for creating and outputting high-end color composite images. Overdrive strips away more than two-thirds of Live Picture 2.5's price by dispensing with the program's editing and color-separation features: Support for Photoshop plug-ins is gone, for example, as are features such as cloning, distortion, EPS insertion, and sharpen/blur. If you need any of those operations, you'll have to do them separately in Photoshop, before or after you're done compositing in Overdrive.

Overdrive retains some more-modest editing tools found in Live Picture 2.5, but its most impressive inheritance is the ability to handle multiple huge (50-MB or larger) image files speedily and in far less RAM than Photoshop requires. In Overdrive, as in Live Picture 2.5, opening and manipulating a 500-MB image takes no more time than opening and manipulating a 20-MB image. This capability derives from the company's proprietary IVUE file format and FITS editing technology. The IVUE format eliminates the need to load an entire image into RAM if you're working with only a small portion of it. FITS maintains a list of all the edits you've made to your

With Live Picture Overdrive, masking out the background of the high-resolution leaf image and layering it on top of the large water background image is fast and easy even in just 24 MB of RAM.

image(s) and applies them to any portion of the image you're viewing on-screen but renders them across the entire image only when you print your final image or save it in a non-IVUE format. FITS and IVUE together not only enable you to combine and navigate large images easily but they also store edits and color-correction operations made in Overdrive as layers that can be hidden or deleted at any time to deactivate your changes.

Live Picture Overdrive contains all the tools you'll need in order to layer and composite multiple Photoshop images into a single file, and it also offers good color-correction tools and simple paintbrushes. Overdrive can also use a layer's alpha channel to create an image mask automatically — a real boon for compositing work. (Although you can do this in Photoshop's layers as well, Overdrive is far, far speedier.)

Although the idea of editing in Photoshop and compositing in Live Picture Overdrive is sound, there will still be times when you'll wish for more editing power in Live Picture Overdrive. If you want to perform an edit that spans layers (blurring one into another, for example) or make an edit that requires seeing more than one layer at a time (if you need to register an object in one layer with an object in another layer, for example), you're simply out of luck.

Careful planning can obviate some of these problems, but application switching can still be tedious. To facilitate cross-program editing, Live Picture offers a free reward for registering Overdrive: Total Integration's FastEdit/IVUE, an Acquire plug-in that lets you selectively open parts of an IVUE image for editing in Photoshop.

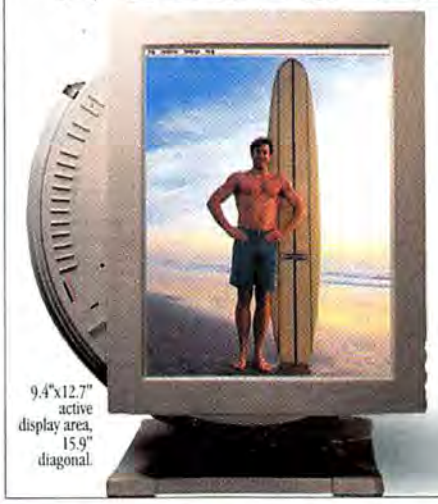
Live Picture Overdrive's memory requirements are small (24 MB), meaning you don't need mountains of RAM to keep both LPO and Photoshop open at the same time.

The Bottom Line

Live Picture Overdrive is a great deal for Photoshop users on a budget who need to composite large images — or who want to get started working with multiple high-resolution files. Live Picture Overdrive's interface can take a bit of getting used to, but the program's speed is luxurious and the multilayered-editing approach powerful. / Ben Long

Live Picture Overdrive 1.0, $195 (list). **Company:** Live Picture, Soquel, CA; 800-724-7900 or 408-464-4800; http://www.livepicture.com/. **Reader Service:** Circle #409.

The Monitor that Shows You the Whole Kahuna.



9.4"x12.7" active display area, 15.9" diagonal.

Portrait Display Labs

The Pivot 1700™ has other 17" color monitors beat from top to bottom. It pivots from horizontal to vertical mode to give you the tallest, sharpest display you can get. Taller, even, than a 21" monitor! And much more affordable. So now you can read a full 8.5"x11" page *without scrolling*.

Call us today or, if you prefer, e-mail us at pdlcalif@aol.com for the whole story.

800-858-7744 Ext. 25

http://www.portrait.com

MacUser

COMING SOON:

97

FEBRUARY

INTERNET SERVICE PROVIDER SHOWDOWN

In February's Networking section, MacUser takes a good look at how to pick the right service provider based on features, quality of service, price and Mac friendliness. MacUser helps pave the way to the Internet!

WEB ANIMATION TOOLS

With millions of Web pages fighting for attention, it's every Web designer's goal to create a page that jumps out of the crowd. That's why animation on the Web is such a hot ticket these days. Noted digital designer Lynda Weinman, author of *Designing Web Graphics, 1996*, gives a frame-by-frame rundown on the four types of animation tools — GIF animation, plug-ins, programming and streaming movie formats. For the first time ever, MacUser mouse-rates all the leading Web animation tools so that readers can see which tool is best for which job. You can say you saw it first in MacUser.

LOW-COST FLATBED SCANNERS MACUSER LABS REPORT

If you're shopping for a low-cost color flatbed scanner to get images onto the Web or into a snazzy document, then the February issue of MacUser is a must-read for you! In addition to reviewing and mouse-rating close to 15 low-cost color flatbed scanners all priced uner $1,000, MacUser editor, Roman Loyola, also gives expert advice on how to buy a scanner, scanning jargon, and scanning rules-of-thumb. Backed by serious benchmark testing done by the experts in MacUser Labs, MacUser makes buying risk-free.

FEBRUARY AD CLOSE: MONDAY NOVEMBER 18, 1996

Your personal memories.

No other computer in the world makes it this easy to create your own home movies. Avid Cinema software guides you step by step through the entire moviemaking process, from planning shots to editing video to publishing your finished movies.

Your personal education.

It comes with some of the most popular educational software already installed and runs hundreds of other educational programs that make learning more fun—to help kindergartners learn to read and write, high school kids prepare for college or grown-ups master a second language.

Your personal finances.

The Performa 6400 computer brings the point-and-click simplicity of a Macintosh to a wide range of software for managing your family finances—programs like Quicken that help you do your taxes, track your investments and balance your checkbook.

Your personal interests.

*We've even made the Internet more personal by including your own Personalized Internet Launcher—a service from Apple that automatically searches the Internet and brings to your screen the newest and best web sites that interest you most.**

How much more personal c

**Internet service provider fees and phone charges not included. 180 and 200 MHz processors are different configurations at different price points. Monitor and printer sold separately. © 1996 Apple Computer, Inc. All rights reserved. Apple, the Apple logo, Macintosh, Performa and StyleWriter are registered trademarks of Apple. Quicken is a registered trademark used under license by Intuit from Microsoft Corporation. All Macintosh computers are designed to be accessible to individuals with disability. To learn more (U.S. only), call 800-600-7808 or TTY 800-755-0601.*

Your personal computer.

No, that cozy-looking piece of hardware isn't a newfangled ottoman. But you'll be amazed at how comfortable it feels in your home. It's the new Performa 6400 tower – built around the PowerPC™ 603e RISC chip running at 180 or 200 MHz with up to 2 gigabytes of hard drive space, and shown with the new Apple® Multiple Scan 15AV monitor and the Apple Color StyleWriter® 2500.

Introducing the Macintosh Performa 6400.

Don't be too surprised by how familiar the Macintosh® Performa® 6400 feels when you bring it home.

After all, it *is* a Macintosh – still the only computer in the world designed from the very first chip to work the way people work.

And it *is* a Performa – designed with families in mind to be easy to set up, easy to learn and easy to use.

But now we've not only given it powerful new capabilities no other home computer has ever had before. We've also made the most personal computer of all more personal than ever.

Thousands of learning and business programs are available for Macintosh. And twenty-five popular titles come preinstalled with the Performa 6400. Like Grolier's Multimedia Encyclopedia, ClarisWorks 4.0 and Quicken SE.

Right out of the box, your kids can instantly find answers to their questions, complete with video, animation and sound. And you can start working with a spreadsheet, word processor, financial tools and more.

Every Performa model comes with Macintosh PC Exchange,™ allowing you to read from and write to DOS disks. Add a program like SoftWindows™ or a PC compatibility card, and you can even bring work home from the office and run your Windows applications at the touch of a key.

Of course, all work and no play makes Jack the world's dullest parent.

That's why the Performa 6400 comes with today's most advanced multimedia features. Including an 8x-speed CD-ROM drive for the smoothest game animation and 16-bit stereo sound for the clearest listening experience. And with the addition of Avid® Cinema software, creating your own home movies becomes unbelievably easy.

It also brings the Internet home with a 28.8 Kbps modem and all the software you need not only to get up and surfing on the Net,® but to easily create your own web page as well.

And although the life span of some computers may appear to extend just beyond that of the average goldfish, we've loaded the Performa 6400 with ample power and plenty of expansion options so you and your family will enjoy it for years to come.

It's everything a family computer should be. For the name of the Apple reseller near you, and for information on special holiday promotions, call 800-446-3000, extension 100. Or visit us on the Internet at www.apple.com/

And bring home the most personal computer of all. Macintosh.

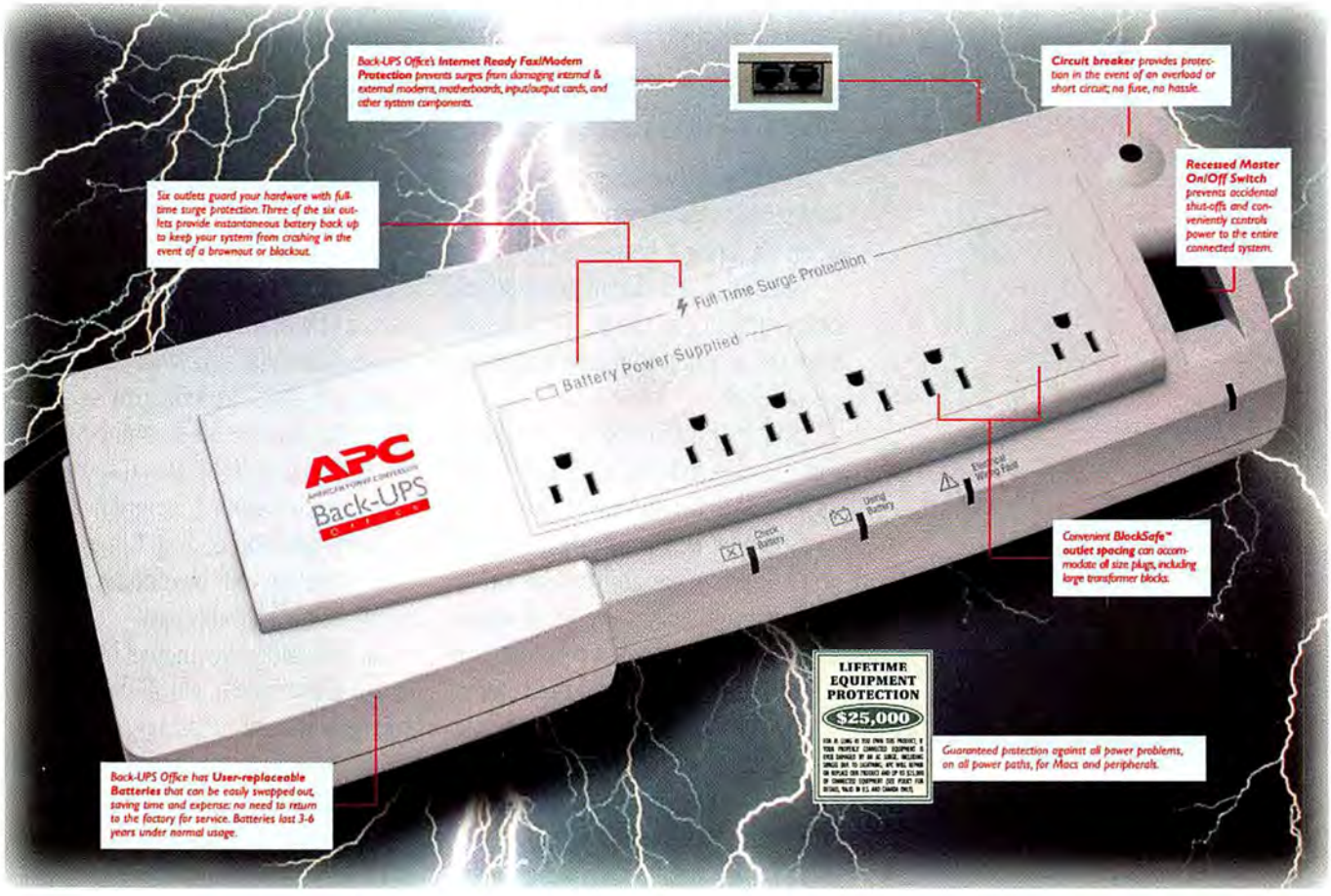
Your personal growth.

There's more than enough power for today's applications and plenty of expansion options that make it easy to add functionality no matter what you want to do – now, and down the road. When your family grows, your Performa grows with you.

an a personal computer get?

Computer, Inc. Macintosh PC Exchange is a trademark of Apple Computer, Inc. PowerPC is a trademark of International Business Machines Corporation, used under license therefrom. Avid is a registered trademark of Avid Technology, Inc. Windows is a registered trademark of Microsoft Corporation and SoftWindows is a

"They thought my new Multipath Back-UPS® Office™ was just a big surge suppressor – then the lights went out."



At last, a safe place to plug everything: Multipath Back-UPS Office for Mac workstations and peripherals

Facing the darkness is hard, but inevitable: You have a better chance of winning the lottery than of escaping power problems: They're the single largest cause of computer data loss and hardware damage.

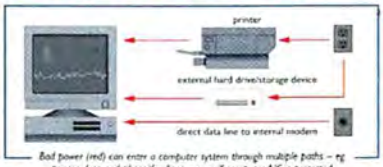
Back-UPS Office provides reliable power for your entire system. Instantaneous battery backup ensures uninterrupted operation of your CPU, monitor and an external storage device. Full-time surge suppression and site-wiring fault protection spreads a true Multipath safety net under any remaining integrated peripherals, like modems, printers, faxes and phone systems. Back-UPS Office also provides convenient BlockSafe™ outlet spacing to handle all size plugs – even large block transformers.

Unique Multipath protection keeps your Mac and data safe

Plugging a phone line into your computer doubles your vulnerability to power problems; add any peripheral, and it triples. Even if your AC power-line is shielded, when a surge hits an unprotected peripheral, it can blaze down serial and data lines, and toast your expensive Mac.

Back-UPS Office's compact design installs easily on desktop, floor or mounts to wall.

Multipath Means Total Power Protection



Bad power (red) can enter a computer system through multiple paths – eg printer, data and phone/fax lines – even if computer A/C is protected.

The Multipath protection of Back-UPS® Office™ shields your peripherals and guards your computer from bad power on every path, providing clean, safe power (green), to your entire system.

Multiple peripherals and data lines to and from your system are vital, but dangerous. Without them, you can't do your job. However, if a power sag makes your modem drop the line while you're downloading from the Internet, or locks your keyboard before you've saved work, you lose time, money and spend another late night at the office to meet your deadline.

Back-UPS Office protects your entire system

Until now, protection for your entire system required several devices. But multi-device protection can leave you vulnerable to line noise and unwanted data glitches created by the voltage differential between outlets. Those glitches are prevented with the Back-UPS Office common voltage reference.

Back-UPS Office means true Multipath protection, clean, safe power to every peripheral, and instant battery backup to keep your cutting edge system and O/S from crashing. It means protection for less by integrating the security of a surge suppressor with the power of a UPS, guaranteed up to $25,000.

APC has won more awards for reliability than all other brands combined

RECOMMENDED 1-888 Computer Reseller News SPRING COMDEX

"Back-UPS Office [is] a shoo-in for the small-office/home-office computing market and for general desktop workstations"
-Computer Reseller News

The Multipath Power Protection Advantage	Traditional Surge Protector	Traditional UPS	Back-UPS Office
Protected Paths			
AC	•	•	•
Data			•
Phone			•
Total Outlets	7	2	6
Number of Block Outlets			2
Protection from			
Surges	•	•	•
Spikes	•	•	•
Blackouts		•	•
Brownouts		•	•
Overvoltages			•
Typical Runtime in Minutes			
with Pentium 100 w/15" monitor		10	10
Battery backup for			
PC		•	•
Monitor		•	•
Storage Devices/Zip Drives			•
Full-time surge protection for			
Fax/Modem	•		•
Laser Printer	•		•
Speakers	•		•
Dataline protection for			
Internet or Network			•

Traditionally, protecting all your equipment meant buying a surge suppressor and a UPS. Even then, only your AC line was protected. New Back-UPS Office protects all paths to your equipment. Bulletproof Multipath protection

Protect yourself before you kick yourself. Get your new Back-UPS Office today (list price: $179.99), or call APC for a FREE 60-page catalog!

APC®
AMERICAN POWER CONVERSION
Dept. R2
(888)-BUY-APCC ext. 8007
http://www.apcc.com/8007.htm
(401)788-2797 Fax • (800)347-FAXX PowerFax
CompuServe: GO APCSUPPORT • Email: bkoffice@apcc.com
132 Fairgrounds Road, West Kingston, RI 02892 USA

© 1996 APC. All Rights Reserved. All trademarks are property of their owners. Specifications subject to change without notice. AB4013a

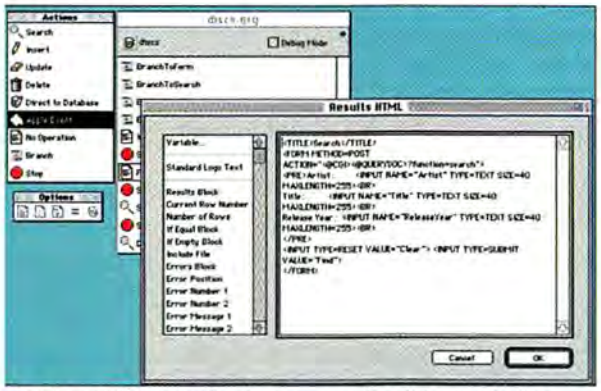
Tango for FileMaker

4½

Provide access to FileMaker databases over the Internet.

WHAT FILEMAKER PRO DID for databases, Tango for FileMaker hopes to do for searchable Web sites. Simply put, Tango makes it easy for you to publish your FileMaker database on the Web. And befitting a product that works hand-in-glove with the elegant FileMaker Pro, Tango does its work via a full-featured, easy-to-use graphical interface.

Like other database-publishing tools (including its sibling, Tango, a tool for searching SQL client/server databases over the Web), Tango for FileMaker includes a CGI (Common Gateway Interface) application that resides on your Web server. The CGI processes database queries issued in the World Wide Web's common language, HTML (HyperText Markup Language), and it returns responses in the form of HTML pages. Tango differs from other FileMaker CGIs, however, in its simplicity. It spares you the HTML coding and thorny FileMaker calculating other CGIs require.



The TangoEditor application's query editor lets you edit the raw HTML that lies behind the forms and error pages of Web-searchable FileMaker databases.

With Tango for FileMaker, you create the Web-interface database fields by dragging and dropping the fields or choosing pop-up-menu options. As you do so, Tango creates the HTML for your Web interface automatically. TangoEditor, the application you use for building Web-based forms, also gives you some display-formatting options, again without HTML coding, and a nifty feature called HTML Snippets, which lets you specify and store HTML text (such as pointers to a logo, or navigation links) that can be added to your database pages with a click.

Beyond the appearance of your Web interface is the deeper business of specifying what portion of your database will be accessible via the Web and how you want your published database to respond to information requests that come in over the Web. In Tango, you use tools called Query Builders to accomplish these tasks — and the tools are exceptionally easy to use. TangoEditor reads layout and field names from the database and displays them in a palette. To assign functions to fields, you drag the fields from the palette and drop them onto the editing window, where you can specify their behavior.

Tango's Query Builders generate scriptlike files called query documents, and when you open one by double-clicking, the drag-and-drop Query Builder environment gives way to a powerful text-based editor. Here, you can invoke Apple events, specify a variety of responses to HTML errors, edit raw HTML, and much more.

Tango for FileMaker's 24-lesson tutorial offers a wealth of examples. The step-by-step guide takes you from creating a simple search form to launching a product database that can calculate sales tax or markup percentage.

Tango is no speed demon. We performed simple database queries over a quiet Ethernet network and experienced noticeable delays. Tango for FileMaker also has one potentially troublesome problem. Although the CGI can invoke FileMaker scripts, the feature works only if FileMaker is the active application — which effectively means you have to keep your published database on its own system.

The Bottom Line

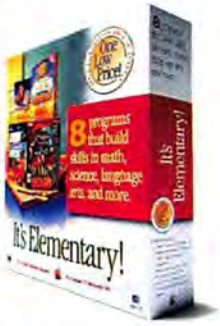
Tango for FileMaker leads the field in user-friendly Web database publishing. Expect plenty of competition in the months ahead, but for now, it's the tool of choice for FileMaker users. / Shelly Brisbin

Tango for FileMaker, $349 (list). **Company:** EveryWare Development, Mississauga, ON, Canada; 888-819-2500 or 905-819-1173; http://www.everyware.com/. **Reader Service:** Circle #410.

But wait, there's more.

"Early Learning Kit." Includes 8 interactive learning programs that will help your kids learn basic reading, writing and counting skills long before they even start school.

"It's Elementary!" Includes 8 interactive learning and entertaining programs that will have your 7- to 10-year-old learning language arts, math, science and social studies.



"College in Mind?" Includes 8 top programs that will help your kids get organized and ready for college by sharpening their test-taking, writing and interview skills.

"Extreme Fun Pak." Any of you hard-core gamers up for a challenge? These 6 blockbuster games will take you into the realm of intense action. Just remember to give your kids a chance.

Get up to 8 Macintosh® programs at one great low price when you purchase any of these educational and entertainment software bundles from Apple.® From early learning development to sizzling game-playing excitement, you'll find that Macintosh is the easiest way to bring learning – and fun – home. What more could you possibly ask for?

CompUSA · Micro Center · ComputerWare · Fry's Electronics · Computer World

And other fine Apple authorized resellers

©1996 Apple Computer, Inc. All rights reserved. Apple, the Apple logo and Macintosh are registered trademarks of Apple Computer, Inc., registered in the U.S.A. and other countries. It's Elementary!, College in Mind? and Extreme Fun Pak are trademarks of Apple Computer, Inc. All other company and/or product names are trademarks or registered trademarks of their respective companies.

Howtek Scanmaster 7500 Pro

★★★★½

Drum scanner adjusts itself to user's skill.

ALTHOUGH RECENT YEARS have seen advances in high-end flatbed scanners, drum scanners still lead the way in generating the best digital images possible. The Howtek Scanmaster 7500 Pro desktop drum scanner doesn't have all the features of top-of-the-line drum scanners, but its ease of use and outstanding software make it an excellent choice for prepress environments that require high volume and high quality — such as ad agencies and many graphic-arts houses. And although its just-sub-$60,000 price may not sound like a bargain, it's comparable to that of high-end flatbed scanners whose abilities the 7500 matches or exceeds.

The 7500 captures its images by using three matched PMTs (Photo Multiplier Tubes) rather than a CCD (charge-coupled device) array like those found in flatbed scanners. PMT technology is known for delivering high-quality scans, and indeed, the images we captured on the 7500 consistently exhibited fewer artifacts and less noise than those from any of several high-end, large-format flatbed scanners. What's more, unlike many flatbeds, the 7500 can scan transmissive and reflective targets at the same time.

The 7500 offers 12-bit-per-channel color; 5,000-dpi optical resolution, interpolated to 16,000; two drum sizes, 11.5 x 18.5 inches and 24 x 18.5 inches; a SCSI-2 interface; and outstanding dynamic range (3.8 out of a possible 4.0). The 7500 is capable of scanning in both the RGB and CMYK color spaces. It captures data in CMYK by use of a specialized processor that converts from RGB to CMYK on the fly. An option on some scanners, this hardware approach to color conversion is standard with the 7500.

Prepping artwork for use in the 7500 is easy: Just attach one or more originals to the drum with a low-tack, low-residue tape, and then place the drum in its mount inside the scanner. Because Howtek includes two drums with the 7500, you can prep one job while another is being scanned. An optional mounting table ($1,295 list) furnishes an extra drum mount and can speed production even more.

The 7500 gives you the option of including multiple originals — reflective prints, transmissive slides, or a combination of both — in a single job. To scan multiple images in one job, you perform a prescan and then use the 7500's scanning software to outline each original. You can capture each image separately or batch them for speedy capture. Either way, the scanner calibrates itself before scanning each image, to ensure high color accuracy.

Smart Software

No matter how good your scanner hardware is, good software is critical to getting the best-possible output. We tested the 7500 with Howtek's new scanning application, Trident SE 1.1, and were impressed with the software's complement of tools, which are well designed to meet the needs of scanning novices as well as seasoned pros.

Trident gives you several levels of control. First, you choose the degree of freedom you'll have in correcting your image, by choosing between the hands-on SE (Separator Edition) mode and the more automated PE (Photo Edition) mode. Within each of these are two additional options that determine the extent of your ability to fine-tune color corrections of scanned images: In Production mode, the software handles corrections largely on its own; in Expert mode, you're free to tweak your way to exacting accuracy.

The beauty of the Trident application is its flexibility and ability to scale to the needs of expert and novice operators alike. Without sacrificing any of the 7500's scanning capabilities, Trident in PE mode allows inexperienced operators to generate professional-quality scans easily. A seasoned operator using Trident in SE Production mode can opt for greater control and correction, and the SE Expert mode provides perfectionists with extensive tools, including full gradation control, tone curves, cast removal, dot gain, and gray balance.

Trident's SE Expert controls provide outstanding precision and fine-tuning, but with that sophistication comes complexity. Many tools are nonintuitive and difficult to learn, in part because they don't follow standard Macintosh OS interface conventions. The spotty Trident manuals don't always help either. Once you're over the learning curve, however, you have a truly top-class set of tools at your disposal.

The Bottom Line

For scanning environments that generate ten or more scans a day, the Howtek Scanmaster 7500 Pro and the outstanding Trident SE software are excellent tools. The 7500 performs extremely high-quality scans, and Trident not only makes it easy for novices to get professional results quickly but also offers advanced tools for scanning veterans. The 7500 will quickly pay for itself in saved service-bureau fees. / Rick Oldano

Howtek Scanmaster 7500 Pro, $58,900 (list, including Trident SE software). **Company:** Howtek, Hudson, NH; 800-444-6983 or 603-882-5200; http://www.howtek.com/. **Reader Service:** Circle #411.

Desktop drum scanning is fast and easy with the Howtek Scanmaster 7500 Pro.

VOCALTEC

Have you heard your e-mail today?

VocalTec's new **Internet VoiceMail, *Version 3.0*** is a software program that lets you send **voice mail** over the **internet** for **FREE** to **anyone** with an e-mail address. **Internet VoiceMail,** works **like** your **e-mail program** — simply enter a person's e-mail address, record a message, and send it off. You can even **add text** or **attach files**. In a few minutes, your friend **anywhere** in the **world** can **hear your voice** for **just the cost of your Internet connection**.

Internet VoiceMail works with your existing e-mail program to add the exciting dimension of voice. Sing happy birthday to a good friend, congratulate a business associate, or just let someone know you're thinking of them — all in your own voice. So go ahead, ***make yourself be heard.***

Internet VoiceMail™

VOCALTEC

1-800-551-0624

from the makers of
Internet PHONE™

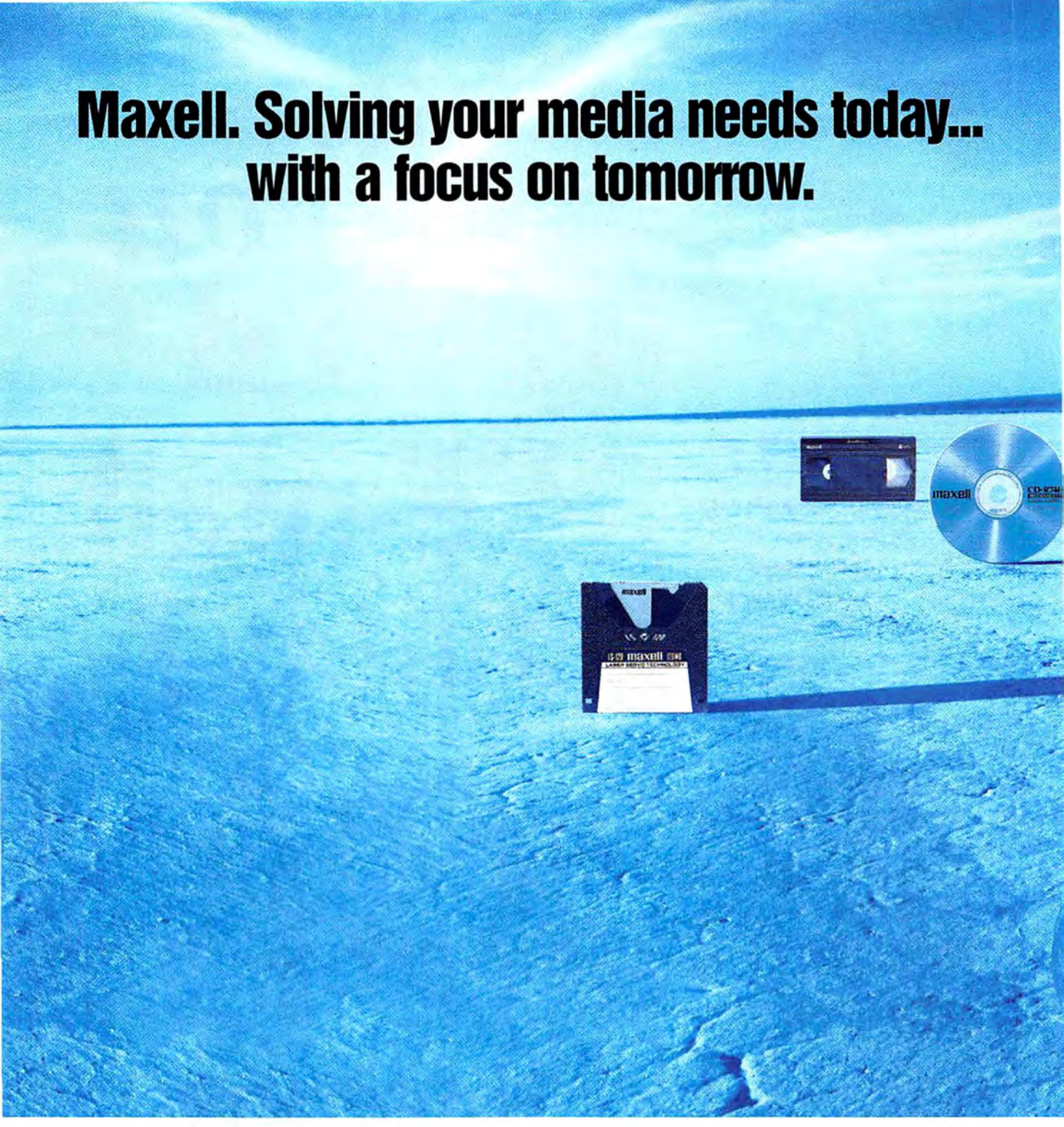
MAC & PC

FREE PC microphone included

download a free trial!
www.vocaltec.com/demo500.htm

CIRCLE **13** ON READER SERVICE CARD

Maxell. Solving your media needs today... with a focus on tomorrow.



A commitment to technology that puts us a step ahead.

At Maxell Commercial Products Group, we specialize in computer and broadcast recording media. That means we can dedicate all our resources to anticipating where the future of recording media is headed, and creating products that can take you there.

For example, we were the first to harness the power of LIMDOW® technology, enabling us to double the rewriting speed with direct OverWrite Magneto Optical Disks. And our patented ceramic armor metal particles prolong the life of broadcast video and computer tapes, generation after generation.

The widest array of recording media products in the business.

For over 25 years, the Maxell name has been synonymous with the highest quality products in the business. Today, you can count on us for the widest array of recording media products in the industry as well. In fact, we're so confident of our quality products, you'll find they're backed by an iron-clad lifetime warranty and supported by a toll-free tech support line.

From ground breaking computer optical disks to the latest generation of broadcast products such as Betacam SP, you only have to remember one name and make one call for all your storage product needs: Maxell.

Take a closer look at Maxell's entire product line, today!

Whatever the application, whatever the environment, Maxell's broad product line means the end of compromise when it comes to recording media.

You can see for yourself by calling for our *FREE* full-line product brochure. It's full of informative details and applications for all of our computer and broadcast storage solutions. For complete details on any of our products, simply call 1-888-2-MAXELL (262-9355), or check out our Website at www.maxell.com

See us at Comdex booth #L462

maxell®
Commercial Products Group

Technology for the next generation.

Maxell Corp. of America, 22-08 Route 208, Fair Lawn, New Jersey 07410
Maxell Canada, 111 Staffern Drive, Concord, Ontario, Canada L4K 2R2 • (905) 669-8107

CIRCLE **22** ON READER SERVICE CARD

MasterJuggler Pro 2.0

3½

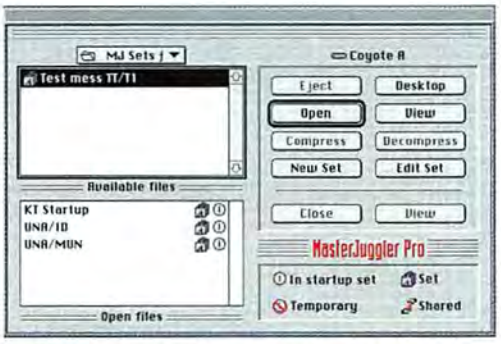
Update to font-management stalwart can't match competitors.

LIKE OTHER FONT-MANAGEMENT utilities, Alsoft's MasterJuggler Pro lets you create font sets that can be opened or closed in one step, freeing you to organize your fonts in your own folders. And it resolves font-ID conflicts. But even newly updated, this tried-and-true font manager is rather awkward and some of its included utilities are outdated.

MasterJuggler's font sets are ordinary Mac files, which makes them easy to back up and archive. They're also easy to lose track of or delete accidentally. You must also remember to store them in a single folder, or they're likely to end up all over your hard disk. Alsoft tacitly acknowledges this problem by including a utility for finding errant set files.

The program creates two types of sets: startup, which open automatically when you boot, and temporary, which you can open as needed. Temporary sets normally close when you shut down, but if your system crashes, MasterJuggler will thoughtfully reopen any temporary sets that were active, when you restart.

MasterJuggler's main window looks straightforward, but until you get used to the program, its odd interface makes it difficult to use. MasterJuggler buttons don't mean what you think they should. For instance, clicking on the Temporary or In Startup Set buttons doesn't control whether you create a temporary or startup set.



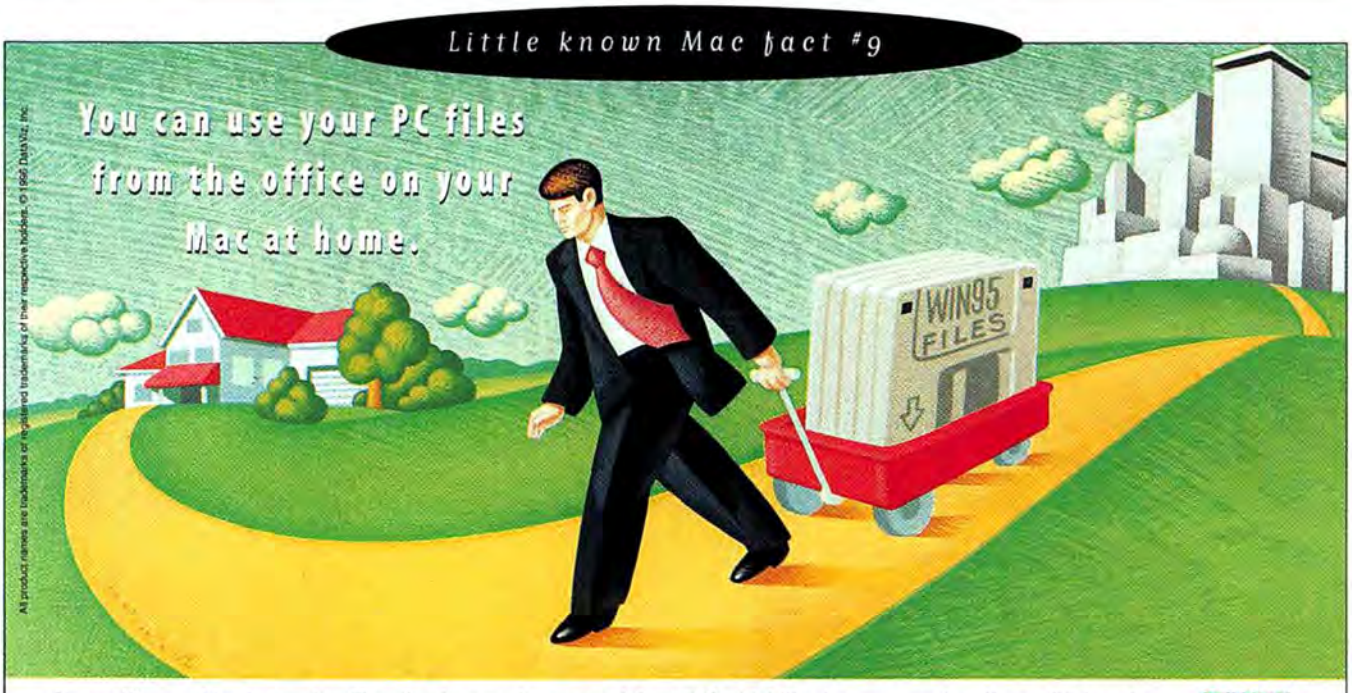
Baffling buttons in MasterJuggler's primary control window don't behave as you'd expect.

MasterJuggler Pro ships with a motley grab bag of utilities. Some, including the Font/DA Utility, address problems that are all but extinct on modern Mac OS systems. Others, such as PowerTalk KeyChains and Font Gathering (a far-from-automatic tool for collecting fonts for transport to a service bureau), are also less than essential. Font Guardian, however, is truly helpful: It reports defective suitcase or outline fonts, duplicate fonts, and missing printer outlines. Set Converter, which converts sets from Symantec's Suitcase 2 font-management program to MasterJuggler format, is somewhat handy — although it ignores MasterJuggler's real rival, the current Suitcase, version 3.

The Bottom Line

Despite its interface quirks, MasterJuggler is almost as good as Suitcase 3. But it needs a major overhaul for the next round of the font-management game, as forthcoming programs promise such advantages as the ability to open font sets automatically when you launch applications or documents. / Kathleen Tinkel

MasterJuggler Pro 2.0, $89.95 (list). **Company:** Alsoft, Spring, TX; 800-257-6381 or 713-353-4090. **Reader Service:** Circle #413.



No one likes working late at the office. So why not take your work home? MacLinkPlus lets you use virtually any PC-based word processing, spreadsheet or graphic file on your Mac. With all formatting intact. It doesn't matter if you use Microsoft Office at work and ClarisWorks at home. Or Microsoft Works at home and WordPerfect at work. Or thousands of other combinations. MacLinkPlus lets you bring files back and forth with ease. Sure there are lots of reasons why you can't make it home on time. But at least with MacLinkPlus, incompatible file formats doesn't have to be one of them.

For details, call 1-800-270-0030 ext. 126 or visit our Web site at http://www.dataviz.com/maclink9.

MacLink

DATAVIZ

Circle **163** on reader service card for special multipack pricing and general information.

Circle **164** on reader service card for general information.

Nightingale 3.0

Sweet-sounding notation program hits high notes, however unevenly.

LIKE THE BIRD IT'S NAMED after, Musicware's music-notation program, Nightingale, is uniquely talented and beautiful, but after a time, its quirks can wear a bit thin.

Nightingale costs $250 less than its main competitor, Coda's Finale, but it gives you many of the same features, including Standard MIDI file transcription, real-time transcription, up to 64 staves and 100 voices, automatic transposition, and WYSIWYG display and printing. It even has a few talents Finale doesn't. Even though it's not PowerPC-native, Nightingale is faster than Finale. It also has a freely distributable playback utility called NoteView, which lets anyone view and, via MIDI, play your Nightingale scores.

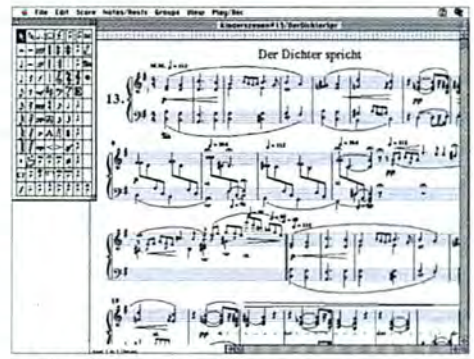
Finale also doesn't offer anything like Nightingale's $149 NoteScan add-on, which lets you scan printed music sheets and turn them into editable scores.

Nightingale's clean interface makes it easier to use than the comparatively cluttered Finale. Tools for inserting notes, rests, chord symbols, clefs, key signatures, and dynamic markings are in one floating palette. The clever QuickChange dialog box gives you a pull-down menu that has only the options appropriate for changing a selected element in the score.

Nightingale's clean layout extends to the way measures are handled. Unlike notation programs that force you to manually move notes, rests, and bar lines to accommodate a flurry of notes, Nightingale expands and contracts bars to maintain a legible score.

Alas, lest we sound *too* overjoyed, Nightingale has several niggling annoyances. For one, you can't copy more than one music staff at a time. Nor can you copy and paste separate voices from within a single staff. You'll also find yourself reverting all too often to a previously saved score because you can't Undo.

Even more vexing are the note-recognition problems in the NoteScan add-on and its lack of hard-copy documentation. And although NoteScan does a respectable job with scores containing one-line, single-note melodies, its recognition accuracy plummets with more-complex manuscripts.



In Nightingale's floating palette, you have easy access to most of the tools you need in order to create or edit your musical manuscript.

The Bottom Line

If you are in the market for a powerful and easy-to-use music-notation program for a not-too-steep price, Musicware's Nightingale is worth considering, especially if you have a scanner and are planning to do some editing and annotating of printed scores. If you can live with Nightingale's off notes, you'll discover that this bird produces some sweet music.

/ Christopher Breen

Nightingale 3.0, $495 (list). **Company:** Musicware, Redmond, WA; 800-997-4266 or 206-881-9797; http://www.halcyon.com/musicware/. **Reader Service:** Circle #414.

Now Triple Your Memory And Forget Those Splitting Headaches.

Now it's easy to *triple* your memory with software and without the headache of tearing your Mac apart. New RAM Doubler™ 2 is the improved version of RAM Doubler, one of the highest-rated and best-selling Mac utilities ever with more than *one million* sold. RAM Doubler 2 is faster, offers flexible memory settings and keeps those memory hungry apps at bay. RAM Doubler 2 lets you run more programs at once, work faster and work smarter. Get the most out of your Mac with new RAM Doubler 2.

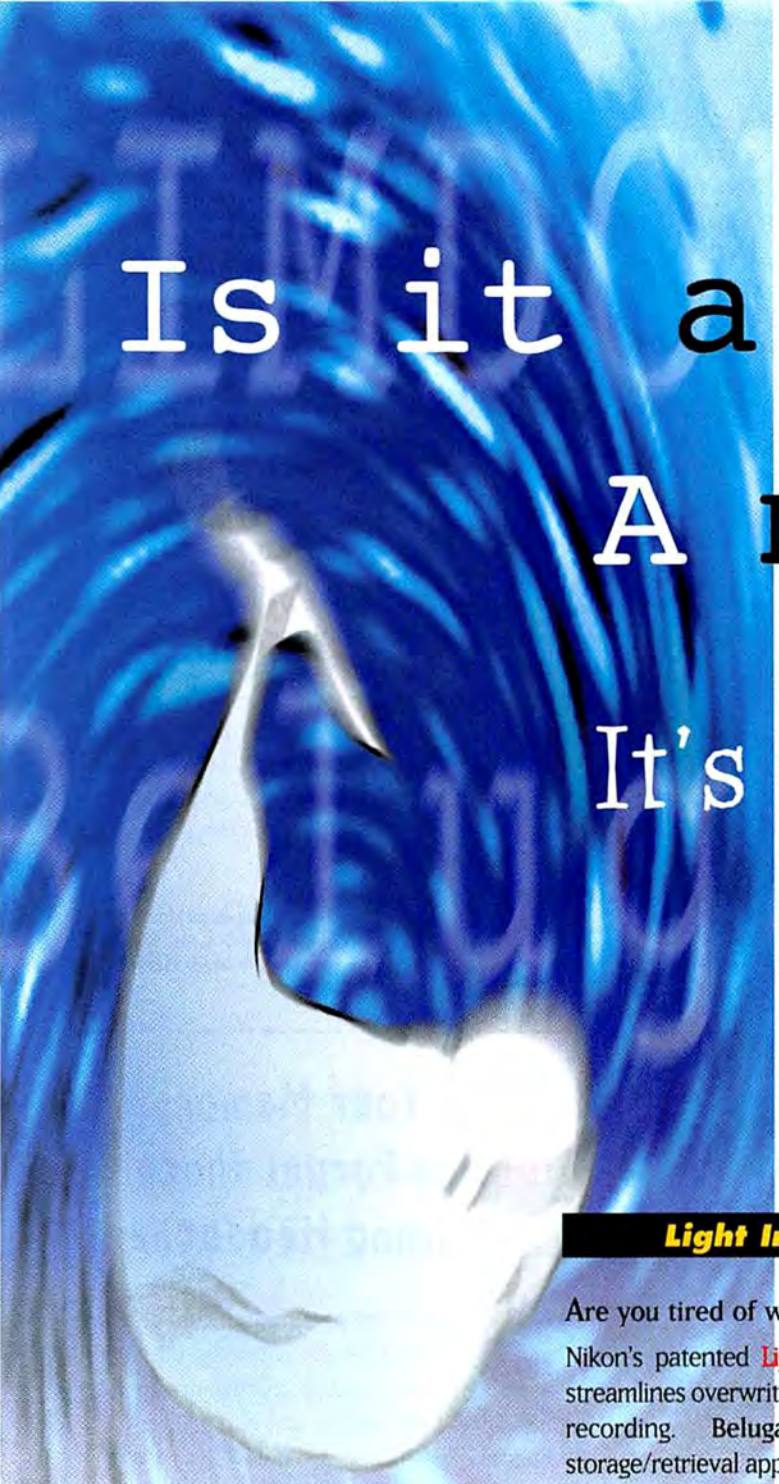
Connectix

1-800-571-7558 or www.connectix.com

Triple Your Memory With New RAM Doubler 2

© 1996 Connectix Corporation. 2655 Campus Drive, San Mateo, CA 94403 USA • (415) 571-5100 • Fax (415) 571-5195 • E-mail info@connectix.com
RAM Doubler is a trademark of Connectix Corp. All other trademarks are the property of their respective holders.

CIRCLE 62 ON READER SERVICE CARD



Is it a fish?

A mammal?

It's the fastest 2.6GB MO.

Beluga™

Light Intensity Modulation - Direct Overwrite

Are you tired of waiting to download files into conventional MOs?

Nikon's patented Light Intensity Modulation - Direct Overwrite technology streamlines overwriting from the existing two-pass to a single pass "on-the-fly" recording. Beluga™ is the intelligent choice for mainstream data storage/retrieval applications and even full motion video.

Existing files? Not to worry, Beluga™ communicates with other ISO-Proposed erasable media such as 2.6GB, 1.3GB, 650MB conventional MO and CC WORM.

At 4 MB/sec, Beluga™ is like adding another hard drive.

Nikon Precision Inc.
1399 Shoreway Road
Belmont, CA 94002-4107
Phone: (415) 508-4674
FAX: (415) 508-4600

1-888-88NIKON
http://www.mo-nikon.com

CIRCLE **7** ON READER SERVICE CARD

Retrieve It! 2.5

★★★★

Utility searches the Internet as well as your disks.

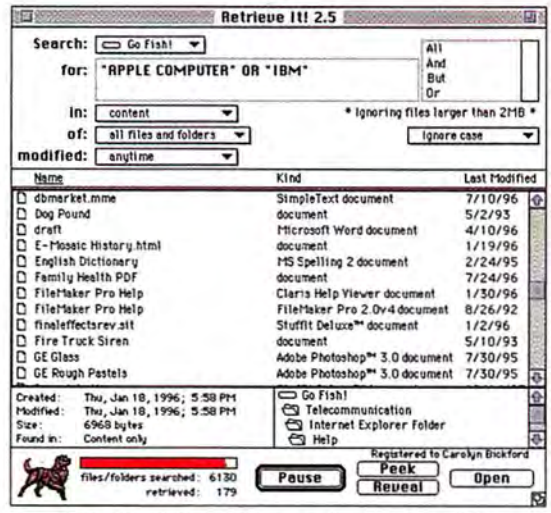
EVEN WITH ITS SYSTEM 7.5 face-lift, Apple's Find File extension is looking tired, especially in comparison to Retrieve It! 2.5. This impressive find-file utility now not only finds files by name or by words they contain but also cleverly connects to Internet search engines.

Retrieve It! is able to search through any mounted volume or individual folders to find a file by its name. It can also search through each file's content for individual words. Content searches can take several minutes but are invaluable when you don't remember which file has the information you're looking for. You can search by using operators, which include the run-of-the-mill AND, OR, and NOT as well as more-advanced operators that let you specify how many words apart one keyword can be from another, for instance. You can further narrow your search, screening files by modification date or using a list of creator types Retrieve-It! generates for you. When Retrieve It! finds a file that matches your criteria, the program adds it to a list in a scrolling window.

Internet Bloodhound

These features alone give Retrieve It! a solid edge over Apple's Find File, but we were even more impressed by Retrieve It! 2.5's ability to integrate with Internet search engines. From within the Retrieve It! window, you can select among the five most popular Net search services — Yahoo, Alta Vista, Excite, Infoseek, and Lycos — to search World Wide Web pages. You can also choose among more-specific search services to find news, stock prices, e-mail addresses, classified ads, or Usenet postings. When you initiate a search, Retrieve It! launches your Web browser and opens the first page of results.

Retrieve It! is an application, not an extension, so extension conflicts will not be a problem. However, this also means that if you want to invoke it by use of the Command-F key combination, you'll have to use a third-party utility.



Search the World Wide Web as easily as you search for information on your hard disk with Retrieve It!.

The Bottom Line

Find-file utilities that outshine Apple's old workhorse aren't new, and many have esoteric features that MVP Solutions' program doesn't. But Retrieve It! is the first that's easy and practical enough to permanently replace the Find File extension on our system. / Carolyn Bickford

Retrieve It! 2.5, $65 (list). **Company:** MVP Solutions, Mountain View, CA; 415-562-3457; http://www.mvpsolutions.com/. **Reader Service:** Circle #415.

Now You Can Answer Your Mother's Prayer.
Appear Nightly In Her Living Room
In Living Color.

Introducing Connectix Color QuickCam™, the camera and software that lets you use your computer in fun ways at home, business and on the net. Send personalized cards. Add images to business reports. Videoconference with additional software. Spiff up your web site. Get Color QuickCam for under $200*. Just plug it in, install the software and start taking brilliant color pictures and video on your computer.

Connectix

1-800-571-7558 or www.connectix.com
*Estimated retail price after '30 rebate

Now You Can With Color QuickCam
For Mac and Windows platforms. Available wherever computer products are sold.

© 1996 Connectix Corporation, 2655 Campus Drive, San Mateo, CA 94403 USA • 415-571-5100 • FAX 415-571-5195 • EMAIL info@connectix.com QuickCam is a trademark of Connectix Corporation. All other trademarks are the property of their respective holders.

CIRCLE 64 ON READER SERVICE CARD

Infini-D 3.5

4 4 4 4

New features improve on good 3-D package.

THE LATEST UPDATE TO INFINI-D, Specular's integrated 3-D-modeling, -rendering, and -animation program, adds a winning combination of new features and enhancements to an already friendly and affordable 3-D package. Seasoned Infini-D users will appreciate impressive new features such as the ability to perform Boolean operations when rendering and to customize and animate lens-flare effects. New users and old alike will appreciate several ease-of-use improvements to Infini-D's controls.

Infini-D users have long coveted more-expensive 3-D packages' ability to perform Boolean operations — the creation of new objects by adding or subtracting the volume of one object to or from another. Infini-D 3.5 partly satisfies users' desires with the introduction of Boolean rendering. You can designate any object in Infini-D 3.5 as a negative object or an intersection object; a negative object can subtract its volume from another object, whereas an intersection object adds its volume to that of other objects. This approach differs from true Boolean modeling in that the merger of two shapes in Infini-D 3.5 doesn't actually create a new object geometry; both of the original shapes remain in your scene (although either or both can be made invisible). But careful grouping of these objects enables you to achieve many of the same results you'd get with a far more expensive Boolean modeler. What's more, you can animate negative and intersection objects just as you would any other in Infini-D. This allows for dynamic effects such as having a sphere's volume subtracted from a cube as the two pass through each other — or having invisible objects take bites from a rendered apple.

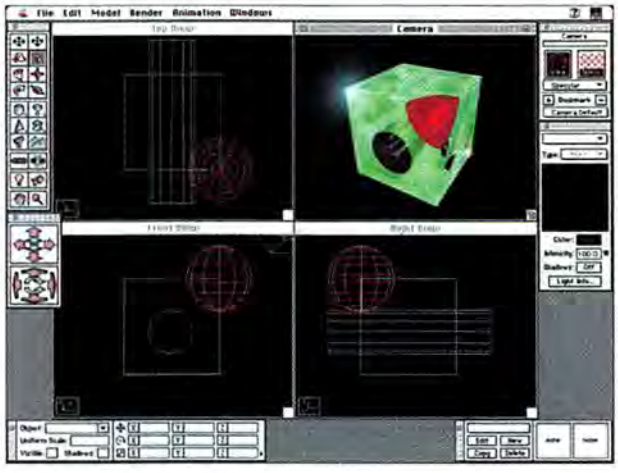
SuperFlares, another feature that's new to Infini-D 3.5, is one that users may not have been pining for — but it's one they'll quickly find many uses for. SuperFlares are lens-flare effects that let you customize any light source in an Infini-D project — whether it's in your scene or illuminating it from offstage. Using SuperFlares allows you to replicate a host of real-world lighting effects such as a halogen searchlight, a laser, or a smoldering coal. Infini-D includes SuperFlare presets for a variety of effects, but the real power of SuperFlares comes as you manipulate light-source characteristics such as brightness, aspect ratio, flare and glow color, reflection style, streak pattern, halo, and obfuscation (by other objects in front of the light source). You can save and reuse any combination of these settings and animate changes in them over time. Sample animations that ship with Infini-D 3.5 — including a sweeping searchlight and an igniting rocket engine — illustrate SuperFlares' potential and provide good understanding of how it can be put to use.

Adding to the usefulness of SuperFlares is a new Infini-D object type, the ShadowCatcher, which is rendered only where other objects' shadows fall upon it. You control the shadows' transparency by setting the ShadowCatcher objects' surface transparency. Use of ShadowCatchers allows you to render cast shadows into an alpha channel or a background image, which greatly simplifies the placement of 3-D objects with shadows into 2-D images — such as you might do in Adobe Photoshop.

A host of other features enhances the performance and versatility of Infini-D's modeler. Ray tracing for spline-based as well as polygonal objects has been accelerated (with speed increases depending on the user's system). True transparency and refraction rendering are now available in all shading modes, which improves accuracy of previews in faster shading modes. And if you ever create animations for broadcast or videotape playback, you'll appreciate the new optional Safe Title and Safe Action indicators, which outline the portion of your scene that will be clipped when your image is converted for a TV screen.

Infini-D's Workshop, where 2-D objects can be extruded, swept, or lathed into 3-D objects, has also been improved: Keyboard arrow keys can be used to nudge selected elements, and multiple EPS outlines can now be imported into one cross section. Most of the Workshop's tools can now be selected with keyboard equivalents.

Interface and general improvements round out Infini-D 3.5's new features. The new Navigation Floater is a handy palette that provides *xyz* navigation control for the scene windows and pitch/roll/yaw controls for camera windows. Importing images (as textures and backgrounds) can be done via the Surface menu, and multiple images can be imported at the same time, streamlining production.



Realistic, dramatic lighting effects are possible with Infini-D 3.5's new SuperFlares feature.

Version 3.5 allows you to set and save the rendering resolution and ruler increments for each scene independently, rather than forcing you to switch global preferences in order to change them. Infini-D 3.5 has also added support for user-definable scratch disks and animation-filename suffixes. QuickTime VR support is slightly improved through autorotation of tall camera windows and the availability of QTVR movie presets.

The Bottom Line

Infini-D 3.5 is a worthwhile upgrade to an already comprehensive and easy-to-use tool set for beginning 3-D artists. New features such as SuperFlares and Boolean rendering enable users to achieve effects that would otherwise require a significantly more expensive package. / David Biedny and Nathan Moody

Infini-D 3.5, $449 (estimated street). **Company:** Specular, Amherst, MA; 800-433-7332 or 413-536-3100; http://www.specular.com/. **Reader Service:** Circle #416.

Internet for Macintosh. Install disks. Double click.

It's that simple.

EarthLink Network

The coolest, easiest Internet access on Earth.

Every account includes E-mail and a free 2 meg Web site.
Call now for your EarthLink Network TotalAccess™
software with Netscape Navigator™ 2.0.

1-800-395-8425

1995 BYTE POURNELLE'S USER'S CHOICE AWARD

Internet access in over 290 cities in the U.S. and Canada. Software for MACINTOSH, WINDOWS, WINDOWS 95, featuring Netscape Navigator 2.0. EarthLink Network is one of the largest Web space providers in the U.S. and also provides ISDN, Frame Relay, T1 and other Internet services. **There is a one-time set-up fee of $25.00. Prices for Canada are different.*

NETSCAPE NAVIGATOR™ INCLUDED

EarthLink Network, Inc. 3100 New York Drive, Pasadena, CA 91107 Fax: 818-296-2470
Info via email: info@earthlink.net Live human via email: sales@earthlink.net Visit our Web site at http://www.earthlink.net

Copyright ©1996 EarthLink Network, Inc. All Rights Reserved. Trademarks are property of their respective owners. Netscape Communications, Netscape Navigator and the Netscape Communications logo are trademarks of Netscape Communications Corporation. ©1996 PhotoDisc.

CIRCLE 90 ON READER SERVICE CARD

1-800-258-2622 1-800-CLUBMAC 1-800-258-2622

SOUTHLAND MICRO SYSTEMS...

We're Strong Enough To Support All Your Memory Needs.

Since our inception, Southland Micro Systems has maintained on impeccable record of delivering only the highest quality memory solutions to a sophisticated, memory-hungry marketplace. Our product line includes all capacities of SIMMs, DIMMs, VRAM and Cache for both Macintosh and DOS platforms.

Complete in-house manufacturing allows us to monitor and produce reliable, quality products, bring new products to market quickly, and develop innovative memory solutions to meet the demands of today's ever changing market.

Because of this, we're able to offer our customers competitive pricing, fast delivery, and value added service.

Memory prices fluctuate frequently, please call for latest prices.

DIMM

M101 1081	8MB	$65
M101 1082	16MB	$135
M101 1083	32MB	$265
M101 1084	64MB	$495

SOUTHLAND MICRO SYSTEMS

Quality • Strength • Speed

Internet:http://www.southlandmicro.com

SIMM (72PIN)

M101 1031	4MB	$35
M101 1054	8MB	$65
M101 1072	16MB	$120
M101 1070	32MB	$265

ClubMac®

ORDER 24 HOURS A DAY • 7 DAYS A WEEK

1-800-258-2622

Visit Our Web Site @ http://www.club-mac.com

When placing an order please mention source code **681296**

UMAX®
Computer Corporation
SuperMac S900

1 Year Manufacturer's Warranty

Up to $250* Instant Rebate on 150MHz Machines

Starting at $2995

UJ012 1001
Monitor sold separately

Up to 225MHz PowerPC

Multi-Processor Upgradeable!

UJ012 1011	SuperMac J700L 150MHZ 604, 16MB, 2.1GB HD, 128 IMS Video Card 2MB, 6.7x CD	$2995
UJ012 1001	SuperMac S900D 150MHZ 604, 16MB, 6.7x CD	$2995*
UJ012 1002	SuperMac S900L 150MHZ 604, 16MB, 2GB HD, 128 IMS Video Card, 6.7x CD	$3495*
UJ012 1006	SuperMac S900L 180MHZ 604e, 32MB, 2.1GB HD, 128 IMS Video Card 4MB, 8x CD	$3795
UJ012 1007	SuperMac S900L 200MHZ 604e, 32MB, 2.1GB HD, 128 IMS Video Card 4MB, 8x CD	$3995
UJ012 1012	SuperMac S900L 225MHZ 604e, 32MB, 2.1GB HD, 128 IMS Video Card 4MB, 8x CD	$4495
UJ012 1010	SuperMac S900L DP (2)180MHZ 604e's, 32MB, 2.1GB HD, 128 IMS Video Card 4MB, 8x CD	$4695

*$150 toward the purchase of a ClubMac peripheral, plus $100 Instant Rebate

PowerComputing™

PowerTowerPro™ 225

Protect ME! APC

$4995*

MacUser ★★★★★

score card MacWEEK ◆◆◆◆◆

P512 1001

- 225MHz PowerPC 604e Processor
- Upgradeable CPU Card
- Dual Processor Support
- Up to 1GB Memory
- AV Capable Hard Drive
- Ultra SCSI/RAID Options
- 8X CD ROM Drive
- 1MB Level 2 Cache included
- 8MB 128-Bit Graphics Accelerator
- 6PCI Slots
- 9 Drive Bays
- Interleaved Memory
- Dual SCSI, Fast Internal 10MB/se.

*Monitor sold separately

P512 1008	PowerCenter 132 604, 132MHz,16MB, 1GB HD. 4X CD. 1MB VRAM, 3 PCI	$1895
P512 1007	PowerCenter 150 604, 150MHz,16MB, 1GB HD. 4X CD. 1MB VRAM, 3 PCI	$2095
P512 1006	PowerTower 166 604, 166MHz, 16MB, 2GB AV HD, 4X CD, 2MB VRAM, 3 PCI	$2895
P512 1005	PowerTower 180e 604e, 180MHz, 16MB, 2GB AV HD, 8X CD, 2MB VRAM, 3 PCI	$3295
P512 1004	PowerTower 200e 604e, 200MHz, 16MB, 2GB AV HD, 8X CD, 2MB VRAM, 3 PCI	$3595
P512 1003	PowerTowerPro 180 604e, 180MHz, 16MB, 2GB AV HD, 8X CD, 8MB VRAM IMS card, 6 PCI	$4195
P512 1002	PowerTowerPro 200 604e, 200MHz, 16MB, 2GB AV HD, 8X CD, 8MB VRAM IMS card, 6 PCI	$4495
P512 1001	PowerTowerPro 225 604e, 250MHz, 16MB, 2GB AV HD, 8X CD, 8MB VRAM IMS card, 6 PCI	$4995

ClubMac®

The Best Source for Mac/OS Systems, Peripherals, and Software.

The Best Service
Our knowledgeable and experienced Sales Reps are available 24 hours a day, 7 days a week.

The Best Selection
We have over 5000 products in stock and ready to ship.

The Best Price
Our huge buying power lets us pass the savings on to you.

Authorized Catalog Reseller

Sales & Customer Service	24 Hours a Day, 7 Days a Week	(800) 258-2622
Inquiries & International Sales	24 Hours, 7 Days a Week	(714) 768-8130
Corporate, Educational, & Government Sales	M - F 5am - 5pm PST	(800) 258-2621
Technical Support	M - F 7am - 5pm PST	(800) 854-6227
24-Hour Fax		(714) 768-9354
E-mail: ClubMac Sales		cmsales@club-mac.com
Customer Service		custsvc@club-mac.com
Technical Support		techsup@club-mac.com

WARRANTIES: All items manufactured by ClubMac are returned to ClubMac for warranty repair. All other items carry manufacturer's warranty. MONEY BACK GUARANTEE: All products manufactured by ClubMac carry a 30 day money back guarantee. ClubMac extends all other manufacturers' return policies to its customers. Non-ClubMac products carry 30 day money back guarantee when specified. RETURNS: Call for RMA number! Any product that is returned WITHOUT an RMA number will be refused. ALL PRODUCT INFORMATION AND PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE. NOT RESPONSIBLE FOR TYPOGRAPHICAL ERRORS.

Call for your free ClubMac Catalog Subscription

http://www.club-mac.com

DISCOVER NOVUS VISA MasterCard AMERICAN EXPRESS Cards

NO SURCHARGE!

When placing an order please mention source code 681296

ORDER 24 HOURS A DAY • 7 DAYS A WEEK

1-800-258-2622

Visit Our Web Site @ http://www.club-mac.com

ClubMac®

1-800-258-2622 1-800-CLUBMAC 1-800-258-2622

1-800-258-2622 1-800-CLUBMAC 1-800-258-2622

Nothing comes closer to reality.

"SuperScan took top honors in every important performance category"

Macworld

Check out the monitor Macworld editors voted their "runaway favorite for focus, brightness, contrast, and color." The SuperScan Mc 21 gives you the sharpest image money can buy (0.22 mm horizontal dot pitch. 0.16 mm vertical). It also displays 40% more pixels than competing aperture grill monitors for crisper graphics and improved readability of small text. Plus it's flatter than other displays so you get a more accurate image with consistent brightness and precise focus even in the corners.

	NEW SuperScan Mc 801HR	SuperScan Mc 21	SuperScan Mc 20	SuperScan Mc 17	SuperScan Mc17s
CRT size	21 inch	21 inch	20 inch	17 inch	17inch
Viewable Image	20.0"	20.0"	18.7"	15.9"	15.7"
Dot Pitch	.22 mm horizontal .16 mm vertical		.28 mm	.26 mm	.28 mm
Max. resolution	1600 x 1200	1600 x 1200	1600 x 1200	1600 x 1200	1280 x 1024
Scan frequency	31-96 Khz 50-160 Hz	31-85 Khz 50-160 Hz	30-82 Khz 50-120 Hz	24.8-82 Khz 50-120 Hz	30-64 Khz 47-104 Hz
ClubMac price	$2,059	$1,899	$1,395	$899	$745
Part Number	R053 1034	R053 1032	R053 1031	R053 1033	R053 1035

MW EDITORS' CHOICE · MacUser RATED SEPTEMBER 1996 · MW ★★★★ · MPR II · 3-year warranty · Colorific

SuperScan
An advantage you can clearly see

NSA 100 Lowder Brook Drive, Westwood, MA 02090 http://www.nsa-hatachi.com
The ENERGYSTAR™ emblem does not represent EPA endorsement of any product or service.

RASTEROPS®

HITACHI

ClubMac®

ORDER 24 HOURS A DAY • 7 DAYS A WEEK
1-800-258-2622
Visit Our Web Site @ http://www.club-mac.com

When placing an order please mention source code
681296

IMAGINE 128

POWER MAC ACCELERATION SERIES

OPTICOLOR 128

Same Technology, Same Performance, New Name.

The Imagine 128™ video accelerator for the Power Macintosh from Number Nine Visual Technology, which has garnered numerous awards including 4 stars (Macworld Magazine), 4 diamonds (MacWeek Magazine), and Two Thumbs Up (New Media Magazine), is now the OptiColor 128™ from RasterOps. This highly acclaimed video accelerator, based on the Number Nine Imagine 128 controller, is the only true 128-bit graphics accelerator available to Macintosh users providing the fastest acceleration ever for the Power Macintosh.

RASTEROPS®

R053 1037 OptiColor 128 8MB Accelerated 24-bit color video card $1199

R053 1037 OptiColor 128 4MB Accelerated 24-bit color video card $549

radius®

The World's Leading Macintosh Video Editing System

VideoVision PCI 2.0

Radius brings proven non-linear video technology to the macintosh PCI platform with VideoVision® PCI™. VideoVision PCI is Radius' next generation, QuickTime compatible full-motion, full-screen, video capture and playback system. It features real-time, high quality video input and output, synchronized 16-bit CD quality stereo audio at up to 48KHz, and 24-bit color. Designed to work with Power Macintosh models incorporating the PCI bus, VideoVision PCI ships with a powerful software bundle including Radius Edit 2.0 and Adobe After Effects to provide a complete video production solution.

$3795

R013 1079 VideoVision PCI 2.0 ..... $3795

R013 1018 VideoVision Studio 2.5.1 (Nubus) $1599

Radius PressView 21 Display

21"

$3369

FEATURES

- Resolution up to 1600 x1200
- 21" .25m high performance DiamondTron display
- Color management support for AGFA FotoTune 1.0 & 2.0, Apple ColorSync 1 & 2, EFIColor, and Kodak Precision.
- Exclusive "Stealth" coat that prevents reflection.

R016 1034 Radius PressView 21 Display System (R016 1034) $3369

ThunderPower 1920

This new generation of PCI cards is the result of years of experience accelerating QuickDraw for the Macintosh Platform.

$1729

NEW PRODUCT

- 1920 x 1440 resolution- ***the highest available***
- Adobe Photoshop and Illustrator acceleration
- Hardware Pan and Zoom
- On the fly resolution and Bit Depth Switching
- New software for Thunder Dynamic Desktop™ double the performance

R013 1081 ThunderPower 30/1920 PCI Card $1729

When placing an order please mention source code 681296

ORDER 24 HOURS A DAY • 7 DAYS A WEEK

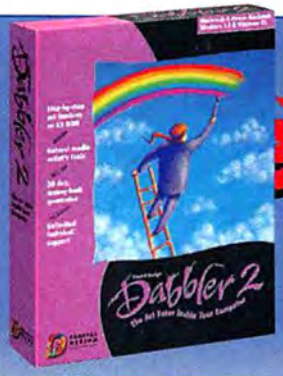
1-800-258-2622

Visit Our Web Site @ http://www.club-mac.com

ClubMac®

1-800-258-2622 1-800-CLUBMAC 1-800-258-2622

1-800-258-2622 1-800-CLUBMAC 1-800-258-2622



4" x 5" DrawingSlate™ II now bundle with Dabbler 2

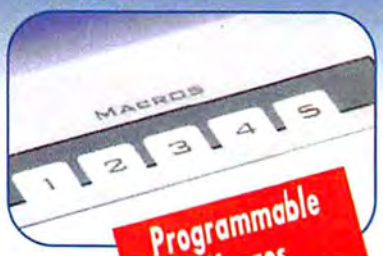
UNBELIEVABLE DEAL!

DrawingSlate™ II handles every drawing or painting style you work in full color or complex line art, shading, stippling.

4" x 5" DrawingSlate™ II

with Dabbler 2

FOR ONLY $99.95



Programmable Macros

Manufacturer's LIFE TIME Warranty

MANUFACTURER'S 30 DAY MONEY BACK GUARANTEE

FEATURES

Advanced Pen Technology
Simulates drawing or painting

Lightweight, Compact Tablet
Convenient sizes

Custom Pressure Sensitivity
User-selectable of maximum and minimum

Detail Scaling
For working on a magnified or reduced view

Recordable Macros
Programmable commands

Dynamic Windowing
For switching between software applications

Rotatable Drawing Area
For working in portrait or landscape position

Fumble-Free Erasing
Convenient, pen-point precision

CalComp has developed a graphics tablet that makes producing artwork on your computer as comfortable and familiar as using a pen, pencil or brush, DrawingSlate II combines the simple, intuitive techniques you use to draw or paint, with the computer's sophisticated storage and revision abilities.

6" x 9" DrawingSlate™ II

CALCOMP
A Lockheed Martin Company

C290 1010	DrawingSlate II 4"x5" w/Erasing Pen & Dabbler	$99.95		
C290 1002	DrawingSlate II 6"x9" w/Erasing Pen	$199.95	w/Painter 4.0 (C290 1003)	$435
C290 1001	DrawingSlate II 12"x12" w/Erasing Pen	$229	w/Painter 4.0 (C290 1005)	$459
C290 1004	DrawingSlate II 12"x18" w/Erasing Pen	$299	w/Painter 4.0 (C290 1006)	$529

$199.95

ClubMac®

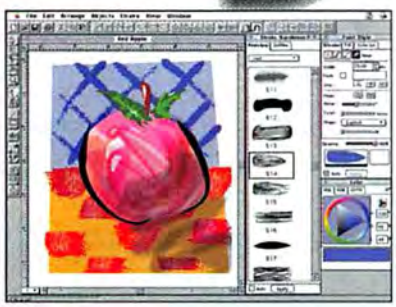
ORDER 24 HOURS A DAY • 7 DAYS A WEEK
1-800-258-2622
Visit Our Web Site @ http://www.club-mac.com

When placing an order please mention source code
681296

Superior graphics software

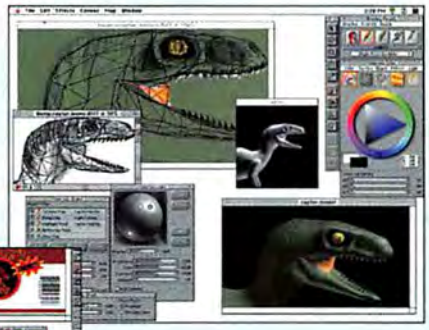
FRACTAL DESIGN CORPORATION

Express Yourself!



Welcome to a whole new way of drawing with Fractal Design Expression™ — the first Natural-Media® vector drawing program. For the first time ever, digital artists and designers can combine the stylistic expressiveness of traditional artists' tools with the editability, speed, flexibility, and resolution independence of vector-based illustration. With Expression's revolutionary Skeletal Strokes™ technology you can draw sophisticated, multi-element strokes or even complete illustrations with a single vector path.

Expression strips away the technical tedium of creating art with standard vector tools and replaces it with true freedom of expression. Instead of spending hours manipulating vector control points the old fashioned way, you simply select one of the 350 built-in Skeletal Strokes™ and begin drawing. You may also create your own strokes from imported vector artwork or by using Expression's built-in professional level illustration tools.



With Expression, you have an almost limitless number of stroke styles. Natural-Media strokes including elegant calligraphic pens, soft shades of pastels and pencils, strong, bold oil brush strokes and even the translucent wash of watercolors are just a click away. Graphic element strokes let you draw everything from simple plant life to stylized characters and complex illustrations with a single gesture. You can even create Multi-view strokes to add automatic variability to your illustrations.

Expression works with all your existing graphics software. You can import and export from Adobe Illustrator™ or CorelDRAW™ and even convert your illustrations to raster bitmap files for use with Fractal Design Painter®, Adobe Photoshop™ or as web graphics.

Express yourself with Fractal Design Expression - the revolutionary Natural-Media drawing program.

F039 1055 **Fractal Design Expression (Sidegrade)** .. $149*
F039 1051 **Fractal Design Expression (Full Version)** $295

* Sidegrade Must own painter, Poser, Ray Dream Studio, or Designer!

Fractal Design DETAILER

Painting directly on the surface of a 3D model!

Detailer is an exciting new graphics program from Fractal Design that lets you paint directly on the surface of 3D models. It allows for direct manipulation of 3D surfaces by letting you create texture, bump and other surface maps on your 3D models. Detailer supports multiple floating selections, so imported Painter or Photoshop files preserve independent layers and floaters. Also at your disposal are over 100 retouching and natural media brushes many of which made another Fractal product; Painter, a classic! It's the closest thing to actually holding an object in your hand and painting on it.

* Sidegrade Must own Painter, Poser, Ray Dream Studio, or Designer!

F039 1051 **Fractal Design Detailer (Sidegrade)** $149*
F039 1051 **Fractal Design Detailer (Full Version)** $295

Painter 4

Experience the Power of Natural Media

MACWORLD Editors' Choice Awards March 1996

MORE FRACTAL DESIGN PRODUCTS

F039 1022	Fractal Design Ray Dream Designer 4	$198
F039 1009	Fractal Design Poser	$89.95
F039 1003	Fractal Design Painter 4.0 Upgrade	$129
F039 1002	Fractal Design Dabbler 2.0	$44.95
f039 1032	Fractal Design Ray Dream Add Depth	$49
F039 1034	Fractal Design Jag II	$49

Ray Dream Studio 4.1

$295
F039 1024

When placing an order please mention source code 681296

ORDER 24 HOURS A DAY • 7 DAYS A WEEK

1-800-258-2622

Visit Our Web Site @ http://www.club-mac.com

ClubMac®

1-800-258-2622 1-800-CLUBMAC 1-800-258-2622

1-800-258-2622 1-800-CLUBMAC 1-800-258-2622

UMAX®

The Magic of Color™

Vista-S12 LE

$699
U010 1055

MacUser ★★★★
July 1996

HIGH-RESOLUTION, HIGH POWER AT AN AFFORDABLE PRICE

The new S12 offers breakthrough technology made easy. With Umax's new autoscan driver, all you do is place your image on the scanner and in one step it's in your computer and ready to go! With **33-bit equivalent analog gamma correction** you get the smoothest tonal curve of any scanner in its class. A single-pass scanner with 600x1200dpi resolution, the S12 uses a parallel circuit to process colors simultaneously, resulting in sharper, faster scans.

U010 1055 Vista-S12 LE Photoshop 3.0 LE and PageManager $699
U010 1054 Vista-S12 Pro Photoshop 3.0 full version and PageManager $799

$1850
U010 1069

PowerLook II Pro

MORE POWER TO YOU!

If you demand high performance you need the all new PowerLook II flatbed scanner from Umax. This fast new powerhouse offers incredible 3.3 Dynamic Range. And with **36-bit color capture for over 16.7 billion colors and 4096 shades of gray**, you'll capture the brightest highlight, darkest shadow and everything in between. Plus, a cold cathode lamp and enclosed optics will ensure a long maintenance free life. With the PowerLook II, Umax sets a new standard.

U010 1069 PowerLook II LE 36-bit with Transparency Adapter $1850
Adobe Photoshop LE

U010 1052 PowerLook II Pro 36-bit with Transparency Adapter $1995
Full Adobe Photoshop, Kai's PowerTools SE, PhotoPerfect Advanced

Vista S6E Color Scanner

SPEED, QUALITY, ACCURACY

$325
U010 1061

- Single Pass Scanner
- 24-bit color flatbed scanner
- SCSI-II interface
- 256k bus caching
- Micro-stepping optical transmission

Bundled with Adobe PhotoDeluxe

U010 1061 UMAX S6E w/ PhotoDeluxe $325

1 Million Pixel Digital Camera System

Power up your workstation with the ability to add high-quality images to your web, multimedia and desktop publishing projects! The Pixera camera system is the fast and easy way to capture images to your computer.

- ✔ Fixed or variable focus lens
- ✔ 24-bit RGB 1280x1024 Scanning Mode (4-pass, 2 sec. exposure)
- ✔ 640x480 (up to 1/1000 sec.)
- ✔ Motion viewfinder
- ✔ PCI or PCMCIA interface card
- ✔ Pixera Studio for image capturing and manipulation
- ✔ Pixera Album image database application
- ✔ No memory cards or batteries needed
- ✔ **EVERYTHING INCLUDED!**

Fixed-focus lens

Pixera Personal
$795
P605 1004 - PCI
P605 1003 - PCMCIA

C-mount lens

Pixera Professional
$1195
P605 1002 - PCI
P605 1001 - PCMCIA

Pixera Studio and Pixera Album included!

System Requirements
68040/PowerPC processor (PowerPC™ recommended) 24MB RAM

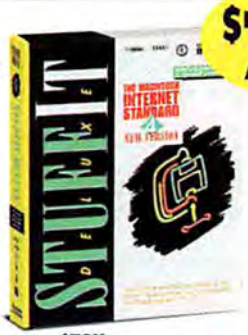
pixera

Aladdin Systems

$72.95

STUFFIT DELUXE 4.0

The award-winning StuffIt Deluxe effectively doubles your disk space, saves you time and money when sending files over networks and the Internet. Lets you easily trade files with Mac, PC, and Unix users, and enables you to backup important files.



MACWORLD MW ★★★★ October 1996
World Class Winner Macworld
MacUser ★★★★½

A290 1001 StuffIt Deluxe 4.0 ..... $72.95
A290 1006 Desktop Tools $45.95
A290 1005 CyberFinder $19.95

THE MACINTOSH INTERNET STANDARD

peak net.jet

$29.95
P459 1000

Surf the Internet at Peak Speed! The Turbo Charger for the Internet

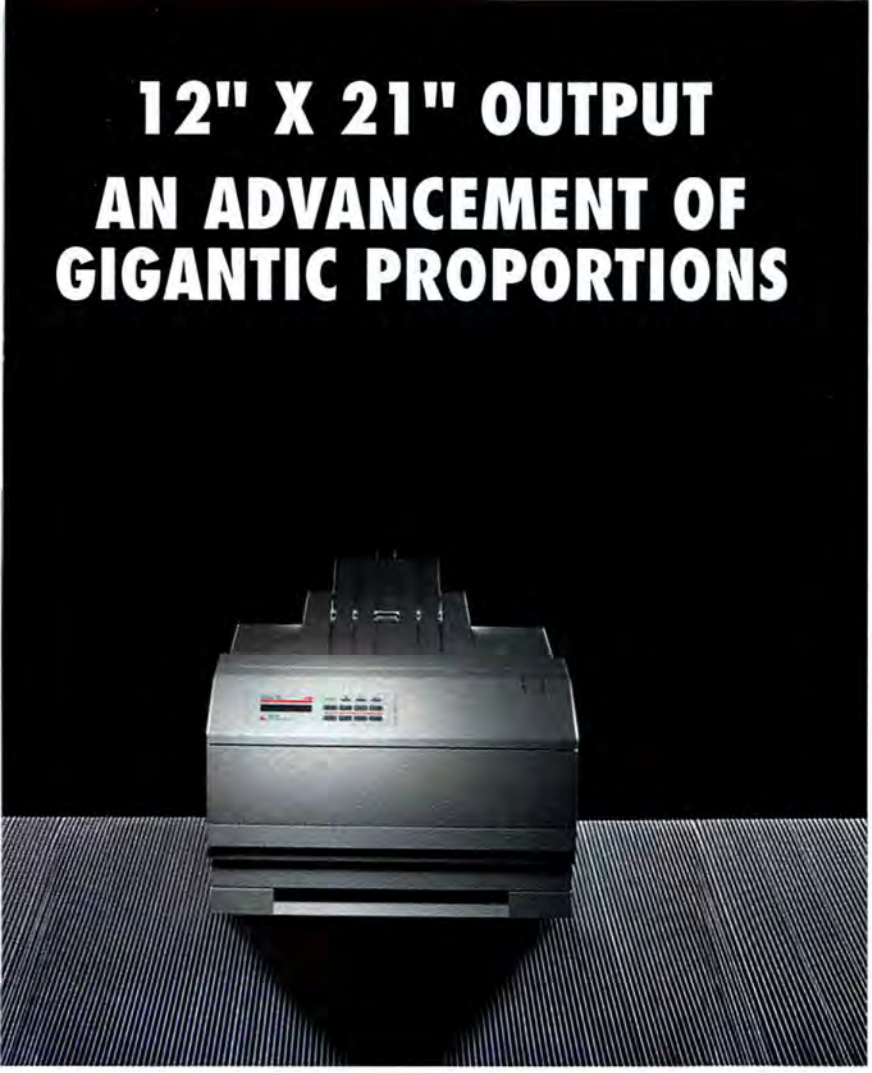
Peak Net.Jet directly addresses the number 1 issue on the Internet, lack of speed while surfing the World Wide Web. *Peak Net.Jet* can significantly reduce the waiting time and increase the speed with which a user can view pages and links within a site and when traveling from site to site. this translates into valuable extra time to explore more of the fastest growing communications, entertainment and marketing medium in the world.

ClubMac®

ORDER 24 HOURS A DAY • 7 DAYS A WEEK
1-800-258-2622
Visit Our Web Site @ http://www.club-mac.com

When placing an order please mention source code 681296

12" X 21" OUTPUT
AN ADVANCEMENT OF GIGANTIC PROPORTIONS



THE GCC ELITE XL 1208 SUPERSIZE.
$6,399.

For the graphics and pre-press communities, the new Elite XL 1208 SuperSize is truly an advancement. It gives you true 1200 x 1200 resolution at 8 pages per minute. But what makes the XL 1208 SuperSize truly special is its capacity for super-sized, camera-ready output. It prints on 12" x 21" paper or polyester plates with a printing area of 11.69" x 20". No desktop laser printer prints on larger paper.

Add to that: AccuGray for our finest halftones, 32MB of RAM (upgradable to 64MB) for imaging virtually any complex image at 1200 dpi, a 29030 RISC processor at 25MHz, plus full networkability and you'll see why it's a super performer.

GCC TECHNOLOGIES

The GCC Elite XL Series:

	Elite XL 616	Elite XL 608	Elite XL 808	Elite XL 1208	Elite XL1208 SuperSize
Print Quality	600 x 600 dpi	600 x 600 dpi	800 x 800 dpi	1200 x 1200 dpi	1200 x 1200 dpi
Pages Per Minute	16 ppm	8 ppm	8 ppm	8 ppm	8 ppm
Fonts Included	80 Postscript, 15 PCL	80 Postscript, 15 PCL	285 Postscript, 15 PCL	285 Postscript, 15 PCL	285 Postsript, 15 PCL
Interface	LocalTalk, Parallell, SCSI Ethernet	LocalTalk, Parallell, SCSI *Ethernet	LocalTalk, Parallell, SCSI Ethernet	LocalTalk, Parallell, SCSI Ethernet	LocalTalk, Parallell, SCSI Ethernet
Paper Sizes	letter, legal, ledger, 11x17, A3, A4, envelope	letter, legal, ledger, 11x17, A3, A4, envelope	letter, legal, ledger, 11x17, A3, A4, envelope	letter, legal, ledger, 11x17, A3, A4, envelope	letter through 12x20 A3, A4, envelope
RAM	8MB	6MB	12MB	24MB	32MB
Compatibility	Mac, PC, Unix	Mac, PC, Unix	Mac, PC, Unix	Mac, PC, Unix	Mac, PC, Unix
Price	$2,699	$2,399	$3,199	$4,499	$6,399

*optional

When placing an order please mention source code **681296**

ORDER 24 HOURS A DAY • 7 DAYS A WEEK

1-800-258-2622

Visit Our Web Site @ http://www.club-mac.com

ClubMac®

1-800-258-2622 1-800-CLUBMAC 1-800-258-2622

1-800-258-2622 1-800-CLUBMAC 1-800-258-2622

NEC Doesn't Have It.

Sony's Is More Expensive.

TECHNITRON™

free

COLORIFIC

MacUser

April 1996

MAG Innovision Co., Inc. • MAGic FAX-On-Demand 714-751-0166

©1996 MAG Innovision Co., Inc. All rights reserved. The following are trademarks of their respective companies: MAG InnoVision and Technitron of MAG Technology Co., Ltd.; Colorific of Sonnetech, Ltd.; Trinitron and Multiscan of Sony; MultiSync of of the MAG InnoVision DX15T and DX700T, the Sony Multiscan® 15sfII and 17sfII, and the NEC MultiSync® XE15 and XV17+ based on information published by the manufacturers of those monitors as of 5/28/96. Actual price may vary. Specifications subject to models require optional adapter. Free universal Macintosh adapter with purchase through December 31, 1996.

ClubMac®

ORDER 24 HOURS A DAY • 7 DAYS A WEEK

1-800-258-2622

Visit Our Web Site @ http://www.club-mac.com

When placing an order please mention source code 681296

MAG-nified performance
MAG-nificent color
MAG-Technitron™

Forget NEC and Sony. Your best value in hi-res color monitors with an advanced Trinitron® CRT are Technitron color monitors from MAG InnoVision.

VERTICALLY FLAT — superb image quality and reduced distortion.

ULTRA FINE 0.25mm APERTURE GRILLE — super sharp focus and definition. The unique technology enhances brilliance and contrast to levels that other monitors can't match.

MAG InnoVision® DX15T	Sony Multiscan® 15sf II	NEC MultiSync® XE15	MAG InnoVision® DX700T	Sony Multiscan® 17sf II	NEC MultiSync® XV17+
Trinitron®*	Trinitron®	Conventional Flat Square Tube	Trinitron®*	Trinitron®	Conventional Flat Square Tube
0.25mm	0.25mm	0.28mm	0.25mm	0.25mm	0.28mm
13.9"**	13.9"**	13.8"**	16"**	16"**	15.6"**
MSRP $399	MSRP $549	ESP $575	MSRP $799	MSRP $879	ESP $849

**Viewable. (All Technitron color monitors include: EPA Energy Star Compliant power management; SWEDAC MPR II compliant low emissions; 3-year Limited Warranty; award winning service (extended service plans optional); recyclable packaging; and no CFC's used in manufacturing.)

MICROPROCESSOR - based digital controls deliver unrivaled flexibility for Macintosh™ and PowerMac™ compatability.[1]

NEC's MultiSync® XE15 and XV17+ don't have it. Sony's Multiscan® 15sfII and 17sfII are more expensive. For the best value in Trinitron®* color CRT technology — buy Technitron color monitors from MAG InnoVision. Order your Technitron color monitor today from one of these Authorized Ultimate Resellers:

Super savings on MAG monitors Get them NOW from ClubMac®

M156 1005	Mag Innovision DX700T 0.25mm Advanced Trinitron® CRT	$725
M156 1004	Mag Innovision DX15T 0.25mm Advanced Trinitron® CRT	$399
M156 1006	Mag Innovision DX1595 15" 0.28mm Flat Square Tube	$369
M156 1007	Mag Innovision DX1795 17" 0.26mm Flat Square Tube	$629

MAG INNOVISION®

http://www.maginnovision.com

NEC Technologies, Inc. All other trademarks are the property of their respective owners. As an Energy Star Partner, MAG InnoVision has determined that these products meet the Energy Star Guidelines for energy efficiency. Comparisons of prices and specifications change without notice. *All uses of Trinitron® refer to CRT technology only. The DX700T and DX15T use a Trinitron® CRT. Free Colorific Color Management Software through 12/31/96 for end users ($49.95 retail value) included with monitor purchase. 1 Some

When placing an order please mention source code 681296

ORDER 24 HOURS A DAY • 7 DAYS A WEEK

1-800-258-2622

Visit Our Web Site @ http://www.club-mac.com

ClubMac®

1-800-258-2622 1-800-CLUBMAC 1-800-258-2622

CIRCLE **120** ON READER SERVICE CARD

ROAD TEST:

You won't hear screaming tires, but Apple's new PowerBook masters the course without a hitch.

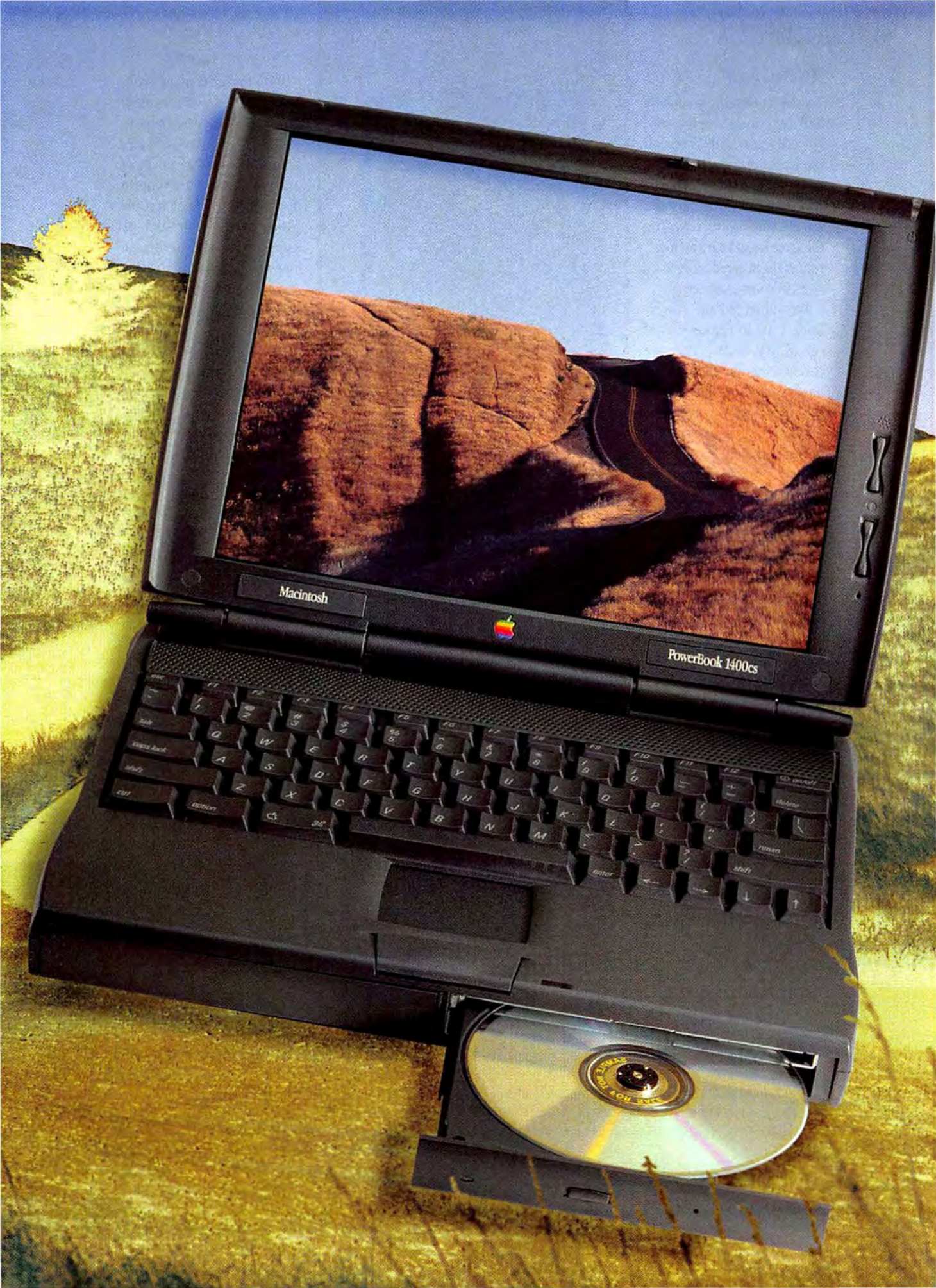
THE APPLE POWERBOOK

FEW PEOPLE WOULD DESCRIBE THE VOLVO as hotter than Georgia asphalt, but that doesn't make it any less desirable as a solid, reliable means of transportation. That's why we couldn't be happier, or more relieved, that after a month of road-testing the new PowerBook 1400 — Apple's first PowerBook since the troubled 5300 — we were reminded of the Volvo. Like Scandinavia's stalwart export, the 1400 won't break any speed records and it's not likely to set young hearts racing, but it is the kind of solid, reliable data vehicle we've all been waiting for from Apple.

1400

BY ANDREW GORE

PHOTO ILLUSTRATION / GIAMPIERO BENVENUTI

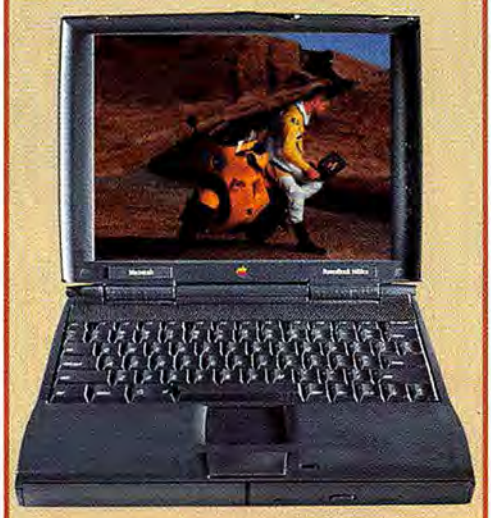

Macintosh
PowerBook 1400cs

BOXY BUT GOOD

The most burning question we had regarding Apple's new PowerBook was this: Does it resolve the problems of its predecessor? Although it has been redesigned from the ground up, the 1400 is still based on the same logic-board architecture as the ill-fated 5300, so we were, of course, concerned.

We subjected the PowerBook 1400 to three kinds of reliability tests. First, we checked the durability of the hardware, using a series of nonlethal tests, including fieldstripping the unit down to its base components and subsequently reassembling it. Although we did not subject it to extreme conditions beyond Apple's stated operating limits — such as excessive heat, cold, or pressure — we did run limited versions of these tests within the recommended safe operating range of the 1400.

Second, we conducted an extensive series of software-compatibility tests, including installing many "suspect" applications and extensions that have been known to cause crashes with the 5300. Applications we tested included QuarkXPress 3.32, Photoshop 3.0.5, Illustrator 6.0, Word 6.0.1, Excel 5.0a, ClarisWorks 4.0v4, and FileMaker Pro 3.0v2, plus a variety of fax and communications software and CD-ROM multimedia titles. We also tested RAM Doubler 2.0 and Speed Doubler 1.3, both of which were previously linked to problems with the 5300.



APPLE POWERBOOK 1400c ttttt

PROS: Solid and reliable. Reasonably priced. Big screen. Many expansion options. Easy access for upgrading. Full-sized CD-ROM drive. Fashion-statement BookCovers.

CONS: Slow processor. Heavy, unremarkable chassis.

With the 5300, many problems didn't become evident until the machine had been in use for several weeks. So, we crammed months' worth of use into weeks of test time. In the month we had to test the 1400c model supplied by Apple, there was hardly an hour when it wasn't running some kind of test.

In the end, the PowerBook 1400 passed all our reliability tests. After trying every trick in the book to trip it up, the only problem we encountered was a minor screen flicker, which occurred when the portable was rapped sharply. The problem was later diagnosed as a loose connector.

FIRST IMPRESSIONS

So the 1400 appears to be unfettered by the reliability problems that plagued the 5300, but just because it's safe doesn't mean it's worth buying. We therefore looked beyond the machine's reliability to scrutinize its usability.

At first glance, the 1400 looks very similar to the 5300, but it appears larger. That's because the slightly bowed-out front section of the lower clamshell fools the eye — the 1400 is almost exactly the same size as the 5300, and, unfortunately, shares its boxy look.

Unlike the 5300, though, the 1400 has a couple of clever design tweaks that quickly distinguish it from run-of-the-mill PC portables. For example, there's a removable panel on the lid, called a BookCover, that can be replaced by

Spin-Doctoring the PowerBook 1400 / new portable CD-ROM drive

SINCE THE INTRODUCTION of Apple's PowerBook 5300, the most requested new feature, with the possible exception of machines that work, has been a 5.5-inch CD-ROM drive. With the 1400, Apple has finally delivered — on both of the requests.

The 1400's CD-ROM drive, also available separately for $349, is a 6x mechanism manufactured by Teac. Not only is it Apple's first portable CD-ROM drive but it's also the company's first excursion into the world of ATAPI drives, which use an interface protocol that is a superset of the IDE interface standard common with PC portables.

The drive itself weighs about half a pound and slips into the 1400's drive bay on the right front of the portable. In testing the drive, we looked at compatibility, speed, impact on battery life, and usability. On all four counts, the drive passed with flying colors.

In implementing the new ATAPI drive interface, Apple really did its homework on compatibility. We tested over 30 CD-ROM-based applications and titles, ranging from the Microsoft Office CD-ROM to LucasArts' The Dig. All worked without a hitch. In fact, the only application that didn't work with the new drive was MacBench 3.0, which couldn't recognize the ATAPI interface. As a result, we had to fall back on using the good old stopwatch for testing speed.

The new drive's speed was excellent, especially given that the speed of battery-powered CD-ROM drives has had a tendency to fluctuate wildly. Not surprisingly, the drive performed consistently at full speed while plugged in; however, even when battery-powered, the drive continued to perform well, with speed dropping off only slightly.

But the biggest surprise was how power-frugal the drive was. No matter what task we threw at it, the drive invariably ran for about two hours on battery power. Our tests included running multimedia titles that constantly access the disc and running audio CDs on a loop.

As for the usability of the module, the CD-ROM drive proved flawless. Like other modules, the drive can be warm-swapped — installed in the bay while the computer is sleeping. In all other ways, it behaves exactly like an internal CD-ROM drive in a desktop Mac, including having audio pass-through to the speakers. Apple has even thrown in a little bonus: a Control Strip module for controlling the playback of audio CDs. */ ANDREW GORE*

NO SPEED DEMON

AS A DATA VEHICLE, Apple's latest PowerBook isn't going to have to worry about getting any speeding tickets. It's equipped with a less-than-swift 117-MHz PowerPC 603e processor. That's disappointing, considering that 240-MHz 603e processors are currently available. Fortunately for those who crave the ultimate in speed, processor-upgrade cards are slated to be available from Newer Technology.

MacBench 3.0 scores are relative to those of an Apple Power Mac 6100/60 with a 250-MB internal hard drive, which is assigned a score of 10 in each test. You can download a copy of MacBench from http://www.zdnet.com/zdbop or from CompuServe (GO ZDBENCH).

MACBENCH 3.0 SCORES

	Processor	Clock Speed	Processor	Floating Point	Disk Mix	Publishing Disk Mix	Graphics Mix	Publishing Graphics Mix
PowerBook 1400c	603e	117 MHz	12	16	13	9	7	9
REFERENCE SYSTEMS								
PowerBook 5300c	603e	100 MHz	12	14	9	8	7	10
PowerBook 190cs	68040	33 MHz	5	0	12	8	4	4
Performa 6400	603e	180 MHz	19	24	20	15	14	11
			SCORE BETTER	SCORE BETTER	SCORE BETTER	SCORE BETTER	SCORE BETTER	SCORE BETTER

custom panels or by a clear-plastic panel. Laminated cards, decorated with colorful designs, can be slipped beneath the clear panel to give your PowerBook a distinctive look (see page 73 for *MacUser*'s special BookCover cutout). In addition, Apple and several third parties plan to offer plastic replacement BookCovers with special finishes and designs (for more on BookCovers, see the "PowerBook 1400 Gadgetry" sidebar).

When you open the 1400's clamshell lid, you see another innovation: an 11.3-inch, SVGA (800-x-600-pixel), 16-bit-color display. (Apple will no longer provide a gray-scale option.) Apple is offering two versions of this big screen — a dual-scan, passive-matrix and an active-matrix display. Although we spent most of our time working with the 1400c, which sports the color active-matrix screen, we also had a chance to try out the 1400cs model's color dual-scan screen. Both showed just how far flat-screen technology has come in only a year — for example, the dual-scan screen exhibited almost no cursor submarining or motion blurring. The color saturation of both screen types has also improved, although the larger screen surface and higher resolution proved to be a challenge for the 1400's single lamp, making the screens less bright than the 5300's 10.5-inch display.

Overall, we preferred the sharpness and superior color of the active-matrix screen, although the new dual-scan screens have improved to the point where they give the active-matrix ones a run for their money.

ZONED FOR EXPANSION

A quick look at the 1400's innards shows that Apple's latest PowerBook was designed for maximum flexibility. In addition to the now familiar dual-card bay, which can accommodate either one Type III PC Card or two Type II Cards (all PCMCIA 3.2-standard), the 1400 is the first PowerBook to offer a full 5.5-inch front-loading storage-device bay. This bay can be used to store a spare battery or to accommodate a floppy, optical, Zip, or (drumroll please) full-sized 6x CD-ROM drive. Yes, at last it will be possible to use standard audio and data CDs in your PowerBook. In fact, Apple is offering the CD-ROM drive in a bundle with two of the 1400's three configurations (for more on the 1400's CD-ROM drive, see the "Spin-Doctoring the PowerBook 1400" sidebar). All configurations come with a removable floppy drive.

A look at the rear of the PowerBook shows another, less obvious vista for expansion. There is still the infrared transceiver that debuted with the 5300. Unfortunately, it's just as slow as before and still isn't IrDA-compliant. (Apple's excuse for continuing to include this transceiver is that it costs next to nothing. If it's so cheap, we wish Apple had spent some money improving its speed or at least adding IrDA compliance.) More useful are the stereo-audio-in and -out ports, which are no longer hidden behind the port cover. And Apple has replaced the flimsy 5300 power connector, which had a tendency to break off, with the more solid Duo power connector. (The 1400 can't use a Duo power supply, however.)

Behind the port cover, which now swings under the ports to rest safely inside the case, are ADB, serial, and HDI-30 SCSI ports. There's also the 1400's internal expansion slot, which can accommodate a variety of cards, including an Apple video-out card or a Focus Enhancements 10BASE-T Ethernet card (for more on expansion cards, see the "Ethernet Ethos" sidebar).

UNDER THE HOOD

To appreciate why the 1400's expansion slot — virtually unchanged from that of the 5300 — is nevertheless a vast improvement, you have to look under the hood of Apple's new PowerBook. Although digging into a PowerBook has traditionally been a job best left to professionals, opening up the 1400 is almost as much fun — yes, fun — as using it.

Apple has finally learned its lesson. After years of building the most service-hostile portables on the planet, Apple has made the 1400 a dream to work on. Gone are the Torx screws, the tortured wireworks and subframes, and the delicate connectors that can short out or snap off at the least provocation. It takes under three minutes to access

EASY THREE-STEP ACCESS

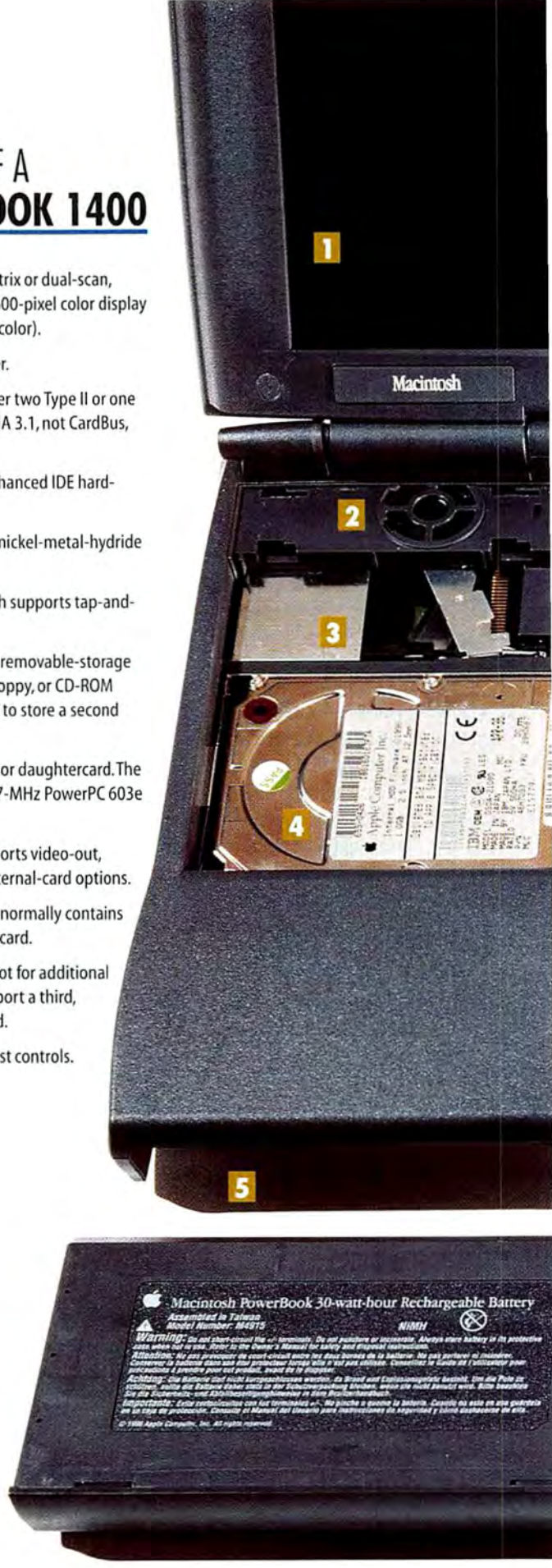
STEP 1. The 1400 is the first PowerBook to have elements that snap, Lego-like, into place. The grille over the keyboard pops off when you give a firm push to the left.

STEP 2. No screws anchor the 1400's keyboard, so once the grille has been removed, the keyboard lifts out with a little upward pressure from a slotted screwdriver.

STEP 3. With the keyboard out, remove eight screws (two for the hard drive, six for the heat sink) to get at the 1400's primary components. Unlike past PowerBook models, the 1400 uses garden-variety Phillips-head screws, not the more exotic Torx screws. Once the screws have been removed, all user-upgradable parts are easy to access.

PHOTOGRAPHY / STEVEN UNDERWOOD

ANATOMY OF A **POWERBOOK 1400**



1. 11.3-inch active-matrix or dual-scan, passive-matrix 800-x-600-pixel color display (supports up to 16-bit color).

2. Monophonic speaker.

3. PC Card bay for either two Type II or one Type III PC Card (PCMCIA 3.1, not CardBus, interface).

4. Internal 2.5-inch Enhanced IDE hard-drive bay.

5. Battery bay for one nickel-metal-hydride (NiMH) battery.

6. New trackpad, which supports tap-and-drag functions.

7. Expansion bay for a removable-storage device, such as a Zip, floppy, or CD-ROM drive; can also be used to store a second battery.

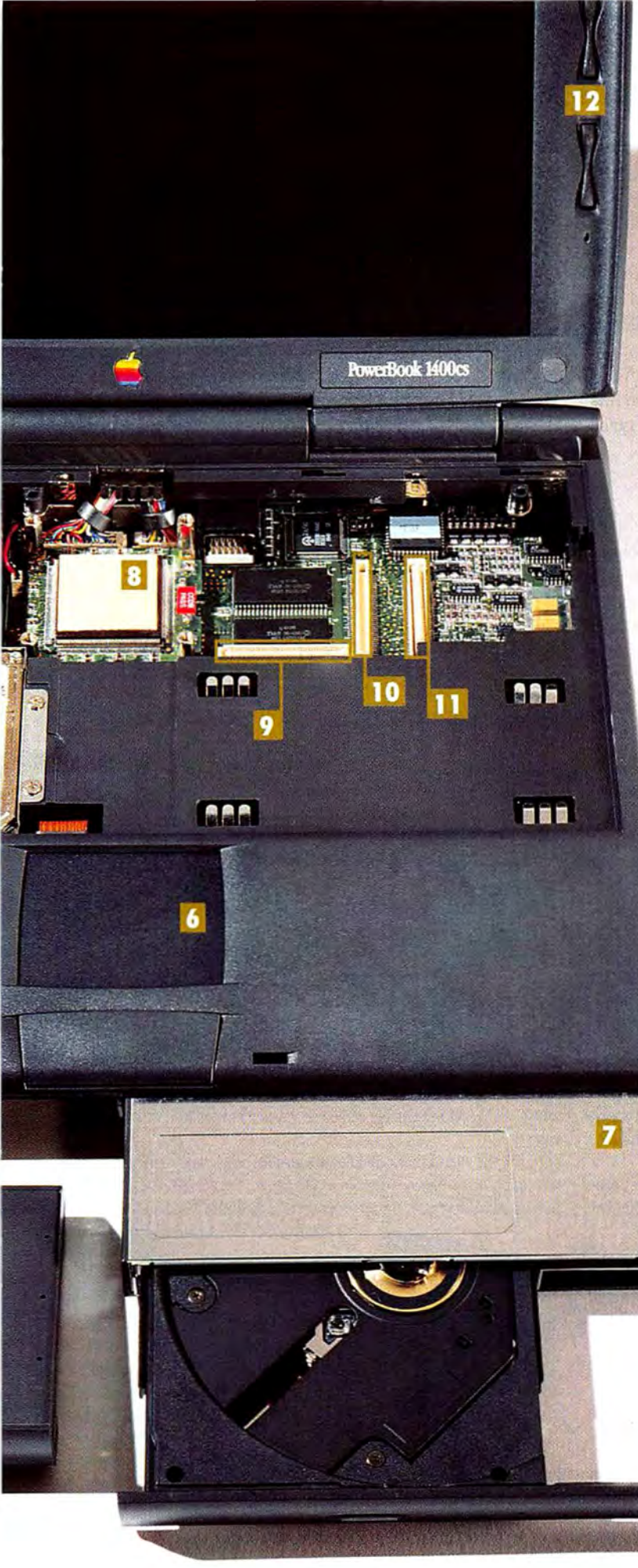
8. Upgradable processor daughtercard. The 1400 comes with a 117-MHz PowerPC 603e and no L2 cache.

9. Expansion slot supports video-out, Ethernet, and other internal-card options.

10. Primary RAM slot, normally contains factory-installed RAM card.

11. Secondary RAM slot for additional memory. Can also support a third, piggybacked RAM card.

12. Brightness/contrast controls.



THE 1400 OFFERS several enhancements to the PowerBook rear panel. A metal-hinged port cover is partially contained in the portable when the cover's open, making it harder to break off the cover. The audio-in and -out ports are now accessible even when the port cover is closed. The Duo-style reinforced power connector is a vast improvement over the 5300's fragile power port. The familiar, if limited, selection of PowerBook ports is available — single ADB, serial, HDI-30 SCSI, security, and infrared ports. There's also an area for an optional internal video or Ethernet port.

THE POWERBOOK 1400 is Apple's most expandable PowerBook yet, with several Apple and third-party expansion cards available for its three internal slots. An Apple video-out card (top), a Focus Enhancements 10BASE-T Ethernet card (middle), and an Apple RAM card (bottom) are just a few of those available.

all the major components of the 1400. And the tools you need are no more exotic than a standard Phillips-head screwdriver (for a guide to fieldstripping your PowerBook, see the "Anatomy of a PowerBook 1400" sidebar).

Once you've removed the keyboard, you have easy access to the internal hard drive, the expansion slot, and the two RAM slots. To expand the system's memory, you don't have to replace the factory-installed RAM card. The second RAM slot can accommodate up to two RAM cards, via a piggyback connector. With three cards installed, the 1400 can have up to 64 MB of RAM.

The combination of the PC Card bay, removable-storage-drive bay, internal expansion slot, and two RAM slots makes the 1400 Apple's most flexible and expandable portable to date.

YOUR FATHER'S OLDSMOBILE

In addition to the plethora of slots, the 1400 also sports another place into which an add-on card can be plugged: the processor-daughtercard connector. The 1400 is the first of the PowerBooks since the 500 series to offer an upgradable-processor option — a good thing, considering that the 117-MHz PowerPC 603e Apple ships in its new PowerBook is a little sluggish by today's standards.

The 1400 achieved a MacBench 3.0 Processor score of just 12, as did the 5300c, with its 100-MHz 603e. Part of the reason for the low score is the 1400's lack of a Level 2 cache. The speed problem is compounded by the 1400's 33-MHz, 32-bit-wide bus, which is slower than that of even the slowest Performas now available.

Considering that 603e processors are now available at speeds of up to 240 MHz, Apple's choice of the relatively slow 117-MHz 603e chip seems almost unforgivable, except for two things: today's complete selection of PowerPC-native applications and the company's use of a fast, Enhanced IDE drive. Using native software, we found the 1400's speed acceptable and noticeably faster than that of our 5300c running the same applications.

For those who just can't take driving in the slow lane, Newer Technology plans to offer a full line of processor-upgrade cards for the 1400. All these cards will come with a 128K L2 cache and faster processors, possibly with speeds as high as 200 MHz.

Another area in which the 1400 disappoints is in its heftiness. It weighs in at 6.6 pounds with the floppy drive installed and 6.9 pounds with the CD-ROM drive installed

PowerBook 1400 Gadgetry / accessories are everything

NO SELF-RESPECTING POWERBOOK JOCKEY would want to miss out on the nifty gadgets that enable, enhance, and enliven PowerBook 1400 computing. Apple has been working with several third-party developers to ensure that owners of its new PowerBooks will have plenty of goodies to cram into their briefcases — or their PowerBook's expansion slots. Vendors were still finalizing prices as we prepared this article and details on configurations were sketchy, but here's a general rundown on what PowerBook 1400 owners can look forward to.

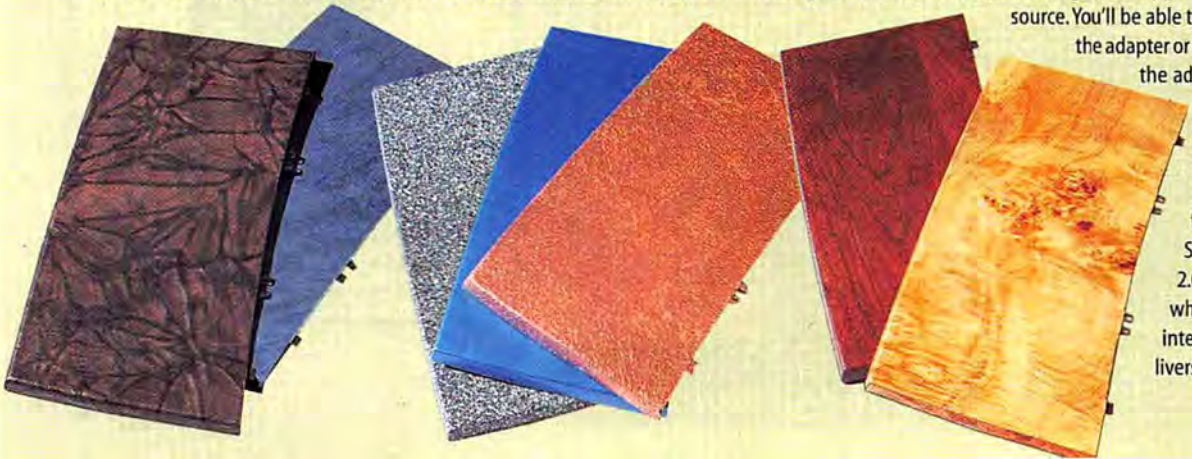
COVER STORY. The most visible add-on for the 1400 is the BookCover, a custom lid that lets you personalize your PowerBook. To give your 1400 a distinctive look, you have several options. You can replace the 1400's plain-gray plastic panel with a transparent one (both are included) and then slide a printed design — made of laminated card stock — behind it, or you can purchase a custom-designed plastic lid.

The 1400 comes with a selection of card-stock designs cut to fit behind the transparent BookCover, or you can create your own designs, using Apple-supplied templates. In addition, Apple will be promoting a variety of special BookCover "lines" designed to project your personality, promote your business, or even add functionality to your PowerBook.

Although details weren't finalized as we prepared this article, Apple's plans call for four distinct kinds of custom plastic BookCovers. A mass-market line, priced at about $20 per BookCover, will bear pop icons, such as college or sports-team logos or licensed characters. A vanity line will bear the names or logos of companies, products, or special events. A signature-edition line will target collectors with limited-edition designs created by celebrity PowerBook users. And a prestige line will feature functional add-ons, such as foldout stereo speakers, as well as an array of tony-looking materials, including fine wood, leather, and metal, such as burnished aluminum, incorporated into the lid's plastic. Prices for these high-end BookCovers could range as high as $125 apiece.

One prestige-line cover has already been finalized, and it's sure to intrigue the perennially battery-drained: Keep It Simple Systems is building a BookCover with a built-in flip-out solar panel the company claims will run your PowerBook and/or recharge your battery whenever you work in sunlight — even through a window.

JUICING UP. Along more-traditional portable-power lines, VST Technologies will supply a new version of its Smart Charger for the PowerBook 1400's nickel-metal-hydride batteries. The Smart Charger uses Apple's AC adapter as its power source. You'll be able to buy it with or without the adapter or in a bundle that includes the adapter and an extra battery. According to VST, batteries will refresh far faster in the Smart Charger than they do in the PowerBook, since the Smart Charger delivers 2.0 amps of charge current whereas the PowerBook's internal charge circuitry delivers just .75 amps.



instead. Although about half a pound lighter than the 540c, it is still a dense machine in a market in which portables are getting both smaller and lighter.

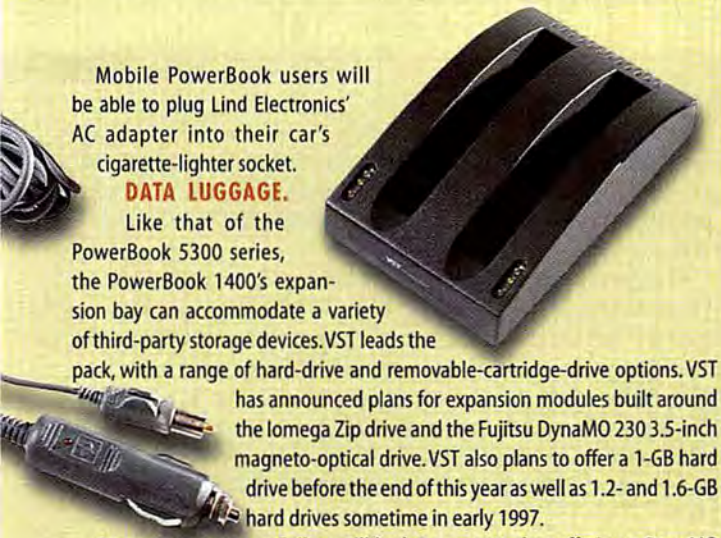
One nice thing about a larger portable, however, is that it has space for a full-sized keyboard. In addition to having the crisp action we've come to expect from PowerBook keyboards, the 1400's keyboard is raised, not recessed like the 5300's — which makes for a more pleasant typing experience. Also, because the keyboard rests on a flat panel that supports its entire area, you don't experience the spongy feeling that sometimes afflicts keyboards on subnotebooks such as the Duo. It also has a full palm-rest area with a centered trackpad that boasts double-tap and tap-and-drag capabilities. If you have trouble mastering the trackpad's tap-and-drag functions, as we did, you can turn them off via the Trackpad control panel.

YOUR MILEAGE MAY VARY

One thing that could have shaved ounces, if not pounds, off the 1400 would have been the use of lighter, lithium-ion (LiIon) batteries. Considering Apple's past problems with the more volatile LiIon technology and the 5300, however, the company was perhaps wise to go with nickel-metal-hydride (NiMH) batteries for the 1400.

Certainly, the 1400's battery life doesn't seem to have suffered from use of NiMH power packs. Apple claims that the 1400 can run for 2 to 5 hours on a single, fully charged battery. Although our test results don't quite bear out these optimistic estimates, they come close. In repeated tests with a variety of power configurations, ranging from maximum conservation to power hog, the 1400 ran on a single battery for anywhere from 1 hour, 45 minutes to as long as 4 hours. We consistently got 3 hours' use by using only moderate power-conservation measures and 2 hours' use if we accessed the CD-ROM drive frequently (for more on the CD-ROM drive's impact on power consumption, see the "Spin-Doctoring the PowerBook 1400" sidebar).

The 1400's battery, which fits in a compartment next to the removable-drive bay, is quite compact — you can probably fit two batteries fairly easily into a tightly packed PowerBook bag. Because the 1400 has a built-in 50-milliamp-hour, rechargeable lithium backup battery, users can put the PowerBook to sleep and exchange batteries without fear of losing whatever is stored in RAM or in a RAM disk.



Mobile PowerBook users will be able to plug Lind Electronics' AC adapter into their car's cigarette-lighter socket.

DATA LUGGAGE. Like that of the PowerBook 5300 series, the PowerBook 1400's expansion bay can accommodate a variety of third-party storage devices. VST leads the pack, with a range of hard-drive and removable-cartridge-drive options. VST has announced plans for expansion modules built around the Iomega Zip drive and the Fujitsu DynaMO 230 3.5-inch magneto-optical drive. VST also plans to offer a 1-GB hard drive before the end of this year as well as 1.2- and 1.6-GB hard drives sometime in early 1997.

As we went to press, Fujitsu still hadn't committed to offering a DynaMO expansion module of its own for the 1400, but it does plan to offer an external version of its 3.5-inch magneto-optical drive. The $499 device will connect to the PowerBook via the PC Card slot.

NETWORKING. In addition to the PC Card Ethernet adapters already available for PowerBooks, 1400 owners will have at least two internal Ethernet cards to choose from: the $129 Focus Enhancements EtherLAN 1400 and the Newer Technology PowerBook 1400 Internal Ethernet Card. The cards will feature RJ-45 connectors and compatibility with both classic EtherTalk and Open Transport.

THERE'S MORE. The Newer Technology PC Card Video-In Capture Card for the 1400 will grab video at 8 to 30 frames per second, at resolutions of up to 320 x 240 pixels. Included software will let you use a video camera to either take still pictures or create time-lapse movies. You will even be able to use the camera in motion-detector mode — it will snap shots only when there's movement in front of the lens.

A BookEndz docking station, from Pilot Technologies, will provide connections for a desktop monitor, networking, and a modem. / *JIM SHATZ-AKIN*

DIRECTORY

APPLE COMPUTER
Cupertino, CA
800-776-2333
408-996-1010
http://www.apple.com/

FOCUS ENHANCEMENTS
Woburn, MA
800-775-5566
617-938-8088
617-938-1098 (fax)
http://www.focusinfo.com/

FUJITSU COMPUTER PRODUCTS OF AMERICA
San Jose, CA
800-626-4686
408-432-6333
http://www.fcpa.com/

IOMEGA
Roy, UT
800-697-8833
801-778-1000
801-778-3158 (fax)
http://www.iomega.com/

KEEP IT SIMPLE SYSTEMS
Helena, MT
800-372-6882
406-442-3559
http://wildwestweb.com/public/KISS_Home_Main.html

LIND ELECTRONICS
Minneapolis, MN
800-897-8996
612-927-6303
612-927-7740 (fax)
http://www.lindelectronics.com/

NEWER TECHNOLOGY
Wichita, KS
800-678-3726
316-943-0222
316-685-9368 (fax)
http://www.newertech.com/

PILOT TECHNOLOGIES
Eden Prairie, MN
800-682-4987
612-828-6002
612-828-6806 (fax)
http://www.pilot-tech.com/

VST TECHNOLOGIES
Acton, MA
508-263-9700
508-263-9876 (fax)
http://www.vsttech.com/

THE BOTTOM LINE

PowerBook 1400 is something of a misnomer, considering that the computer's model number is lower than that of the 5300. In every way, it stands head and shoulders *above* its predecessor — it's solid, it's reliable, and it has everything we could possibly ask for in a basic portable. Although its speed didn't blow us away and it lacks the raw animal magnetism of the 500 series, the 1400 delivers more value than any of its forebears. In fact, it gave us the same kind of satisfaction we got from using the original 100-series portables. Unlike the 5300 and 500 series, the 1400 series is priced right, and as a result, it may attract 100-series buyers who didn't go for Apple's pricier alternatives.

Apple is offering its new portable in three configurations. At the low end, the 1400cs has a dual-scan, passive-matrix display, a 750-MB drive, and 12 MB of RAM and costs only $2,499. The second 1400cs configuration comes with a 750-MB drive, 16 MB of RAM, and a CD-ROM drive, for $2,899. At the high end of the line is the 1400c, which sports an active-matrix display, a 1-GB drive, 16 MB of RAM, and a CD-ROM drive, for $3,499. Each configuration comes bundled with the Apple Internet Connection Kit, ClarisWorks, Claris Organizer, and PowerBook File Assistant, plus several other utilities. All in all, the 1400 offers a good range of configurations at reasonable prices. It's a solid value, especially when you consider how many of its features are new.

But it's not just reliability and competitive pricing that make the 1400 a proper heir apparent to the PowerBook throne — it's also creative flair. Although we know that it won't help the processor run any faster (we've already ordered upgrades to take care of that), the wood-grain BookCover we've got on order is going to add a dash of elegance to our mobile-computing experience. Now we just wish we could afford a Volvo with wood paneling.

Best of all, though, is that the 1400 makes it safe once again to buy a PowerBook. And given its bigger screen, CD-ROM drive, and better overall design, buying a PowerBook 1400 is not only safe but it's maybe even a good idea as well.

BOOKMARK

RELATED INTERNET SITES

Apple's PowerBook Resource Center
Everything the road warrior needs to know about Apple's new portables.

GO TO http://www.zdnet.com/macuser/features/pbtips.html

Andrew Gore is editor of *MacUser* and coauthor of *PowerBook: The Digital Nomad's Guide*. He also wrote the first review that exposed the problems with the 5300 series. Senior Editor Jim Shatz-Akin also contributed to this report.

Ethernet Ethos / connecting the PowerBook 1400

NO MATTER HOW FECKLESS, unfettered, and free your PowerBook allows you to be, there's sure to come a time when you'll need to connect to a network. These days, of course, that means Ethernet — and with the PowerBook 1400, it also means an additional purchase. That's because Apple hasn't offered built-in Ethernet with its PowerBooks since the 500 series, so you'll need to buy either an internal Ethernet adapter (Focus Enhancements and Newer Technology are both selling them) or a PC Card LAN adapter.

Using a PC Card LAN adapter will be your *only* option if you also need video-out capabilities from your PowerBook 1400, which has only one internal expansion-card slot. You can use the slot to accommodate either a video adapter or an Ethernet card. If you opt to do the former, you'll need a PC Card for your Ethernet connection. You can choose a single-purpose LAN card or a combo card, which does double duty as both a modem and a network interface.

Which is right for you depends on a variety of issues, including, of course, your need for speed. If you'll be connected to a network frequently or if you plan to move large files from your PowerBook to other machines via a LAN, speed will be paramount in your purchasing decision.

To help you get an idea of what you can expect in terms of speed, we used ZDBOp's NetBench NIC (network interface card) test, which measures the peak throughput of NIC cards, to evaluate a sampling of the PC Card Ethernet adapters currently available for PowerBooks. Because not all applications request that a file be transferred in the same packet sizes, the test uses a 10-MB file that is requested by the client from the server in varying packet sizes.

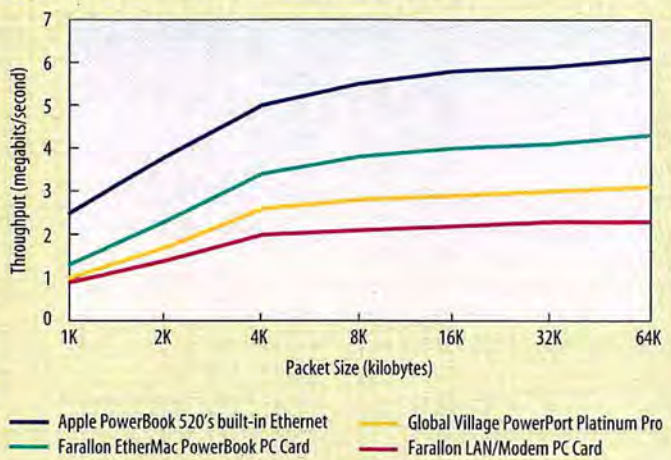
We tested two combo cards — the $499 Global Village PowerPort Platinum Pro and the $499 Farallon LAN/Modem PC Card — as well as the $169 Farallon EtherMac PowerBook PC Card, a dedicated Ethernet-only card. We compared each card's speed with that of a PowerBook 520's built-in Ethernet.

Our findings (see figure) suggest that a single-purpose networking PC Card is faster than a combo PC Card — potentially by 50 percent. However, PC Cards in general lag far behind built-in Ethernet, which is up to 50 percent faster than the fastest PC Card we tested, Farallon's Ethernet-only EtherMac PowerBook PC Card.

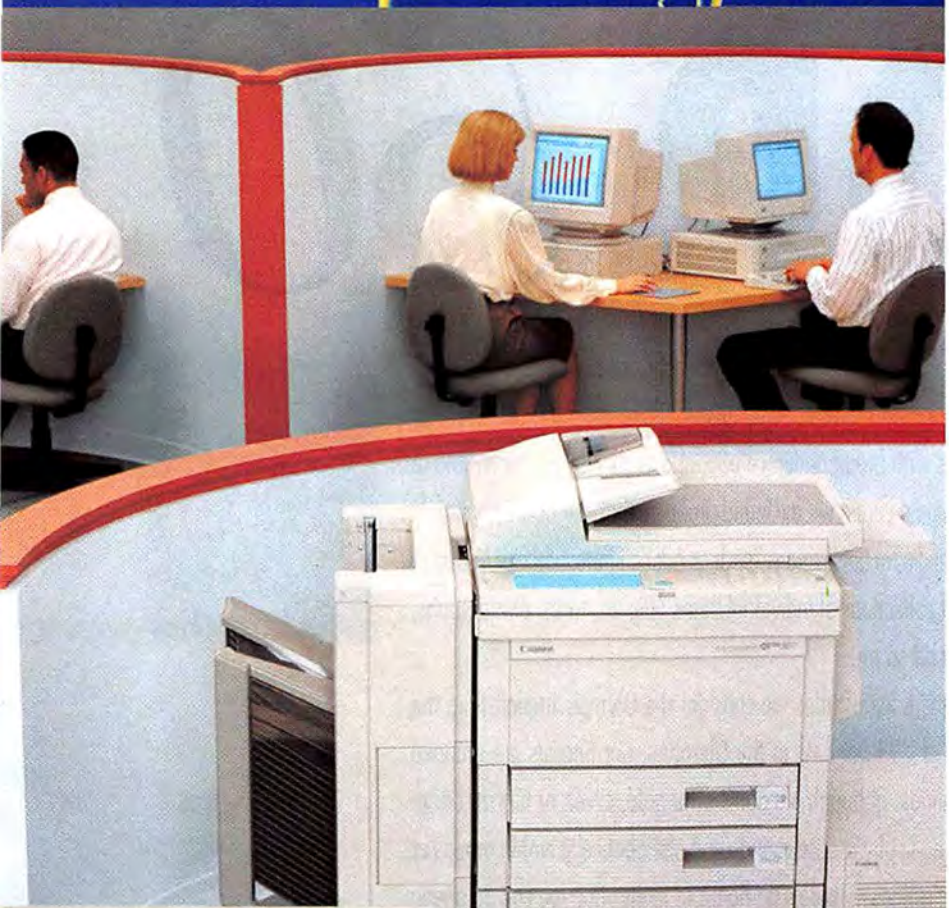
In addition, as you might expect, all combo cards are not created equal — the Global Village PowerPort Platinum Pro consistently beat the Farallon LAN/Modem PC Card in our tests.

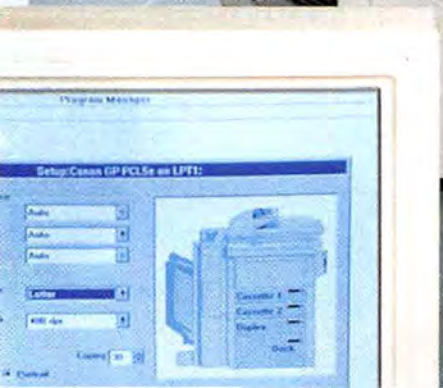
There's more than raw throughput to consider when you choose a PowerBook networking card. Price is important, as is convenience. A single combo card may be easier to keep track of than two dedicated cards — one modem and one networking PC Card. But for top speed from a networking PC Card, a single-purpose adapter is your best bet. / *JIM SHATZ-AKIN*

THROUGHPUT VERSUS PACKET SIZE



4 languages, multiple networks, an endless stream of documents and one GP30F to manage the whole operation.





GP30F Digital Imaging System.

CANON CONNECTS multiple environments with one integrated document management system: The GP30F Total Document Management System from Canon.

The GP30F is built around open industry standards, and it connects directly to Ethernet, Token Ring and AS/400 networks. So no matter how many different platforms you're working with, anyone on any network can print, fax, scan and copy more productively, all through the same digital system. The GP30F also speaks your language, whether you're using SPX/IPX, TCP/IP, SNA, Ethertalk or all of the above.

yes NetWare Tested and Approved

So with the GP30F, you don't have to change your whole environment to make your document processing more efficient. And you don't have to sacrifice the present for the future. The GP30F will integrate seamlessly with whatever new technology you employ.

Adobe PostScript

If your office needs an integrated solution to document management, the GP30F is one system that can manage the job perfectly. For more information, call **1-800-OK-CANON** *anytime*, or visit us at **http://www.usa.canon.com** on the web.

Canon

CIRCLE **9** ON READER SERVICE CARD

Customer is responsible for determining compatibility with their systems and applications. Optional equipment required. Novell and Netware are registered trademarks of Novell, Inc. TRIL qualified Token Ring products are certified for physical interoperability in multi-vendor environments. PostScript is a trademark of Adobe Systems, Inc., registered in the U.S. and other countries. AS/400 is a registered trademark of International Business Machines Corporation.
© 1996 Canon U.S.A., Inc.

MACUSER'S 1996

TOP 50

IT GETS TOUGHER EVERY YEAR. Back when the titles were few enough, we could actually use our annual CD-ROM roundup to pick the best 50 of all the CD-ROMs you could buy for the Mac. Now, we're limiting ourselves to the best ones released since our last roundup (October '95), but the task is more Herculean than ever. Even with some companies not responding to our call for titles, we still looked at hundreds of discs — and the best ones are better than ever before.

So, we've gotten tougher as well. We've upped the ante on quality, insisting that only those titles rating four mice and above (based on our judgment of their content, production quality, ease of navigation, innovative features, and overall enjoyability) make the final cut. We also favored titles with broad audience appeal over niche-y products. And of course, as in past years, we excluded products that use CD-ROMs simply as delivery media for applications (such as Adobe Photoshop and Microsoft Office) or for collections of individual items (clip art, fonts, photographs, shareware, and so on).

The result is a list of titles we consider the Olympic medalists of the current crop of CD-ROMs. As in the Olympics, our finalists are grouped within categories; although we don't offer gold, silver, or bronze designations, we do list by mouse rating (and alphabetically within groups of equal mouse ratings). There's no flame to ignite, but you can go ahead and start playing your John Williams Olympic Fanfare CD now, because it's time to summon the heroic ones . . . .

BY THE EDITORS OF *MACUSER*

CD-ROMs

Reference

Microsoft Bookshelf '96 – '97

Microsoft / ★★★★★; $55 estimated street

You can look through nine cross-linked reference works all at once or individually for great quotes, definitions, URLs, ZIP codes, or just ideas. This program brings together a dictionary, thesaurus, almanac, dictionary of quotations, encyclopedia, chronology, ZIP-code directory, world atlas, and Internet directory, with a single search engine. If you can afford only one reference resource, this is the one you want.

Cinemania '96

Microsoft / ★★★★½; $35 estimated street

Want to find the 1996 Academy Awards nominees, see a picture of Brad Pitt, or hear some dialogue from *Double Indemnity*? Providing everything from biographies and filmographies to movie reviews and film recommendations in a variety of categories, this program is the best CD-ROM movie guide you can buy. To boot, monthly online updates will keep you hip to the latest film news.

AMA Family Medical Guide

DK Multimedia / ★★★★; $39.95 list

Alas, there are no keen transparent layers to flip through with this program's anatomy charts, but you *can* flip among topics ranging from childbirth to the hazards of alcohol abuse — thanks to a generous smattering of hyperlinks, supplemented with videos and animations. Hypochondriacs will love the ability to self-diagnose their ills through symptom-based flowcharts.

MarketPlace 3.0

MarketPlace Information / ★★★★; $600 estimated street

If you do any direct marketing, the investment you make in this admittedly pricey program will pay off. MarketPlace 3.0 provides access to quarterly updated Dun and Bradstreet information on all U.S. businesses. Cross-reference the data by business location, size, type, and other criteria for an unlimited amount of market analysis, and then use the data to create a fine-tuned mailing or telemarketing list of up to 3,000 prospects. If you like the results, you can buy more prospects from MarketPlace.

Microsoft Encarta '96

Microsoft / ★★★★; $55 estimated street

Information grazers will love this explorative encyclopedia, which encourages you to, for instance, compare languages with one another or match musical instruments with their country of origin. Of course, you can read individual articles on encyclopedia topics, but it's more fun to have Encarta's Mind Maze trivia game test your knowledge first or let yourself get sidetracked with the article's many links. It's just too bad the poorly ported interface puts Mac users at a disadvantage.

Planet Earth

Macmillan Digital USA / ★★★★; $49.95 list

If you want maps, Planet Earth's got 'em. In fact, it has six sets of maps, including satellite views, political boundaries, ecological zones, and famous historical sites. Find a spot on any map that interests you, and then uncover information about it. Although the information is similar to what you'd find in an encyclopedia, this CD-ROM is not dry — slide shows, video clips, and voice-overs keep the learning lively.

Real Picture World Atlas

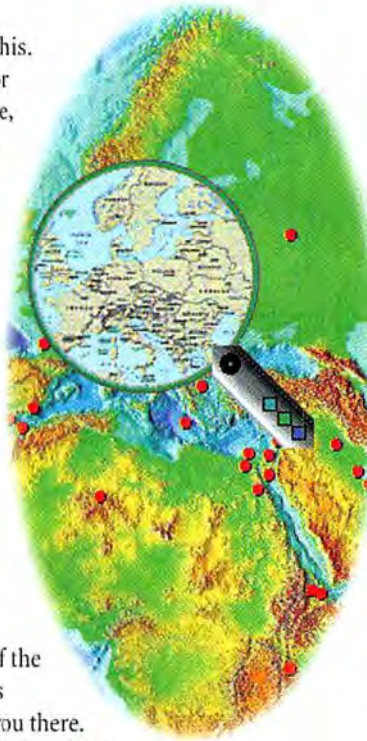
Now What Software / ★★★★; $49.95 list

From Albania to Zimbabwe, this atlas will take you all over the world, give you geopolitical information and statistics on each country, and let you hear the local language. When you click on a country, a list of common American English phrases appears — select one, and you'll hear its equivalent in that country's most common tongue. As they'd say in Australia, it's "magic."

SelectPhone 1997

Pro CD / ★★★★; $99 list

Directory assistance was never like this. You can search for people by name or find businesses by classification code, but that's not all. With this title, you can also target listings by their distance from your home or business and quickly get the names and numbers of neighbors — a handy option for when emergencies arise. If you're not sure of the exact name or location, just use the clever search feature to look through similar names and nearby towns.



Street Atlas USA 3.0

DeLorme / ★★★★; $80 estimated street

Whether you need to find your way around a large city or travel to one of the more remote corners of the U.S., this program has the street maps to get you there. New features include an overview window that lets you know where you're searching (the zoom and search functions remain awkward, though).

MORE THAN MUSIC

TAKE A COLLECTION OF SONGS and mix in material reminiscent of *Entertainment Weekly*, *Cosmopolitan*, MTV, Doom, *Tiger Beat*, and *People* magazine, and what do you get? The record industry's new kid on the block: the Enhanced CD. On a single compact disc, music companies are adding photos, music videos, games, lyrics, and just about anything else that will "enhance" the buyer's experience. The roster of artists jumping on the bandwagon is diverse, ranging from Bonnie Raitt and Natalie Merchant to Primus and Queensryche.

With the definition of this new art form still up for grabs, it's hard to predict where the best Enhanced CDs will turn up. Niches such as contemporary Christian music can provide surprisingly good examples of the Enhanced CD's potential, whereas those from some major artists have been ho-hum.

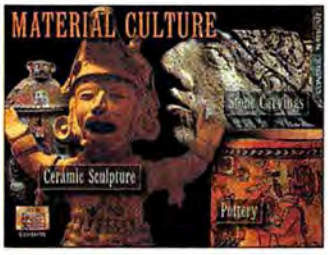
Here are ten Enhanced CDs, running the gamut of musical genres, that all truly deserve to be called "enhanced." In general, they offer attractive interfaces plus lots of photos, interviews, music videos (most with lyrics), and games — not to mention the occasional surprise or two. In one of them, watch out where you aim that rock . . . . / *LAMONT RIDGELL*

History

Exploring the Lost Maya

Sumeria / ★★★★½; $49.95 list

If Indiana Jones became a multimedia publisher, the result might look a bit like this: a title that manages to entertain as it reveals the secrets of Mayan culture.



You'll explore archaeological digs, learn how to read Mayan hieroglyphs, extrapolate the decline of the great empire, and see gruesome Mayan rituals — you can even get travel information in case you want to visit the sites yourself.

Critical Mass: America's Race to Build the Atomic Bomb

Corbis Publishing / ★★★★; $49.95 list

World politics, nuclear physics, personal tragedy, and Atomic Age comic-book excerpts fuse together at a Los Alamos office, circa 1945. Discover the motives and history of the atomic bomb's masterminds, including J. Robert Oppenheimer and Niels Bohr; tour 1940s Los Alamos; and learn about the making and marketing of the Atomic Age and the Cold War.

The Day After Trinity

Voyager / ★★★★; $29.95 list

The brilliant physicist who masterminded the creation of one of mankind's deadliest weapons and helped the Allies win World War II was also one of the most poignant victims of the Cold War. This annotated film documents J. Robert Oppenheimer's life, including his motivations for making the atomic bomb and his disgrace during the McCarthy era, and includes declassified files about Oppenheimer as well as a photo gallery of haunting images.

Kon-Tiki Interactive

Voyager / ★★★★; $39.95 list

Risking his life, anthropologist Thor Heyerdahl took to the Pacific Ocean in a handmade balsa raft in 1947 and conclusively proved that ancient cultures migrated between distant islands and continents. You can meet up with the great adventurer and his journeys through his documentaries, books, and archaeological digs — in fact, the indefatigable Norwegian will even pop up in your explorations on this CD-ROM, whenever he has a new anecdote to share.

/ ten truly enhanced CDs

BORN ON A PIRATE SHIP
— Barenaked Ladies (Reprise Records)
Tongue-in-cheek lyrics go hand in hand with the offerings of this interactive extravaganza. Just have some fun with this one.

BURNING DOWN THE HOUSE
— Bonnie Raitt (Capital Records)
The concert video sequences alone are worth the price of this straight-ahead rock-and-roller's latest offering.

GO BIG
— Various Artists (Om Records)
No PC game on the market captures the energy and excitement of snow- and skateboarding as well as this CD does with its videos, music, and supplements from *Slap* and *Thrasher* magazines. If you ride fast and play your music loud, make this your soundtrack.

THE GROOVEACTIVE COLLECTION
— Various Artists (Om Records)
This CD challenges some of the best music-related CD offerings from Voyager — and surpasses some of them. Great graffiti art, acid jazz, and interviews.

THE INDIVIDUALIST
— TR-i (Ion)
The best yet from the artist formerly known as Todd Rundgren; it features a retro-'50s interface and catchy pop songs tied to off-the-wall animations and activities (imagine Rush Limbaugh meets Doom).

JESUS FREAK
— D.C. Talk (Forefront)
The interactive videos and interviews are just as frenetic as the music. Hip-hop-contemporary-soul-Christian-rap music doesn't get any better than this. Some of the goodies on the "enhanced" side will surprise even the jaded.

LIMBOLAND
— Betty (Intersound)
Learn how this three-woman rock band went from the small-club circuit to HBO's *Encyclopedia*, through interviews, videos, and other extras.

OL' SCHOOL
— Ohio Players (Intersound)
A live-in-concert CD full of the eye-popping visuals you'd expect from this group, known for its double-entendre titles.

PART OF THE SYSTEM
— Dana Key (Forefront)
A slick, clean interface makes this contemporary-Christian CD as easy on the eyes as it is inspiring to the ears.

TELECOMMUNICATIONS BREAKDOWN
— EBN / Various Artists (TVT Records)
Put this disc into your drive, and witness what MTV is supposed to be, as your screen becomes an interactive-video wall. Artists from Gil Scott-Heron to Nine Inch Nails contribute.

150 Years of America's Smithsonian

Macmillan Digital / ★★★★; $39.95 list

The Smithsonian Museum is a treasure trove of memorabilia and art. This title can't match the museum's collection item for item (an impossible task for one CD-ROM), but thanks to an interactive time line and a Find feature, it's easier to navigate than the real museum — plus you get multimedia supplements such as a film clip from *The Wizard of Oz* that's linked to a picture of Dorothy's red slippers.

Ten DESERT-ISLAND DISCS

ALTHOUGH WE'RE ALWAYS on the lookout for great new titles, these still-available classics would be good company for any desert-island sojourn (with a PowerBook 1400 and a solar-battery pack, of course).

THE COMPLETE MAUS — Voyager

COSMIC OSMO AND THE WORLDS BEYOND THE MACKEREL — Cyan

A HARD DAY'S NIGHT — Voyager

MICROSOFT WINE GUIDE — Microsoft

MYST — Brøderbund Software

PASSAGE TO VIETNAM — Against All Odds

SMALL BLUE PLANET — Now What Software

THE THINKIN' THINGS COLLECTIONS — Edmark

THE WAY THINGS WORK — DK Multimedia

XPLORA 1 — Interplay Productions

Science and Nature

Volcanoes: Life on the Edge

Corbis Publishing / ★★★★½; $49.95 list

Volcanoes is a natural wonder. Packed with drama and captivating imagery, this disc lets you explore the phenomenon of the volcano through the perspective of *National Geographic* photographer Roger Russmeyer. Start by viewing vivid photographs of the world's volcanoes while listening to stories about them, and then delve deeper into volumes of supplemental information. There's much to explore, and the well-organized interface makes everything easy to find.

A.D.A.M. The Inside Story 1997

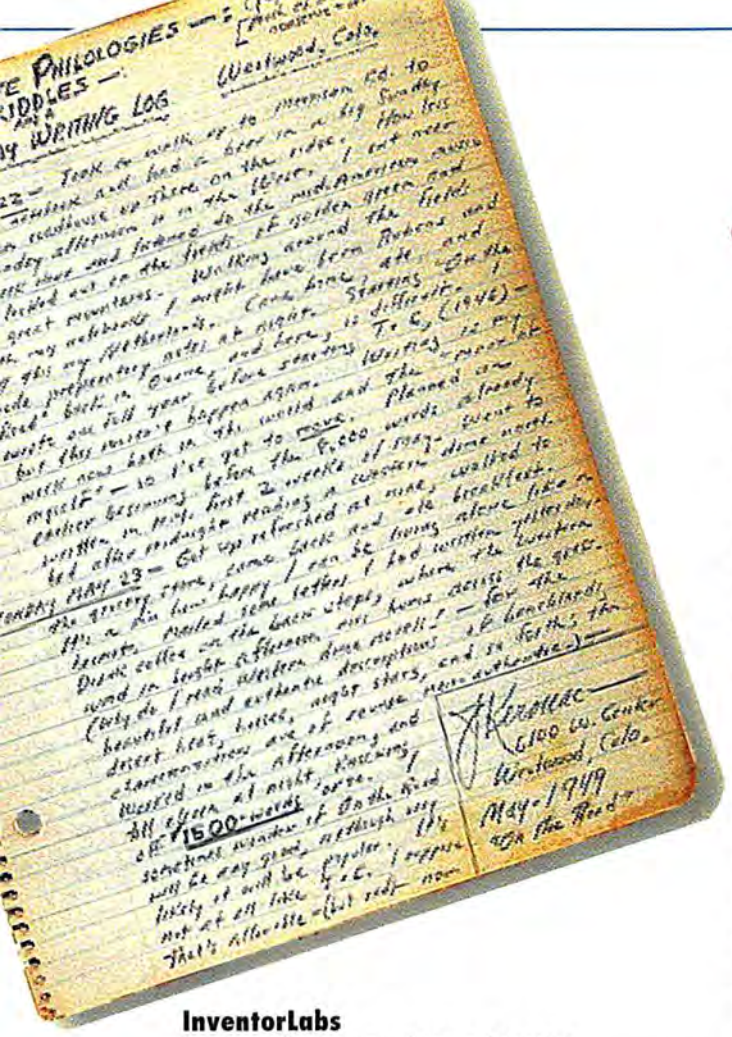
A.D.A.M. Software / ★★★★; $39.95 list

Like a '90s version of the '60s clear-plastic dolls with removable body parts, this disc is an excellent amateur tool for boning up on anatomy. You can magnify the view of each body part; flip through over 60 virtual overlays; and manipulate 3-D models of the lungs, heart, and skull. One particularly valuable feature is the Scrapbook, a well-designed series of stories intended to teach children about various body systems, such as the reproductive and lymphatic systems.

In the Company of Whales

Discovery Channel Multimedia / ★★★★; $39.95 list

If you're planning a whale-watching trip or you're just a fan of the world's largest mammal, this CD-ROM is an excellent resource. It's packed with facts and footage on our blubbery friends of the ocean. Learn where whales hang out and what they do that we can't see beneath the water, and get insight from a panel of experts who answer frequently asked whale questions.



Art, Music, and Literature

A Jack Kerouac ROMnibus

Penguin Electronics / ★★★★½; $49.95 list

The famous Beat poet would have liked to hop this bus. Mellow music accompanies an intimate tour into Kerouac's life as you read pages from his journals and browse through his drawings and paintings. Flip through photo albums and an interactive "family tree" of the San Francisco Beat poets, and listen to live readings of works such as *San Francisco Blues.* The disc even includes a complete version of *The Dharma Bums,* thoroughly annotated with text, audio, and video links.

A Passion for Art: Renoir, Cézanne, Matisse and Dr. Barnes

Corbis Publishing / ★★★★½; $49.95 list

The eccentric Dr. Albert Barnes had excellent taste in art and was wealthy enough to exercise it. More than 65 artists are showcased in this classy, cleanly produced CD-ROM. Stroll through the long-closed-to-the-public Barnes Collection gallery, and click on paintings for close-ups and artist information; browse portfolios; check out time lines; or take one of four guided tours for dramatic, behind-the-scenes stories that enrich your appreciation of the works.

Robert Winter's Crazy for Ragtime

Calliope Media / ★★★★½; $43.99 list

Best known for CD-ROMs such as The Rite of Spring, Robert Winter examines classical music of a different sort in this disc: the highly syncopated, quintessentially American music known as ragtime. The disc includes Winter's own fresh performances of dozens of rags, a bit of musicology, sheet-music folios, original source and reference materials, and a feature that lets you "create" your own rag by assembling and modifying pieces of existing compositions. All in all, it's as fun as the music it celebrates.

InventorLabs

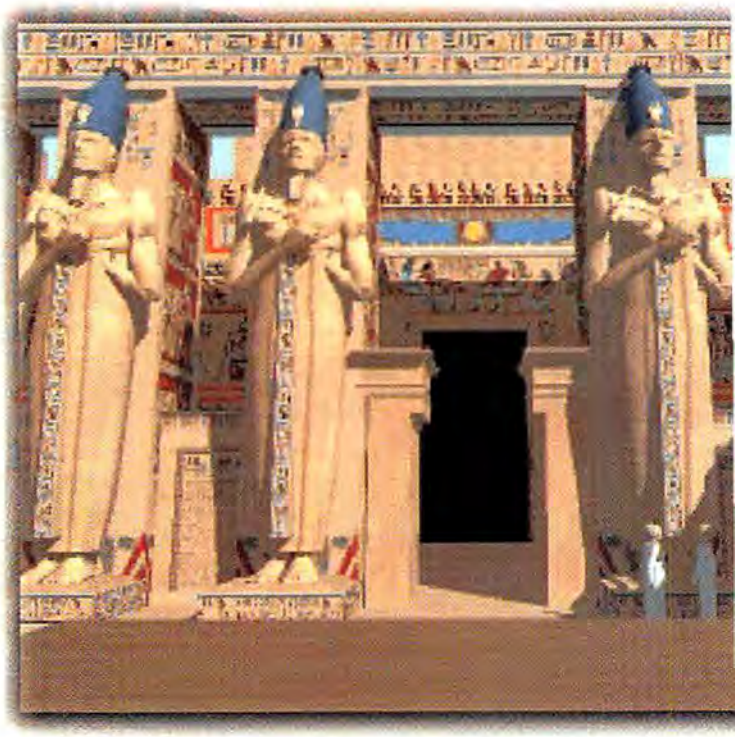
Houghton Mifflin Interactive / ★★★★; $49.95 list

Although it's designed for ages 10 and up, this disc may well entice you to nudge your child aside and grab the mouse yourself. You get to slip inside the laboratories of Thomas Edison, Alexander Bell, and James Watt. Besides snooping around to see what tools they used and what inventions they created, you can run machines and try out experiments such as creating a long-lasting lightbulb. The clanking of machinery, hissing of steam, and breaking of failed lightbulbs add plenty of atmosphere to the experience.

RedShift 2

Maris Multimedia / ★★★★; $49.95 list

Don't have your own spaceship? That doesn't mean you can't tour the universe, at least the virtual universe within RedShift 2. The main thrust of the program is to take you to any part of the universe you want to visit. You can view the Earth from Jupiter or catch a ride on a comet 1,000 years ago. RedShift's professional-looking animations of phenomena such as the Big Bang make them come alive before your eyes.



ArtRageous!
SoftKey / ♦♦♦♦; $40 estimated street

If you can deal with digital host Tim and overlook the rather obnoxiously designed central Plaza, ArtRageous! hides lots of fun stuff for kids as well as adults to goof around with. Sections labeled Perspective, Light, Composition, and Color house interactive games that let you mess with famous artwork and create your own while boning up on art techniques and a little art history.

Between Earth and the End of Time
Integrated Communications & Entertainment / ♦♦♦♦; $59.99 list

Fans of Welsh artist Rodney Matthews' otherworldly art will enjoy this CD-ROM "journey" hosted by Matthews himself. Addressed as Traveler, you peek into his studio, leaf through digital portfolios, and take a walk through the Welsh countryside. Word puzzles and quizzes accompany your tour. The CD-ROM also includes a workshop where, provided with an assortment of backgrounds and fantasy creatures, you can dabble in creating your own Matthews-like art.

Charlton Heston's Voyage Through the Bible / Old and New Testament
Jones Digital Century / ♦♦♦♦; $39.95 list

Charlton Heston may not be your cup of tea, but at least he picks colorful material to work with. This 2-CD-ROM trip through the Bible's history is smooth and tasteful, an interactive Near Eastern tour through a 3-D temple, art and music history, and archaeological sites. Video clips of Heston as Mr. Rugged Man, tooling around the desert in his Jeep, are simply an amusing cherry on top of this scenic sundae.

Poetry in Motion II
Voyager / ♦♦♦♦; $29.95 list

Poetry fans who understand that many poems are best read aloud will appreciate this second volume of Voyager's "live" poetry showcase. Watch and listen to performances from 24 North American poets — among them Jim Carroll, Allen Ginsberg, Anne Waldman, Helen Adam, and Spalding Gray — and follow along with attached transcripts. Video interviews accompany the readings to give a firsthand look at these poetic personalities.

Masterpiece Mansion
Philips Media / ♦♦♦♦; $40 estimated street

Billed as a children's CD-ROM, Masterpiece Mansion is nonpatronizing and diverting enough to entertain adults as well. Trapped in a mansion, you cruise through rooms and try to escape by clicking on paintings, answering questions, and solving puzzles that draw on your knowledge of art history. You are assisted by artist biographies, time lines, and synopses of art periods through the ages. Although a lean overview of art history, it's still plenty of fun.

The Rebecca Project
Rutgers University Press / ♦♦♦♦; $69.95 list

Alfred Hitchcock turned Daphne Du Maurier's 1938 Gothic romance novel *Rebecca* into a riveting film; Hollywood turned it into a public phenomenon. The CD-ROM examines *Rebecca*'s life span, from novel to overmarketed star vehicle. Video-annotated analyses of the film include examinations of Hitchcock's directing techniques and feminist theories from several writers. Scan through movie clips from *Rebecca* and other Hitchcock films, as well as studio stills, press books, ad campaigns, book covers, and the reissue trailer.

Games

Marathon 2: Durandal

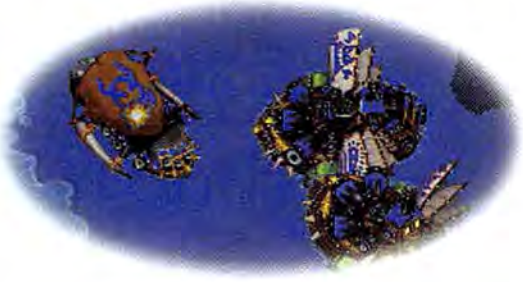
Bungie Software / ★★★★½; $39 list

Sure, Marathon 2 may be yet another violent, first-person shoot-'em-up, but it's the game that erased all doubt of the Mac's suitability for action games. Marathon 2's combination of great 3-D graphics, directional stereo, and a frenzied pace makes it a Mac gaming classic. It also lets as many as eight players compete over a network in game variations such as Tag; Kill the Guy with the Ball; King of the Hill; and of course, good ol'-fashioned Total Carnage.

WarCraft II

Blizzard Entertainment / ★★★★½; $54.95 list

The Orcs and the Humans are at it again, locked in battle over the land of Azeroth. But WarCraft II isn't just a continuation of the original WarCraft — there are dozens of new buildings, characters, and missions in this real-time strategy war game. There's also an editor you can use to create your own maps, and the game allows up to eight players to play over a network.



X-Wing Collector's CD

LucasArts / ★★★★½; $49.95 list

For flight-sim aficionados, X-Wing is a must-have. It offers over 130 missions, beautifully rendered animations, and enemies who draw on artificial intelligence for their relentless cleverness. It's also been enhanced to take advantage of the PowerPC chip, so the graphics, animations, and game play are even better than in the PC version.

You Don't Know Jack X-tra Large

Berkeley Systems / ★★★★½; $40 estimated street

The only multiplayer game for the Macintosh that successfully combines game play and humor, this game show with an attitude will have you rolling in the aisles with its wisecracking host and zany questions. Plus, it's the only game around that lets you literally screw your opponents. Need more questions? Check out the You Don't Know Jack Question Pack ($20 estimated street).

Full Throttle

LucasArts / ★★★★; $29.95 list

Take some leather; mix with burnt rubber and exhaust; add motorcycles, murder, and mayhem; and place them all in a *Blade Runner*-meets-*Mad Max* setting, and you have Full Throttle. In this graphic adventure, you play a gang leader framed for murder; your goal is to clear your name while saving America's last motorcycle factory. Full Throttle is proof that games with great animation and an interesting story line needn't take a back seat to those with full-motion video.

Five STAND-OUT STINKERS

MEDIOCRITY IS EASY to find among CD-ROMs, but only a few discs deserve to be approached with nostrils firmly pinched. Here are four new standard-setters and a Hall of Famer (now mercifully discontinued).

THE CONTRACT — Educorp

It's like watching C-SPAN through a Vaseline-coated rifle scope: A huge blue circle encases small, murky video bites of Newt Gingrich and his contemporaries spouting on about the Contract with America, the Oklahoma City bombing, and so on. Even Miss America doesn't look good from this angle.

THE GREAT KAT'S DIGITAL BEETHOVEN ON CYBERSPEED — Bureau of Electronic Publishing

Speed-metal violinist The Great Kat plays with attitude to spare, but the few successes among her musical snippets can't compensate for the buggy interface; clumsy navigation; and the dominatrix-costumed Kat's tiresome, boy-focused "be my slave" routine.

MACKENZIE AND COMPANY — Her Interactive

Operating under the principle that any product that entices girls to use a computer is good, Her Interactive fills five discs with a mind-numbing array of vapid activities based on shopping, make-up, and boy-attracting. This cloying collection has something to offend every thinking woman.

PHONE SEARCH USA 2.0 — DeLorme

DeLorme may have the market cornered with its extraordinary street atlas, but its digital directory is inexcusable. In fact, we couldn't even get this ugly, awkward directory of outdated information to work with its atlas counterpart as advertised. Given its much better competition, this product is nothing more than an embarrassing offering for Mac users.

PING AND KOOKY'S CUCKOO ZOO — [EA*Kids]

When *MacUser* first reviewed this astonishingly irritating children's game, our reviewer described it as "an infuriating mishmash of unimaginative animations, grating music, and condescending voices that purports to teach preschool skills." Not much to add, really — except that its soundtrack alone is an excellent argument for strict handgun control.

Monty Python and the Quest for the Holy Grail

7th Level / ★★★★; $45 list

This self-proclaimed "Best Strategy Game of 932 A.D." is a must-have for Monty Python fans. If you can stop laughing for just a moment, you'll find that the quest for the Holy Grail leads you through games of Spank the Virgin, Catch the Cow, and Drop Dead. This game is one of the few games around in which you'll want to click on anything and everything, because you'll never know what's going to happen.

Entertainment and Leisure

Monty Python's Complete Waste of Time

7th Level / ★★★½; $50 estimated street

Unabashedly silly and true to its name, this disc will have you abandoning all dignified purpose within seconds. You'll be smashing people-headed gophers, spotting loonies, "pythonizing" your desktop and system sounds ("You naughty person!"), singing along to the Lumberjack Song, and chasing down video clips of classic Monty Python sketches such as "Nudge, Nudge" as you explore Mrs. Zambesi's brain (the main navigational device) and possibly even discover the secret to intergalactic success along the way.

Reflux — Issue 2: The Threshold

Inverse Ink / ★★★½; $12 list

Reflux is a serialized cyberpunk comic book so alive that it crackles and hums on your screen. Some panels morph into videos when you click on them (showcasing Inverse's clever repurposing of kung-fu movie footage), whereas others offer hot spots that trigger animated episodes — and the click of a button switches you among three characters' perspectives. The plot may be convoluted, but following it is an E-ticket ride.

The Residents' Bad Day on the Midway

Inscape / ★★★½; $50 estimated street

"Bad day" is an understatement for what happens when you get sucked into the nightmarish carnival in this title. As twisted and visually compelling as Freak Show, the previous collaboration between artist Jim Ludtke and performance-art band The Residents, this disc adds a novel plot device: You jump among the minds of a

dozen or so characters during random encounters as you tour the midway's repellent attractions. Your goal: to satisfy your curiosity before you meet with a nasty accident and *wish* you were only having a bad day.

Anne Hooper's Ultimate Sex Guide

DK Multimedia / ★★★★; $39.95 list

This disc provides an embarrassment-free way to find out how much you *really* know about humankind's most persistent recreational activity. Featuring interactive questionnaires (to point you toward recommended programs and "Sexopedia" topics); tasteful, strategically shot videos; animated diagrams; case studies; password-protection; and the crisp, no-nonsense persona of British sex therapist Anne Hooper, this guide can enrich almost anyone's knowledge of this perennially hot topic.

Rock Climbing

Media Mosaic / ★★★★; $49.95 list

Rock Climbing is a refreshing example of a how-to CD-ROM that works, offering more than a book can without losing a book's ease of navigation. Based on the book *Mountaineering: The Freedom of the Hills,* it's packed with clear, easy-to-follow animations and videos of rock-climbing techniques. Pop-up definitions are another plus, and the clever use of ambient sound and voice-overs makes you feel like you're right there at the base camp, rubbing your sore muscles and shooting the breeze with your climbing buddies.

Virtual Tarot 2.0

Virtual Media Works / ★★★★; $35 estimated street

Can a tarot-card reading done on a computer seem as believable as one done by a gypsyish stranger? Surprisingly, the answer in this case is yes. Virtual Tarot combines a player-influenced card-dealing mechanism with trance-inducing music, beautiful graphics (in both the playing environment and the reproductions of the classic Rider-Waite deck), and a wealth of information about card interpretations. Navigation can be slow, but the keyboard shortcuts help.

Kid's Stuff

Jump Start Second Grade

Knowledge Adventure / ★★★★★; $36.95 list; ages 6 – 8

If you want to give your child a consistently excellent computer-learning experience from toddlerhood through elementary school, we heartily recommend the Jump Start series, from Knowledge Adventure. Although Jump Start 2nd Grade's endearing characters, challenging games, and surprisingly sophisticated music make it our favorite, any Jump Start title — Toddlers, Preschool, Pre-K, Kindergarten, Kindergarten Reading, 1st Grade, 3rd Grade, or 4th Grade — would be a welcome addition to your kid's collection.

Trudy's Time and Place House

Edmark / ★★★★★; $29.99 list; ages 3 – 6

Nobody creates better early-learning software than Edmark — its love for kids and learning is readily apparent in each title in its House series: Millie's Math House; Bailey's Book House; Sammy's Science House; and our most recent favorite, Trudy's Time and Place House. Trudy, a friendly little alligator with a Band-Aid on her knee, hosts an exceptionally inventive series of games that teach the abstract concepts of time and place.

Africa Trail

MECC / ★★★½; $49.95 list; ages 10 – 16

The latest in MECC's highly regarded "Trail" series — Oregon Trail, Amazon Trail — may very well be the best yet. Based on events and images from an actual bicycle expedition, Africa Trail invites you to plan and participate in your own virtual journey down the length of the African continent, meeting people, solving problems, listening to music — even playing a well-designed bike-riding arcade game.

Infinity City

Headbone Interactive / ★★★★½; $29.95 list; ages 4 – 8

Singing taxi driver Zack and his animal pals in the GiggleBone Gang explore early math — such as counting, geometric shapes, money transactions, and size relationships — in this lively, entertaining program. Fifty activity modules ensure variety in topic areas and in the ways information is presented: Picture puzzles, stories, and interactive Poke'n'Prod games are engaging and educationally effective.

World Discovery Deluxe

Great Wave Software / ★★★★½; $49.95 list; ages 8 and up

If a geography bee strikes you as a form of cruelty, check out World Discovery Deluxe, an exhaustive, challenging, and highly *fun* series of geography-based games. Trivia quizzes, tricky map puzzles, and even audio clips of nations' national anthems are used to test and teach knowledge of the world and its peoples. This program proves that drill-and-practice instruction doesn't have to be dull and static.

Freddi Fish 2: The Case of the Haunted Schoolhouse

Humongous Entertainment / ★★★★; $39.95 list; ages 3 – 8

Great animation, good (and judiciously brief) musical numbers, and an involved-and-involving mystery plot make this a fitting sequel to the also excellent Freddi Fish and the Missing Kelp Seeds. Freddi and her cartoony friends are mainly entertainment — they don't pretend to teach undersea facts — but the puzzles they encounter require plenty of logical, sequential thinking — and deliver hours of entertaining game play.

Logical Journey of the Zoombinis

Brøderbund / ★★★★; $39.95 list; ages 8 – 12

If you're tired of buying kid's games that get only one or two play attempts before they're shelved for good, Brøderbund's Logical Journey of the Zoombinis is for you. There are many hours of play time — and multiple levels of difficulty — as you learn and exercise math-related reasoning skills to help a bevy of exceptionally cute Zoombinis find their way to a new home.

Mighty Math Number Heroes

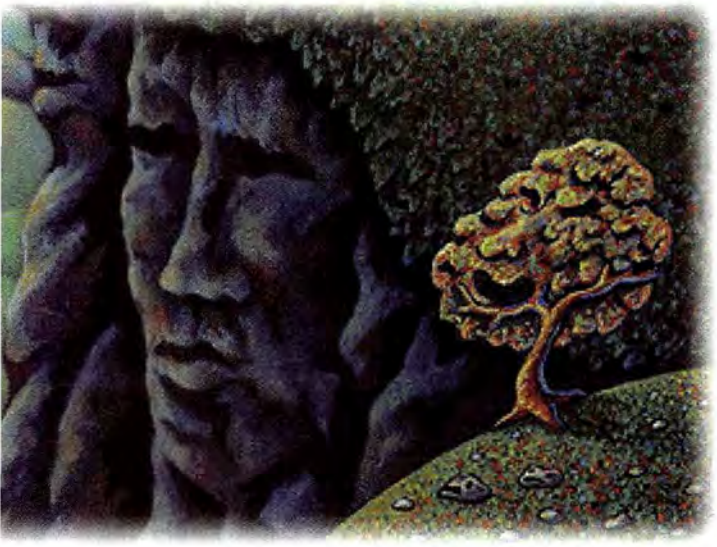
Edmark / ★★★★; $39.99 list; ages 8 – 10

There's no way around it: Learning math takes practice — lots of practice. Luckily, the software geniuses at Edmark have come up with a way to make that practice not only fun but also consistently challenging (even, we hesitate to admit, for some grown-up editors here at *MacUser*) as statistics, fractions, geometry, and good ol' arithmetic are taught in engaging and visually stimulating games.

Morton Subotnick's Making Music

Voyager / ★★★★; $39.95 list; ages 3 and up

The goal of this ingenious, open-ended introduction to music is to let kids learn about melody, harmony, and song structure by playing around. Activities include an area where pieces of well-known kids' songs can be rearranged or mixed and matched; a tune builder,



where you change notes and rhythms by moving birds on a telephone-wire staff; and a simple piano-roll note sequencer that works much like grown-up MIDI programs.

Read, Write and Type

The Learning Company / ★★★★; $50 estimated street; ages 6 – 8

Designed for prereaders, this program offers a unique and useful combination of keyboarding instruction, letter and word recognition, and phonics. Each keyboard key represents a storyteller who's imprisoned by a nasty computer virus. You free the storytellers by mastering their respective keys and then use their letters to build increasingly complex words and stories. The program harnesses young kids' natural button-pushing curiosity and channels it to build both typing and language skills.

MacUser editors Carolyn Bickford, Jim Bradbury, Rik Myslewski, Karen Ohlson, Nancy Peterson, Jim Shatz-Akin, and Brooke Wheeler put plenty of wear and tear on their CD-ROM drives in contributing to this story; Assistant Editor LaMont Ridgell deserves special thanks for his tireless efforts.

BOOKMARK

RELATED INTERNET SITES

Most of the companies listed in this directory also have Web sites where you can find more information about their products. The URL below provides a jumping-off point to all these sites.

GO TO http://www.zdnet.com/macuser/mu_1296/cdrom.html

Directory

A.D.A.M. Software
800-755-2326
770-980-0888

Berkeley Systems
800-713-7146, ext. 333
510-540-5535

Blizzard Entertainment
800-953-7669

Brøderbund
800-521-6263
415-382-4400

Bungie Software
800-295-0060
312-563-6200

Calliope Media
800-336-2947
310-829-1100

Corbis Publishing
800-246-2065
206-641-4505

DeLorme
800-452-5931
207-865-1234

Discovery Channel Multimedia
800-678-3343
301-986-1999

DK Multimedia
800-356-6575
212-213-4800

Edmark
800-320-8378
206-556-8484

Great Wave Software
800-423-1144
408-438-1990

Headbone Interactive
800-267-4709
206-325-3885

Houghton Mifflin Interactive
800-829-7962
617-351-3333

Humongous Entertainment
800-499-8386
206-486-9258

Inscape
800-693-3253
310-312-5705

Integrated Communications & Entertainment (ICE)
416-868-6423

Inverse Ink
800-771-1344
415-938-1118

Jones Digital Century
800-435-7390
303-784-8275

Knowledge Adventure
800-542-4240
818-246-4400

The Learning Company
800-800-8270
510-792-2101

LucasArts
800-985-8227
415-472-3400

Macmillan Digital USA
800-910-0099
212-654-8500

Maris Multimedia
800-336-2947
415-492-2819

MarketPlace Information
800-999-9497
617-672-9200

MECC
800-227-5609
612-569-1500

Media Mosaic
800-972-3766
503-225-1988

Microsoft
800-426-9400
206-882-8080

Now What Software
800-322-1954
415-394-5015

Penguin Electronics
800-253-6476
212-366-2000

Philips Media
800-340-7888
310-444-6500

Pro CD
800-992-3766
508-750-0000

Rutgers University Press
908-445-7764

7th Level
800-884-8863, ext. 77
214-498-8184

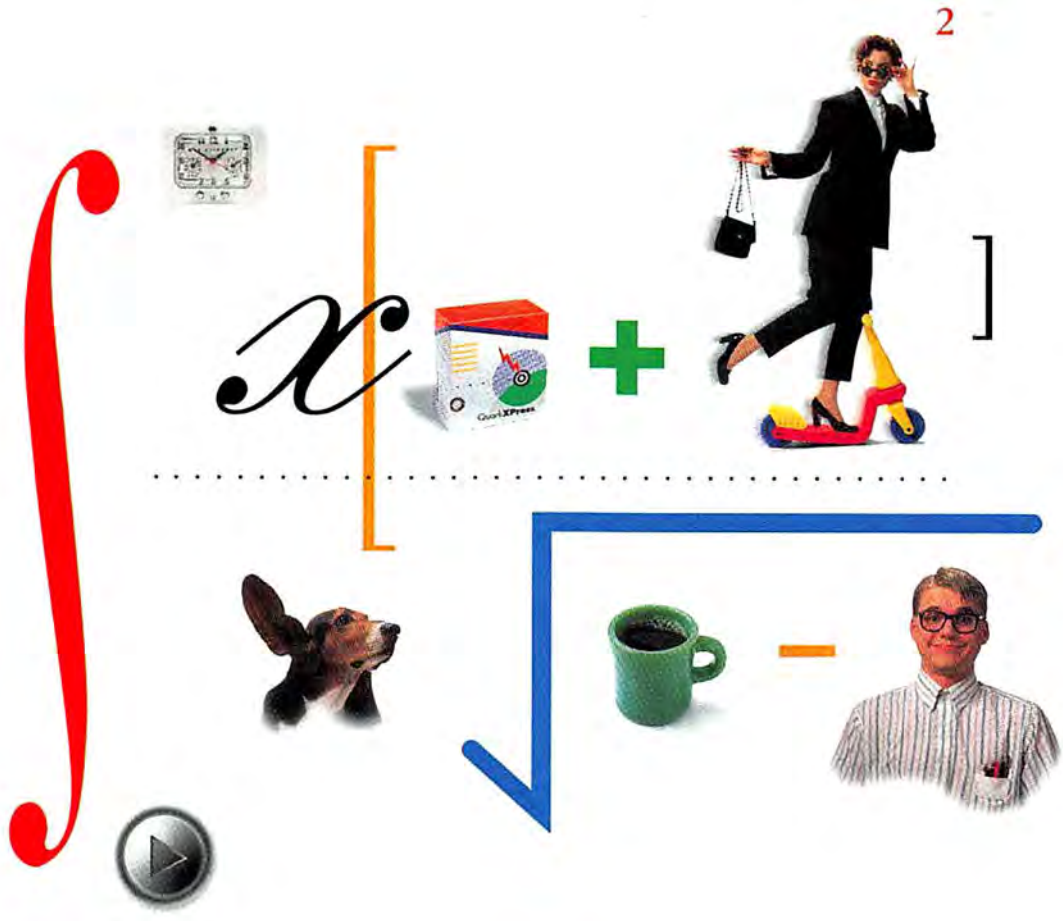
SoftKey
800-227-5609
510-505-6720

Sumeria
415-904-0800

Virtual Media Works
408-739-0301

Voyager
800-446-2001
212-431-5199

Designer math.



[QuarkImmedia.]

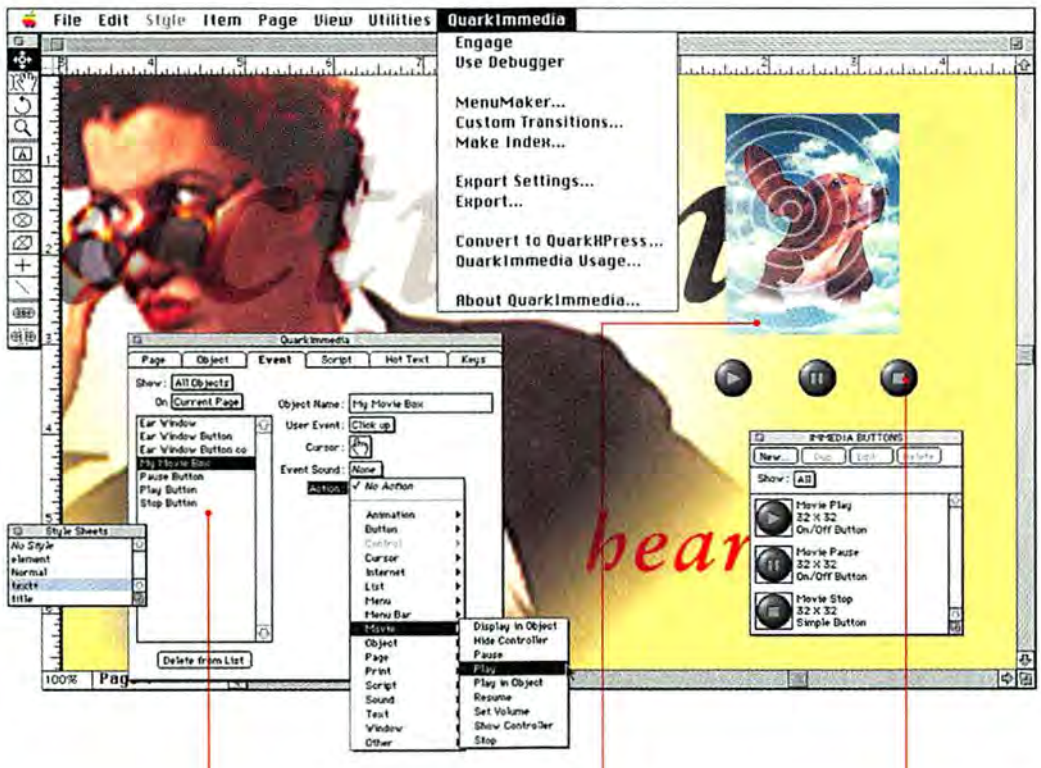
Multimedia is the problem. QuarkImmedia is the solution.

QuarkImmedia™ makes it easy to add multimedia and online publishing to your portfolio.

That's because it builds on skills you already have. You know QuarkXPress,™ so you already understand QuarkImmedia. Use QuarkImmedia to leverage your existing software, knowledge, and content (as well as your clients') as you explore new media and new opportunities. Create compelling multimedia communication for delivery via CD-ROM, disk, intranet, the Internet, *and* print—or all of them simultaneously. QuarkImmedia lets you factor sound, video, animation, and interactivity into your design solutions without the hassle of programming, tagging, or coding.

Now you can count on the same degree of design flexibility and type control on screen that you've come to expect on paper. And with the QuarkImmedia Design Tool you can generate high-end multimedia projects anyone can view and interact with: the royalty-free QuarkImmedia Viewer works in concert with popular browsers such as Netscape Navigator, providing seamless navigation between QuarkImmedia and HTML Web sites.

Your options have just increased exponentially.



The six-in-one QuarkImmedia palette provides access to core features from one location.

Items in a QuarkXPress layout become objects in a QuarkImmedia project.

Use interactive objects to navigate, activate scripts, and control dynamic media elements.

Put your ideas in motion.

CIRCLE **5** ON READER SERVICE CARD

www.quark.com 1·800·788·7835 Ext. 3007

Quark and QuarkXPress are trademarks of Quark, Inc., Reg. U.S. Pat. & Tm. Off. QuarkImmedia and the Quark logo are trademarks of the Quark companies. All other trademarks are the properties of their respective owners.

QUARK™

The Burden of PROOF

ACCURATE COLOR PROOFS ARE VITAL TO DESKTOP PUBLISHERS. MACUSER LABS TESTS EIGHT DYE-SUBLIMATION PRINTERS AND PICKS THE BEST OF THE BUNCH.

DESKTOP-PUBLISHING PROS take their color seriously. Color must be accurate from start to finish, from photo to final press output. A surefire way to ensure that your four-color layouts are accurate is to proof them before they go to press — you'll save guesswork, time, and money. But in order to proof successfully, you need a way to make sure your prints match what you see on your monitor and you need a printer that can simulate a variety of printing-press technologies. Speed is also an important consideration.

With their ability to produce continuous-tone, photographic-quality images, dye-sub printers are the printers of choice for serious desktop publishers. They offer a more convenient, affordable proofing method than do Matchprint proofs created on-press. To find out which of the eight latest dye-sub printers — ranging in price from about $6,000 to $20,000 — makes the best color proofing system, MacUser Labs put each printer through its paces. We looked at print quality, speed, and the color-management tools that ship with each. With one exception, all the printers support full-bleed, tabloid-sized media — an important feature for proofing two-page color spreads.

In general, each printer we tested produced good-looking results, but there were some wide discrepancies in color accuracy. And when our experts looked closely at image details, other strengths and weaknesses appeared. In the end, one printer stood out from all the rest: The Tektronix Phaser 480X not only boasts the best looking prints but it also provides flexible, easy-to-use color-correction features.

BY ROMAN LOYOLA

PHOTOGRAPHY / ADRIAN ORDENANA

DYE SUBLIME

Dye-sub printers are like laser and inkjet models in that they use dots to create images on paper. But what makes dye-sub printers different and able to produce photographic-quality images is the way in which they apply the dots. Rather than applying them in clusters, as color laser and inkjet printers do, dye-sub printers use a grid that allows colors to blend together. Here's an example: To make red, laser and inkjet printers place a yellow dot and a black dot very close to a magenta one. The result fools the eye into seeing red, but there's no mistaking the distinctive dot pattern that characterizes output from these printers. Dye-sub printers, on the other hand, are able to produce a true red by blending dyes. Another advantage is that dye-sub printers can vary the density of each color by applying different degrees of heat to the dyes.

A dye-sub ribbon has one panel each of cyan, magenta, yellow, and black dye. The printer's heating element changes the dye on the ribbon from a solid to a gas, which is diffused onto chemically coated paper. As the dye diffuses, it blends with other dots, helping to create the distinctive continuous-tone output that is the hallmark of dye-sub printers.

Conventional printer wisdom holds that the higher the resolution, the better the image quality, but this doesn't hold true for dye-sub printers reproducing photographic images. Although the eight printers we tested support 300-dpi resolution, rather than the 600-dpi-and-higher resolution of laser and inkjet printers, the lower resolution doesn't affect the quality of photographic images, because there are no dot patterns to contend with.

The cost per page with dye-sub printers is considerably higher than that with laser and inkjet printers, however. Factoring in ribbons and media, the cost per page is about $7. But then again, when you consider the cost of using a Matchprint proof for proofing — about $150 — you still come out way ahead over time.

PHOTO FINISH

Of all the criteria we used to evaluate the printers, we gave the most weight to image quality. If a dye-sub printer can't produce high-quality, color-accurate images, its value as a proofing device is severely compromised. To rate the printers for image quality, we used a variety of test images. We printed an Adobe Photoshop file containing a tabloid-sized photo from the Graphic Arts Technical Foundation (Pittsburgh, PA; 412-621-6941) that had a wide range of colors as well as skin and other natural tones, varying degrees of highlight and shadow, fine detail, and a gray gradient background. In addition, we printed a two-page spread, created with QuarkXPress, containing TIFF and EPS images as well as text. Last, we printed a technical illustration created with Adobe Illustrator.

Because the Kodak Digital Science 8650 PS doesn't support tabloid-sized media, we resized the image to fit on letter-sized media and printed the two-page layout as two separate pages to test it. All of our test files were printed at commercial-press quality, and the results were judged by a jury of publishing experts, who compared the printers' output to Matchprint proofs created from the same test files.

The clear winner for image quality was the Tektronix Phaser 480X. Its color accuracy was quite good, highlights and shadow detail were excellent, and metallic objects didn't produce "flares" in the image. The gray background in the GATF image reproduced evenly and accurately. We did notice a very slight magenta cast, which gave natural tones a somewhat reddish appearance (we were able to use the printer's color-correction tools to easily adjust for the cast), and the colors weren't quite as saturated as those from some of the other printers.

A close second for image quality was the NewGen ChromaxPro. Its color accuracy was very good, and like the Tektronix printer, it maintained a high level of sharpness and detail in our GATF image.

The most disappointing output was that from the Imation Rainbow Model 2730, one of the most expensive printers we tested. The images appeared washed out, and a brownish hue covered everything. Registration was poor too — in some areas, we could distinguish the separate color plates.

Our jury also found fault with output from the Seiko ColorPoint 835 PS. With the GATF file, the Seiko printer had trouble with highlights, creating "hot spot" effects, and the colors were inaccurate. One bonus the Seiko — and the Fargo — printer offers over the others in our roundup is that it can double as a thermal-wax printer. This ability means that you can use thermal-wax mode to produce rough proofs that cost

THE BOTTOM LINE

WITH THEIR ABILITY TO PRINT CONTINUOUS-TONE, photographic-quality images, dye-sublimation printers make ideal color proofing systems. Although image quality is by far the most important qualification, a color proofer should come with a capable, well-designed set of color-management tools as well. In rating the eight printers in this roundup, we also considered price and speed.

+ / OUTSTANDING ● / ACCEPTABLE − / POOR

RATING	PRODUCT	PRICE	IMAGE QUALITY	COLOR MANAGEMENT	SPEED
★★★★½	**Tektronix Phaser 480X**	●	+	+	●
★★★★	NewGen ChromaxPro	●	+	+	−
★★★½	Imation Rainbow Model 2715	●	●	+	−
★★★½	Kodak DCP 9000	●	●	●	●
★★★	Fargo Pictura 310e	+	●	●	−
★★★	Imation Rainbow Model 2730	●	−	+	+
★★★	Kodak Digital Science 8650 PS	●	●	●	●
★★★	Seiko ColorPoint 835 PS	●	−	●	●

Tektronix Phaser 480X — BEST BUY

Boasting an unbeatable combination of good image quality and solid color-management tools, the Phaser 480X is our top choice for color proofing. Its superb color accuracy and easy-to-use software make it a standout in its field.

LISTING IS ALPHABETICAL WITHIN GROUPS OF EQUAL MOUSE RATINGS.

For our Internet customers with questions, AT&T uses the most advanced technology ever known in the history of the world.

A live human being.

Sign up for AT&T WorldNet℠ Service and get personal customer care 24 hours a day, plus a whole lot more ☛ Fast economical access (thanks to over 200 local access numbers, each running up to 28.8 Kbps) ☛ For AT&T long distance customers, unlimited Internet access for just $19.95/mo. or one year trial where the first five hours/mo. are free* ☛ Plus, unsurpassed AT&T Network reliability.

AT&T

www.att.com/worldnet/wis • 1 800 WORLDNET x115 • ALSO AVAILABLE FOR MAC

* Local, long distance or 800 facility access charges to reach AT&T WorldNet Service and additional access charges or taxes that may be imposed on members or on AT&T WorldNet Service may apply to all usage. Five-hour offer limited to one AT&T WorldNet account per billed telephone number prestubscribed to AT&T for residential customers and per qualified user for business customers and requires minimum of one hour of usage per month; must register by 12/31/96. $2.50 per hour charge applies after five hours. Non-AT&T long distance customers can choose from two usage plans: unlimited usage for just $24.95 per month or for only $4.95 a month get three hours of usage. ($2.50 per hour charge thereafter). Unlimited usage offer limited to one log-on per account at any time. Other terms and conditions apply. ©1996 AT&T. All rights reserved.

a lot less per page than dye-sub output and that you can use to print business graphics.

Images printed by the Kodak DCP 9000 offered clear evidence that the quality of the color-correction tools that ship with a printer can make a big difference to image quality. Even though the DCP 9000 uses the same print engine as the Seiko printer, its output looked much better — its color accuracy was good, and image details reproduced well. When we compared the Kodak printer's output with the Matchprint proofs, however, it was quite dark.

The $10,000 Imation Rainbow Model 2715 and the $5,995 Fargo Pictura 310e use the same Fargo 310 print engine. But they differ not only in price but also in output quality. We preferred images printed by the Rainbow Model 2715 — the colors were quite accurate and better than the Fargo printer's. Both printers produced better results than the Model 2715's more expensive sibling, the Model 2730, however.

Although dye-sub printers excel at printing photographic images, their weakness lies in printing font sizes typically used for body text. The Kodak DCP 9000 had the best text output of the eight printers, maintaining serifs with few jagged edges. The other printers produced text that was either too heavy or jagged or broken. In addition, none were able to produce a good-looking black for text — in every case, characters were more a deep dark brown than black.

COLOR MANAGEMENT

Publishing pros know that color management is a vital aspect of color proofing. Not only should the output from your proofing device match the colors on your monitor but it should also match the final output you get from the press. Each of the printers we tested comes with a set of tools for adjusting color. We used these tools not only to see how accurate they were but also to find out how easy they were to use. We found that all the bundled software tools are more or less adequate, but three bundles stand out from the rest.

We were most impressed by the tools that come with the Tektronix Phaser 480X. Nine color-matching profiles are available through the printer driver, plus you can get additional color profiles from Tektronix's BBS. The calibration utility, PhaserMatch, offers an easy and simple approach for editing profiles and calibrating the printer. You can also adjust for the target paper color as well as tinker with individual CMYK values and dot gain.

The 3M Rainbow Color Proofing System, available with both Imation printers, isn't as straightforward to use as Tektronix's offering, but it provides options that experienced users will appreciate. With the 3M software, you can perform RGB proofing, print eight-color separations, save files that have been RIPed (raster-image-processed), and adjust for particular press-media tints.

BOOKMARK

RELATED INTERNET SITES

Apple's ColorSync 2.0 Overview Page
An in-depth discussion of color and the benefits of color management for printing.

GO TO http://www.zdnet.com/macuser/mu_1296/features/dyesub.html

Instead of being software-based, the NewGen ChromaxPro's color-management system is built into the printer. NewGen uses its proprietary ChroMATCH system, which is embedded in the PostScript Level 2 RIP. Color-matching chores are reduced to a single simple task: You choose either the 3M Matchprint or the Fuji ColorArt option, depending on your final output media. When the ChromaxPro prints, it makes adjustments according to your selection. For those who need more options, NewGen provides a Full Gamut option — available via the printer's front control panel — for use with other third-party systems. NewGen plans to provide additional proofing-system profiles in the future.

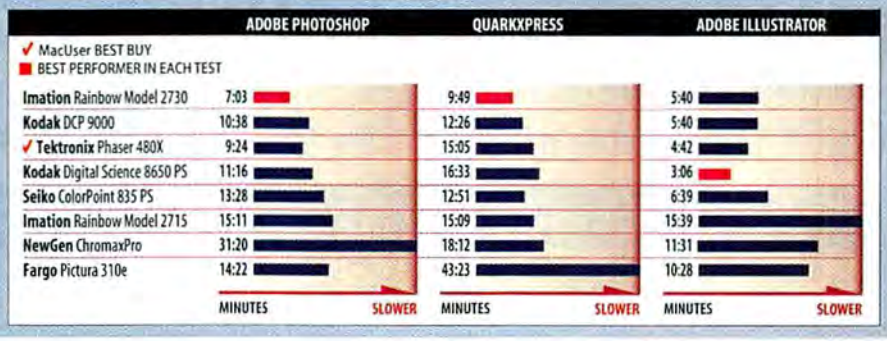
The Seiko printer provides color-management tools conveniently through its printer driver and via the MatchPoint Tools calibration utility. Through the driver, you can adjust for RGB and CMYK conversions as well as select a smoothing method and resolution. MatchPoint Tools consists of three applications you can use to compensate for calibration, color adjustment, and dot gain for final press output.

The Kodak Digital Science 8650 PS uses UltraColor, Kodak's

SPEED-TESTING DYE-SUB PRINTERS

We created three tests to gauge the speed of each dye-sub printer. For our Adobe Photoshop test, we used a file from the Graphic Arts Technical Foundation. Our QuarkXPress file consisted of a two-page, full-bleed color spread that incorporated a TIFF and an EPS image as well as some text, and our Adobe Illustrator document helped us evaluate RIP performance with a real-world EPS file.

Our test platform was an Apple Power Mac 9500/132 with a 1.2-GB hard drive and 128 MB of RAM. We replaced the Power Mac's standard ATI graphics card with a Radius Thunder/30 graphics card that was set for 24-bit color. Each system was connected to a Radius PressView 17 SR monitor calibrated to D50, using a Radius ProSense calibrator. With the exception of the two Imation printers, which need a host Mac for print processing, we used Ethernet. We printed all files on tabloid-sized paper, except in our tests of the Kodak Digital Science 8650 PS, which prints only on letter-sized media.



what are YOU looking AT?

Well, if it's the sharpest, cleanest, most vivid image you've seen on a display monitor in years, then it's probably a Panasonic® PanaSync™ Monitor. And if it's not a PanaSync you're looking at, keep reading. You're in for an eye opening experience.

Let's start with the most extensive warranty and customer support program in the industry. You simply won't find anything like it.

48-Hour Swap

Panasonic provides a three year warranty on parts, labor and the CRT. We offer an On-Site Exchange program during the first year of ownership for no additional charge. And we provide a 24 hour, 7 day-a-week Customer Support Hotline.

This is what *MacUser* said when they took a look at our program. "Panasonic deserves recognition for its high level of customer support. It's the only company to offer around-the-clock support, seven days a week."**

But that's not the only place we make the competition look bad. The PanaSync/Pro P17 is the price/performance leader. Take a look at the comparisons. Our P17 provides higher refresh rates than Apple, Radius and Sony, and it has a maximum resolution of up to 1600 x 1280. The result is one of the sharpest images available.

The P17 is just one of Panasonic's complete line of 15" through 21" monitors that are far better than the competition.

Model	Dot Pitch (mm)	Max. Res. (H x V)	H-Scan (kHz/NI)	Viewable Area	Warranty (Years)	ARP*
PanaSync/Pro P17	0.25	1600x1280	30-86	16.0"	3/1 Swap	$819
AppleVision 1710	0.25	1280x1024	30-82	16.1"	1	$1,077
Radius PrecisionView 17	0.25	1024x768	31-64	16.0"	1	$789
Sony 17seII	0.25	1600x1200	30-85	16.0"	3 P&L, 2 CRT	$963

Whether part of a Home System or CAD/CAM workstation, our Entry, Standard, Professional and PanaMedia™ series provide the feature set you're looking for.

When you look at the whole picture, we're sure you'll agree, Panasonic has the monitors you should be looking at.

To find out more about the complete line of Panasonic PanaSync Display Monitors, visit our Web-site at www.panasonic.com or call us at 1-800-742-8086, Ext. MN13.

Panasonic
Computer Peripheral Company

We Make Your PC Come Alive.

ENTRY SERIES | STANDARD SERIES | PROFESSIONAL SERIES | MULTIMEDIA SERIES

CIRCLE **79** ON READER SERVICE CARD

*Average retail price for all competitive models provided by ARS, Inc. as of July 31,1996. **December 1995

All product/brand names are trademarks or registered trademarks of their respective holders.

MN13-MACU

THE CLOSER YOU LOOK / *aspiring color laser printers*

DYE-SUBLIMATION PRINTERS MAY BE GETTING a run for their money from the latest crop of 600-dpi color laser printers. The $12,500 Canon C LBP 360PS, the $10,699 Digital Colorwriter LSR 2000, and the $8,999 IBM Network Color Printer each combine an EFI Fiery XJE controller and a Canon engine to offer a kind of continuous-tone printing. Continuous-tone printing is what enables dye-sub printers to produce photographic-quality images — an essential feature for desktop publishers doing color proofing.

Dye-sub-printer makers define continuous-tone printing as the ability to vary the density of each pixel to produce 1 of 256 shades of color and to blend colors, rather than using strategically placed dots to fool the eye into seeing a particular color. As a result, they deliver true color without having to resort to halftoning, as inkjet, thermal-wax, and color laser printers have traditionally done.

Canon, Digital, and IBM, however, are defining continuous-tone printing a little differently as they promote their new printers. Although color laser printers are incapable of varying the density of each pixel, the data received by the new printers from the Fiery controller is, in fact, continuous-tone multibit data (8 bits per cyan, magenta, yellow, and black), the same information that dye-sub printers receive. The controller processes the multibit data and sends it to the engine, which is able to interpret it and apply the colors. Even though other output technologies could, theoretically, use the controller to process multibit data, the print engine would have to have the ability to digest all the information and transfer the images to paper — not a trivial task.

The $12,500 Canon C LBP 360PS color laser printer combines the EFI Fiery XJE controller with a Canon engine.

But although the definition of *continuous-tone* may differ somewhat between makers of dye-sub and color laser printers, the proof is in the output. From a normal reading distance, one foot, output from the Canon, Digital, and IBM printers looks to be photographic-quality. Gradients are smooth and subtle, and colors are vibrant and realistic. But a closer look reveals the telltale signs of halftones — namely, dots and specialized screening.

The bottom line? Image quality from color laser printers has jumped by leaps and bounds in the past few years. But even though images from the latest trio of color lasers may look nearly identical to those printed by dye-sub printers when viewed from a distance, discerning desktop publishers are not likely to be fooled — yet. / TONY BOJORQUEZ

proprietary rendering method for simulating the colors on your monitor. The Kodak DCP 9000 also uses UltraColor, but it lets you select from a variety of profiles. You can download additional profiles if the one you need isn't installed, and you can use the calibration utility that accompanies the DCP 9000 to adjust the printer for the media your press uses.

DYE-SUB DERBY

To gauge printing speed, we connected each printer (with the exception of the two Imation printers, which don't have Ethernet connections) via Ethernet to an Apple Power Macintosh 9500/132 with 128 MB of RAM. If the printer used its own onboard processor and RAM, we equipped it with

FEATURES OF DYE-SUB PRINTERS

✓ MacUser BEST BUY	FARGO PICTURA 310E	IMATION RAINBOW MODEL 2715	IMATION RAINBOW MODEL 2730	KODAK DCP 9000
List price (as tested)	$5,995	$10,000	$18,500	$17,995
RAM (standard, max., as tested)	NA	NA	NA	48 MB, 112 MB, 48 MB
Standard ports	serial, parallel	serial, parallel	SCSI, parallel	Ethernet*, parallel, SCSI[†]
Ethernet	none	none	none	standard
Hard-drive capacity	none	none	none	optional external
PostScript type and level	Adobe Level 2 CPSI[◊]	Adobe Level 2 CPSI[◊]	Adobe Level 2 CPSI[◊]	Adobe Level 2
Number of ROM-resident fonts	none	none	none	39
Maximum image area	11.95 x 17.4 in.	11.95 x 17.4 in.	12.2 x 18.1 in.	12.16 x 18.0 in.
Warranty	1 year	180 days	90 days	6 months
Company	Fargo Electronics Eden Prairie, MN 800-327-4622 612-941-9470 http://www.fargo.com/	Imation Oakdale, MN 800-257-8488 612-737-9545 http://www.imation.com/	Imation Oakdale, MN 800-257-8488 612-737-9545 http://www.imation.com/	Eastman Kodak Rochester, NY 800-235-6325 716-726-7260 http://www.kodak.com/

*Has both 10BASE-2 and 10BASE-T ports. [†]One for connecting to host, one for an external hard drive. [‡]Ethernet is standard on the model we tested. [◊]Software RIP.

enough RAM to process a four-color print job. One word to the wise: If your print jobs are four-color, not three-color, be sure the printer you buy has enough RAM. The standard RAM configuration for some printers is sufficient only for three-color printing. And if you need to do trapping and other proofing tasks, you'll need even more. We also used Radius Thunder/30 graphics cards, set to 24-bit color; Radius PressView 17 SR monitors, calibrated to a color temperature of D50 (the standard for desktop publishing); and Radius ProSense calibrators, for calibrating each system.

The overall fastest printer we tested was the Imation Rainbow Model 2730. It connects to your Mac as a SCSI device — a drawback if your SCSI chain is full. Fortunately, it has two SCSI ports, so you can put it anywhere in your SCSI chain. Unfortunately, it doesn't come with a SCSI cable. One other thing to consider: The Rainbow Model 2730 doesn't have an onboard processor or RAM; it requires the host Mac to perform all processing.

Our image-quality champ, the Tektronix Phaser 480X, was third overall in speed, behind the Kodak DCP 9000. The Imation Rainbow Model 2715 produced good-looking output for its price, but we had to wait a long time to see it. Like the Model 2730, the Model 2715 uses a dedicated Mac for processing, but it has a serial interface — it took more than 15 minutes to print each of our test files. The Fargo Pictura 310e was another slow performer, taking more than 40 minutes to print our QuarkXPress document.

The speed of the NewGen ChromaxPro using the standard 48 MB of RAM was disappointing. NewGen claims that installing more RAM allows the printer to process larger image segments, resulting in faster printing speeds. However, before you run out and buy a ChromaxPro, you should determine the maximum amount of RAM you'll need. Adding RAM later can be inconvenient, because you can't just snap new SIMMs onto the motherboard as you can with most other printers. In addition, you must swap out the hard drive, since its controller is configured for the printer's currently installed RAM. In order to upgrade the printer, you have to cart it to an authorized NewGen dealer, who will in turn send it away to have the new RAM and hard drive installed. This process takes about two days.

FINAL PRINT

Our favorite among the eight dye-sub printers we tested was the Tektronix Phaser 480X — its top-notch image quality and easy-to-use software tools were an unbeatable combination. But before you run out and buy one, be sure to work out how much RAM you'll need — plan on at least 48 MB for four-color printing and even more if you want to do trapping and overprinting.

We were also impressed with the NewGen ChromaxPro's image quality. An added plus is the printer's ChroMATCH technology, which reduces color management to one simple step. However, the printer's design can make upgrading more of a hassle than it should be.

For those on a budget, the Imation Rainbow Model 2715 is an attractive alternative. For several thousand dollars less than the Tektronix and NewGen printers, it offers acceptable color accuracy. The one caveat is that it doesn't have an onboard processor — a host Mac is needed to do the grunt work of processing print jobs.

Before coming to *MacUser*, Associate Editor Roman Loyola learned the tricks of the printing trade with the Alameda Newspaper Group. MacUser Labs Associate Project Leader Martin Wong managed the testing for this report, assisted by Project Leader Rick Oldano. Printer consultant Tony Bojorquez also contributed to this report.

KODAK DIGITAL SCIENCE 8650 PS	NEWGEN CHROMAXPRO	SEIKO COLORPOINT 835 PS	✓ TEKTRONIX PHASER 480X
$10,795	$15,995	$19,100	$19,995
32 MB, 64 MB, 48 MB	48 MB, 192 MB, 48 MB	28 MB, 136 MB, 92 MB	32 MB, 112 MB, 96 MB
LocalTalk, parallel, SCSI	LocalTalk, parallel, serial	LocalTalk, serial, parallel, Ethernet, SCSI	LocalTalk, parallel, serial
optional	optional ($499)	standard	optional ($595)[6]
optional external	170 MB	256 MB	optional external
Adobe Level 2	Phoenix Level 2	Adobe Level 2	Adobe Level 2
35	35	39	39
8.0 x 12.0 in.	11.81 x 17.52 in.	12.48 x 19.88 in.	11.9 x 17.2 in.
1 year	1 year	1 year	1 year
Eastman Kodak Rochester, NY 800-235-6325 716-726-7260 http://www.kodak.com/	NewGen Systems Costa Mesa, CA 800-756-0556 714-641-8600 http://www.newgen.com/	Seiko Instruments San Jose, CA 800-888-0817 408-922-5900 http://cgg.seiko.com/	Tektronix Wilsonville, OR 800-835-6100 503-682-7377 http://www.tek.com/

Virtual Pool from MacPlay has all the angles and shots of the real game—and then some. Features 4 great pool games, full-motion-video library, realistic physics and geometry, easy multiplayer modes, realistic 3-D perspective and graphics plus a musical jukebox.

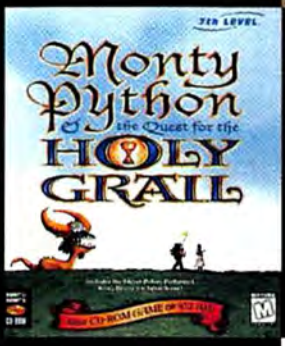
Five hundred years ago, Europe's conquering heroes pursued dreams of a new world. MacPlay's Conquest of the New World is a strategy game where you command explorers, settlers and mercenary soldiers as they discover a new world and build the ultimate nation.

You Don't Know Jack, Volume 2, is the bilarious sequel to the original award-winning game. This Jack comes complete with 800 all-new questions, new question types, celebrity guest appearances, new features and more. From Berkeley Systems.

In Zork Nemesis, you're beckoned to the Forbidden Lands, a cursed world occupied only by the tortured spirits trapped there. Travel through 5 mind-bending worlds to discover the ancient secret of alchemy that will free the trapped souls from evil's grip. From Activision.

Is that the

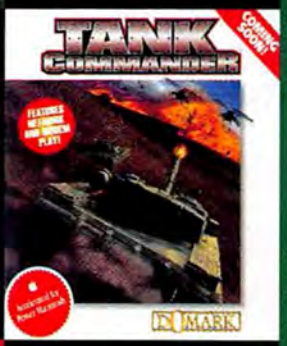
MacSoft's Terminal Velocity offers fast 3-D texture-mapped graphics, full 360-degree flight movement and 7 weapons of extraordinary destruction as you fight your way through 9 unique planets with an awesome array of air-to-air and air-to-ground combat action.



The best CD-ROM game of 932 A.D.—Monty Python and the Quest for the Holy Grail from 7th Level, Inc. It will take you on a romp through King Arthur's England, uncovering clues, solving puzzles and playing wholesome games like "Burn the Witch" and "Spank the Virgin."

Westwood Studios' Command and Conquer takes you into a gritty, high-tech world where the art of electronic intelligence and covert surveillance reigns supreme. Where guerrilla strategies and savage combat are the norm. Muster forces and lacerate your enemies to the bone.

Tank Commander by Eidos Interactive slams you into the cockpit of an M1 Abrams tank as you test your split-second-decision skills against enemy tanks in over 25 fully textured missions. Destroy T-72, Leopard and Challenger tanks with over 7 weapons.



With its incredibly realistic flight models, 3-D photo-realistic landscapes and the use of real-world physics, Flight Unlimited re-creates the most accurate sensation of aerobatic flying ever experienced on the Macintosh. For best results, play before lunch.

Origin Systems' Wing Commander IV is one of the latest space-combat games for the Mac. Take on the role of Colonel Blair, played by Mark Hamill in breathtaking space battles and heart-pounding drama, as you fight your way through the most spectacular Wing Commander yet.

Get ready for the biggest adrenaline rush of the holiday season. We're talking new games for the Mac.® We're also talking sweaty palms. Heart-pounding exhilaration. Stomach-in-the-throat thrills—the works. And here's the best part: with thousands of titles to choose from, you may never come down from that gaming high. Piqued your interest? Good.

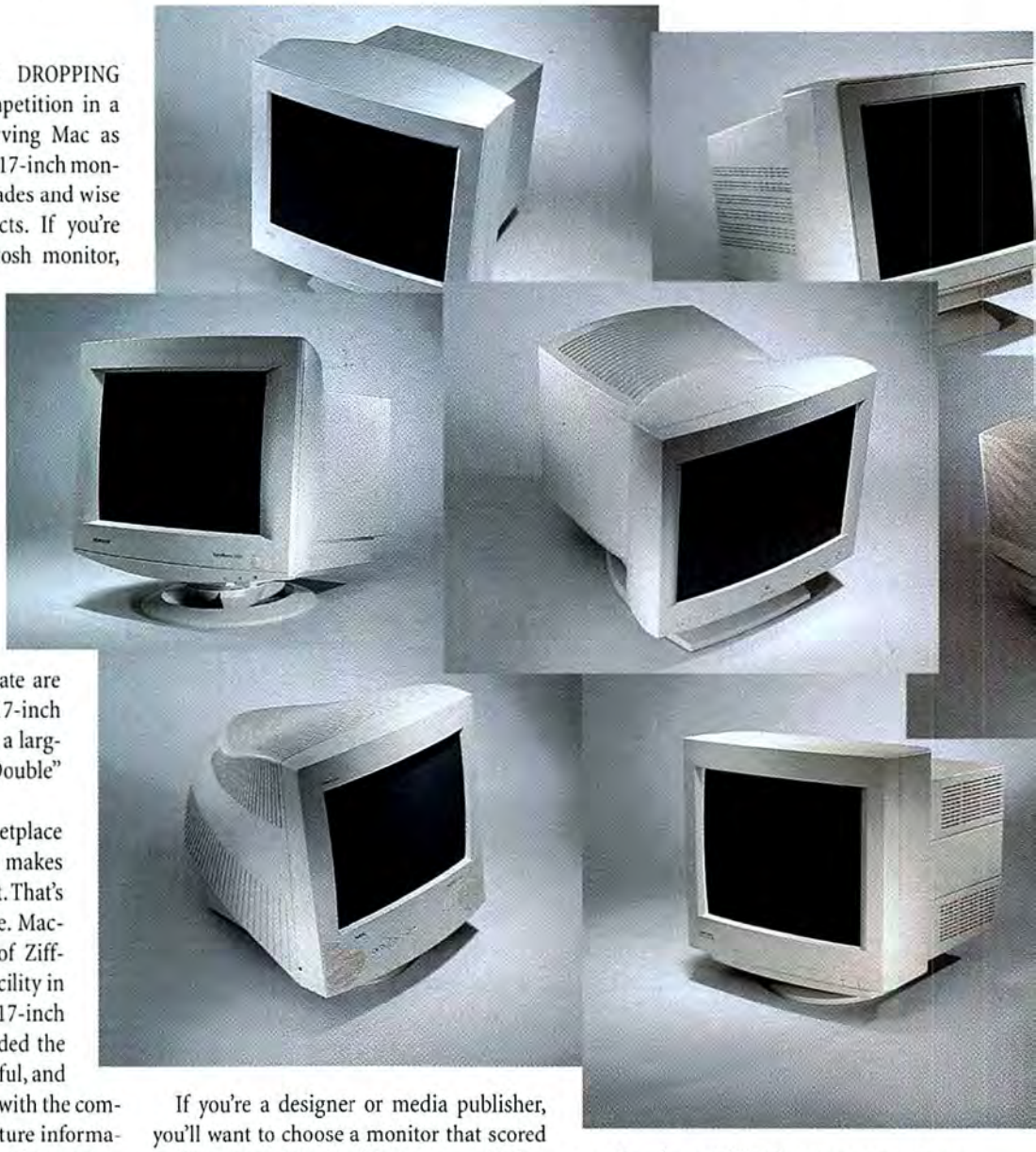
© 1996 Apple Computer, Inc. All rights reserved. Apple, the Apple logo, Mac, Macintosh, the Mac OS logo and Power Macintosh are registered trademarks of Apple Computer, Inc. "All

smell of chestnuts burning? Or just your neurological receptors going into overdrive?

So now you're probably wondering how to get your twitching fingers on these games. Just visit stores like CompUSA, Staples, Micro Center and Fry's Electronics. Or, flip through any Mac mail-order catalogs. Or, hop on the Net. But no matter where you go to find them, remember to look for the smiling Mac OS logo. (All great software wears this face.™) If you're ready to take your adrenal glands on the ultimate ride, visit www.macsoftware.apple.com. And learn more about games for your Macintosh® and how to find them. Of course, if you want to, you can always use a phone: **call 800-500-4862.**

great software wears this face™ is a trademark of Apple Computer, Inc. All other products are trademarks or registered trademarks of their respective companies.

17-Inch Monitors: The



WITH PRICES DROPPING due to stiff competition in a marketplace serving Mac as well as PC users, 17-inch monitors have become smart upgrades and wise choices as entry-level products. If you're looking for your first Macintosh monitor, you're better off paying $300 or so over the price of a 14-inch model to get a 17-inch monitor you won't rapidly outgrow. And compared to a 20- or 21-inch model, a 17-inch display system offers as many resolution choices — some support up to 1,600 x 1,200 pixels — in a smaller, sharper, and much less costly package. In fact, many professionals who require plentiful screen real estate are choosing to add a second, 17-inch monitor rather than switch to a larger model (see the "Seeing Double" sidebar).

Although a crowded marketplace makes for lower prices, it also makes buying decisions more difficult. That's where we can be of assistance. MacUser Labs enlisted the help of Ziff-Davis Labs' monitor-testing facility in benchmarking forty-seven 17-inch monitors, to find which provided the brightest, sharpest, most colorful, and least distorted images. Armed with the comprehensive test results and feature information for these monitors, our Best Buy recommendations, and our general advice for smart shopping in the monitor marketplace, you'll be well prepared to make a wise choice.

Focusing on Test Results

In looking at the results of our image-quality tests, you should consider not just which monitor is best, in general, but also which is best for *you*. Here are some tips on individual tests you may want to pay particular attention to, based on how you'll be using the monitor.

If you're a designer or media publisher, you'll want to choose a monitor that scored well in our Color Tracking test — higher scores indicate greater color accuracy. The Daewoo CMC-1703B, Mitsubishi Diamond Scan 17HX, Sampo AlphaScan 760, and WYSE WYSEvision WY-17PS tied for top honors, with scores of 98 percent — near perfection. Although the MAG InnoVision DX700T, which scored 87 percent, is OK for business use, we recommend that all buyers stay away from the MAG InnoVision DJ702, with its dismally low score of 60 percent.

If you do quite a bit of word-processing or spreadsheet work, pay close attention to the results of our MTF Sharpness test. Scores above 50 percent are acceptable, but higher scores are better. Although the NEC MultiSync M700 scored the highest in this test, with a commendable 85 percent, it did not fare as well in our Misconvergence test, also a determining factor in perceived sharpness — nearly a third of the monitors we tested fared better. For scoring high marks on both the MTF Sharpness and the Misconvergence tests, top honors go to the CTX VL700, Sony Multiscan 17sfII, Samsung SyncMaster 17GLi, and NSA/Hitachi SuperScan Elite 17.

PHOTOGRAPHY / MICHAEL FALCONER

Bigger Picture

We recommend any of these for word-processing and spreadsheet work for which color accuracy is not critical.

Also, if you work in a room that has particularly high ambient brightness or if your system is next to a window, choose a monitor that scored well in our Brightness test. All the monitors we tested for this report had acceptable scores, but those whose scores came in above 25 footlamberts are ideal for well-lit offices. Even though you may not need all the brightness a particular monitor can provide, it's a good idea to note which systems have the potential to give you extra brightness, because a variety of environmental conditions might change. The headlight-bright Apple AppleVision 1710 Display scored 49 footlamberts, making it an ideal choice for even the brightest work environments.

Checking Specs

When you have 50 or so monitors to choose from, you can afford to be picky about more than just image quality and price. Check out the following specifications for any monitor you're considering: company warranty and repair policies, active screen size, maximum resolution, scan rates, dot pitch, tube type, type of controls, Mac-readiness, and type of glare protection.

Warranty and Repair Policies. Pay particular attention to a monitor's warranty. Very long CRT warranties are great, because even though CRTs tend to be long-lived, they're expensive to replace when they break. Failure of other components is much more likely, so the length of the parts-and-labor warranty is even more important. We recommend that you purchase a monitor that has a long, full parts-and-labor warranty. Also, we recommend buying a monitor from a vendor that has a swap or cross-ship policy, which allows you to take a monitor in exchange for yours so that you can get back to work quickly.

Especially noteworthy is Compaq's on-site service for the first year of ownership (yes, this means that technicians actually make house calls). Finally, since it's quite possible that you can spend time waiting on hold when you call with questions, look to purchase products from vendors that offer toll-free phone support.

Active Screen Size. The viewable image area — measured diagonally from corner to corner — is a consideration if you want to make sure you're getting the maximum possible screen real estate, since not all "17-inch" monitors are alike. In fact, a monitor's viewable image area (determined by the size of the phosphor-coating area inside the rather thick CRT glass) is somewhat smaller than the physical size of the CRT glass, by an inch or more. In certain states, monitor vendors as well as retailers are required to report each monitor's viewable image area in their marketing materials. Since this requirement may tend to confuse buyers, many vendors have renamed their products so as not to explicitly reference the CRT size.

To provide the best information to help you make your buying decision, we measured the viewable area of each monitor's CRT when it was displaying a 1,024-x-768-pixel image generated through a Microvision SuperSpot 200, a fully automated monitor-testing system that measures the sharpness, pincushion distortion, and geometric alignment of each monitor by using a suite of objective, repeatable tests.

On each monitor, we made a reasonable attempt to maximize the image size without causing undue pincushion distortion. The measurements ranged from 15.4 to 16.2 inches, a difference that may sound small, but keep in mind that a larger image area allows for slightly better image clarity and improved overall readability.

Maximum Resolution. In considering the maximum resolution a monitor supports, keep in mind that achieving a given resolution requires capabilities on both ends: your Mac system's and the monitor's. All the monitors featured in this roundup are *autosynchronous,* meaning that they can synchronize to just about all the *vertical-scan rates* of the various resolutions your Mac OS system's built-in display circuitry (or the added circuitry of a graphics card) can provide — the higher the vertical-scan rate, the less the image will flicker. However, although all the display systems can support the Mac's basic 640-x-480-pixel resolution — mandatory for playing many game and multimedia titles — not all can support the

COMMON SCAN RATES

RESOLUTION	VERTICAL-SCAN RATE	HORIZONTAL-SCAN RATE
640 x 480 pixels	66.7 Hz	35.0 kHz
832 x 624 pixels	74.6 Hz	49.7 kHz
1,024 x 768 pixels	74.9 Hz	60.2 kHz
1,152 x 870 pixels	75.1 Hz	68.7 kHz
1,280 x 1,024 pixels	75.0 Hz	80.0 kHz
1,600 x 1,200 pixels	68.7 Hz	85.2 kHz

smart shopper

5 questions to ask when you're shopping for a monitor:

1. Is a Mac adapter in the box or available on request — and can I return or exchange the monitor if it doesn't work with my Mac?
2. If the monitor breaks, can you have me up and running quickly with a replacement?
3. What's the maximum resolution of this monitor with my Mac system (including any added graphics card)?
4. Is calibration software such as Sonnetech's Colorific bundled with the monitor?
5. Does the screen have an antireflective coating?

CRT TYPES / *several ways to make displays*

PICTURE A BEAKER MADE OF THICK GLASS, with an electron gun in its neck, shooting beams through a mask or grille just above the beaker's bottom, which is coated on the inside with phosphors that emit red, green, and blue light. Now turn it on its side so the bottom becomes a monitor's screen — that's your basic CRT, or cathode-ray tube.

The four types of CRTs currently used in computer monitors — shadow-mask, aperture-grille (Trinitron or DiamondTron), CromaClear (slotted shadow-mask), and Pure Flat (flat, slotted shadow-mask; on the horizon at press time) — all share this basic description and work in much the same way. In each case, the electron gun shoots three beams (one to elicit red light, one green, and one blue) rapidly across and down the screen, row by row, with an electromagnetic yoke deflecting the beams in sync with the horizontal and vertical scan rates provided by your Mac's video circuitry. And in each case, the alignment of the openings in the mask or grille with the phosphor pattern on the inside of the screen is critical to ensuring that each beam strikes phosphors of the appropriate color (at which point, they emit light of that color in proportion to the strength of the beam at that moment).

The differences among CRT types lie mainly in three areas: the type of electron gun, the pattern of mask or grille openings (and phosphors), and the roundness or flatness of the screen.

Gun-Assembly Type. The three guns within an electron-gun assembly can be arranged in either a triangular fashion or an in-line pattern (a straight line), with the latter generally providing better beam alignment, for greater image clarity. Shadow-mask CRTs can have either type of assembly. All aperture-grille tubes use an in-line gun — Sony's Trinitron gun uses a single-focus lens, however. Both NEC's CromaClear and Matsushita's Pure Flat CRTs use in-line electron guns.

Mask or Grille Type. This characteristic varies greatly among the four types of CRTs.

In a shadow-mask tube, the mask is a thin plate of metal riddled with tiny holes and each trio of phosphors is arranged in a triangular dot pattern; the angle at which each beam passes through each hole dictates whether it strikes a red, green, or blue dot.

In an aperture-grille tube, the grille is an array of thin, tightly stretched vertical wires; the beams pass between them to strike red, green, or blue vertical phosphor stripes. Two horizontal wires (one-third of the way from the top and from the bottom) prevent vibration of the wires, which could cause alignment problems.

The CromaClear CRT has a shadow mask with slots cut into it, rather than holes, so that more electrons can pass through, and its phosphor coating is patterned in stripes rather than dots. The larger phosphor area and larger shadow-mask openings for every beam are intended to provide greater brightness than in a traditional shadow-mask design.

The Pure Flat CRT uses a flat tension mask — a slotted shadow mask kept under tension in a precisely aligned frame within the CRT. Alignment is critical in a flat-screen, flat-mask design, since the distance of the electron guns from parts of the screen is more variable.

Screen Shape. In general, the flatter the screen, the less likely you are to see distortion and glare — and the more likely you are to need extremely precise alignment. The screens of shadow-mask CRTs tend to have some spherical curvature (think of the curvature at the end of a light bulb), with the better ones being closer to flat. The screens of aperture-grille CRTs have a slight cylindrical curvature (vertically flat but curved horizontally), which produces less glare than a spherical curvature. CromaClear CRTs have "semiflat" spherical screens similar to those on better (and more expensive) shadow-mask CRTs. And the Pure Flat CRTs, as the name indicates, feature a perfectly flat screen, for the least glare of any CRT design.

ANATOMY OF A CATHODE-RAY TUBE

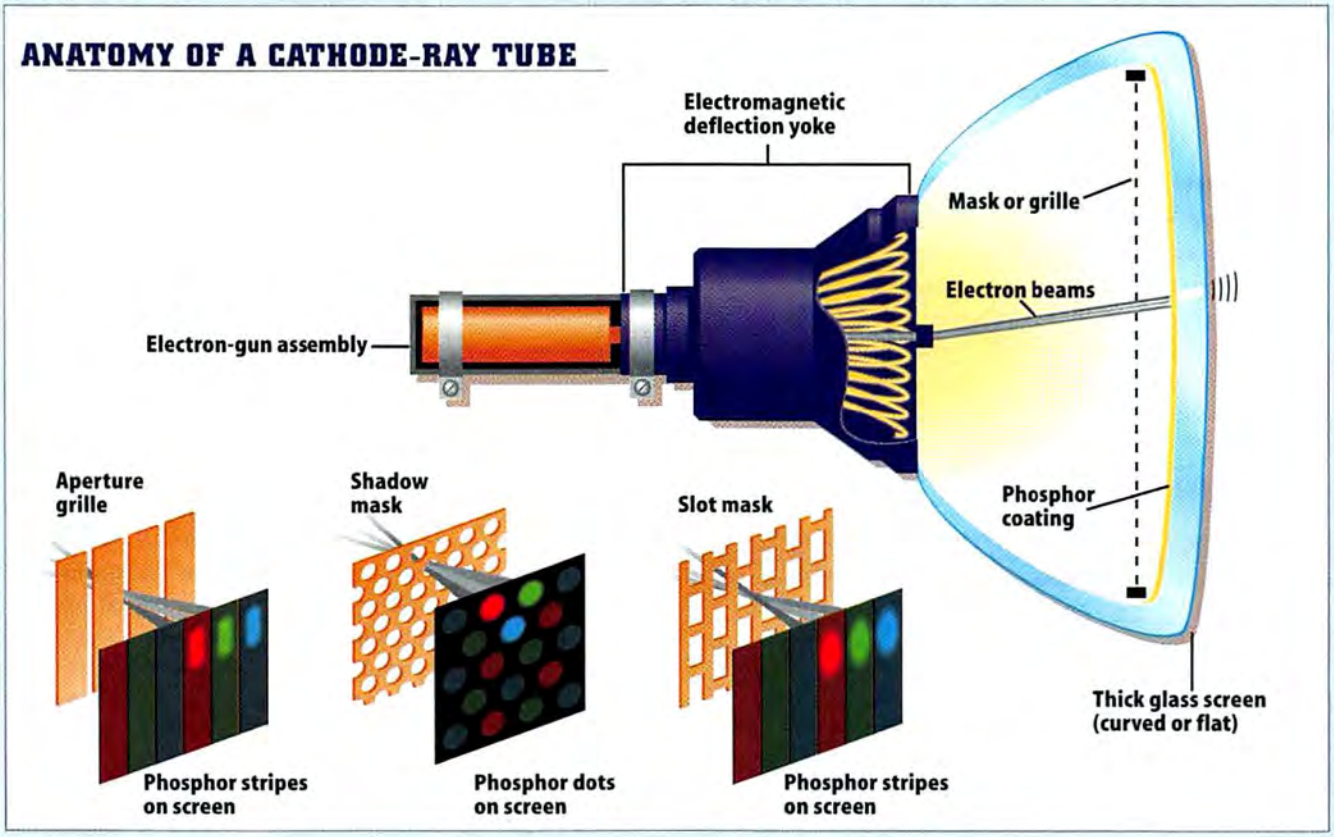


ILLUSTRATION / ANNIE BISSETT

BBEdit 4.0

"...deserves a place in everyone's HTML toolkit."

-MacUser, August 1996

BBEdit Stands Alone

BBEdit is the tool of choice for web page designers because it offers so many powerful features. As an HTML editor, BBEdit offers HTML keyword coloring, drag and drop HTML tools, an HTML-aware spelling checker, and multiple undos. As a web site manager, BBEdit can directly "Open From..." and "Save To..." FTP servers, compare the contents of files and folders, and perform unrivaled multi-file search and replace commands.

BBEdit Works Well with Others

BBEdit also works well with other applications and environments. BBEdit is AppleScript savvy, and is fully integrated with Frontier 4.0 to perform a suite of valuable web-authoring scripts. BBEdit includes tools to check your HTML syntax, so you can use it to proofread code generated by graphical HTML applications. BBEdit is also easily expanded to support new HTML conventions as they hit the scene.

BBEdit is Generous

Bare Bones Software is famous for providing customers with free incremental upgrades, free technical support, free t-shirts, and even free software. To get some free goodies – and check out BBEdit, while you're at it – feel free to stop by our web site.

http://www.barebones.com/freegoodies/

Bare Bones Software, Inc.

P.O. Box 1048, Bedford, MA 01730 • main 617-676-0650 • fax 617-676-0651

BBEdit is a trademark of Bare Bones Software, Inc. All other trademarks and registered trademarks are properties of their respective holders. © 1996 Bare Bones Software, Inc.

CIRCLE **76** ON READER SERVICE CARD

highest resolution your Macintosh system can provide. To be certain a particular monitor meets your needs, check the specs for your Mac's or card's upper limit. Older, NuBus Macs support resolutions of up to 1,152 x 870 pixels (at a vertical-scan rate of 75.1 Hz and a horizontal-scan rate of 68.7 kHz); today's PCI Macs support resolutions of up to 1,280 x 1,024 pixels (at a vertical-scan rate of 75 Hz and a horizontal-scan rate of 80 kHz). Many graphics cards support a resolution of 1,600 x 1,200 pixels (usually at a vertical-scan rate of 68.7 Hz and a horizontal-scan rate of 85.2 kHz). If you are planning to use higher resolutions, we recommend that you shop around for an accelerated-graphics card that supports high scan rates, in order to minimize flicker.

Scan Rates. The vertical- and horizontal-scan rates generated by your Mac's video circuitry — and your monitor's support of these rates — are what allow your monitor to achieve a particular resolution. When you choose a resolution in the control strip or in the Monitors control panel, your Mac's video circuitry generates corresponding scan rates. The vertical-scan rate, often called the refresh rate, is the number of times each image is displayed on the screen per second; because flicker is readily apparent at low vertical-scan rates, we don't recommend rates much below 65 Hz. The horizontal-scan rate dictates how many horizontal lines each image contains. In looking at the range of scan rates for a given monitor, make sure the rates for the resolutions you typically use are supported. The "Common Scan Rates" table lists some scan rates corresponding to typical resolutions.

Dot Pitch. As the "CRT Types" illustration shows, a monitor's image is composed of varying amounts of red, green, and blue light emitted from a fine array of phosphor dots or stripes painted on the inside of the screen. *Dot pitch* (the conventional term, although *stripe pitch* is more accurate in some cases) is a measurement of the fineness of this phosphor pattern. Typically, a finer (smaller) dot pitch results in a sharper image, all other characteristics being equal.

Tube Type. Although tube type — whether the CRT has an aperture-grille, shadow-mask, or slot-mask design (see the "CRT Types" sidebar) — is definitely a characteristic you'll want to understand as you shop for display systems, it's no longer as important a buying factor as it used to be. In the past, CRTs that had an aperture-grille design, such as the Sony Trinitron and Mitsubishi DiamondTron tubes, used to be brighter than shadow-mask tubes and have more-even brightness and color; with today's advanced shadow-mask-tube technology, however, this distinction is no longer true.

In our testing, we found no correlation between tube type and color- and brightness-uniformity scores. In general, aperture-grille tubes still produce less glare than shadow-mask tubes, because of their cylindrical — rather than spherical — tube type. Shadow-mask tubes, on the other hand, can be better for line drawing and working with small type, because their round-dot pattern produces even sharpness for horizontal and vertical lines — and because the two horizontal wire shadows faintly visible on an aperture-grille screen (one-third of the way from the top and the bottom of the screen) can sometimes be distracting to some users.

As far as NEC's new, slot-mask-design CromaClear tube (featured in the MultiSync M700 in this roundup) is concerned, we found its main advantage to be sharpness. The M700 had the best MTF Sharpness score of any monitor we tested. However, its brightness — another supposed advantage of the new tube type — although good, was not exceptional. Color uniformity across the surface of the M700's CRT was not so great, but this problem is typical of any new CRT design, as manufacturers strive to perfect the precision of mask and phosphor alignment.

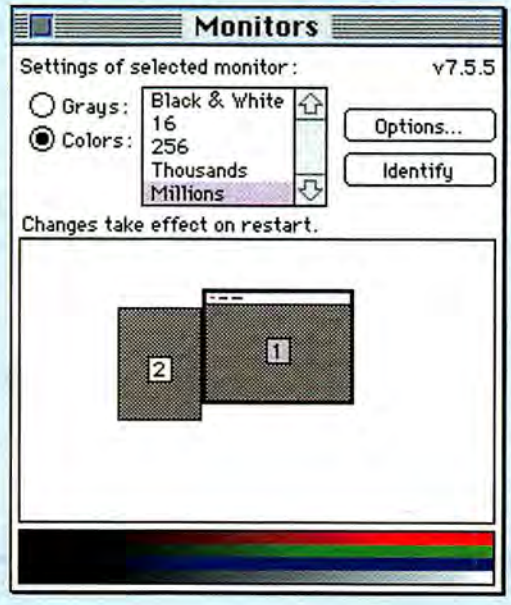
Controls. The type of controls a monitor offers can significantly affect its ease of use. All the monitors in this roundup feature digital controls that remember your settings for a particular resolution. The better monitors feature on-screen menu-driven controls, which reduce the number of buttons required for making certain adjustments and also provide you with some help and feedback on the adjustments you make. Some of the control features on these monitors are quite esoteric and can be difficult to adjust. Before you use the digital controls on these monitors, check the manual to find out which button returns the monitor to its factory-default settings. Corporate sites may

SEEING DOUBLE / *the two-monitor advantage*

ATTRACTIVE AS IT IS AS A FIRST MONITOR, a 17-inch monitor can be even more enticing to Mac users as a second monitor — thanks to an important feature of the Mac OS that's not available with Windows. Multiple-monitor support has been part of the Mac OS since the Mac SE and provides Mac users with significantly more flexibility than Windows users in arranging their screen real estate.

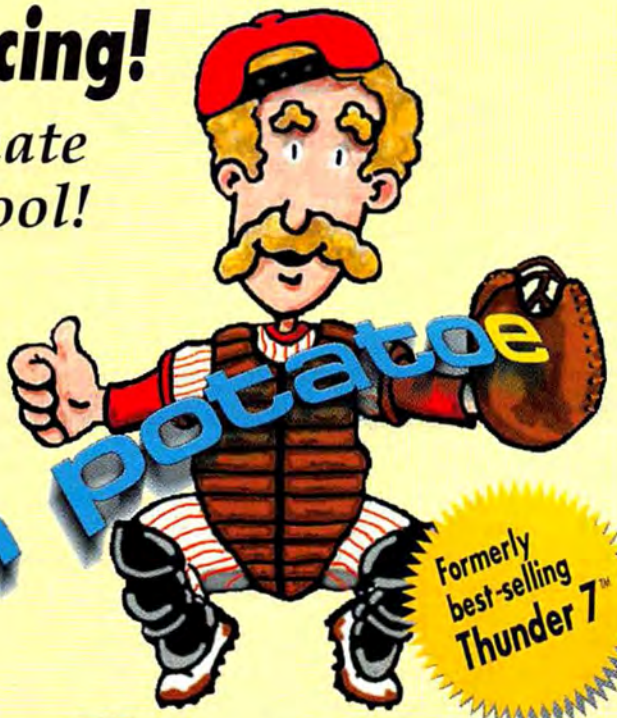
If your Mac already has a monitor — even if it's an all-in-one Performa — you can still use a 17-inch display system as a second monitor, providing you have the free desk space and your Mac has an available expansion slot for the add-in graphics card (available for as little as $200) required to drive the additional monitor.

Many designers are opting for a 17-inch display for their work space and a 14-inch display for their tools and palettes. This arrangement allows for as much on-screen work space as a 21-inch display provides but has the sharpness advantages that come with smaller CRT sizes. Even for business use, a two-monitor setup is handy (as many of us at *MacUser* can attest): You can keep your e-mail, calendar, and other organizational tools easily accessible on your 14-inch display while you use your 17-inch display for your word-processing, spreadsheet, and other productivity applications.



Introducing!

The ultimate writing tool!



Formerly best-selling Thunder 7™

SpellCatcher™

Universal Spell Checker

- The single spell-checker for all your applications—even e-mail!
- Interactive spell checking "watches" while you type and makes alternative spelling suggestions on the spot!
- Batch spell checking will check entire documents for errors.

Spell Catcher Reads Your Shorthand

- Automatically expands your abbreviations for commonly used phrases, i.e., "vty" becomes "Very truly yours."

Thesaurus

- Gives definitions, synonyms, antonyms, related, compared and contrasting words. Quick access from the ever-present, Spell-Catcher icon.

Work Saver

- Captures keystrokes automatically for later recovery.
- Protects your work from power failures or crashes.

Write Anywhere With Confidence!

SpellCatcher™

CIRCLE **25** ON READER SERVICE CARD

EGGHEAD COMPUTER CITY

Sales & Information: 800-359-4920 • 408-484-9228

Let's Keep It Simple Spreadsheet™

The *NEW* spreadsheet that's so simple, it's revolutionary! Simply drag-and-drop all your operations.

Conflict Catcher™3

Sets the industry standard for start up file management and conflict identification.

InfoGenie™2

Get organized! The fastest and easiest way to store and find information!

Snap Mail™ 2

E-mail that is easy-to-install, easy-to-use and half the price of other e-mail!

C&G CASADY & GREENE

www.casadyg.com

want to check out monitors such as the NEC MultiSync M700, which lets managers lock out all controls until users press a special key sequence (listed in the manual).

Mac-Readiness. Whether a Macintosh cable or adapter is included is also an important consideration. All the monitors we tested are Mac-compatible when connected via either a Mac video cable or a PC VGA cable and Mac adapter. Each of these Mac cables or adapters comes prewired with (or has switches for selecting) sense codes that tell the Mac OS which resolutions and refresh rates are compatible with the monitor. As a compatibility safeguard, the Mac OS allows you to select only the resolutions and refresh rates it's sure are compatible with your monitor. Since all these monitors are autosynchronous, all should work well with a Mac if you have the right adapter, but you may have to do a bit of trial-and-error adjusting of adapters or

FEATURES OF 17-INCH MONITORS

PRODUCT	RATING	LIST PRICE	EST. STREET PRICE	PARTS, LABOR WARRANTY	CRT WARRANTY	CROSS-SHIP REPAIR POLICY	ACTIVE SCREEN SIZE (DIAG.)
AcerAcerView 78ie	★★★½	NA	$799	1 year, 1 year	1 year	●	15.6 in.
ADI MicroScan 5V**	★★★★	$899	$739	3 years, 3 years	3 years	●	15.9 in.
Apple AppleVision 1710 Display	★★★½	$1,039	$970	1 year, 1 year	none		16.1 in.
Compaq V70	★★★★	NA	$730	3 years, 3 years	3 years		15.6 in.
CTX PR700	★★★★	$999	$899	3 years, 3 years	2 years		16.2 in.
CTX VL700	★★★★	$775	$660	3 years, 3 years	2 years		16.0 in.
Daewoo CMC-1703B	★★★½	$799	$700	3 years, 3 years	3 years	●	15.8 in.
Delta DB-1765EA	★★★½	$799	$699	2 years, 2 years	2 years	●*	15.9 in.
EIZO Nanao FlexScan TX-C7S	★★★★	$1,125	$1,299	3 years, 3 years	3 years	●	15.9 in.
EIZO Nanao FlexScan T2-17TS	★★★★	$1,299	$1,150	3 years, 3 years	3 years	●	15.8 in.
Hitachi Accuvue GX17L	★★½	$765	$765	1 year, 1 year	1 year	●†	16.0 in.
Hyundai DeluxScan 17B	★★★★	$649	$599	3 years, 1 year	3 years	●	15.8 in.
Iiyama VisionMaster Pro 17	★★★★	$949	$850	3 years, 3 years	3 years	●	15.9 in.
KDS Visual Sensations VSx-7	★★★★	$649	$599	3 years, 1 year	2 years	●	15.8 in.
LG Electronics GoldStar Studioworks 76i	★★★½	$799	$699	3 years, 3 years	3 years		16.0 in.
LG Electronics GoldStar Studioworks 78m	★★★½	$999	$869	3 years, 3 years	3 years		16.0 in.
MAG InnoVision DJ702	★★★½	$859	$829	3 years, 1 year	2 years		16.1 in.
MAG InnoVision DX700T	★★★★	$799	$700	3 years, 1 year	2 years		16.0 in.
Magnavox CM4018	★★★	$749	$699	1 year, 3 years	3 years		16.1 in.
ManTech InSync 1726	★★★½	$699	$670	3 years, 3 years	3 years	●	16.0 in.
Mitsubishi Diamond Scan 17HX	★★★★	$849	$815	3 years, 3 years	3 years		15.6 in.
NEC MultiSync M700	★★★★	NA	$899	3 years, 3 years	3 years	●	15.4 in.
NEC MultiSync XV17+	★★★★	NA	$850	3 years, 3 years	3 years	●	15.5 in.
Nokia Multigraph 447Xav	★★★★	$999	$999	3 years, 3 years	3 years	●	15.6 in.
Nokia Multigraph 447Xi	★★★★	$899	$850	3 years, 3 years	3 years	●	15.6 in.
NSA/Hitachi RasterOps Mc 17	★★★★	$999	$899	3 years, 3 years	3 years		15.8 in.
NSA/Hitachi SuperScan Elite 17	★★★½	$999	$899	3 years, 3 years	3 years	◊	15.8 in.
Pacom Data Display 7Fgs	★★★★	$749	$650	3 years, 3 years	3 years	●	15.7 in.
Panasonic PanaSync Pro P17	★★★★	$949	$799	3 years, 3 years	3 years	●	16.1 in.
Panasonic PanaSync S17	★★★★	$799	$649	3 years, 3 years	3 years	●	16.0 in.
PiXie PBC-1764	★★★½	$699	$599	3 years, 3 years	3 years	●†	15.9 in.
Princeton EO17	★★★★	$621	$599	3 years, 3 years	3 years		15.8 in.
Princeton Ultra 70F	★★★½	$599	$543	1 year, 1 year	1 year		15.9 in.
Princeton Ultra 17+	★★★½	$629	$600	3 years, 1 year	2 years		15.4 in.
Sampo AlphaScan 760	★★★★	$899	$829	3 years, 3 years	3 years	●	16.1 in.
Samsung SyncMaster 17GLi	★★★★	$829	$759	3 years, 3 years	3 years	●	15.7 in.
Samtron SC-726GXL	★★★★	$899	$819	3 years, 3 years	2 years		15.8 in.
Sceptre P73	★★★½	$849	$750	3 years, 1 year	3 years		15.8 in.
SIGMA Ergoview 170	★★★	$999	$800	1 year, 1 year	1 year		15.4 in.
Smile CB1716SL	★★★★	$699	$619	3 years, 1 year	2 years	●	16.0 in.
Sony Multiscan 17sfII	★★★★	$879	$800	3 years, 1 year	2 years	●	16.0 in.
✓ **Sony** Multiscan 17seII	★★★★½	$1,099	$1,000	3 years, 1 year	2 years	●	15.8 in.
techmedia TCM-1700G	★★★½	$699	$585	3 years, 3 years	1 year		15.5 in.
ViewSonic Optiquest V775	★★★★	$699	$665	3 years, 3 years	3 years	●	16.0 in.
✓ **ViewSonic** 17EA	★★★★½	$699	$645	3 years, 3 years	3 years	●	15.9 in.
ViewSonic PT770	★★★★	$895	$849	3 years, 3 years	3 years	●	16.0 in.
WYSE WYSEvision WY-17PS	★★★½	$995	$920	3 years, 3 years	3 years		16.2 in.

✓ MacUser BEST BUY

*First 90 days only. †First 30 days only. ⁵Specify Mac model when ordering. ◊Extra cost. **Compatible with PowerPC-based Macs only.

their switch settings for monitors for which the responsibility of providing adapters is left to resellers. For this reason, we recommend buying your monitor from a vendor that includes a Mac cable or adapter in the box or sends it free on request — or from a reseller that offers a money-back guarantee.

Also, if you're buying a monitor for a non-PowerPC-based Macintosh or a Macintosh that contains an older graphics card, make sure it can handle *sync on green* (horizontal and vertical synchronization signals on the same wire as the green color signal). With PowerPC-based Macs, the signals are all on separate wires, just as they are with PCs.

Glare Protection. Monitors also vary in the type of glare protection they offer. The simplest is nothing more than a darkened glass, which does not reduce glare but does increase contrast. Darkened glass is used on practically every display, in combination

MAXIMUM RESOLUTION	VERTICAL-SCAN RATES	HORIZONTAL-SCAN RATES	DOT PITCH	TUBE TYPE	ON-SCREEN CONTROLS	MAC ADAPTER INCLUDED FREE
1,280 x 1,024 pixels @ 80 Hz	50 – 120 Hz	30 – 86 kHz	.26 mm	shadow-mask	●	
1,024 x 768 pixels @ 76 Hz	50 – 100 Hz	30 – 64 kHz	.26 mm	shadow-mask	●	
1,280 x 1,024 pixels @ 75 Hz	50 – 120 Hz	30 – 80 kHz	.26 mm	Trinitron	●	●
1,024 x 768 pixels @ 85 Hz	50 – 100 Hz	32 – 69 kHz	.28 mm	shadow-mask	●	●
1,600 x 1,200 pixels @ 65 Hz	50 – 120 Hz	30 – 85 kHz	.26 mm	DiamondTron	●	●
1,280 x 1,024 pixels @ 66 Hz	50 – 120 Hz	30 – 85 kHz	.28 mm	shadow-mask	●	●
1,024 x 768 pixels @ 75 Hz	47 – 120 Hz	30 – 64 kHz	.28 mm	shadow-mask	●	
1,024 x 768 pixels @ 60 Hz	50 – 100 Hz	30 – 65 kHz	.28 mm	shadow-mask	●	
1,360 x 1,024 pixels @ 86 Hz	50 – 160 Hz	30 – 69 kHz	.27 mm	Trinitron	●	
1,280 x 1,024 pixels @ 82 Hz	55 – 160 Hz	30 – 86 kHz	.26 mm	DiamondTron	●	●
1,024 x 768 pixels @ 60 Hz	50 – 100 Hz	30 – 64 kHz	.28 mm	shadow-mask		
1,280 x 1,024 pixels @ 60 Hz	45 – 130 Hz	30 – 65 kHz	.28 mm	shadow-mask	●	
1,600 x 1,200 pixels @ 72 Hz	50 – 160 Hz	27 – 92 kHz	.26 mm	Trinitron	●	
1,024 x 768 pixels @ 75 Hz	50 – 120 Hz	28 – 70 kHz	.28 mm	shadow-mask	●	
1,152 x 870 pixels @ 75 Hz	50 – 110 Hz	30 – 65 kHz	.28 mm	shadow-mask	●	
1,152 x 870 pixels @ 75 Hz	50 – 120 Hz	30 – 85 kHz	.26 mm	shadow-mask	●	
1,152 x 870 pixels @ 75 Hz	50 – 160 Hz	30 – 69 kHz	.26 mm	shadow-mask	●	●[5]
1,152 x 870 pixels @ 75 Hz	50 – 100 Hz	30 – 70 kHz	.25 mm	Trinitron	●	●[5]
1,024 x 768 pixels @ 75 Hz	50 – 130 Hz	30 – 66 kHz	.28 mm	shadow-mask	●	
1,024 x 768 pixels @ 85 Hz	50 – 90 Hz	30 – 66 kHz	.28 mm	shadow-mask		
1,280 x 1,024 pixels @ 75 Hz	50 – 130 Hz	30 – 82 kHz	.26 mm	shadow-mask	●	●
1,152 x 870 pixels @ 55 – 75 Hz	55 – 120 Hz	31 – 69 kHz	.25 mm	slot-mask	●	●
1,152 x 870 pixels @ 55 – 75 Hz	55 – 100 Hz	31 – 65 kHz	.28 mm	shadow-mask	●	●
1,600 x 1,200 pixels @ 72 Hz	50 – 150 Hz	31 – 82 kHz	.25 mm	Trinitron	●	●
1,600 x 1,200 pixels @ 72 Hz	50 – 150 Hz	31 – 91 kHz	.26 mm	Trinitron	●	●
1,600 x 1,200 pixels @ 74 Hz	50 – 120 Hz	25 – 82 kHz	.26 mm	shadow-mask	●	●
1,280 x 1,024 pixels @ 75 Hz	50 – 120 Hz	25 – 82 kHz	.26 mm	shadow-mask	●	
1,280 x 1,024 pixels @ 66 Hz	50 – 120 Hz	30 – 65 kHz	.28 mm	shadow-mask	●	
1,600 x 1,200 pixels @ 75 Hz	50 – 160 Hz	30 – 86 kHz	.25 mm	shadow-mask	●	
1,024 x 768 pixels @ 75 Hz	50 – 160 Hz	30 – 69 kHz	.27 mm	shadow-mask	●	
1,024 x 768 pixels @ 85 Hz	47 – 120 Hz	30 – 64 kHz	.28 mm	shadow-mask	●	
1,152 x 870 pixels @ 75 Hz	50 – 120 Hz	30 – 70 kHz	.26 mm	shadow-mask	●	●[5]
832 x 624 pixels @ 75 Hz	50 – 120 Hz	30 – 65 kHz	.28 mm	shadow-mask	●	●[5]
1,152 x 870 pixels @ 75 Hz	50 – 120 Hz	30 – 82 kHz	.28 mm	shadow-mask	●	●[5]
1,152 x 870 pixels @ 75 Hz	50 – 120 Hz	30 – 82 kHz	.25 mm	DiamondTron	●	
1,280 x 1,024 pixels @ 60 Hz	50 – 120 Hz	30 – 65 kHz	.28 mm	shadow-mask	●	●
1,600 x 1,200 pixels @ 68 Hz	50 – 120 Hz	30 – 85 kHz	.26 mm	shadow-mask	●	●
1,280 x 1,024 pixels @ 75 Hz	50 – 110 Hz	30 – 66 kHz	.28 mm	shadow-mask	●	
1,600 x 1,200 pixels @ 65 Hz	50 – 120 Hz	30 – 82 kHz	.27 mm	shadow-mask		
1,024 x 768 pixels @ 76 Hz	50 – 100 Hz	30 – 65 kHz	.26 mm	shadow-mask	●	●
1,024 x 768 pixels @ 75 Hz	50 – 120 Hz	31 – 65 kHz	.25 mm	Trinitron		●
1,280 x 1,024 pixels @ 75 Hz	48 – 150 Hz	30 – 85 kHz	.25 mm	Trinitron	●	●
1,152 x 870 pixels @ 75 Hz	47 – 104 Hz	30 – 64 kHz	.28 mm	shadow-mask	●	
1,600 x 1,200 pixels @ 66 Hz	50 – 130 Hz	24 – 82 kHz	.26 mm	shadow-mask	●	
1,024 x 768 pixels @ 85 Hz	50 – 120 Hz	30 – 69 kHz	.28 mm	shadow-mask	●	●
1,600 x 1,200 pixels @ 65 Hz	50 – 130 Hz	24 – 82 kHz	.25 mm	Trinitron	●	●
1,600 x 1,200 pixels @ 60 Hz	50 – 120 Hz	24 – 82 kHz	.25 mm	DiamondTron	●	

WELL-MONITORED TESTS / *image quality at a glance*

WHEN YOU SPEND SEVERAL HOURS A DAY staring at a color monitor, you want it to be easy on the eyes — that is, you want bright, accurate color and a sharp, well-focused image. Our overall-image-quality score is a weighted average of tests measuring these characteristics, using two precision testing devices.

We conducted all the monitor tests in a completely black room (in order to prevent ambient light from interfering with the tests), with each monitor set up for its optimal combination of brightness and contrast.

We used a Minolta Color Analyzer CA-100 to measure each monitor's overall brightness; the uniformity of color and brightness across an image; and color tracking, or accuracy, at various brightness levels. The Color Tracking test measures how well each monitor displays color at various brightness levels, by analyzing the amount of red, green, and blue light emitted.

In addition, we used a Microvision SuperSpot 200 to measure MTF sharpness (the sharpness of a special test pattern consisting of adjacent, single-pixel black and green lines), convergence (alignment of the monitor's three electron beams with each other — also a determining factor in overall sharpness), and pincushion distortion (the tendency of a monitor's displayed image to bow in or out along the sides or at the top or bottom). The MTF-sharpness score is an average of MTF sharpness measured horizontally and vertically at 12 points on the screen.

We are providing the individual results of three of these tests — Color Tracking, MTF Sharpness, and Brightness — because of their respective importance to graphic designers, users who work with text or detailed lines, and users who work in bright environments. In the Color Tracking test, a score of 90 percent or higher is acceptable. Scores that are higher than 50 percent are acceptable in our MTF Sharpness test. And in our Brightness test, a score of 20 footlamberts or more is acceptable.

	OVERALL IMAGE QUALITY	COLOR TRACKING	MTF SHARPNESS	BRIGHTNESS
Apple AppleVision 1710 Display	1.70	93	66	49
EIZO Nanao FlexScan TX-C7S	1.62	93	73	35
✓**Sony** Multiscan 17sell	1.61	90	78	34
Sony Multiscan 17sfII	1.61	94	74	34
Compaq V70	1.59	90	76	34
✓**ViewSonic** 17EA	1.55	93	66	40
MAG InnoVision DX700T	1.54	87	72	43
Samsung SyncMaster 17GLi	1.53	97	73	35
CTX VL700	1.49	88	80	32
ADI MicroScan 5V	1.48	88	73	34
WYSE WYSEvision WY-17PS	1.47	98	76	32
Delta DB-1765EA	1.46	96	63	32
EIZO Nanao FlexScan T2-17TS	1.46	96	75	34
Nokia Multigraph 447Xav	1.46	97	75	29
ViewSonic Optiquest V775	1.45	93	81	31
LG Electronics GoldStar Studioworks 78m	1.45	94	77	33
NSA/Hitachi SuperScan Elite 17	1.45	84	72	35
Smile CB1716SL	1.45	91	80	31
techmedia TCM-1700G	1.45	81	76	30
ViewSonic PT770	1.44	97	79	30
NSA/Hitachi RasterOps Mc 17	1.43	93	68	34
CTX PR700	1.43	90	66	32
Princeton E017	1.43	93	70	38
Samtron SC-726GXL	1.39	97	62	29
Panasonic PanaSync S17	1.39	93	73	35
Pacom Data Display 7Fgs	1.39	96	65	31
Hyundai DeluxScan 17B	1.38	93	75	28
Iiyama VisionMaster Pro 17	1.38	95	80	25
NEC MultiSync XV17+	1.38	86	69	34
Magnavox CM4018	1.37	97	67	32
Panasonic PanaSync Pro P17	1.36	95	78	32
NEC MultiSync M700	1.35	93	85	28
PiXie PBC-1764	1.35	87	76	28
Acer AcerView 78ie	1.35	96	70	26
Mitsubishi Diamond Scan 17HX	1.34	98	67	35
LG Electronics GoldStar Studioworks 76i	1.34	97	74	29
Sampo AlphaScan 760	1.32	98	75	25
Nokia Multigraph 447Xi	1.32	92	73	31
Sceptre P73	1.32	85	71	27
Daewoo CMC-1703B	1.32	98	62	30
Princeton Ultra 70F	1.31	89	66	28
Hitachi Accuvue GX17L	1.29	95	58	23
Princeton Ultra 17+	1.27	94	63	33
KDS Visual Sensations VSx-7	1.27	89	59	32
MAG InnoVision DJ702	1.26	60	80	29
ManTech InSync 1726	1.24	90	68	24
SIGMA Ergoview 170	1.24	97	66	23
	SCORE BETTER	ACCURACY (percent) BETTER	MTF (percent) BETTER	LUMINANCE (footlamberts) BETTER

✓ MacUser BEST BUY

■ Best performer(s) in each test

Brilliant performance. Breakthrough price.

It's the new Phaser® 350. The most affordable, economical and fastest laser-class color printer to hit the market. [Check the reviews.] You'll applaud its brilliant color matching, media flexibility, and image quality. Account groups will cheer its incredible speed, low cost per color print [typically 5¢], and vivid presentation overheads. It fully supports PC/Mac environments. [Getting any ideas?] Call for a dramatic print sample. Tektronix sells more workgroup color printers than anyone.

Call 800/835-6100, Ext. 1341. http://www.tek.com/CPad?1341

Tektronix

Phaser 140 Phaser 240 Phaser 350 Phaser 440 Phaser 550 Phaser 480X Phaser 300X

© 1996 Tektronix, Inc. All rights reserved

CIRCLE **124** ON READER SERVICE CARD

with another antiglare treatment. The least expensive is etching, which means simply that: The glass on the front of the CRT is roughened in order to scatter oncoming light. Slightly more expensive and common on many 17-inch displays is a fine silica coating, which scatters oncoming light much as etching does but with less reduction in sharpness. Most expensive — and more desirable — is an antireflective coating.

Antireflective coatings work by reversing the polarization of light as it passes through the coating and reflects back outward, essentially "canceling out" glare. These coatings are highly effective; however, they must be kept absolutely clean — the oil in your fingerprints is enough to reduce their effectiveness markedly, sometimes producing color-tinged reflections. For this reason, antireflective coatings are not the best option for environments in which children or others who can't resist pointing at the screen by touching it are present.

The Bottom Line

If we made monitor-buying recommendations based solely on image quality, our top choice would be Apple's AppleVision 1710 Display, a superbright monitor that earned the best overall-image-quality score in our tests. When we factored in other considerations such as warranty, repair policy, and price, however, two other monitors were the only ones to earn ratings of four-and-a-half mice and our Best Buy recommendations.

Budget-conscious monitor buyers would be hard-pressed to identify a better choice than the ViewSonic 17EA, with its estimated street price of $645. Not only did it receive the sixth-highest score for overall image quality but the company also offers a 48-hour cross-ship guarantee in case of failure and a full three-year warranty on parts, labor, and the CRT. As an extra plus, it has built-in speakers.

Users who demand extrasharp, high-resolution images may prefer our other Best Buy, the Sony Multiscan 17seII. With an estimated street price of around $1,000 and the third-highest overall-image-quality score, the Multiscan 17seII offers a maximum resolution of 1,280 x 1,024 pixels (more than two pages on-screen) at an ergonomically comfortable refresh rate of 75 Hz, with a crisp dot pitch of .25 millimeters and commendable MTF sharpness. Sony too offers a cross-ship repair policy. / *JEFF PITTELKAU*

DIRECTORY

Acer America
800-733-2237
408-432-6200
800-554-2494 (fax)
http://www.acer.com/

ADI Systems
San Jose, CA
800-228-0530
408-944-0100
408-944-0300 (fax)
http://www.adi-online.com/

Apple Computer
Cupertino, CA
800-538-9696
408-996-1010
800-462-4396 (fax)
http://www.apple.com/

Compaq Computer
Houston, TX
800-888-5858
800-345-1518
800-888-5329 (fax)
http://www.compaq.com/

CTX International
City of Industry, CA
800-888-2012
818-839-0500
818-810-6703 (fax)

Daewoo Electronics
Lyndhurst, NJ
800-250-9066
201-460-2000
847-228-6271 (fax)
http://www.dwe.daewoo.co.kr/

Delta Products
Fremont, CA
888-88-3358
510-770-0660
510-770-0122 (fax)
http://www.deltaca.com/

EIZO Nanao Technologies
Cypress, CA
800-800-5202
310-431-5011
310-431-4811 (fax)
http://www.eizo.co.jp/welcome/

Hitachi America
Fremont, CA
800-259-9939
510-661-6351
510-661-6317 (fax)
http://www.hitachi.com/

Hyundai Electronics America
San Jose, CA
800-568-0060
408-232-8000
408-232-8146 (fax)
http://www.hea.com/

Iiyama North America
Warminster, PA
800-394-4335
215-957-6551
215-957-6551 (fax)
http://www.kom.com/kc/visionmaster/

KDS USA
Garden Grove, CA
800-283-1311
714-379-5599
714-379-5595 (fax)
http://www.kdsusa.com/

LG Electronics USA
Englewood Cliffs, NJ
800-243-0000
201-816-2000
201-816-0636 (fax)
http://www.lgeus.com/

MAG InnoVision
Santa Ana, CA
800-827-3998
714-751-2008
714-751-5522 (fax)
http://www.maginnovision.com/

Magnavox
Knoxville, TN
800-531-0039
423-521-3271
423-521-3242 (fax)
http://www.magnavox.com/

ManTech Solutions
Springfield, VA
800-246-7962
703-913-2400
703-913-2424 (fax)
http://www.mtsol.com/

Mitsubishi Electronics America
Cypress, CA
800-843-2515
714-220-2500
714-229-3854 (fax)
http://www.mela-itg.com/

NEC Technologies
Itasca, IL
800-632-4636
630-775-7900
630-775-6717 (fax)
http://www.nec.com/

Nokia Display Products
Sausalito, CA
800-296-6542
415-331-4244
415-331-0424 (fax)
http://www.nokia.com/index.html

NSA/Hitachi
Westwood, MA
800-441-4832
800-672-4685
617-461-8665 (fax)
http://www.nsa-hitachi.com/

Pacom Data
Fremont, CA
800-820-7226
510-440-7200
510-440-7212 (fax)
http://www.pacomdata.com/

Panasonic Computer Peripheral
Secaucus, NJ
800-742-8086
201-348-7000
800-726-2797 (fax)
http://www.panasonic.com/

PiXie Technologies
Fremont, CA
800-440-7211
510-440-9721
510-440-9356 (fax)

Princeton Graphics Systems
Santa Ana, CA
800-747-6249
714-751-8405
714-751-5736 (fax)
http://www.prgr.com/

Sampo Technology
Norcross, GA
770-449-6220
770-447-1109 (fax)

Samsung Electronics America
Ridgefield Park, NJ
800-726-7864
201-229-4000
800-229-2239 (fax)
http://www.sosimple.com/

Samtron Display Devices
Ridgefield, NJ
800-933-4110
201-229-4000
800-726-7864 (fax)

Sceptre Technologies
City of Industry, CA
800-788-2878
818-369-3698
818-369-3488 (fax)
http://www.sceptretech.com/

SIGMA
Fremont, CA
800-437-4624
510-624-4900
510-624-4930 (fax)

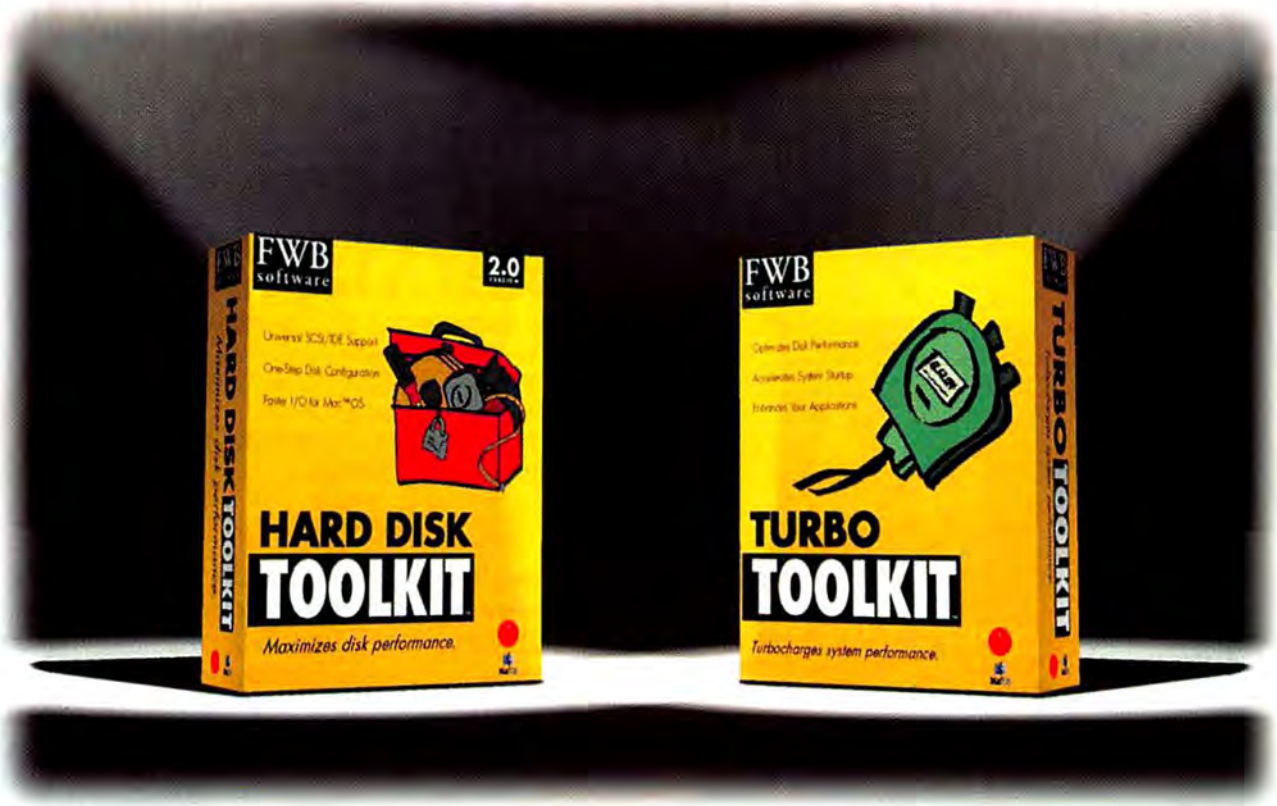
Smile International
Costa Mesa, CA
800-876-4532
714-756-0336
714-546-0315 (fax)
http://www.smilekfc.com/

Sony Electronics
San Jose, CA
800-352-7669
408-432-0190
408-955-5505 (fax)
http://www.sel.sony.com/

techmedia Computer Systems
Garden Grove, CA
800-379-0077
714-379-6677
714-379-9069 (fax)
http://www.techmedia.net/compinfo.htm

ViewSonic
Walnut, CA
800-888-8583
909-869-7976
909-468-3756 (fax)
http://www.viewsonic.com/

WYSE Technology
San Jose, CA
800-438-9973
408-473-1200
408-473-2401 (fax)
http://www.wyse.com/



The PERFORMANCE is About to Begin.

Ladies and Gentlemen, introducing the best new performers for the Mac™OS—Hard Disk ToolKit™ 2.0 and the new Turbo ToolKit™. Find out why more than 1.4 million loyal fans have switched to the ToolKit family of award-winning software. With **Hard Disk TOOLKIT** 2.0, enjoy universal SCSI/IDE support, one-step disk configuration, and faster I/O for your Mac.

Also starring in today's performance is **TurboTOOLKIT**. Watch how this rising star optimizes disk performance, accelerates system startup and enhances your favorite applications. It works behind the scenes to make your system faster and more efficient. So take your seat, sit back and enjoy a great **PERFORMANCE**.

The Mac Zone — Your Catalog SuperStore

INGRAM MICRO

FWB software

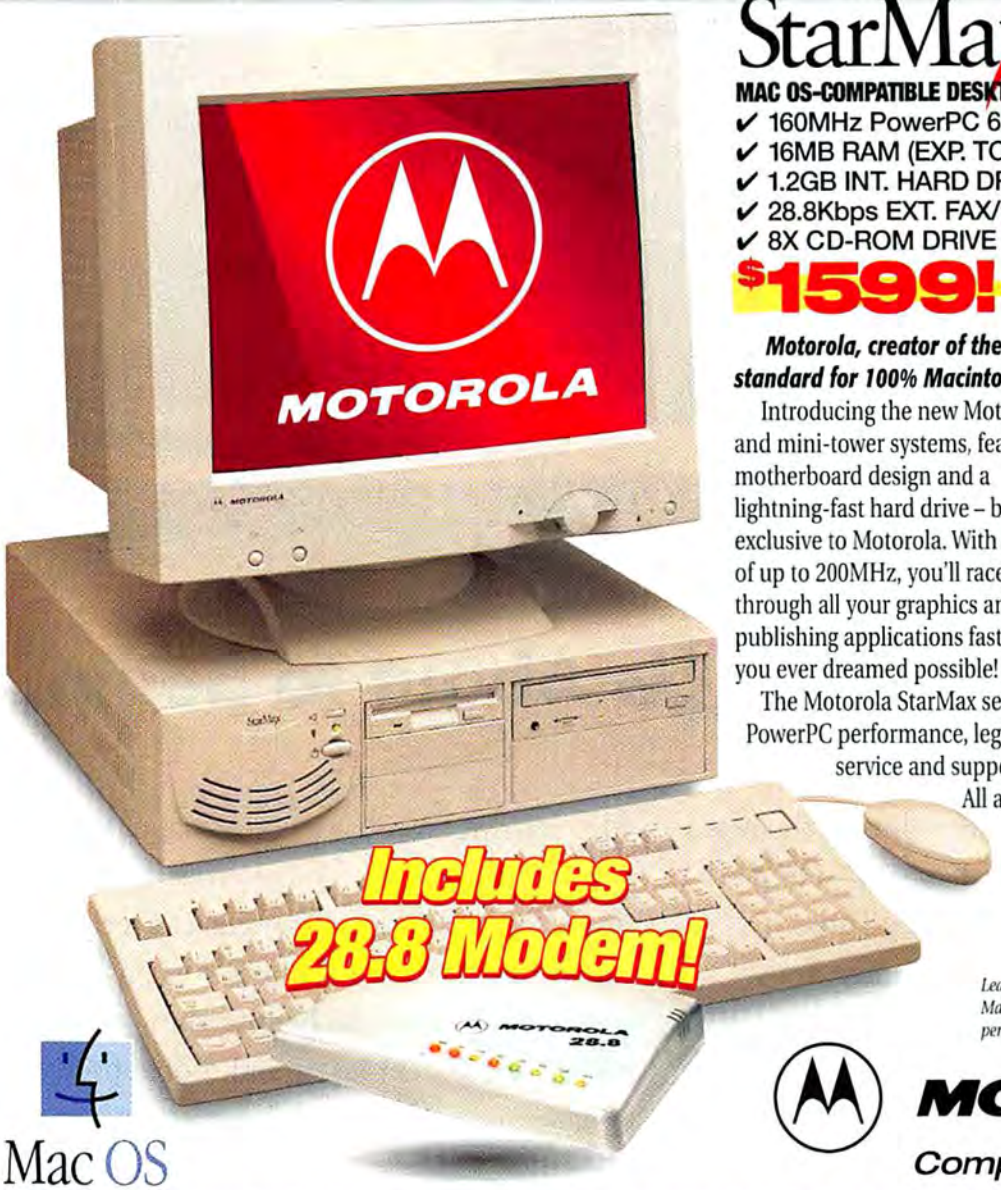
TO ORDER
contact your local reseller or
MacWarehouse: 1-800-255-6227
MacZone: 1-800-248-0800
Upgrades Only: 1-800-581-4FWB
Information: http://www.fwb.com

#1 in Storage Management.™

© 1996, FWB Software, LLC. FWB is a registered trademark of FWB Software, LLC. Hard Disk ToolKit and Turbo ToolKit are trademarks of FWB Software. Mac and MacOS are trademarks of Apple Computer, Inc. and may be registered in certain jurisdictions. All rights reserved. Specifications subject to change without notice.

INTRODUCING MOTOROLA® STARMAX™

THE QUALITY OF MOTOROLA. THE POWER OF MAC® OS.



Mac OS

StarMax 3000/160

MAC OS-COMPATIBLE DESKTOP PERSONAL COMPUTER

- ✔ 160MHz PowerPC 603e
- ✔ 16MB RAM (EXP. TO 160MB)
- ✔ 1.2GB INT. HARD DRIVE
- ✔ 28.8Kbps EXT. FAX/MODEM
- ✔ 8X CD-ROM DRIVE

$1599!

Includes **MEGA BUNDLE** of popular software and CD titles!

Motorola, creator of the PowerPC chip, has set a new standard for 100% Macintosh®-compatible performance...

Introducing the new Motorola StarMax™ series of desktop and mini-tower systems, featuring a state-of-the-art motherboard design and a lightning-fast hard drive – both exclusive to Motorola. With speeds of up to 200MHz, you'll race through all your graphics and publishing applications faster than you ever dreamed possible!

The Motorola StarMax series brings you industry-leading PowerPC performance, legendary quality, and the best service and support warranty in the business. All at a price you can't afford to miss!

Leading the way with Mac OS-compatible personal computers.

MOTOROLA
Computer Group

THE STARMAX FAMILY OF MAC OS PERSONAL COMPUTERS.

The affordable StarMax 3000 series features a high-performance PowerPC 603e processor, plus up to 32MB RAM, a hard drive with up to 2.5GB of storage, an 8x CD-ROM, 1MB VRAM, and 256K Level 2 cache. You even get a blazing-fast Motorola 28.8 data/fax modem!

The top-of-the-line StarMax 4000 series is based on the PowerPC 604e processor – proven in industry benchmarks to be 50% faster than the 603e processor running at the same speed.

The StarMax 3000 and 4000 series are available in two configurations: a desktop system with three PCI expansion slots and three drive bays, or – the ultimate in expandability – a mini-tower with five PCI expansion slots and five drive bays!

Plus, only Motorola gives you five worry-free years of exclusive Motorola-Branded service and support. Your comprehensive warranty includes 90-day "up and running" telephone support, and unmatched on-site service the next business day for your first year – you can even upgrade your warranty to get same-day on-site service for five full years!

Copyright ©1996 Micro Warehouse, Inc. All rights reserved. MacWAREHOUSE is a registered trademark of Micro Warehouse, Inc. Motorola and the Motorola logo are registered trademarks and StarMax is a trademark of Motorola, Inc. PowerPC and the PowerPC logo are trademarks of International Business Machines Incorporated. Macintosh and Mac are registered trademarks, and the MacOS logo is a trademark of Apple Computer, Inc.

PERSONAL COMPUTERS.

THE PERFORMANCE OF POWERPC.™

MOTOROLA STARMAX 3000 MAC OS DESKTOP

160MHz PowerPC 603e Processor
- 16 MB RAM [Exp. to 160MB]
- Internal 1.2 GB Hard Drive
- Internal 8X CD-ROM Drive
- 256K Level 2 Cache
- 1 MB VRAM [Exp. to 4MB]
- Supports 14", 15", 17" or 21" Monitors, VGA and SVGA Displays
- Stereo 16-Bit Sound I/O
- External 28.8Kbps Fax/Modem
- 3 PCI Expansion Slots
- Two ext. drive bays, 1 internal
- Five-Year Manufacturer's Warranty
- Extended Keyboard and Mouse

$1599.

Ask for item CPU 0447

Monitor sold separately.

MOTOROLA STARMAX 3000 MAC OS DESKTOP

200MHz PowerPC 603e Processor
- 16 MB RAM [Exp. to 160MB]
- Internal 1.2 GB Hard Drive
- Internal 8X CD-ROM Drive
- 256K Level 2 Cache
- 1 MB VRAM [Exp. to 4MB]
- Supports 14", 15", 17" or 21" Monitors, VGA and SVGA Displays
- Stereo 16-Bit Sound I/O
- External 28.8Kbps Fax/Modem
- 3 PCI Expansion Slots
- Two ext. drive bays, 1 internal
- Five-Year Manufacturer's Warranty
- Extended Keyboard and Mouse

$1999.

Ask for item CPU 0449

Monitor sold separately.

MOTOROLA STARMAX 3000 MAC OS MINI TOWER

160MHz PowerPC 603e Processor
- 32 MB RAM [Exp. to 160MB]
- Internal 2.5 GB Hard Drive
- Internal 8X CD-ROM Drive
- 256K Level 2 Cache
- 1 MB VRAM [Exp. to 4MB]
- Supports 14", 15", 17" or 21" Monitors, VGA and SVGA Displays
- Stereo 16-Bit Sound I/O
- External 28.8Kbps Fax/Modem
- 5 PCI Expansion Slots
- Three ext. drive bays, Two internal
- Five-Year Manufacturer's Warranty
- Extended Keyboard and Mouse

$1899.

Ask for item CPU 0448

Monitor sold separately.

MOTOROLA STARMAX 3000 MAC OS MINI TOWER

200MHz PowerPC 603e Processor
- 32 MB RAM [Exp. to 160MB]
- Internal 2.5 GB Hard Drive
- Internal 8X CD-ROM Drive
- 256K Level 2 Cache
- 1 MB VRAM [Exp. to 4MB]
- Supports 14", 15", 17" or 21" Monitors, VGA and SVGA Displays
- Stereo 16-Bit Sound I/O
- External 28.8Kbps Fax/Modem
- 5 PCI Expansion Slots
- Three ext. drive bays, Two internal
- Five-Year Manufacturer's Warranty
- Extended Keyboard and Mouse

$2399.

Ask for item CPU 0450

Monitor sold separately.

MOTOROLA STARMAX 4000 MAC OS DESKTOP

160MHz PowerPC 604e Processor
- 16 MB RAM [Exp. to 160MB]
- Internal 1.2 GB Hard Drive
- Internal 8X CD-ROM Drive
- 256K Level 2 Cache
- 2 MB VRAM [Exp. to 4MB]
- Supports 14", 15", 17" or 21" Monitors, VGA and SVGA Displays
- Stereo 16-Bit Sound I/O
- 3 PCI Expansion Slots
- Two ext. drive bays, 1 internal
- Five-Year Manufacturer's Warranty
- Extended Keyboard and Mouse

$2599.

Ask for item CPU 0451

Monitor sold separately.

MOTOROLA STARMAX 4000 MAC OS DESKTOP

200MHz PowerPC 604e Processor
- 16 MB RAM [Exp. to 160MB]
- Internal 1.2 GB Hard Drive
- Internal 8X CD-ROM Drive
- 256K Level 2 Cache
- 2 MB VRAM [Exp. to 4MB]
- Supports 14", 15", 17" or 21" Monitors, VGA and SVGA Displays
- Stereo 16-Bit Sound I/O
- 3 PCI Expansion Slots
- Two ext. drive bays, 1 internal
- Five-Year Manufacturer's Warranty
- Extended Keyboard and Mouse

$3199.

Ask for item CPU 0453

Monitor sold separately.

MOTOROLA STARMAX 4000 MAC OS MINI TOWER

160MHz PowerPC 604e Processor
- 32 MB RAM [Exp. to 160MB]
- Internal 2.5 GB Hard Drive
- Internal 8X CD-ROM Drive
- 512K Level 2 Cache
- 2 MB VRAM [Exp. to 4MB]
- Supports 14", 15", 17" or 21" Monitors, VGA and SVGA Displays
- Stereo 16-Bit Sound I/O
- 5 PCI Expansion Slots
- Three ext. drive bays, Two internal
- Five-Year Manufacturer's Warranty
- Extended Keyboard and Mouse

$2999.

Ask for item CPU 0452

Monitor sold separately.

MOTOROLA STARMAX 4000 MAC OS MINI TOWER

200MHz PowerPC 604e Processor
- 32 MB RAM [Exp. to 160MB]
- Internal 2.5 GB Hard Drive
- Internal 8X CD-ROM Drive
- 512K Level 2 Cache
- 2 MB VRAM [Exp. to 4MB]
- Supports 14", 15", 17" or 21" Monitors, VGA and SVGA Displays
- Stereo 16-Bit Sound I/O
- 5 PCI Expansion Slots
- Three ext. drive bays, Two internal
- Five-Year Manufacturer's Warranty
- Extended Keyboard and Mouse

$3599.

Ask for item CPU 0454

Monitor sold separately.

What makes the Motorola StarMax Mac OS computer your best choice?

- ☑ Improved motherboard design for faster Mac OS performance
- ☑ Lightning-fast 1.2 and 2.5GB hard drives
- ☑ Includes 28.8 Fax/Modem and Internet Access Software (3000 Series)
- ☑ 5-Year Motorola-Branded Warranty
- ☑ First year on-site service and support
- ☑ Unsurpassed Motorola quality

MOTOROLA
Computer Group

MacWAREHOUSE

Order toll-free

24 HOURS A DAY, 7 DAYS A WEEK

1-800-434-3039

CIRCLE 155 ON READER SERVICE CARD

The perfect color system.

Scan

Correct

The best scanner is the human eye, and the best color correction device is the human brain. Think about it. You just look at something and there's the color. That's exactly how LinoColor™ VisuaLab™ software works, too.

With LinoColor VisuaLab, you scan directly into CIELAB, the color space that encompasses all the colors the human eye can see.

And because we've put our more than 40 years of color expertise into this software, your scans will be more accurate than you ever thought possible. If you do want to make color corrections, we've made it very easy, with the industry's most intuitive interface. To learn more about how easy great scanning can be, call for our free brochure today: **800-842-9721.** In Canada, call 800-668-0770. Or get it on the Web at **www.linocolor.com**

CIRCLE **11** ON READER SERVICE CARD

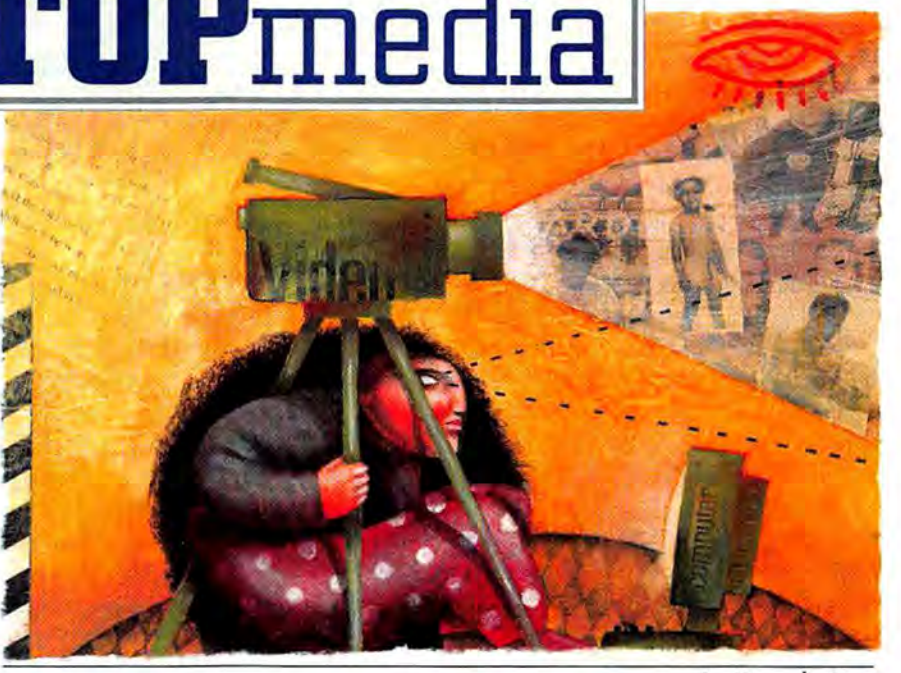
LinoColor

Color is child's play.

Linotype-Hell

© 1996 Linotype-Hell. Hell and Linotype are registered trademarks; and LinoColor and VisuaLab are trademarks of Linotype-Hell AG and/or its subsidiaries.

Powerful Macs and cheap video cards make this a great time for businesspeople to join the Video Age.



By Kennedy Grey

A Desktop-Video Primer

YOU'D LIKE TO ADD a touch of QuickTime to your Web site. Your business presentations could use something more lively than the usual PowerPoint slides. But your video experience is limited to a few hours behind a camcorder in the backyard. You've certainly never used your Mac to capture and edit video, mostly because you're not quite sure what equipment and software you'll need or what it would cost.

We've got good news for you. Today, even standard office computers are video-capable, and QuickTime-based hardware and software make the Mac the best video platform around. On the other hand, assembling a system that balances quality with affordability is a challenge that requires research and patience. This primer is your guide to assembling a Mac-based video-capture and -editing system that will make you look like a star.

Pieces of the Puzzle

Whether you plan to use an existing Mac for video production or to dedicate a new system to the task, you have a few decisions to make. Besides the Macintosh, you'll need video-capture/compression hardware, a fast storage device, and some editing software.

A Mac. The object of a Mac-based video system is to get video images into the Mac, where you'll edit them and add effects to create your movie or presentation. To do this, you need a way to *digitize* — capture — images from videotape to disk. A few Macs include this capability, and others can do it with the help of a NuBus or PCI video-capture card.

Apple's best off-the-shelf video workstations, the Power Mac 7500 and the Power Mac 8500, include video-capture hardware on the motherboard and also sport a selection of video-input ports (composite, S-Video, and RCA). Each system can capture images at 320 x 240 pixels and at 25 to 30 frames per second. The 8500 also includes video-out capability, allowing you to display your movies on a television monitor or record your edited footage to videotape once your project is completed. Several AV Macs, including the discontinued Quadra 840AV and the Power Mac 8100AV system, can capture images at 160 x 120 pixels and at roughly 30 frames per second.

Power Computing's PowerTower AV systems are another ready-made video option. Rather than having built-in digitizing hardware and input/output ports, each includes a miro miroMotion DC20 video card, which is able to capture full-screen images at 640 x 480 pixels and at 30 frames per second. The card includes VHS and S-Video input and output ports. Such a system also includes a fast hard drive and a scaled-down version of Adobe Premiere editing software, all of which starts at around $4,000.

If you plan to turn a Mac you already own into a video studio, you'll need at least one free NuBus or PCI slot (for the capture card) and a minimum of 16 MB of RAM. You can capture video with this relatively modest complement of memory, but you'll want 32 MB or more if you plan to do any serious editing.

If you're ready to splurge on a new system, apply the usual rule of thumb: Get the best CPU you can afford. Serious Mac video makers should opt for a Mac or clone with a PowerPC 604 processor and a minimum of three expansion slots, for video cards and a disk-array card.

Capture Cards. Unless you're planning to use a preconfigured AV machine, the next item in your shopping basket should be a video-capture card. There are three varieties of Mac-compatible cards: QuickTime; proprietary; and the Data Translation Media 100, which straddles the fence.

ILLUSTRATION / ELIZABETH LADA

Cards that use proprietary technology are usually found at the professional end of the digital-video spectrum — and at the high end of the price range. Proprietary systems flourished, until recently, because QuickTime did not offer stable audio/video synchronization or adequate video-playback speed. Today, QuickTime-based cards are where the real action is for most Mac users, offering quality comparable to that of proprietary systems — at a fraction of the cost. You'll find a wide array of choices and price points, from the affordable to the professional. These cards also support the many QuickTime-capable video, animation, and effects packages currently available.

You can capture good-quality images for less than a thousand dollars or spend several times that amount for video that can pass muster in the broadcast world. The differences in cards are manifested mainly in data throughput, support for video standards, and card design.

The secret to moving large amounts of data (raw video generates 27 MB per second) is compression. As it is captured, video cards compress data at a rate that is determined by the card's maximum throughput. Higher throughput means less compression will be needed and your images will look better. S-VHS and Hi-8 video (two high-quality consumer formats) require a card with throughput of at least 3 MB per second. Professional-quality capture requires throughput of 5 MB or more per second. The miro DC20 card, found in Power Computing's AV machines and sold on its own for $799, moves data at 3.5 MB per second, making it a good choice for simple Web and presentation videos. At $3,995, the Truevision Targa 1000pro probably seems rather pricey, but its speedy 5-MB-per-second throughput and its support for a variety of video formats make it a bargain for those who need to create high-quality video for CD-ROM and presentation projects.

Beyond compression and throughput, your chosen video card must support the video format your VCR or camera does. Most cards offer ports for composite-video and S-Video. These video formats are adequate for multimedia presentations but don't approach the quality of component video. Component video uses separate inputs for red, green, and blue — the three colors of the RGB color space. Component-video support is usually found only on high-end cards intended to support professional VCR and camera equipment. Whatever card you choose, be sure that its video ports match those of your VCR or camera.

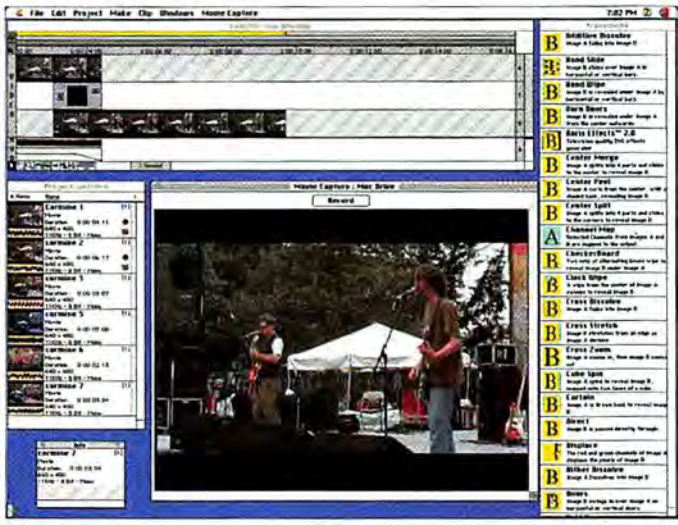


figure 1 / The four main elements of a video-editing package are included in Adobe Premiere. Clockwise from the top: The Construction Window holds images of video clips in the proper order and is the place where music and graphics are added. The Transitions window lets a producer add dissolves, wipes, and special effects. The Movie Capture window contains the live video signal. Once captured, clips move into the Project window, which provides statistics about each clip, including duration, aspect ratio, and audio-quality ratings.

High-end video cards also frequently feature a breakout box, an external device that contains video ports. Using a breakout box, you can better organize the maze of cables connecting your Macintosh to your video equipment and prevent the cables' combined weight from dislodging the board from the computer.

Most video cards also include software, often a limited version of Adobe Premiere. Premiere (see figure 1) dominates the market for video editing on the Macintosh. Premiere features an industry-standard plug-in architecture that supports many third-party filters and effects. There's also an excellent title and keying feature (which allows text animation) and a comprehensive motion-effects window that is able to animate alpha-channel graphics or whole screens including elaborate spins, rolls, and keyframe motion created by the user.

Like QuarkXPress and Adobe PageMaker in the publishing world, video-editing software provides a pasteboard on which you manipulate, rearrange, and enhance images to produce a complete movie. Since video-editing software works together with time-based media, the pasteboard is dynamic — instead of using a blank page, video packages employ a timeline metaphor. Once you have

Better Movies / tips for trouble-free desktop video

YOU WANT YOUR EXPERIENCE creating digital video to be as headache-free as possible, right? Here are a few tips for avoiding trouble:

- Make sure you are using the latest version of the Mac OS (7.5.3) and QuickTime (2.5) as well as of your editing/capture application. Performance improvements and better compatibility will be your rewards.
- Tone down your menu bar. Turn off any extensions or control panels that modify the menu bar, such as the clock display created by the Date & Time control panel. Small as they are, these extensions compete with video-editing software for needed resources.
- Turn off AppleTalk, virtual memory, and RAM enhancers such as RAM Doubler. These interfere with QuickTime's ability to capture and play back smoothly.
- Keep your hard disk defragmented. No matter what you're doing with your Mac, proper hard-disk hygiene is essential. Use Symantec's MacTools or Norton Utilities (preferably both) to check, defragment, and optimize the disk you're using to record video images. DiskExpress, from Alsoft, automatically optimizes your disks when you're not using the machine.
- Use the highest-quality input available. The S-Video connector on your Mac provides a better signal than the RCA-style composite-video connector.
- Turn off sound capture. You'll get better performance if you capture only the video signal. Capture the audio later, and then combine it with video to create your final clip. If you do decide to capture audio and video together and you're using a Power Mac, set it to capture 44-kHz, 16-bit-stereo audio. Sound Manager 3.0 and later versions are optimized for this setting.
- Buy more hard drives. Digital video can quickly fill a disk. Run the OS and the editing software on the built-in drive that came with your Mac, and use your new hard disk as the scratch disk for recording.

/ JEFFY MILSTEAD

It's here!

CorelDRAW! 6 Suite for Power Macintosh

The First Graphics and Word-Processing Suite for Power Macintosh™

Introducing the **first** fully featured graphics suite for Macintosh® users. Offering a complete graphics and word-processing solution for both novice and professional artists, CorelDRAW™ 6 Suite for Power Macintosh™ allows you to create sophisticated artwork effortlessly. Add breathtakingly realistic special effects to your illustrations with innovative drawing, image-editing, 3D modeling and texture creation tools. Internet users will find Corel® WordPerfect® 3.5 an incredibly intuitive way to create polished documents for the World Wide Web. Offering all this and much more, CorelDRAW™ 6 Suite for Power Macintosh™ sets a new standard in productivity, power and value, and marks the dawn of a new era in graphics software for Macintosh® users.

CorelDRAW™ 6 for Power Macintosh™

- Industry-leading vector drawing tools
- Fully compatible with CorelDRAW™ 3, 4, 5 and 6 for Windows®
- Dynamic special effects including Lens, PowerClip, 3D extrusion and enveloping

Corel® WordPerfect® 3.5 for Macintosh™

- Fast, powerful and easy-to-use word processor
- Comprehensive tools for writing and communication
- Internet publishing capabilities enable you to create, import and export HTML documents

CorelDREAM 3D 6

- Powerful spline-based 3D modeling and rendering
- Create 3D models using freeform, wizard or standard 3D object tools
- Apply surface mapping properties including texture, reflection, transparency, shininess and highlights

Corel TEXTURE™ 6

- Create photo-realistic natural media textures such as liquids, metals, marbles, stones, woods and fabrics
- Adjust surface properties including color, lighting, grain angles and layer interactions
- Emboss imported bitmaps and apply beveled edge effects

Corel ARTISAN™ 6

- Includes a full complement of painting and image-editing tools
- Powerful brush effects including Tint, Colorize, Valuate, Saturate, Reveal and Artistic
- Supports Adobe Photoshop™ compatible plug-in filters

INCREDIBLE VALUE!

- 9 powerful applications and utilities
- Over 25,000 clipart images
- Over 1,000 high-resolution photos
- Over 1,000 Type 1 fonts
- Over 650 TrueType® fonts
- Over 750 3D models

Accelerated for Power Macintosh

INCLUDES COREL WordPerfect

KUR-0236-US

Amazing Graphics! Unbeatable Value!

Competitive upgrade offer!
$158.98* upgrade from any version of:
Macintosh® graphics or photo-editing software
Corel® WordPerfect® for Macintosh®
CorelDRAW™ for Windows®

The Mac Zone™ Your Catalog SuperStore
1-800-248-0800

$415.98* Full CD-ROM Version

*US$ plus applicable taxes and shipping.

Corel, WordPerfect and CorelDRAW are trademarks or registered trademarks of Corel Corporation or Corel Corporation Limited. Macintosh is a registered trademark and Power Macintosh is a trademark of Apple Computer, Inc. Adobe Photoshop is a trademark of Adobe Systems Incorporated. All other product names are trademarks or registered trademarks of their respective corporations.

Corel, Official World Title Sponsor of the COREL WTA TOUR

http://www.corel.com
Call now for faxed literature!
1-613-728-0826 ext. 3080
Document # 1008

CIRCLE **77** ON READER SERVICE CARD

captured video clips from tape, you can fill the timeline with clips that will form the final movie. Also, like desktop-publishing tools, video-editing software is able to mingle a variety of digital-media formats, from still images to animation and from audio to special effects.

More Megabytes. Perhaps the most overlooked component in the video chain is the primary storage system: the hard drive or drives you will use to capture, save, and play your video footage. Once again, throughput is the most important consideration when choosing a drive. *Sustained throughput* is a measurement of the amount of data a drive can transfer on a continuing basis. Many drive vendors sell high-performance storage systems intended for video. These drives boast sustained throughput rates that are much higher than those of typical Mac hard drives. Video-card vendors typically recommend that the throughput of your hard drive be somewhat faster than that of your video card. On the other hand, adding a lightning-fast disk array to a system that includes a 3.5-MB-per-second video card is probably overkill. miro, maker of the miroMotion DC20, recommends that your drive's (or array's) throughput be 50 percent above that of your card.

You can test a disk drive to determine whether or not it has the sustained throughput to stand up to the rigors of desktop video. With your Mac video setup in place and Adobe Premiere installed, capture some video footage to the drive you'd like to test. First, tell Premiere to report dropped frames. If you lose frames during the capture, try recording your footage at a lower data rate. If your first capture did not drop any frames, increase the data rate until some frames do drop. When you reach the highest data rate your drive can handle, play your movie back at the same rate, to verify the quality of your recording and, therefore, the data rate supported by your drive.

Video footage takes up lots of space, and the higher your throughput, the less the compression applied to your video and the more disk space your movie will require. A drive with sustained throughput of 3 MB per second will use 180 MB of disk space to store a one-minute video clip. With drive prices low, it pays to invest in a multigigabyte drive. You'll find 4-GB drives for less than $1,000 and 9-GB drives for less than $2,000.

If you intend to work with component-quality video (which usually delivers 5 MB per second of data), a disk array is essential. Disk arrays divide the data stream between two or more drives, effectively multiplying your capture and recording speed. Disk arrays use a PCI card to manage the data streams, so you'll need a spare slot in your Macintosh. Some arrays deliver 40-MB-per-second sustained throughput, which is far above the throughput of most video cards. The latest trend in mass storage for video is removable storage. Removable hard-disk arrays and Jaz arrays are very cost-effective and have the advantage of being able to double as backup systems.

Lights, Camera, QuickTime!

As it did in the page-layout, audio, and color-publishing realms, the Macintosh is leading the way in desktop video, providing the widest selection of components for producing movies. Although the plethora of choices can sometimes seem a bit confusing, your efforts will all be worthwhile when you finally see your video spring to life. Welcome to the bleeding edge.

Kennedy Grey is the Online Media Director for Seattle-based Fast Forward Media Lab, a nonprofit organization that teaches at-risk youth about new-media technologies.

Making Smaller Movies / compression strategies

FACE IT, YOU'VE GOT TO COMPRESS your movies before playing them back on the Mac or adding them to your Web site. Neither the fastest Mac nor the Internet can move uncompressed data fast enough to play video cleanly. But how much should you compress your movie, and how should you go about it? Since greater compression equals lower image quality, you need to find an optimum compression rate, based on your intended playback medium and the image quality you need. Adobe Premiere 4.2 includes features that help you optimize movies for CD-ROM data rates, but the interface is far from intuitive for novice users.

Enter MovieCleaner Pro ($189), from Terran Interactive (800-577-3443 or 408-278-9065). This software is designed to create the best-possible video-compression settings, based on information you supply during an "interview" process. You're asked to decide the relative importance of such things as compression rate versus image quality, audio quality versus video quality, and smooth motion versus clear image quality. Also, MovieCleaner Pro compresses your movie based on what it has learned. Experienced video makers can control such parameters as adaptive noise filtering, blurring, and gamma adjustment.

To help you make your movie debut on the Web, Terran offers a plug-in for MovieCleaner Pro, called Web-Motion ($129). Because Web access speeds vary from the painfully slow (14.4- and 28.8-kbps, with modems) to the almost tolerable (with direct T1 links), compression is especially important for QuickTime movies. The data rate of your movie should be chosen to match the speed at which your audience can connect. Web-Motion also includes a CD-ROM with plenty of sample movies, compressed at the low data rates dictated by the Internet. These movies are integrated into the interview process to help ensure that your expectations for Web-based QuickTime movies are realistic.

Making movies that are truly Web-friendly means giving some consideration to Net-lurking PC users. Mac files typically contain two parts — a resource fork and a data fork. PC files have only a data fork. To get your QuickTime movie ready for cross-platform playback, you need to "flatten" the movie file into a single unit. MovieCleaner Pro can make your movies as flat as a pancake.

A new compressor/decompressor called ClearVideo, from Iterated Systems, holds promise for lowering the data rate while maintaining the quality of Web movies. Iterated claims that movies compressed with ClearVideo, which is based on fractal image-compression technology, can be as little as one-fifth the size of those compressed with the popular Cinepak codec, found in the vast majority of all QuickTime movies today. The decoder (player) will be distributed free of charge on the Net. / *JEFFY MILSTEAD*

When you use MovieCleaner Pro's Web-Motion plug-in, there's no guesswork about Web compression. If you're confused about Internet connection speeds and their effect on movie playback, Web-Motion will be able to help you.

www.netbuyer.come

—and get it!

Computer Shopper introduces NetBuyer, the *best* one-stop, online shopping service for computer buyers — and it's free!

Now there's one super web site where you can shop with confidence and ease. With over 40,000 computer products and more than 180 vendors, **NetBuyer** is a direct shopper's paradise. A few smart moves of the mouse and you search and compare products, check specs and prices, get advice from the experts at Ziff-Davis, cash in on weekly specials and order what you want direct from vendors — online or on the phone.

From a world-class system to cables and adapters, you can search for it, find it, compare it and buy it without leaving your desk or testing your patience. It's a fast and powerful tool. Come see today. The service is free!

Go to NetBuyer on the World Wide Web (www.netbuyer.com) to enter the NetBuyer sweepstakes. Sweepstakes are open only to U.S. residents who are at least 18 years of age. A random drawing will occur each week between October 1st and December 24th. The prize for each weekly sweepstakes is a check for $500. No purchase necessary. Void where prohibited or restricted by law. Sweepstakes are subject to the full official rules posted on the NetBuyer web site.

Pump Up Your Selection Skills

Struggling with the lasso and the magic wand? Adobe Photoshop 3.0's color channels can help.

IF YOU'VE SPENT HOURS painstakingly outlining edges with Photoshop's lasso tool, you know it's not easy to lift an object out of one image so you can place it in another. Whether you want to superimpose a porcupine on the Eiffel Tower or simply give that special someone a third arm, the trick is to understand the power of Photoshop 3.0's color channels.

The mask you can make with color-channel information is usually far more precise than what you could draw by hand, and it's *much* easier and faster to produce. Color channels contain information for each color in your image — red, green, and blue if it's an RGB image; cyan, magenta, yellow, and black if it's a CMYK image. Hidden in a single color channel, there's often more contrast between the object you want to select and its background than you can see by looking at the image as a whole. (Tip: With RGB images, you can usually find greatest contrast in the red channel and greatest detail in the green channel.) It's contrast that can help you create your mask.

Here we use a single color channel to make a mask and then paste our object into a new background. (Our images came from the Photodisc Stock library, at http://www.photodisc.com/.) Once you're comfortable with this technique, try creating more-sophisticated masks by combining parts of different color channels.

5. CORRECT THE COLOR TO GIVE A REALISTIC FLAIR.

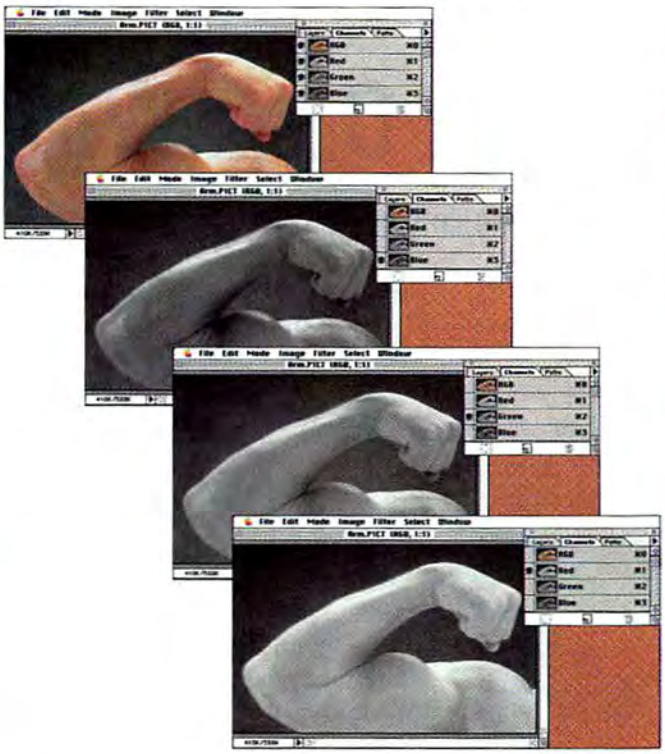
David Biedny is a founding editor of MacUser *and the coauthor (with Bert Monroy) of* Adobe Photoshop — A Visual Guide *(Addison-Wesley). Nathan Moody is a multimedia artist and Biedny's Green Channel Man.*

STEP BY STEP

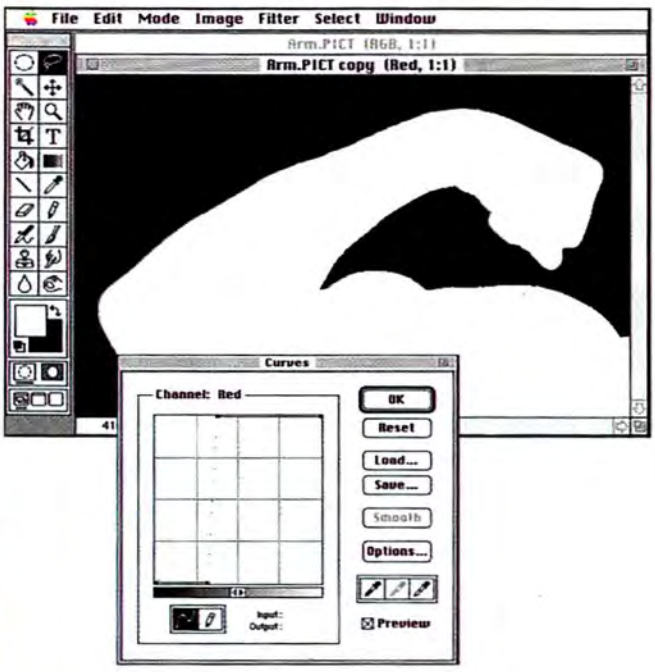
1. CHOOSE THE COLOR CHANNEL WITH THE MOST CONTRAST. Begin by making a duplicate of your file to use for creating your mask. To make a mask, you must eliminate all of the image's midtones until you're left with a black background and a solid white space — the hole your object will show through. The more contrast you start with, the easier this process will be, so take a careful look at each channel (Window: Palettes: Show Channels). We chose to work with the Red channel, because in our image it offered the highest contrast between the arm and the backdrop.

2. USE THE CHANNEL TO MAKE YOUR MASK. Activate your chosen channel by highlighting it in the Channels palette. Begin eliminating the image's midtones by experimenting with curves (Image: Adjust: Curves). Use the more precise pencil tool at the bottom left of your Curves palette to change darker tones to black and lighter tones to solid white. Keep your eye on difficult areas — in our example, the hairs on the back of the arm and the shadow at its crook — to make sure you include them. The more carefully you make this mask, the less time you'll have to spend fixing harsh edges later. Smooth out the curve you've made by clicking on Smooth in the Curves palette. Patch small imperfections with the paintbrush tool, but if there are a lot of holes, try making the mask again from the beginning.

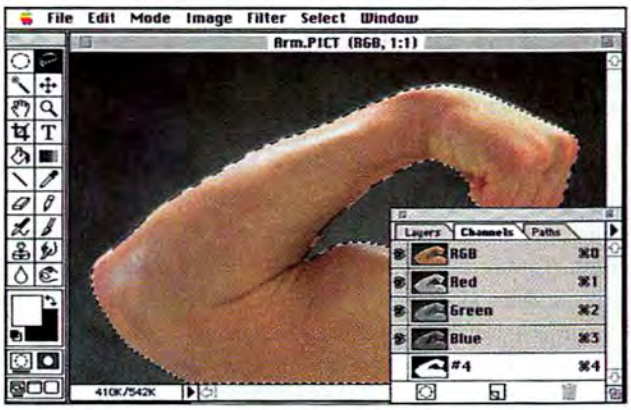
1. CHOOSE THE COLOR CHANNEL WITH THE MOST CONTRAST.



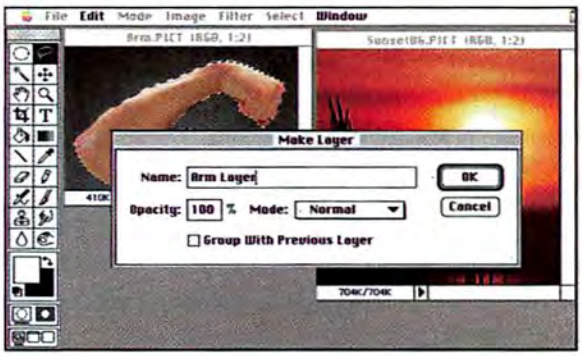
2. USE THE CHANNEL TO MAKE YOUR MASK.



3. USE THE MASK TO SELECT YOUR OBJECT AND PLUCK IT FROM ITS ORIGINAL BACKGROUND.



4. BRING BACKGROUND AND FOREGROUND TOGETHER TO CREATE YOUR NEW IMAGE.



3. USE THE MASK TO SELECT YOUR OBJECT AND PLUCK IT FROM ITS ORIGINAL BACKGROUND. Duplicate this channel — your new mask — and paste it into your original file. To do this, you can drag and drop the channel onto your original image or choose Duplicate Channel from the pop-up menu on the right of the Palettes menu. Now you can use your mask to select the object. Load the channel as a selection (Select: Load Selection), and then revel in the sight of your object selected and ready, all without use of the lasso or the magic wand.

4. BRING BACKGROUND AND FOREGROUND TOGETHER TO CREATE YOUR NEW IMAGE. Paste the selected object into your new background as a new layer (Edit: Paste Layer). Creating a new layer is your best bet when you bring together elements from various images, because you can move, resize, and color-correct the elements without affecting the background. Your object might have some harsh edges despite your efforts. If so, try defringing them one or two pixels (Select: Matting: Defringe).

5. CORRECT THE COLOR TO GIVE A REALISTIC FLAIR. To make your new image look more natural, match the color tone of your foreground and background elements. Using the Color Balance command (Image: Adjust: Color Balance), we shifted our arm's hues away from greens and blues to accentuate the warm reds of sunset.

EXPERT TIPS / By Bob Schaffel and Chuck Weger

Print Nuts Posting on an Open Wire

May your daze be merry and bright, and may all your halftone dots be right.

THE END OF THE YEAR, AGAIN. Last year at this time, we drew up a holiday wish list for the coming year. Let's check last year's list to see if we got what we asked for:

A font-management system that works. *Not quite there yet.* Among other things, we asked for a font-management system smart enough to find and install missing fonts automatically. Symantec finally came out with an update to the popular Suitcase font utility, but it's still basically a passive system that requires you to keep track of font requirements manually. The most promising development is Font Reserve, an intelligent font-substitution database from DiamondSoft.

Simple systems. *Not there yet, and possibly getting worse.* We asked for an operating system that doesn't require a lot of third-party stuff to give it basic functionality. Not only don't we have Mac OS 8 (née Copland) but we're also going to get it only in dribs and drabs as new code and bug fixes warrant updates. Plus, things get more complicated as we head for a more document-centric environment. Web pages are already delivering Java code, and there will inevitably have to be some mediation between what an operating system supplies and what you download from the Internet. Stay tuned.

Better testing. *Perhaps pie in the sky.* We hoped that vendors would, in effect, talk to each other more. The idea of testing for interoperability shouldn't be foreign. Realistically, though, this has as much chance as the proverbial snowball in Hades.

Database management. *Moving in the right direction.* We wished for a more intelligent database structure so that data could drive the production process actively. Several encouraging products that extend the concept of data management to asset management have since appeared, including ones from Archetype, Canto, and Scitex.

Anything other than HTML. *Improved, sort of.* Hoping for something that didn't look like warmed-over typesetting, we asked for a Web authoring language with visual richness. Adobe Acrobat has made inroads on the Net because it delivers visual richness. With the Acrobat plug-in for the Netscape browser, you can view and download individual Acrobat pages without retrieving an entire document.

Reasonable RAM prices. *Halfway there.* Supply finally caught up with demand, and it's been a great time to buy RAM. If only the logic-board engineers kept the same SIMM/DIMM design for a few product cycles . . . .

What Next?

What's on this year's holiday wish list?

Apple shapes up. The company must understand that publishing is its key market. Apple has always been and will continue to be challenged by the PC community. We may not need a Mac to run Excel, but we sure do need one to effect color management. We also hope that Apple will start producing an entire Mac line that not only looks and feels but also is reliable. The PowerBook 5300 problems this year hurt the credibility of the rest of Apple's computers enormously.

Windows NT runs on an Apple box. Although we hear only distant rumors of this, we'd like to be able to run Windows NT server software on a Mac. The benefit? Real connectivity with the "other" community while having the ability to use the Mac for those tasks in which it beats a PC hands down.

Supra emerges. Adobe's new PostScript architecture helps make output (of any sort) more reliable and predictable, and we'd like to see it sooner rather than later. We hope Adobe will remember that it needs to stay intimately tied to high-end commercial publishing.

DVDs materialize. Wouldn't it be nice not to have to wait two years for an affordable Digital Video Disc machine? We might then get on with the evolutionary changes of this recordable medium a lot faster. Intuit's pricing model for Quicken offers a big lesson here — low-entry cost leads to wide adoption.

Software synchronizes. We wish all software vendors would issue one big megarelease on a given day and then keep quiet for a year, so we could get some work done instead of spending our lives upgrading. We could call it Software Appreciation Day . . . Hallmark could issue a line of greeting cards . . . maybe there could be a parade down Fifth Avenue.

No more Web crawling. Whatever it takes to speed up data transfer on the Internet would round out our list. It's bad enough that many Web pages really do rate recognition on Mirsky's Worst of the Web site. It's worse that we have to wait as long as we do to view this ugly stuff. ISDN helps with this only somewhat, and it is still too expensive in many areas of the country. We want bandwidth!

Well, that's it for this year. Not too much to ask, is it? What would you ask for? Let us know at experttips@macuser.com. More important, we hope you have a healthy and happy holiday season. May the god of installations smile on your technological innovation.

Bob Schaffel is emerging-technologies consultant for R. R. Donnelley & Sons. Chuck Weger is a graphic-arts consultant and a partner in Genex Media, a company specializing in new media and Web design.

ILLUSTRATION / STU SUCHIT

Includes First 100MB Disk!

$50 ZIP CASH BACK!

Here's what you get:

- Iomega 100MB Zip Drive
- 100MB 3.5" Iomega Zip Disk
- Utility software on disk

*After $50 mfr's mail-in rebate. Price before rebate $199.95. Offer expires 1/31/97.

Still only $149.95* after rebate

ASK FOR ITEM # BND 1429

NEW!

33,600 bps FAXMODEM

ASK FOR ITEM # BND 1447

Fastest Modem Available!

33.6 SUPERFAST!

All for only $99.95* after rebate

Includes 33.6Kbps fax/modem, Earthlink Total Internet Access, CompuServe Information Manager, Microphone Data and FAXstitute software.

*Price after $30 mfr's mail-in rebate. Price before rebate is $129.95.

See coupon in box. Offer good while supplies last.

8 Pages of HOT DEALS on MAC OS Systems and SIMMs!

Authorized Catalog Reseller

MacWAREHOUSE®

We carry over 6,000 Products for Your Mac — plus a full line of Mac OS Compatibles!

HI-PERFORMANCE MAC SYSTEMS!

PowerPC 603e Systems starting as low as

$1499!

These NEW Macintosh OS workstations offer fantastic price/performance value with blazing-fast PowerPC processors built-in! $1499 reflects price of Power Computing's PowerBase 180MHz Low Profile. See page 6. Check out the BRAND NEW Motorola StarMax 3000 and 4000 workstations on pages 12 and 162.

New!

Motorola StarMax 4000/200MHz Mini-tower 32/2.5GB/8XCD $3599! Monitors sold separately. 604e PowerPC

ASK FOR ITEM # CPU 0454

New!

Motorola StarMax 3000/160MHz 16/1.2GB/8XCD $1599! Monitors sold separately. 603e PowerPC

ASK FOR ITEM # CPU 0447

New!

PowerComputing

PowerBase Series 180MHz, 16MB RAM, 1.2GB HD, 8X CD-ROM $1499! Monitor sold separately. 603e PowerPC

ASK FOR ITEM # CPU 0412

MOTOROLA Authorized Reseller

Includes 28.8 Modem!

Jam-Packed with FREE Software!

FREE! with any order!*

F/A-18 HORNET CLASSIC CD! Strap in for the ride of your life with one of the all-time favorite Mac flight simulators! Ask for Item# AAA0429 *Plus additional $2.95 shipping & handling. Shipped in promotional packaging on CD-ROM.

WHILE SUPPLIES LAST!

New!

MOTOROLA StarMax 4000/160 160MHz, 16MB RAM, 1.2GB HD, 8X CD-ROM, Keyboard & mouse. Monitors sold separately. 604e PowerPC

$2599!

ASK FOR ITEM # CPU 0451

WORTY-FIVE 5-YEAR WARRANTY

Iomega 1.0GB Jaz Drive Unlimited storage using 3.5" 1.0GB cartridges!

$499.95!

Includes First 1.0GB Cartridge!

ASK FOR ITEM # DRI 1119

Global Village Modems BLOWOUT

AS LOW AS $29.95! 14.4Kbps Teleport Gold II

While Supplies Last!

ASK FOR ITEM # DMD 1314

FREE! with Memory Upgrade!*

Star Wars REBEL ASSAULT II!

Item# AAA0433 *Plus $2.95 shipping & handling. Shipped in promotional packaging.

SEE CENTER OF CATALOG

MORY UPGRADES in 80ns as low as $19.95 each!

CHP 0022

12X CD-ROM Drives only $199.95!

SUPER FAST

ASK FOR ITEM # BND 1606

Get Nova Art Explosion and MYST for ONE INCREDIBLY LOW PRICE!

Both for only $29.95!*

*Get Myst & Nova Art Explosion—both for only $29.95 when you purchase a CD-ROM drive at the same time. Software shipped in promotional packaging.

ASK FOR ITEM # AAP 0362

Get it Overnight for only $3.00! Up to 10 lbs.

1-800-344-9320

ORDER 24 HOURS A DAY, 7 DAYS A WEEK

Visit our Web site @ http://www.warehouse.com

For your FREE Canadian Catalog, call toll-free 1-800-603-5139!

CIRCLE 157 ON READER SERVICE CARD

SPEEDS UP TO 200MHZ!

MOTOROLA

New!

StarMax 3000/160

MAC OS DESKTOP SYSTEM

Includes 28.8 Modem!

Worry-Free! The Motorola-Branded Service & Support 3-YEAR WARRANTY

- 160MHz PowerPC 603e Processor
- 16MB RAM (expandable to 160MB)
- 256K Level-2 Cache (512K optional)
- 1.2GB Internal Hard Disk Drive
- 8X-SPEED CD-ROM Drive
- 1.4MB Floppy Disk Drive
- Motorola 28.8 Data/Fax Modem
- Three PCI Expansion Slots
- Two ext. drive bays, one internal
- 1MB VRAM (expandable to 4MB)
- ADB/PS/2, SCSI, stereo 16-bit, headphones/microphone & two serial ports
- Keyboard & mouse included
- Five-year manufacturer's warranty
- Monitors sold separately

Ask for Item # CPU 0447

$1599!

New!

StarMax 3000/200

MAC OS DESKTOP SYSTEM

Includes 28.8 Modem!

Worry-Free! The Motorola-Branded Service & Support 3-YEAR WARRANTY

- 200MHz PowerPC 603e Processor
- 16MB RAM (expandable to 160MB)
- 256K Level-2 Cache (512K optional)
- 1.2GB Internal Hard Disk Drive
- 8X-SPEED CD-ROM Drive
- 1.4MB Floppy Disk Drive
- Motorola 28.8 Data/Fax Modem
- Three PCI Expansion Slots
- Two ext. drive bays, one internal
- 1MB VRAM (expandable to 4MB)
- ADB/PS/2, SCSI, stereo 16-bit, headphones/microphone & two serial ports
- Keyboard & mouse
- Five-year manufacturer's warranty
- Monitors sold separately

Ask for Item # CPU 0449

$1999!

New!

StarMax 3000/160

MAC OS MINI-TOWER

Includes 28.8 Modem!

Worry-Free! The Motorola-Branded Service & Support 3-YEAR WARRANTY

- 160MHz PowerPC 603e Processor
- 32MB RAM (expandable to 160MB)
- 256K Level-2 Cache (512K optional)
- 2.5GB Internal Hard Disk Drive
- 8X-SPEED CD-ROM Drive
- 1.4MB Floppy Disk Drive
- Motorola 28.8 Data/Fax Modem
- Five PCI Expansion Slots
- Three ext. drive bays, two internal
- 1MB VRAM (expandable to 4MB)
- ADB/PS/2, SCSI, stereo 16-bit, headphones/microphone & two serial ports
- Keyboard & mouse
- Five-year manufacturer's warranty
- Monitors sold separately

Ask for Item # CPU 0448

$1899!

New!

StarMax 3000/200

MAC OS MINI-TOWER

Includes 28.8 Modem!

Worry-Free! The Motorola-Branded Service & Support 3-YEAR WARRANTY

- 200MHz PowerPC 603e Processor
- 32MB RAM (expandable to 160MB)
- 256K Level-2 Cache (512K optional)
- 2.5GB Internal Hard Disk Drive
- 8X-SPEED CD-ROM Drive
- 1.4MB Floppy Disk Drive
- Motorola 28.8 Data/Fax Modem
- Five PCI Expansion Slots
- Three ext. drive bays, two internal
- 1MB VRAM (expandable to 4MB)
- ADB/PS/2, SCSI, stereo 16-bit, headphones/microphone & two serial ports
- Keyboard & mouse
- Five-year manufacturer's warranty
- Monitors sold separately

Ask for Item # CPU 0450

$2399!

100% MAC OS-COMPATIBLE!

SUPER SYSTEMS!

New!

From the creators of the PowerPC chip!

The StarMax 3000 Mac OS-Compatible

The Motorola StarMax™ 3000 Mac® OS-compatible brings you industry-leading PowerPC performance at an amazingly affordable price! With Motorola's state-of-the-art PowerPC 603e processor running at speeds up to 200MHz, you'll race through all your graphics and publishing applications faster than you ever dreamed possible!

- Up to 200MHz PowerPC 603e processor!
- Up to 32MB RAM, expandable to 160MB!
- State-of-the-art 8X-SPEED CD-ROM Drive!
- Up to 2.5GB Internal Hard Disk Drive!

160MHz PowerPC 603e
MODELS STARTING AS LOW AS
$1599!

Mac OS

Monitors sold separately.

Includes 28.8 Modem!

Includes Internet Access software!

Worry-Free!
The Motorola-Branded Service & Support
5-YEAR WARRANTY
✓1st Year: on-site, next business day!
✓FREE 90-Day Out-of-the-Box Telephone Support!
✓Service & Support Upgrade Options!

Order by MIDNIGHT ⊙ for OVERNIGHT DELIVERY of your order!

MacWAREHOUSE

Order toll-free 24 hrs. a day, 7 days a week!

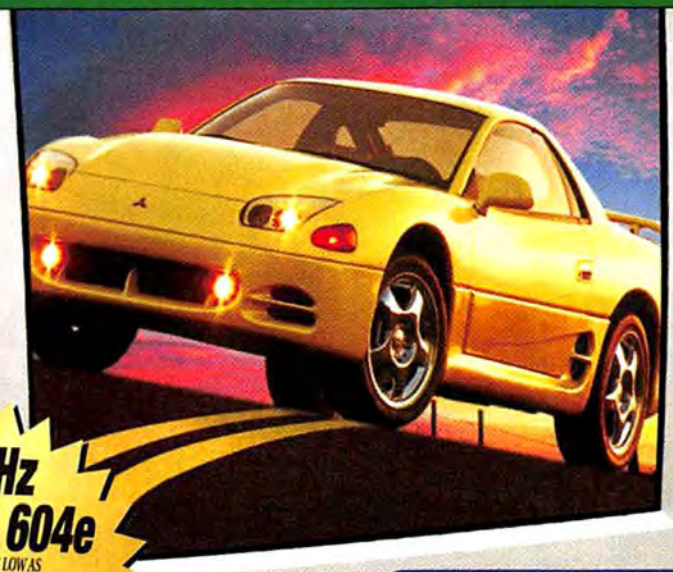
1-800-344-9320

CIRCLE **157** ON READER SERVICE CARD

MOTOROLA
COMPUTER GROUP

HI-PERF

From the creators of the PowerPC chip!



160MHz PowerPC 604e
MODELS STARTING AS LOW AS
$2599!
Monitors sold separately.

- Up to 200MHz PowerPC 604e processor!
- Up to 32MB RAM, expandable to 160MB!
- State-of-the-art 8X CD-ROM Drive!
- Up to 2.5GB Internal Hard Disk Drive!
- Pre-installed Mac OS 7.5.3!

New!

The StarMax 4000:
PowerPC At Its Best!

Motorola, maker of the PowerPC chip, has set a new standard for Mac® OS system performance with the StarMax™ 4000! These state-of-the-art workstations feature the PowerPC 604e processor, proven in industry benchmarks to process up to 50 percent faster than the PowerPC 603e processor.

Great standard features, legendary quality, and the best Service and Support Warranty in the business!

These new Motorola systems come standard with 256K Level-2 cache, up to 32MB of RAM, an 8X CD-ROM drive, up to 2.5GB of hard disk storage, 2MB of Video Memory, built-in 16-bit stereo, up to five PCI expansion slots, extended keyboard and mouse!

Plus, only Motorola gives you five years of exclusive Motorola-Branded Service & Support. Your comprehensive warranty includes on-site service the next business day for your first year—you can even upgrade your warranty to get same-day on-site service for all five years!

Get unparalleled PowerPC 604e performance AND Mac OS ease of use in a powerful desktop system that gives you great price/performance value — order the Motorola StarMax 4000 today!

RMANCE
MAC OS SYSTEMS!

FEATURING TOP-OF-THE-LINE PowerPC 604e PROCESSING

UP TO 200MHz!

monitor sold separately

New! StarMax 4000/160
MAC OS DESKTOP SYSTEM

- 8X CD-ROM Drive
- Three PCI Expansion Slots
- Two ext. drive bays, one internal
- 2MB VRAM (expandable to 4MB)
- Keyboard & mouse included
- ADB/PS/2, SCSI, stereo 16-bit, headphones/microphone & two serial ports

- 160MHz PowerPC 604e Processor
- 16MB RAM (expandable to 160MB)
- 256K Level-2 Cache (512K optional)
- 1.2GB Internal Hard Disk Drive

Ask for Item # CPU 0451

$2599!

monitor sold separately

New! StarMax 4000/160
MAC OS MINI-TOWER SYSTEM

- 8X CD-ROM Drive
- Five PCI Expansion Slots
- Three ext. drive bays, two internal
- 2MB VRAM (expandable to 4MB)
- Keyboard & mouse included
- ADB/PS/2, SCSI, stereo 16-bit, headphones/microphone & two serial ports

- 160MHz PowerPC 604e Processor
- 32MB RAM (expandable to 160MB)
- 256K Level-2 Cache (512K optional)
- 2.5GB Internal Hard Disk Drive

Ask for Item # CPU 0452

$2999!

or sold separately

New! StarMax 4000/200
MAC OS DESKTOP SYSTEM

- 1.2GB Internal Hard Disk Drive
- 8X CD-ROM Drive
- Three PCI Expansion Slots
- Two ext. drive bays, one internal
- 2MB VRAM (expandable to 4MB)
- Keyboard & mouse included
- ADB/PS/2, SCSI, stereo 16-bit, headphones/microphone & two serial ports

0MHz PowerPC 604e Processor
MB RAM (expandable to 160MB)
6K Level-2 Cache (512K optional)

Ask for Item # CPU 0453

$3199!

monitor sold separately

New! StarMax 4000/200
MAC OS MINI-TOWER SYSTEM

- Keyboard & mouse included
- ADB/PS/2, SCSI, stereo 16-bit,headphones/microphone & two serial ports

- 200MHz PowerPC 604e Processor
- 32MB RAM (expandable to 160MB)
- 256K Level-2 Cache (512K optional)
- 2.5GB Internal Hard Disk Drive
- 8X CD-ROM Drive
- Five PCI Expansion Slots
- Three ext. drive bays, two internal
- 2MB VRAM (expandable to 4MB)

Ask for Item # CPU 0454

$3599!

MacWAREHOUSE

Order toll-free 24 hrs. a day, 7 days a week!

1-800-344-9320

CIRCLE **157** ON READER SERVICE CARD

180MHz. PowerPC. The Low

NEW! POWERBASE SERIES

PowerComputing™

PowerComputing delivers the ultimate in value with the new **PowerBase Series.** You'll be blown away by the standard features: *256K Level-2 cache, a mammoth 1.2GB hard drive, a dizzying 8X CD-ROM drive, 2MB accelerated PCI graphics for realistic gaming and modeling, and more.* Plus, it's **jam-packed with FREE software,** including MacOS 7.5.3! *And,* with an optional upgradable CPU and three PCI slots, the PowerBase will give you all the power you need for years to come. Choose the low-profile desktop model, or get a mini-tower case with extra expansion bays for only $100 more. **Either way, you'll get top-of-the-line processing at a rock-bottom price.** ***Order yours today!***

FREE! **All these Power Computing systems come with software, including:** *MacOS 7.5.3, Claris Works, Grolier's Encyclopedia, Now Contact, Now Up-to-Date, Quicken, US and World CD Atlas, plus MUCH MORE!*

POWERCENTER

PowerCenter 604 Desktop
132MHz or 150MHz PowerPC™ 604

- 16MB RAM (expandable to 512MB RAM)
- 512K Level-2 Cache
- 1.0GB SCSI Hard Drive
- Quad-Speed (4X) CD-ROM Drive
- 3.5" 1.44MB Floppy Drive
- 3 Fast PCI Expansion Slots
- Built-in Ethernet (10Base-T & AAUI)
- PCI Graphics w/1MB VRAM
- Extended Keyboard & Mouse
- Desktop Enclosure

Monitor sold separately.

MacUser KWAND 1995 WINNER

HOT PRODUCT 1995

MacWorld

PowerCenter 132MHz
Ask for Item # CPU 0147..... **$1899**

PowerCenter 150MHz
Ask for Item # CPU 0148..... **$2149**

Jam-Packed with FREE Software!

POWERTOWER

PowerTower 604 Mini-Tower
166MHz, 180MHz or 200MHz PowerPC™ 604

- 16MB RAM (expandable to 512MB RAM)
- 512 K Level-2 Cache
- 2.0GB SCSI Hard Drive
- Quad-Speed (4X) CD-ROM Drive
- 3.5" 1.44MB Floppy Drive
- 3 Fast PCI Expansion Slots
- Built-in Ethernet (10Base-T & AAUI)
- PCI Graphics w/2MB VRAM
- Extended Keyboard & Mouse
- Mini-Tower Enclosure

Monitor sold separately.

MacUser KWAND 1995 WINNER

HOT PRODUCT 1995

MacWorld

PowerTower 166MHz
Ask for Item # CPU 0149..... **$2899**

PowerTower 180MHz
Ask for Item # CPU 0150..... **$3299**

PowerTower 200MHz
Ask for Item # CPU 0417 ..... **$3599**

Jam-Packed with FREE Software!

NEW!

POWERTOWER PRO

PowerTower Pro 604e Tower
180MHz, 200MHz or 225MHz PowerPC 604e

- 16MB RAM (expandable to 1GB RAM)
- 1MB Level-2 Cache
- 2.0GB SCSI Hard Drive
- 8X CD-ROM Drive
- 3.5" 1.44MB Floppy Drive
- 6 Fast PCI Expansion Slots
- Built-in Ethernet (10Base-T & AAUI)
- PCI Graphics w/8MB VRAM
- Extended Keyboard & Mouse
- Tower Enclosure

Monitor sold separately.

MacWEEK ◆◆◆◆◆ 7/96

MacUser RATED 9/96

PowerTower Pro 180MHz
Ask for Item # CPU 0376..... **$4199**

PowerTower Pro 200MHz
Ask for Item # CPU 0367..... **$4499**

PowerTower Pro 225MHz
Ask for Item # CPU 0368 ..... **$4999**

Jam-Packed with FREE Software!

Call Toll-Free, 24 Hours a Day, 7 Days a Week!

est Price Ever!

180MHz ONLY $1499!

180MHz PowerBase Mini-Tower (shown) ONLY $1599!

180MHZ PowerPC 603e PROCESSOR!

BUILT-IN 8X CD-ROM!

16MB OF RAM!

1.2GB HARD DRIVE!

PowerBase Series Features:

- ✔ 180MHz, 200MHz or 240MHz PowerPC 603e Processor
- ✔ 16MB RAM (expandable to 160MB)
- ✔ 1.2GB Hard Drive
- ✔ 8X CD-ROM Drive
- ✔ 256K Level-2 Cache
- ✔ Three PCI Expansion Slots
- ✔ PCI Graphics with 2MB EDO DRAM
- ✔ ADB Keyboard & Mouse
- ✔ Essential Software &CD-ROM Titles, Plus MacOS 7.5.3

Monitor sold separately.

FREE FM Tuner!

with your purchase of any PowerComputing System on these 2 pages!

FM Tuner

connects to your ADB port so you can play your favorite FM radio stations on your Mac!

A $49.95 VALUE!

Ask for Item # AAA 0440

MacWEEK ◆◆◆◆◆ 7/96

POWERBASE LOW PROFILE

Choose the Convenient PowerBase Low Profile Case...

PowerBase Low Profile 180MHz Ask for Item # CPU 0412	$1499
PowerBase Low Profile 200MHz Ask for Item # CPU 0409	$1799
PowerBase Low Profile 240MHz Ask for Item # CPU 0408	$2199

180MHz PowerBase Low Profile ONLY $1499!

PowerBase Series available as a Low Profile desktop unit or a Mini-Tower Case!

POWERBASE MINI TOWER

Or Get a Mini-Tower with Extra Expansion Bays for Only $100 More!

PowerBase Mini-Tower 180MHz Ask for Item # CPU 0411	$1599
PowerBase Mini-Tower 200MHz Ask for Item # CPU 0410	$1899
PowerBase Mini-Tower 240MHz Ask for Item # CPU 0407	$2299

Monitor sold separately.

Order by MIDNIGHT ⊕ for OVERNIGHT DELIVERY of your order!

MacWAREHOUSE

1-800-344-9320

CIRCLE 157 ON READER SERVICE CARD

MacWAREHOUSE

Memory Upgrade Guide

for Macintosh, Power Macintosh, PowerBook and Mac-OS compatible computers

30-Pin SIMMs
as low as **$19.95** each.

72-Pin SIMMs
as low as **$49.95** each.

8MB (80ns)
Ask for item # CHP 0102 ..... **$89.95** each.

16MB (80ns)
Ask for item # CHP 0103 ..... **$179.95** each.

32MB (80ns)
Ask for item # CHP 0104 ..... **$349.95** each.

168-Pin DIMMs
as low as **$69.95** each.

8MB (70ns)
Ask for item # CHP 0139 ..... **$89.95** each.

16MB (70ns)
Ask for item # CHP 0141 ..... **$179.95** each.

32MB (70ns)
Ask for item # CHP 0142 ..... **$249.95** each.

64MB (70ns)
Ask for item # CHP 0140 ..... **$599** each.

Star Wars Rebel Assault II

FREE! * with your memory upgrade purchase!

Ask for item # AAA 0433

*You pay $2.95 shipping and handling only. While supplies last. Shipped in promotional packaging on CD-ROM.

New!

LOWER PRICES!

Call toll-free 24 hours a day, 7 days a week

1-800-344-9320

These major credit cards accepted. NO SURCHARGE!

CIRCLE **157** ON READER SERVICE CARD

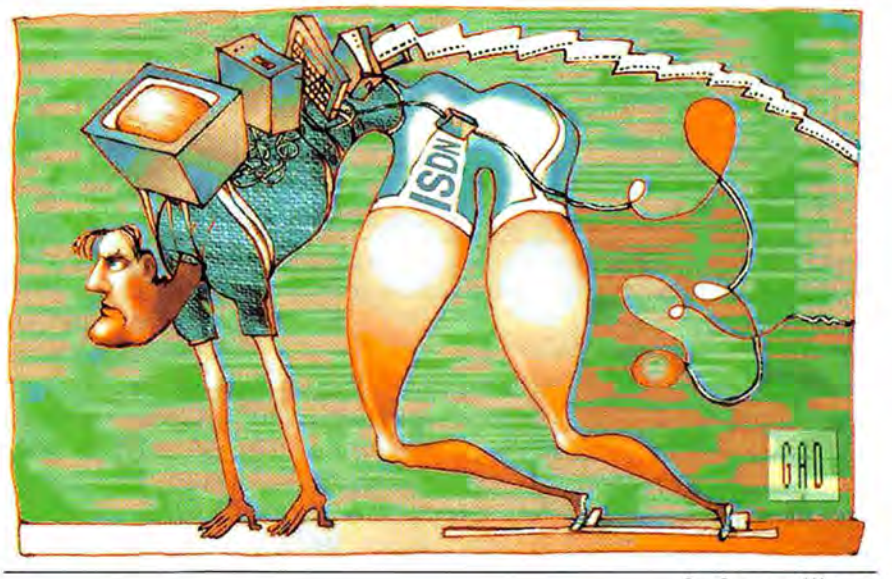


ILLUSTRATION / VICTOR GAD

Want to blast through the Internet at warp speed? ISDN can be your ticket to a cyberspace thrill ride.

By Gregory Wasson

ISDN On-Ramp

FOR THOSE WHO ARE SPOILED by a speedy, direct connection to the Internet at work and long for something better than the barely tolerable 14.4- or 28-kbps modem connection they have at home, ISDN (Integrated Services Digital Network) provides a viable alternative. And the good news is that prices are down and availability up.

ISDN — the digital phone system — is addictively fast (four to ten times as fast as analog lines), but getting wired into the technology can be frustrating, especially for inexperienced home users, who must contend with a blizzard of new jargon and an unfamiliar set of choices. This step-by-step guide will take some of the pain out of setting up a home-based ISDN connection.

Step 1: Call the Phone Company

Before you take the ISDN plunge, you'll need to go on a fact-finding mission. Find out if your phone company provides residential ISDN service in your neighborhood. All of the country's "Baby Bells" offer ISDN to some portion of their service area, and some companies (such as Pacific Bell on the West Coast) are very aggressive in spreading the ISDN gospel. Even in heavily wired areas, there *are* communities not yet served by ISDN.

If you have a choice between Residential or Business ISDN, chances are that the former will be much less expensive. Ask a lot of questions about the exact costs of the ISDN package that interests you. Is there a setup charge? Many phone companies offer steep discounts on the installation fee if you agree to keep the service for a specified period of time — say, two years. Remember, though, that you're likely to face painful penalty fees if you break that agreement. Usage fees are another hidden ISDN cost. Unlike with standard (analog) phone service, ISDN calls will often cost you during business hours. You may pay $.02 or $.03 cents a minute. Night and weekend calls are often free. The "Baby Bells Go Digital" table shows a sample of residential ISDN rates from each regional phone company.

With the price established, move on to nuts and bolts. You'll need to know what type of digital switch (AT&T's 5ESS and Northern Telecom's DMS-100 are the most common) your phone company employs. If you have a choice between 5ESS and some other switch type, choose the more flexible 5ESS.

Finally, ask about discounts or specials on ISDN equipment or Internet accounts. You can sometimes find deals that combine a preconfigured ISDN modem with an account at an ISP (Internet service provider).

Step 2: Shop Around for an ISP

Learning about and finding Internet access also requires a fact-finding expedition — the most important one of the process. Finding an ISP you feel comfortable with is essential in making your transition to ISDN as smooth as possible. If your current ISP offers ISDN, you may be able to switch account types at little cost. If your current provider is an online service (AOL or CompuServe) or does not offer ISDN access, it's time to do some digging.

ISPs come in two flavors: local and national. Local ISPs often offer lower costs, experience in working with your phone company, and plenty of storage space for your FTP and Web pages. On the other hand, local ISPs are often staffed by twentysomething computer-science grads who can be condescending to anyone who doesn't speak geek. National ISPs, such as Netcom and UUNet, generally offer better documentation, fewer busy signals, a bundle of useful software, and more hand-holding for Net newbies.

The best way to get the lowdown on an ISP

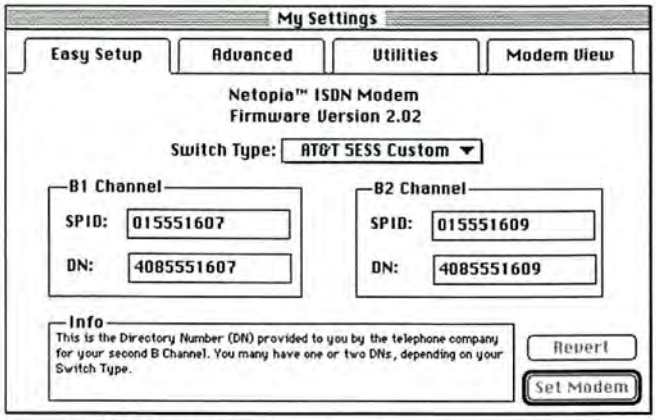


figure 1 / The Netopia ISDN Modem's configuration utility displays a simple tabbed dialog box where you enter SPIDs, DNs, and other information about your ISDN line.

is by word of mouth. Ask your friends and coworkers about their ISPs. How reliable are the providers? Do busy signals often block access? Is technical support readily available? Above all, ask about support for Mac users and for ISDN connections.

The List (http://thelist.iworld.com/) is a great online source of ISP information. This superb Web site allows you to search for national as well as local ISPs by area code, by state, or by pointing at a map. Each listing contains the latest rate information, options (such as ISDN support), special deals, and contact information. You'll find more ISDN-friendly ISPs in the "Nation of Surfers" table.

When you're interviewing ISPs, ask about compatible ISDN equipment. Some ISPs offer technical support only if you buy specific ISDN modems. Some ISPs even sell the equipment preconfigured. This can take a lot of the sting out of setting up ISDN at home, but you may pay a little more for equipment than you would by shopping from a catalog or at a computer superstore.

Compare prices and options. Some ISPs charge a flat monthly rate, with unlimited Net access. Others give you a set number of hours each month and charge a per-minute rate for usage beyond that limit. Find out whether access charges are higher for ISDN connections than for analog ones. Many companies have dropped two-tier pricing; others still charge ISDN customers more. You should expect to pay a $20-to-$30 account-setup fee. Monthly costs vary quite a bit, from $7 to $50, depending on the number of free hours included.

If phone company and ISP representatives have answered all of your questions, it's time to start buying and ordering things. If not, you might want to take a quick look at some of the excellent ISDN resources that are on the Web. Dan Kegel's ISDN Page (http://www.ocn.com/dank/index.html) is a comprehensive resource. It tends to be fairly technical, however, and may not suit users just getting started with ISDN. Get your feet wet with Netcom's good entry-level ISDN pages, at http://www.netcom.com/isdn/questions.html. Pac Bell's ISDN Help Desk (http://www.pacbell.com/products/business/fastrak/networking/isdn/info/Help_Desk/isdnfaq.html) is also an excellent place to go for ISDN info, whether you live on the West Coast or not.

Step 3: Purchase Hardware

ISDN connections require two hardware components: a terminal adapter (TA) and a network terminator (NT-1). Today, most consumer ISDN devices (external boxes, often called ISDN modems) include a TA and an NT-1. The Motorola BitSurfr Pro and the Farallon Netopia ISDN Modem are both popular choices for Mac users. The Farallon package gets the nod for its easy installation and configuration software. Whatever ISDN device you choose, be sure there's at least one analog port for your fax machine, voice phone, or analog modem. You can make and receive standard phone calls with your ISDN line, so long as an analog device is connected. Some ISDN devices (including the U.S. Robotics Courier-I Modem) include an analog modem. Don't be tempted to replace your current phone line with ISDN. Although you can use the ISDN line to make voice or modem calls, it's a good idea to keep your existing phone line: ISDN will go dead in the event of a power failure; analog phone lines will not. You'll pay between $350 and $450 for an ISDN modem with an analog port.

Last, make sure your ISDN modem supports Multilink PPP (MPPP). This capability lets you combine — or *bond* — the two 64-kbps channels that make up your ISDN connection, thereby doubling your access speed.

Step 4: Order Your ISDN Line

Call the phone company to order your line. You want an ISDN BRI (basic-rate interface) — commonly called a 2B+D configuration. A BRI

A Nation of Surfers / ISDN-ready ISPs

ISP	Account-Setup Fee	Monthly Rate(s)	Web Space
GTE Internet Solutions 800-927-3000 http://www.gte.net/	$40	$40 – $65	1 MB
InfiNet 800-849-7214 http://www.infi.net/	none	$20 – $25	3 MB ($5)
MindSpring Enterprises† 800-719-4332 http://www.mindspring.com/	$35	$7 – $27	5 – 10 MB
Netcom 800-353-6600 408-983-5950 http://www.netcom.com/	$50	$30 (+ $3/hour)	1 MB
UUNet Technologies 800-488-6383 703-206-5600 http://www.uunet.com/	none	$30 (+ $2/hour)	none
USA.NET 800-592-1241 http://www.usa.net/	$20	$6 – $33	1 – 3 MB
Whole Earth Networks 800-246-6587 415-281-6500 http://www.well.net/	none	$10 – $25	25 MB

†Combines PSINet's Pipeline and InterRamp services.

1996 Macworld WORLD CLASS AWARD WINNER

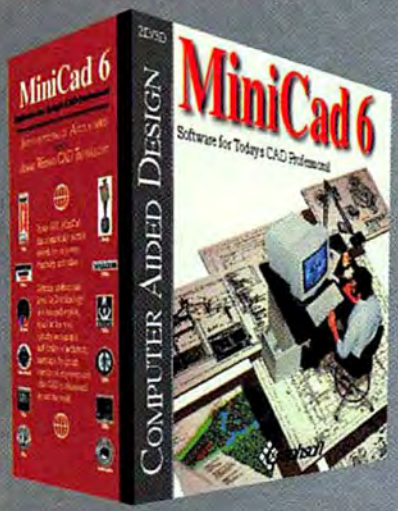
SHOULD MiniCad 6 BE YOUR CAD SOLUTION?

- A program tailored to your needs. Specialized tools for many design industries: A/E/C, mechanical engineering, landscape, space planning, food service, theater/lighting and more
- A proven market leader that handles any job: 2D, 3D, materials lists and cost estimates
- A program that can be used for every stage of the design process — from concept sketches to working drawings and 3D client presentations
- A program that's easy to use, easy to buy: lower entry & training costs and less downtime equal higher productivity
- THE cross-platform solution: move files flawlessly between Mac & Windows. Full 32-bit power!
- A program you can try ... RISK FREE!

MiniCad® 6

MACINTOSH® WINDOWS®

THE FULL-FEATURED CAD PROGRAM with INTEGRATED PROFESSIONAL SOLUTIONS



MINICAD 6: THE COMPLETE CAD PACKAGE!

Just what you're looking for: a hybrid 2D/3D drafting environment; a powerful database to track costs and materials; a built-in macro language to automate routine drafting tasks; full file-transfer capabilities to other major programs, including QuickDraw™3D; even digital terrain modeling! All highly organized and easy to use. You even get high-end presentation features and QuickTime™ animation.

MONEY BACK GUARANTEE 30 DAY AT PARTICIPATING DEALERS

FREE DESIGN AND DRAFTING TOOLKIT™

No extra symbol libraries to buy! MiniCad 6 is packed with thousands of symbols, tools, commands, templates, parametrics, formatted reports, worksheets and sample files created for specific industries. These specialized modules are powerful, complete and already in MiniCad 6, giving you both design flexibility and targeted industry solutions.

INTERNATIONALLY RECOGNIZED

Now in its 11th year, MiniCad is the best-selling CAD program on the Mac. And now there's a Windows™ version! Available in 13 languages, MiniCad 6 is used by design professionals in more than 80 countries.

TRY IT RISK FREE FOR 30 DAYS!

When you buy MiniCad 6 from a participating dealer, you'll get our no-hassle, 30-day money-back guarantee. You'll also get 18 months of free technical support, a 24-page quarterly newsletter and a CD-ROM with Quicktime demonstrations of each Tool and Command as well as samples of MiniCad files from around the world.

Diehl Graphsoft, Inc.
Graphsoft
A NASDAQ TRADED COMPANY

www.graphsoft.com

For more information, please call **1-800-694-7318 (Dept. U)** or 410-290-5114 Fax: 410-290-8050
In Canada, call PaXar at **1-800-260-0905** For Academic pricing, call **1-800-531-3227**

CIRCLE **10** ON READER SERVICE CARD

MiniCad and Design and Drafting Toolkit are trademarks of Diehl Graphsoft, Inc. QuickTime, QuickDraw and Macintosh are trademarks of Apple Computer. Windows is a trademark of Microsoft Corp.

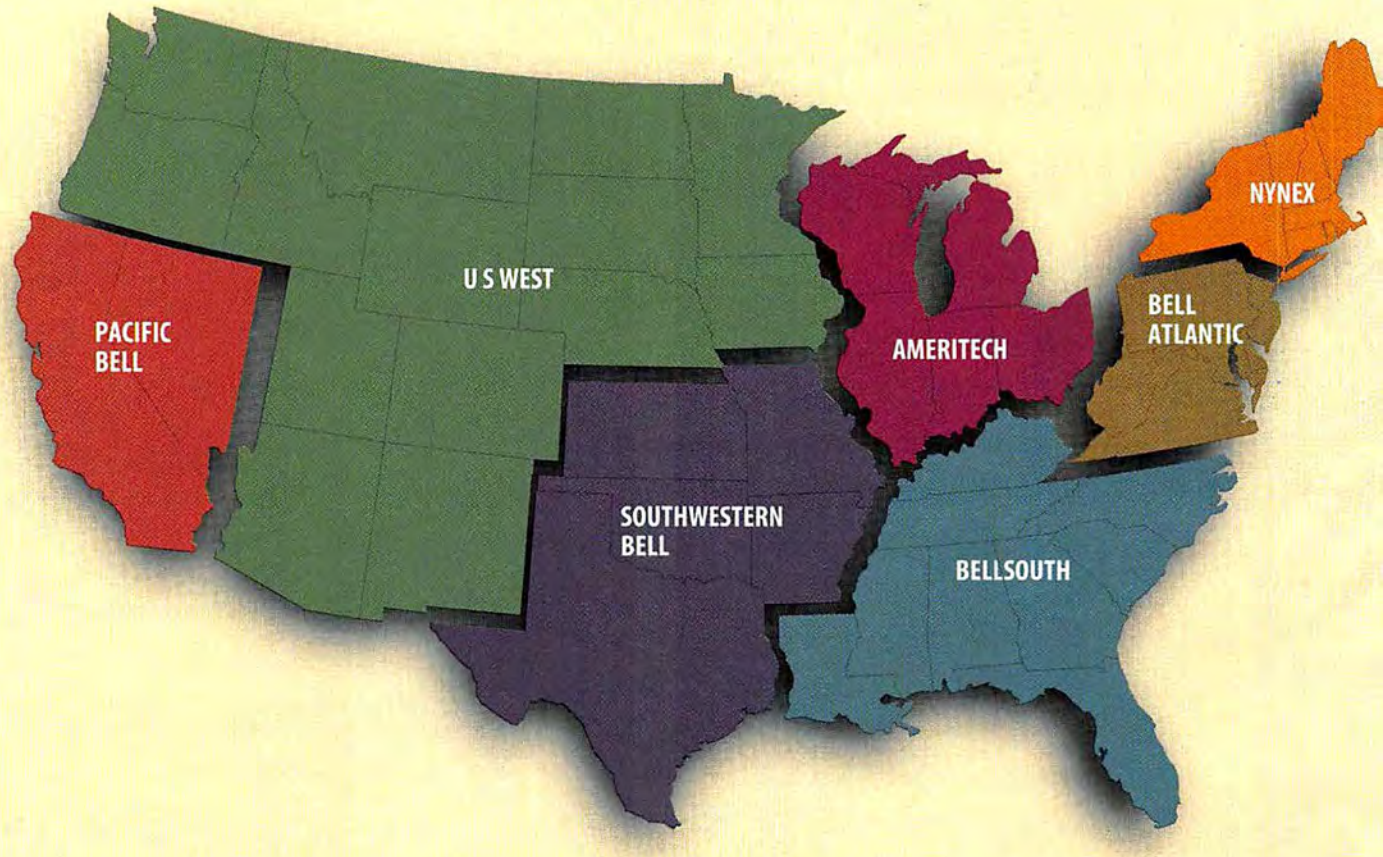
Baby Bells Go Digital / your ISDN connection

YOUR TELEPHONE COMPANY probably offers ISDN service. Setup fees and monthly rates vary widely, and the service is not available to every telephone customer. The map below shows the division of territory among the so-called Baby Bells. The table lists contact information and prices for ISDN service around the country.

Whereas Baby Bells serve specific geographical regions, GTE (800-483-4926; http://www.gte.com) has telephone customers scattered throughout 28 states. It offers ISDN service in 18 states, and fees vary from state to state. Costs range from $80 to $155 for residential installation and from $30 to $50 per month plus $.03 per minute for access time. The company says that it plans to eliminate per-minute charges in the near future.

Phone Company	Setup/Installation Fee	Monthly Rate	Per-Minute Rate
Ameritech 800-419-5400 http://www.ameritech.com/	$113 – $135	$28 – $31	$.02
Bell Atlantic 800-570-4736 http://www.bell-atl.com/	$125 – $173	$27 – $34	$.01 – $.02
BellSouth 800-858-9413 http://www.bell.bellsouth.com/	$25 – $275	$33 – $86	none
NYNEX New England 800-438-4736 http://www.nynex.com/	$67 – $350	$24 – $90	$.05 – $.24
NYNEX New York 800-438-4736 http://www.nynex.com/	$67 – $350	$24 – $90	none
Pacific Bell 800-316-3700 http://www.pacbell.com/	$35 – $125	$25	$.00 – $.03*
Southwestern Bell 800-792-4736 http://www.sbc.com/	$200 – $400	$51 – $104	$.10 – $.25
U S West 800-246-5226 (IA, SD, ND, MN) 800-222-2121 (WA, OR, ID) 800-289-9091 (CO, WY, NE, MT) http://www.uswest.com/	$65 – $210	$39 – $199	$.02 – $.07

*Pacific Bell does not charge for ISDN calls during evening and weekend hours.



Decisions. Decisions.

Will You Make Your Mother-In-Law Sound Like A Pig Or A Cow?

YoYo is a registered trademark of Big Island Communications. All other products mentioned are trademarks of their respective holders.

Introducing YoYo, the most fun way to find out who's calling *before* you answer the phone. Working with Caller ID and your Mac, YoYo identifies the caller with distinct sounds from "*Danger Will Robinson*" to "*I'll be back.*" YoYo also gives you call blocking, automatic paging, call logging and more. Never be bothered by unwanted calls again!

Call 1-800-788-7751, or visit www.big-island.com.

big island™

Available at these dealers and other fine computer stores everywhere

COMPUTER City · MacWAREHOUSE · COMPUTERWARE · The Mac Zone

CIRCLE **158** ON READER SERVICE CARD

gives you two 64-kbps data channels (and one D channel, which manages communication between your line and your ISP).

It's worth noting that Pacific Bell's ISDN customers don't get a full 64 kbps per channel. The ISDN switching equipment used by Pac Bell limits maximum throughput to 56 kbps per channel.

If the phone company is able to give you your ISDN telephone numbers (called DN numbers) and SPIDs (Service Profile IDs, based on the DN numbers) before installation, jot them down. Some systems don't require SPIDs, or they need only a single one. Whatever the case may be, you will require this information in order to configure your ISDN modem.

Now sit back and wait. The delay between ordering a home ISDN line and its actual installation is growing, along with the demand for connections. In some areas, you may have to wait several weeks.

Can't run Windows® 95 on his Mac!

got OrangePC®?

When you must run DOS™, Windows®, Windows95, or WindowsNT, no one replaces your Mac as long as you "got OrangePC." Yes, unlike any other product on the market today, the OrangePC hardware card puts the major PC operating systems on all PCI and all NuBus Macs and PowerMacs.

The Intel®486 (or 5x86) processors power our OrangePC 300 series for Nubus Macs, and the 400 series for PCI based Macs. For power hungry users with PCI systems, the OrangePC 500 series supports Pentium processors up to 200 MHz.

Major features include up to 128 Mb RAM on board, 256K cache, parallel/serial/game ports, accelerated SVGA video (2 Mb), and Sound Blaster™ stereo sound. OrangePC also comes with free network software to connect to Ethernet or Token Ring with full compatibility.

And the OrangePC is affordable, with prices starting at $799! Get a grip on your Mac!

Get OrangePC!

Orange Micro inc.

"16 Years of Innovation and Excellence"
1400 N. Lakeview Ave., Anaheim, CA 92807
(714)779-2772

© Orange Micro, Inc., 1996

CIRCLE **130** ON READER SERVICE CARD

Step 5: Set Up Your Internet Account

Call or visit your chosen ISP, to establish your account. You'll want an ISDN PPP configuration. It usually takes 24 hours or so for the ISP to activate your account. Just make sure it's ready before the phone company shows up to install your ISDN line, so you'll be able to test your connection while the installer is at your home. Make sure the ISP gives you a data sheet listing all the settings you'll need in order to configure MacTCP (TCP/IP under Open Transport) and your Internet-access software.

Step 6: Connect and Configure

Connect the ISDN modem to your computer (see the product documentation), and configure the applicable software with the settings provided by your ISP and phone company. Try to do this the day before the phone installer arrives. Most ISDN-connection problems involve SPIDs. Don't assume that the phone company has provided them in the form your modem and software require. For example, the phone company may give you a SPID in the form 0555-16070, when it should be entered as 01555-16070. If you've chosen a savvy ISP, the tech-support staff may help you with such idiosyncrasies. You should also carefully grill the phone-company installer on this issue.

Don't let the installer get away! Once the line has been installed and activated, try to make the first connection with your Internet account, using the PPP software that came with your ISDN modem or a package provided by your ISP. It's also a good idea to try a call with your phone or modem attached to the ISDN device's analog port (if it has one). If you have trouble getting connected, the installer might be able to do some troubleshooting. If not, check with your ISP's tech-support department *before* you contact the company that makes your ISDN modem. The ISP, especially if it's a local company, is usually a better bet for fast, accurate configuration support.

Ready for Blastoff

It's not as easy as setting up an account with an online service such as AOL or CompuServe, but getting and using an ISDN-based Internet connection is becoming easier — with better configuration software and cooperation among phone companies, ISPs, and hardware makers. It's cyberspeed for the rest of us.

Gregory Wasson is a MacUser *contributing editor. His online activity (starting at 1,200 bps) has included stints as a sysop on ZiffNet/Mac and as Webmaster for NetCarta.*

High Resolution

Here's a laser printer with true 600 x 600 dpi, upgradeable to 1200 x 1200 dpi...*wow*...

Full-Bleed 11" x 17"

...prints page sizes suitable to your needs — up to 12 x 25 inches...*too much*...

Adobe PostScript Level 2

...offers True Adobe™ PostScript™ Level 2...*no kiddin'*...

Halftone Enhancement

...improves halftone quality...*no way*...

Accurate Calibration

...outputs precise measurements...*perfect*.

How Much?...

...not much.

$2495

To Be X•ACT

XANTÉ®'s Accel-a-Writer 8300 featuring X•ACT™ (XANTÉ's Accurate Calibration Technology)

Optional Duplexing Also Available.

Call 800 926-8839

Ext. 2227 • Dealers call ext. 2228 • Fax 334-342-3345

MASTERCARD / VISA / AMEX / DISCOVER

Adobe PostScript

MacUser

XANTÉ *Innovations In Output*

AT&T Capital Corporation

Optional on-site service provided by XANTÉ in partnership with Olivetti North America

olivetti

© 1996 XANTÉ Corporation. XANTÉ and Accel-a-Writer are registered trademarks of XANTÉ Corporation. X•ACT is a trademark of XANTÉ Corporation. Adobe, PostScript, and the PostScript logo are trademarks of Adobe Systems Incorporated or its subsidiaries and may be registered in certain jurisdictions. Other brands and product names are trademarks or registered trademarks of their respective holders.

CIRCLE **126** ON READER SERVICE CARD

SPECULAR 3D WEB WORKSHOP™

New!

'92 & '95 Eddy Award Macworld World Class

MacUser 4-Mice
MacWEEK 4-Diamonds

1994 Eddy Award NewMedia Awesome

MacWEEK 4-Diamonds
MacUser UK 4-Mice

Blast Your Web Page Into The Next Dimension!

Before Specular 3D Web Worksh

After Specular 3D Web Worksho

Back Forward Home Reload Images Open Print

Go to: http://www.specular.com

No Need to Know HTML!
Includes: Adobe PageMill™ plus Internet Access!

Specular 3D Web Workshop

A complete set of Web design graphics tools, plus hundreds of customizable WebHands™!

NEW COOL

Cool New

Specular Home Links Forward

SPECULAR HOME LINKS FORWARD GO!

ONLY $149 Ask for Item # 80614
SPECIAL FOR OWNERS OF ADOBE PAGEMILL™
Call MacMall at 1-800-222-2808

30 Day Money-Back Guarantee!

Specular 3D Web Workshop is the complete solution for creating high-impact Web pages. Specular 3D Web Workshop makes it easy to integrate sophisticated graphics, such as 3D animations, into your Web pages with drag-and-drop simplicity. Whether you are a beginning Web enthusiast or a seasoned Web Master, 3D Web Workshop has everything you need to quickly create a stunning page that will draw in Web surfers and keep them coming back!

Specular
The 3D Graphics Company

Innovative Specular WebHands™ make creating custom Web pages fast and easy. Drag-and-drop professionally designed Web graphics into Adobe PageMill™ for instant page creation, or edit text, lighting, color, perspective and more. Animated WebHands work out of the box with any browser, or you can tune them for QuickTime or Shockwave™ plug-ins. So blast your Web page into the next dimension with Specular 3D Web Workshop!

For more information, call Specular at 1-888-334-7386
Check out our Web site for a demo: www.specular.com

Specular 3D Web Workshop, Specular WebHands and the Specular logo are trademarks of Specular International, Ltd. The Netscape Navigator interface and the Netscape logo are trademarks of Netscape Communications Corp. All other trademarks are copyright by their respective owners.

CIRCLE 67 ON READER SERVICE CARD

NET TRAVELER / By Michael Swaine

Protecting Kids *and* Free Speech

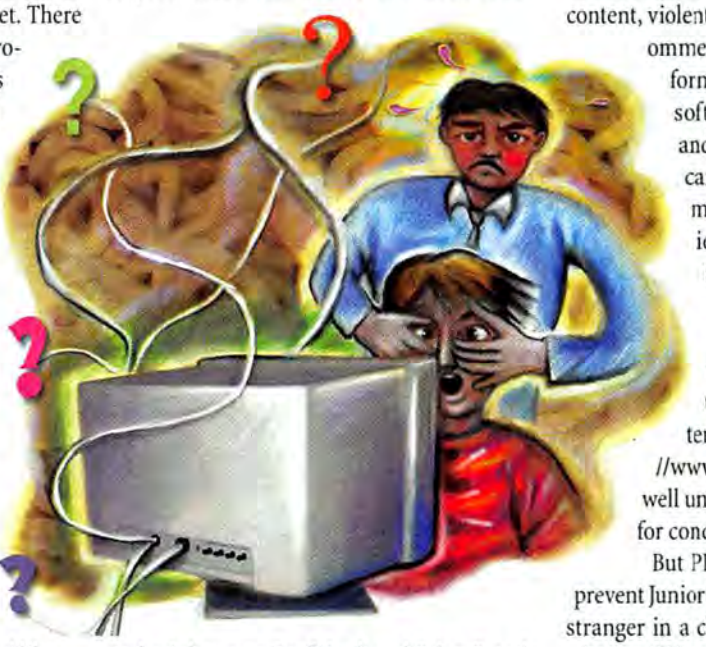
Can we shield kids from inappropriate material on the Net without giving up free speech?

WHETHER YOU'RE A PARENT concerned about your child's safety out there on the cyberfrontier or an unchilded Netizen who doesn't want to see the Net dumbed down to the level of the average eight-year-old or United States senator, you have a stake in how kids surf the Net. There really is material there that's inappropriate for children by almost anyone's standards, and there are other risks to consider, such as the possibility that a child will share some private family information in online chat rooms. So how can parents make sure their kids surf the Net wisely?

Night Baseball. One approach is to give kids plenty of good places to go. And there *are* plenty: Kids can connect with their peers online, explore history and science, play games, and research homework projects, if they only know where to go. One of the best where-to-go places for 8- to 14-year-olds is Yahoo's Yahooligans! site at http://www.yahooligans.com/. It's organized like the main Yahoo site but has a kid-friendly tone and site list. The Ultimate Children's Internet Sites list (http://www.vividus.com/ucis.html) is a good place for parents to search for the best Net starting points: It's organized by age group.

But none of these good places can guarantee that your kids won't find the bad places. That's what Bess, a kid-oriented Internet service provider — which filters out most newsgroups and chat areas and checks incoming and outgoing e-mail for naughty words — attempts to do. Connecting with Bess can be complicated and somewhat expensive, but it starts with a phone call to 206-971-1400. You can check out Bess with the CD-ROM included in Julie McKeehan's *Safe Surfing* (AP Professional, 1996), a guide to the Net for parents, covering everything from getting connected to recommended sites. And *The Internet Kids Yellow Pages*, by Jean Amour Polly (Osborne/McGraw-Hill, 1996), contains a huge list of kid-oriented sites.

Get With the Program. You can do what Bess does, by installing software that filters out objectionable material and sites. Your choice



today is between SurfWatch and Cyber Patrol. Cyber Patrol blocks more kinds of things and is more customizable, but SurfWatch is more robust, more professional-looking, and easier to set up and use. They're each under $50 list, but you have to subscribe to a service that maintains a list of blocked sites, at $40 to $60 per year. If your Internet provider is CompuServe or Prodigy, you get Cyber Patrol for free. You can see demos of SurfWatch and Cyber Patrol at http://www.surfwatch.com/ and http://www.microsys.com/, respectively.

Like grammar-checking software, these tools try to do something that really requires human judgment. Predictably, they don't always succeed. Like childproof caps, they aren't guaranteed childproof but they'll probably frustrate adults.

Rules and Ratings. You should understand that nothing — no list of good sites, no blocking software, and no government legislation — can guarantee that kids won't come across inappropriate material on the Net, if only because there is no universal agreement about what is appropriate. There are, however, efforts afoot now to provide parents with information about the contents of Net sites — sexual content, violent content, naughty words, recommended ages, and so on — in a form that Web browsers and other software will be able recognize and respond to. Interested groups can rate sites in various ways, more different ways than movies are rated, and parents can instruct their software to filter out or select sites based on their ratings. This effort, which you can read about at the Platform for Internet Content Selection (PICS) site at http://www.w3.org/pub/WWW/PICS/, is well under way and should be a boon for concerned parents.

But PICS is no silver bullet. It won't prevent Junior from telling some anonymous stranger in a chat room where you live and when you'll be away on vacation. Only a set of family rules for Internet use can do that. Fortunately, you don't have to dream them up yourself. Author Larry Magid has been waging a one-man crusade to educate parents about the Net and has a set of rules for safe surfing at http://www.larrysworld.com/. Kids should take his advice to heart, as should their parents.

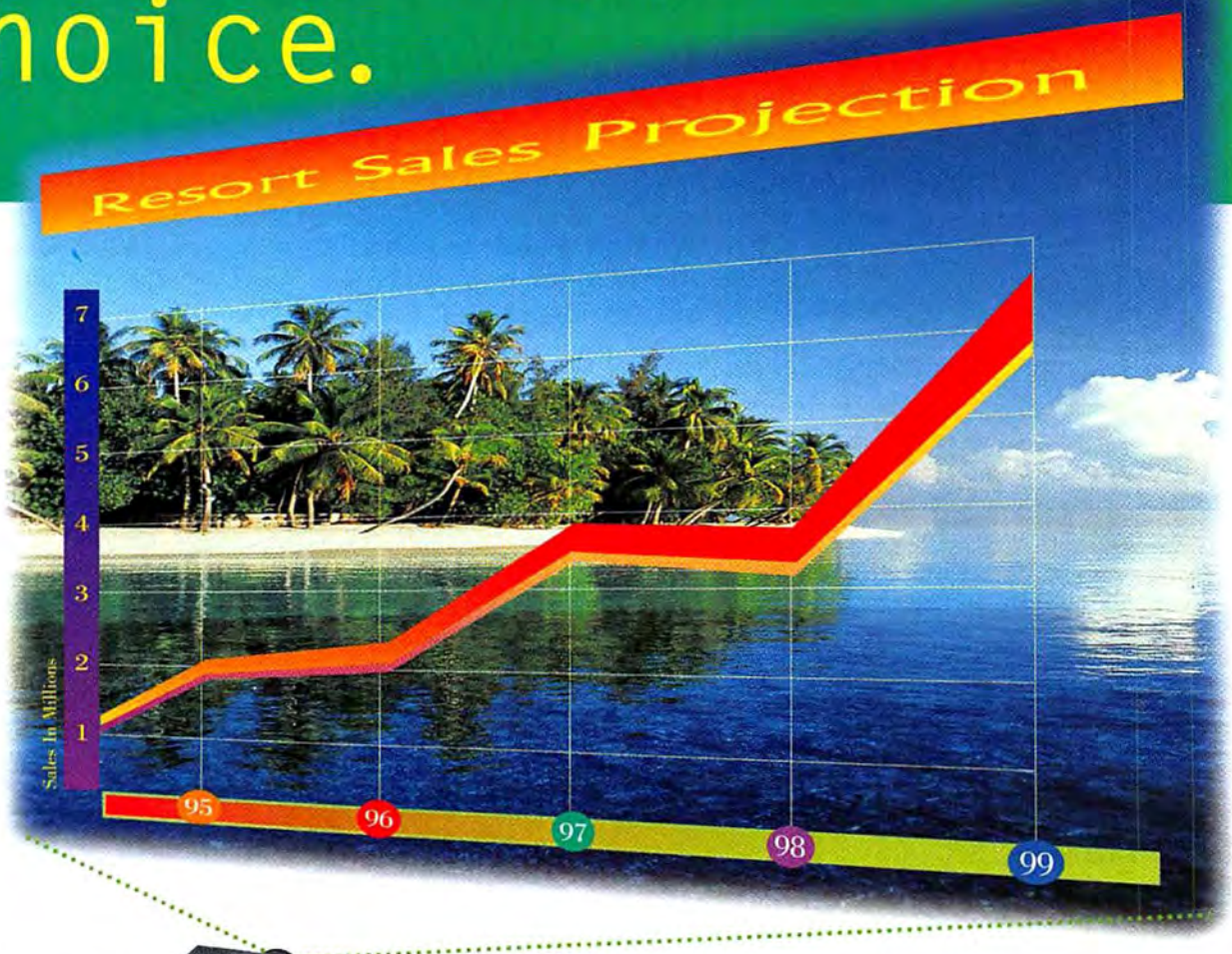
And keep some perspective. The risks have been highly exaggerated. The most important safety tip for Net surfers is, always sit at least an adult arm's length from the monitor.

Don't Know PICS from PICT?

MacUser maintains a list of FAQs about the Internet, *MacUser* itself, and this column specifically. Send mail to faq@macuser.com. *MacUser*'s address on the World Wide Web is http://www.macuser.com/. You can reach me at traveler@macuser.com.

ILLUSTRATION / BARBARA POLLAK

The smallest, lightest, brightest multimedia projector is now an even brighter choice.



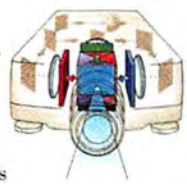
Turn your bright ideas into brilliance. Introducing the Epson ELP-3300, the world's smallest, lightest and brightest multimedia projector. Now you can make brilliant presentations anytime and anywhere without turning off the lights.

The world leader in high performance, portable projectors. The revolutionary ELP-3300 shines 75% brighter than ordinary single-LCD projectors, is about the size of a briefcase and weighs less than 17 pounds. Epson's breakthrough prism technology and three separate Poly-Silicon LCD's generate incredible detail, visibly better brightness (350 lumens) and superior color reproduction.

Easy-to-Use & Versatile. In just seconds, you can connect to any PC, Mac, VCR or camcorder. The ELP-3300 supports full-motion video, colorful text, animated graphics and stereo sound to address a broad range of presentation needs. And for added confidence on the road, Epson's exclusive Extra Care Road Service Program can offer a replacement unit, usually overnight.

Call for a free video. Call 1-800-442-1977, ask for operator 3088 and we'll send you a free video on the benefits of the revolutionary ELP-3300. Or visit our Web site at http://www.epson.com and see for yourself why Epson is the brighter choice.

MACUSER EDITORS' CHOICE AWARD 1995 FINALIST



Epson's Prism Technology, and 3 advanced LCD's (not just 1) produce the brightest, high-quality images.

Weighs under 17 pounds.

YOU'VE GOT TO SEE IT IN EPSON COLOR.™

Epson is a registered trademark of Seiko Epson Corp. ELP-3300 is a trademark of Epson America, Inc. All other trademarks or registered trademarks are the properties of their respective companies.
Extra Care Road Service Program is free while under Epson's one-year limited warranty. Award and nomination given to ELP-3000, the first in the line of Epson projectors with 3 LCD, Prism Technology. © 1996 Epson America, Inc.

HANDSon

Take a minute to think what a hard-drive failure means. Now wipe the cold sweat off your brow and take steps to avoid disaster.

By Kristina De Nike

Easy Hard-Drive Maintenance

WHAT'S TRULY VALUABLE becomes obvious when your hard drive fails. It's not that hunk of lifeless plastic and metal that cost you a few hundred bucks. No, what will actually make you shed tears is the loss of hours of work because your data is gone. Rather than have to face such a grim reality, let us help you take measures to hold onto the most irreplaceable part of your drive — the data.

Run a Full Format

Don't just initialize a brand-new disk — run a full format (check your formatter's manual for instructions). During this process, the formatting software checks every block on the disk and then entirely avoids blocks that have problems, by writing around them. It's well worth the few extra minutes that formatting requires.

Nix the Write Cache?

Apple finally took advantage of the speed gain, which third-party drive makers have taken advantage of for some time, when it turned the write cache on by default for the first time in its PCI-based Macs. Does that mean that you should leave the write cache on? In most cases, yes. Usually you can only benefit — the write cache speeds up data transfers by storing data quickly in a temporary space until there's time to write data permanently to disk. The potential problem with using the write cache, however, is that any data in this cache is unrecoverable if the internal drive loses power — during a crash or a shutdown, for instance. Losing data in the write cache isn't usually a threat with external drives, since they have their own power supplies, but with internal drives, it's a real possibility.

If you're worried about losing the small amounts of data in the write cache of an internal drive, you'll need a third-party formatting utility to turn the cache off. Apple's utility doesn't give you such control. Such utilities as Anubis Pro, from CharisMac (800-487-4420 or 916-885-4420); Hard Disk ToolKit, from FWB (415-325-4392); or DiskWorks, from MicroNet Technology (800-800-3475 or 714-453-6100), will do the trick. You can find the setting you require by accessing SCSI Mode Page 8 (see figure 1) from any of these utilities.

SCSI Mode Page 8 is also where you'll find the read-cache setting, an option you should turn on, since it poses no threat and it speeds up your drive. Resist the temptation to experiment with other Mode Page settings — a wrong choice could make your disk invisible.

Use Write Verification

Perhaps an extreme measure, but a good one all the same, for protecting data that some formatting software allows is to turn on write verification, which prevents errors by comparing data written to disk with the original data. Since write verification significantly increases the time it takes to write data to your disk, you should use this protection only if you're unusually worried about losing data — if you suspect your drive is about to fail, for instance.

Perform Regular Checkups

Turning off the write cache and turning on write verification will help you avoid losing small bits of data, but you still run the risk of losing the whole shebang in the event of hard-drive failure. One of the best ways to prevent such a disaster is to stay in close touch with the state of your hard disk; run disk checks regularly — say, weekly. Disk utilities such as MacTools Pro, from Central Point (800-441-7234 or 503-690-8088), and Norton Utilities, from Symantec (800-441-7234 or 310-453-

ILLUSTRATION / RANDALL ENOS

4600), will show the number and type of errors your disk has. Keep an eye out for problems specifically with the driver, partition map, master directory, volume information, and B-tree. These errors may be serious and need to be fixed immediately with a disk-repair utility such as Apple's Disk First Aid, Norton Utilities, or MacTools. Multiple errors of these types require more than just a repair utility, since they may indicate that the drive is about to fail. In that case, run disk checks frequently, back up often, and replace the drive as soon as you can afford to. When running a disk check, go ahead and optimize too. It will improve the drive's speed, make files easier to recover, and make directories less vulnerable to corruption.

Monitoring your hard disk can help you avoid big data loss, but you can also use disk checks to automatically fix small problems. To do this, run a check in the background with a utility such as Norton Utilities or MacTools Pro. These tools also allow you to recover files you've recently thrown away and, in the case of MacTools Pro, perform valuable virus checks.

Another checkup method that can forewarn you of disaster is running HDT Diagnostics, which is part of Hard Disk ToolKit. During startup, HDT Diagnostics looks for an increase in bad disk blocks. This test is not exhaustive — for instance, it won't tell you if there are problems with the directory — but it can signal serious mechanical problems. If it shows a large jump in the number of bad blocks, your drive may be about to fail. Again, back up frequently and replace the drive as soon as possible.

Beware of Disk Compressors

A utility that doubles your disk capacity may sound like a pretty good idea, but it's probably not worth the risk. Since such utilities compress every file on your disk, it may be impossible to recover them if the drive fails. In some cases the disk-doubling utilities themselves may introduce errors that will ruin your disk.

Use Removables

We certainly don't want to be the cause of undue paranoia, but there are cases of angry coworkers being a threat to data. If you suspect that shady characters have revenge on their minds, do more than password-protect your Macintosh. Keep intruders from reformatting the entire disk and destroying all your files by using a removable drive, which you can lock up.

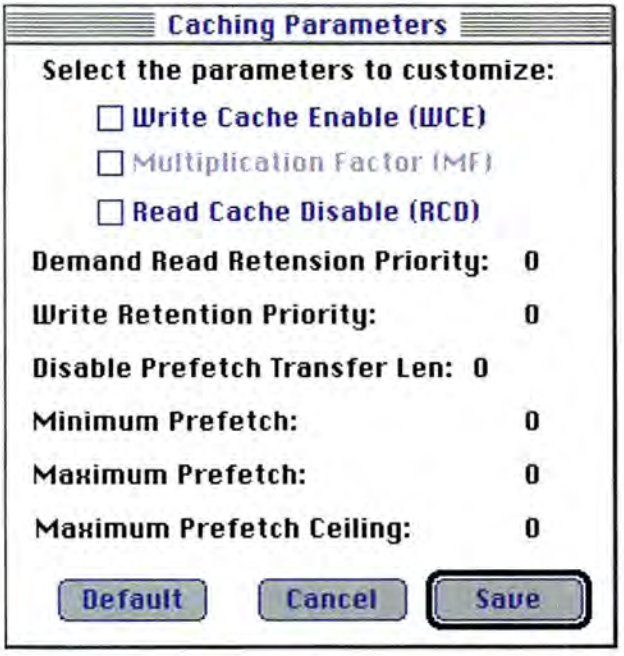


figure 1 / You won't run the risk of losing the data stored in your drive's write cache (temporary storage space) if you turn that cache off. You can find the setting on SCSI Mode Page 8 of some disk utilities, such as Hard Disk ToolKit. Leave the read cache on, since it speeds up the drive without the threat of losing data.

Bring Back the Dead

What do you do that fateful morning when you flip on the hard-drive switch and nothing happens? All is not lost. It probably just means that the power supply is dead, and all you need to do is replace the case. If the drive isn't under warranty, you can buy a new case with a working power supply. Companies such as APS Technologies (800-235-2753 or 816-483-6100; http://www.apstech.com/) sell empty enclosures, complete with directions for installing your old mechanism in the new case. (For tips on avoiding hardware problems, see the "Hardware Care" sidebar.)

If the problem is not that your drive won't turn on but simply that the disk is missing some files, try a file-recovery program such as Norton Utilities or MacTools Pro. Be sure to use another disk as the destination volume during the recovery — that way you won't change anything on the failed disk and can also avoid further damage to files. Besides, it's not wise to trust the failed drive for this important task. Next, copy all the files from the ailing drive and reformat the disk. Maybe it was a random corruption and the drive is actually fine. It may last you another few years — or at least until you can afford to buy a new one.

If you hear the drive mechanism making terrible noises — whining or grating — stop whatever you're doing and turn off the drive. Your only hope is a recovery service. You could send it to the drive's manufacturer, but manufacturers guarantee the drive only, not the data. To get your data off the failed disk, turn to a service such as Ontrack Data Recovery (800-872-2599 or 612-937-5161; http://www.ontrack.com/) or DriveSavers (800-440-1904 or 415-883-4232).

Why Wait?

All hard drives fail eventually, so right now is the time to protect your valuable data. Using our methods may help you avoid losing hours of work.

MacUser Labs Senior Project Leader Kristina De Nike always makes sure that her drives have plenty of breathing room.

Hardware Care / how to make your hard drive last

ONE IMPORTANT WAY to protect your data is to protect the hardware that contains it. Here are some simple ways to treat your hard drive right:

- Keep your drive on a flat surface with open space around it. The fan in the case will lengthen the life of your drive by keeping it cool, but only if it can pull in and expel air.
- Keep the drive away from dust and smoke, which can damage the power supply.
- Keep the drive and its cable away from magnets, since your disk is susceptible to damage from strong magnetic fields. For instance, don't put your drive directly on top of your monitor; older monitors especially emit electromagnetic radiation.
- Never move your drive while it's on. Like the arm on an old-fashioned turntable, a drive head moves across a platter when you're using the drive. Jarring the drive at those times can destroy the disk. Also, keep your PowerBook as stable as possible when it's on, to avoid head crashes.
- Protect your drive's power supply by plugging the drive into a surge protector.
- If you need to ship a drive, use the box it originally came in.

Q. What is the Ultimate Desktop Publishing Utility?

A. A Desktop Warehouse!!!

Finally! A Desktop Warehousing Program that Automates the Publishing Process.

With a few clicks, you can assemble an industrial catalog or price book, proposals or quotes, spreadsheets, and technical or parts manuals. And the best part is - you simply open the Virtual Catalog Drawer when you're ready to publish a brochure or catalog, then launch your favorite application, and place your content in a new or existing document. Updates made in CatalogWAREHOUSE™ are automatically updated in all OLE compliant documents. With CatalogWAREHOUSE™ , you collect and store catalog items only once and publish as often as you like!
CatalogWAREHOUSE™ puts all of your Publishing Tools and Publishing Content on your desktop, at your fingertips!!

Table of Contents Drawer

Build Your CatalogWAREHOUSE™. Constructing a Warehouse for your catalog is as simple as typing an outline for your catalog and filing your content in cabinets, drawers, tabs and folders. The size of your warehouse is limited only to available disk space.

Products Drawer

Inventory & Manage Your Products, Parts, Accessories and Substitutes. The Products Drawer is a unique wing in your warehouse where you can inventory diverse product types and link accessories, text, graphics, prices, parts, substitutes & external documents. Product profiles can be variable & extensive.

Virtual Catalogs Drawer

Publish & Ship your Catalog Content to your favorite DTP Application & cut your publishing budget in half. The Virtual Catalog Drawer can quickly find everything you've stored in the File Cabinet so you are always ready to publish. The Virtual Catalog Page lets you work in one place. Whether you are searching, organizing, launching an application, or creating a document from your DTP application, you can complete your entire publication from one place - the Virtual Catalog Page.

Text Drawer

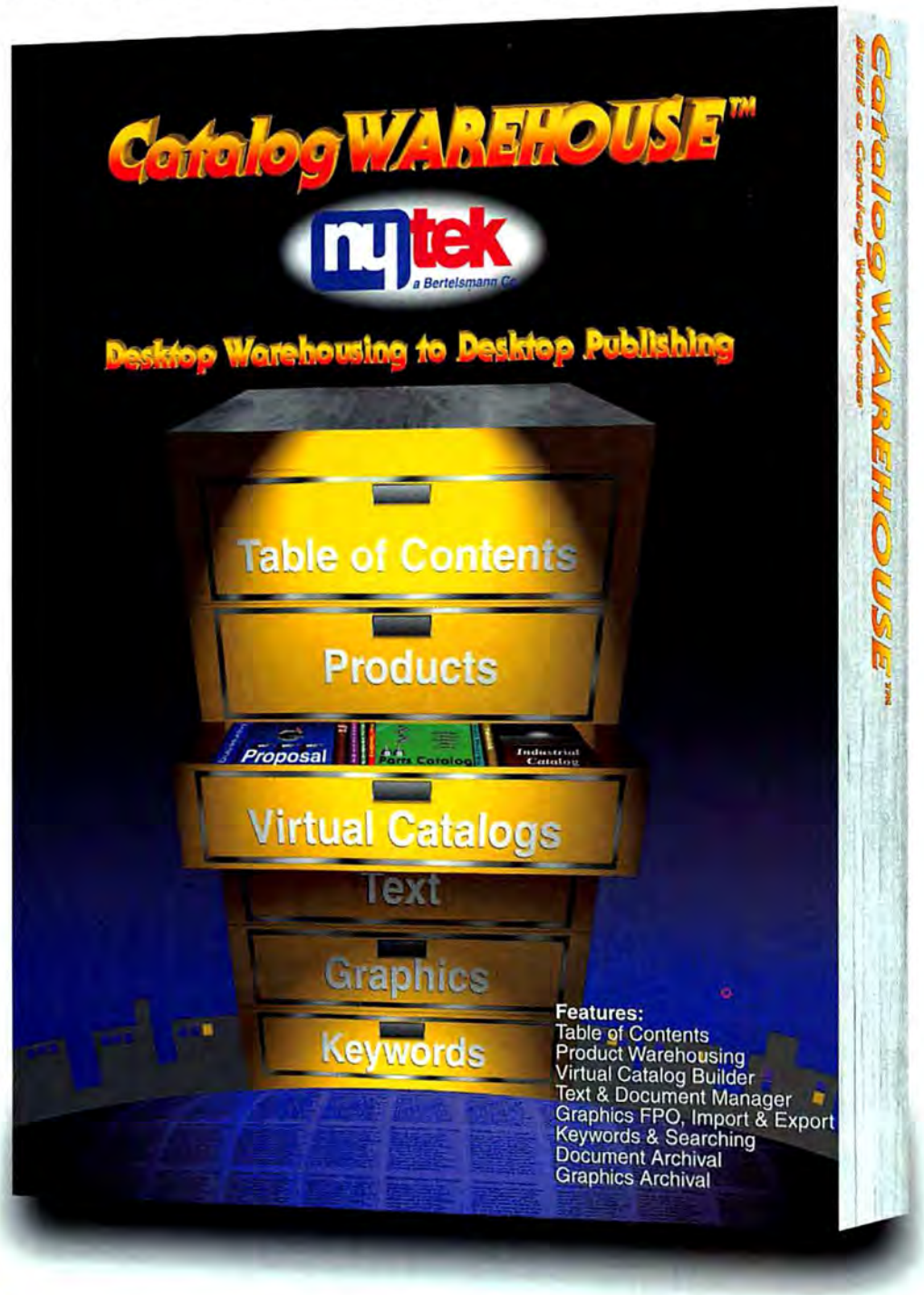
Text & Document Management. Store text records in your file cabinet & link your external documents - word processing, spreadsheets, etc.. You can track and archive the location of external documents as well as link them to product records & graphics.

Graphics Drawer

Graphics Management. Store graphics in all of the popular file formats, organize, track & archive them in your CatalogWAREHOUSE™. FPO export to DTP applications is now at your fingertips.

Keywords Drawer

Marketing Management with Intelligent Searches. In addition to the Virtual Catalog Page searches, you can build marketing keyword logic into your catalog content.



$399
Introductory Price Good through 12-31-96

1-800-484-5343 (Enter Security Code 3211)
Available December, 1996 at MacWarehouse® 1-800-255-6227

© 1990 NYTEK LLC. All Rights Reserved - MacWAREHOUSE is a registered trademark of Micro Warehouse, Inc.

nytek a Bertelsmann Co.

CIRCLE **112** ON READER SERVICE CARD

The ultimate computing resource online

ZDNet™

http://www.zdnet.com

From the sources you trust:

- PC Magazine
- PC Week
- PC Computing
- Computer Shopper
- Windows Sources
- MacUser
- MacWEEK
- Inter@ctive Week
- Computer Life
- FamilyPC
- Computer Gaming World
- Yahoo! Internet Life

Be sure to sign up for Personal View
ZD Net's FREE news service that you can easily configure to track only the companies and products that interest you most.

Click into ZD Net's world-renowned Shareware Library and start downloading!
Over 10,000 programs — all tested, rated and reviewed by ZD Net editors.

Join in! There's a lot going on —
from wide-ranging discussions with industry leaders, to topical weekly chats with editors and ZD Net personalities — there's always something new, exciting and insightful happening at www.zdnet.com.

See You Online!

CIRCLE **3** ON READER SERVICE CARD

By Bob LeVitus and Christopher Breen

Help Folder

Where the gray went, curing Mac amnesia, and networking for game players.

But I *Want* to Go Gray

Q. I have an AppleVision 1710AV monitor and a Power Mac 7200/90 with 2 MB of VRAM. Why can't I set my monitor to display fewer than 256 grays? There are no 16-color, 16-gray, or black-and-white options in the Monitors control panel. I'm running System 7.5.3.

Beniamino T. Cenci-Goga
Perugi, Italy

BOB: That's easy. And it has nothing to do with your monitor. Unlike older Macs, most Power Macs don't support monitor settings of 2, 4, or 16 colors or grays.

CHRIS: That's kind of a drag if you're trying to play a crusty yet beloved game. And what's even worse, very few third-party video cards for Power Macs support those color settings.

BOB: So most Power Mac owners are out of luck. There is one ray of hope for those of you with a 6100, 7100, or 8100 (sorry, Ben) with built-in video. These are the only Power Macs we know of capable of supporting 2, 4, or 16 colors. Just make sure you connect your monitor to the high-density monitor port, the strange nonstandard square-shaped one on the back of your Mac.

CHRIS: Of course, you'll need a special HDI-45 cable (or cable adapter), but that's a small price to pay for progress, isn't it?

Dealing with Memory Loss

Q. Sometimes when I open the About This Macintosh window on my Power Mac 7500 (running System 7.5.3) and add up the amounts of memory used by the system software and open applications, I come up short of the RAM I know is installed. What's wrong?

Chris Ryan
via the Internet

CHRIS: The condition you describe is similar to one experienced by yours truly at his last high-school reunion. Like me — staring dumbly in nonrecognition at that six-foot-four-inch bald guy who, as it turned out, used to come up to my third vertebra at Menlo-Atherton High all those years ago — your Mac is suffering from "memory leak."

BOB: Unfortunately, many users of PCI Macs will become all too familiar with this term. Leaks happen when your Mac doesn't appear to release an application's RAM when you quit that application. You've seen the results of this condition in the memory-usage statistics in the About This Macintosh window. Those annoying Not Enough Memory messages that pop up even when you know that you have plenty of spare RAM are another symptom of memory leak.

CHRIS: Unlike my reunion malady — where a simple glance at baldy's name tag brought best-left-repressed memories flooding back — reclaiming the Mac's memory isn't so easy.

BOB: Although you can haul back a few kilobytes of RAM with E. Kenji Takeuchi's freeware utility Mac OS Purge or *MacUser*'s own RAM Handler, the only sure way to restore your RAM is by restarting your Mac.

CHRIS: Although it won't completely solve your problem, you can apply an ounce of prevention. If you're using Open Transport as your networking software, open the TCP/IP control panel, click on the Options button, and uncheck the "Load only when needed" box (see figure 1). When the box is checked, Open Transport TCP/IP takes its place in memory between other open applications. When you quit those applications, TCP/IP is still there, smack-dab in the middle of your RAM. This results in fragmented memory or, as our German friends might say, *der Leak*.

BOB: Another culprit is the operating system itself. System 7.5.3 clears up several 7.5.2 glitches, but memory leaks are much more common with the new software. Unfortunately, we'll see the end of the leaks only when Apple fixes the problem in a future OS update.

Meanwhile, I've made it a habit to restart a couple of times a day, whether I need to or not, and this seems to have made my PowerWave more stable.

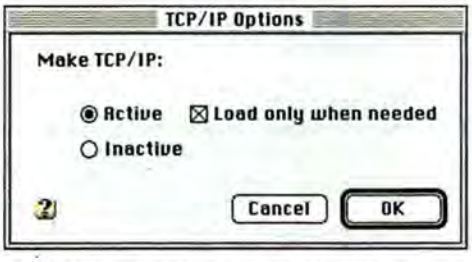


figure 1 / Uncheck this box inside the TCP/IP control panel to seal a major memory leak.

Out of Adjustment

Q. I'm trying to allocate additional memory to Adobe PageMill 1.02, and for some reason, I can't type in the Preferred Size field of the Get Info box. How can I accomplish this?

Joe Pike
via the Internet

BOB: We can think of three things that might cause what you describe. First, PageMill is open while you're trying to adjust its memory allocation. You can't change a program's Preferred Size while the program is open.

CHRIS: No. 2: The program is located on a locked disk or volume (such as a CD-ROM)

WRITE TO HELP FOLDER/TIPS

c/o MacUser
50 Beale Street, 12th Floor
San Francisco, CA 94105

Don't want to wait for an answer? Post your question on the MacUser Forum on either America Online or CompuServe, or send e-mail to helpfolder@macuser.com or tips@macuser.com. We pay $25 to $100 for any undocumented tips we publish.

ILLUSTRATION / BOB STAAKE

or on a damaged disk or volume. Make sure the disk PageMill resides on is unlocked and writable. If the problem persists, run Disk First Aid or Norton Utilities' Disk Doctor to detect and fix any disk-directory damage.

BOB: The last possibility is that the program itself is damaged. Try reinstalling PageMill, to a different disk if possible.

Tips / Browsers

Caching with ShrinkWrap

I read with interest Greg Gabelmann's solution for storing Netscape Navigator cache files in RAM, in the October online edition of *MacUser*. [*For those who missed it, Gabelmann suggested using Mark Adams' $15 shareware program AppDisk to store cache files in RAM for faster access. — Ed.*] I've discovered that you can use Chad Magendanz' ShrinkWrap 2.0 to perform the same trick.

Open ShrinkWrap's Preferences, and under Destination, select Desktop Folder. Also check both "Keep mounted images in RAM" and "Mount images unlocked by default." Now press Command-N to create a new image file. (Your image file should be large enough to hold a fair number of cache files but not so large that you eat up too much of your available RAM.) Name the image file, and move it to the Startup Items folder inside your System Folder. Open Navigator's Network Preferences and designate the virtual disk you just created as the location for Navigator's cache.

With its prior contents intact, the ShrinkWrap virtual disk will mount automatically at startup, and Navigator will be able to retrieve its cache files much more quickly.

Denis Lose
via the Internet

Off-Line Reading

One of the drawbacks of reading information on the World Wide Web is that you must maintain an active Internet connection to view pages as their designers intended — complete with graphics and proper layout. Saving pages as source files does only half the job — you get the text properly laid out, but the graphics are missing unless you download them individually.

An alternative for those who own the full version of Adobe Acrobat is to print Web pages directly to PDF files, using the Acrobat PDFWriter driver. Just select this driver in the Chooser and choose Print from your browser's File menu. Name the file and save. After a somewhat substantial delay (depending on how big the page is), a PDF file containing the image of the complete Web page will be saved to disk. To browse off-line, open the file with Acrobat.

Matt Henderson
via the Internet

[*You can read and print complete Web pages off-line by using WebBuddy ($75, DataViz) or WebWhacker ($69, ForeFront) to automatically download all the text and graphics files that make up the page (or pages) you're interested in. Just open one of the HTML pages with your browser, and print to your heart's content. — Ed.*]

Nothin' but Net

Q. My friend and I live about four miles apart. Is there any way to network our computers for playing games?

Russell Green
via the Internet

CHRIS: Why sure, but it won't be by stringing a *really* long cable between your two dwellings. Because you live farther apart than the allowable limits of a real network, you'll have to rely on a modem and your phone lines.

BOB: Wow, I get to suggest two cheap solutions in one column! Try NetLink Remote, a $10 shareware extension from Joe Kloss. The idea is simple: NetLink fools your Mac into thinking your modem is a node on the network. Just select NetLink in the Network control panel, dial up your buddy (that person must have his or her own registered copy), fire up your network game, and play on. What's the catch? Games such as Marathon that require a fast, real live network will perform at less than optimal speed over a modem connection — even if you're both using 28.8-kbps modems.

CHRIS: Harrumph. I guess I have to mention the pay-to-play options. Russell, Internet gaming has a lot of potential, but so far not much of it has been realized — discounting text-based games such as MUDs, of course. Bandwidth and line noise are still a problem, as is the occasional eight-year-old punk who invariably blows you out of the sky while you're desperately trying to figure out which key engages the AIM-9 "Sidewinder" missile on your F/A-18. Yea verily, although Internet gaming has a long way to go, you have a few commercial options.

Sim-Net offers a service, Sim-Net Online, that, for 75 bucks per annum, lets its users log onto its server and play such games as F/A-18 Hornet, A-10 Attack! Cuba, Descent 1, Links Pro, Bolo, and PowerPoker against human opponents. Games are not included in the service — you must have your own copies. Check http://www.simnet1.com/ for more info.

GameNet, another online outfit, offers the same kind of service — you play the games you own over the Net. It's located at http://www.gamenet.com/.

To play such games as Spaceward Ho!, Hearts, Go, Chess, and Backgammon, log into Outland. Unlike Sim-Net and GameNet, Outland provides you with these games in its downloadable software package. To play, pay your $9.95 per month and log in for unlimited fun at any time of day or night. Outland can be reached at http://www.outland.com/.

What For Art Thou?

Q. How can I figure out what those mysterious extensions and control panels in my System Folder are for?

Jefferis Peterson
via the Internet

CHRIS: It just so happens that there is more than one way to de-fur this feline. If you're connected to the Net, I can recommend two great sources of information.

Point your browser to Dan Frakes' Mac Pruning Pages, at http://www.AmbrosiaSW.com/DEF/. Here you can read in intimate detail about every Apple extension and control panel you're likely to encounter. Included in the descriptions are indications of whether a particular dingus is disposable as well as whether it's of recent vintage. If you don't care to read the document online, you can download a copy of Dan's InformInit. This $10 (and worth it!) shareware guide contains the site's information organized in a stand-alone DOCMaker file. You can FTP InformInit directly from ftp://ftp.AmbrosiaSW.com/pub/DEF/InformInit.hqx.

Jason Haas' Macintosh Extensions Guide is another worthwhile online guide to Apple's add-on thingies. You can find it at http://www.madison-web.com/ext/. Jason tells you who needs a particular extension or control panel (EtherTalk Phase 2 for those with Ethernet connections, for example), the OS version necessary for the extension or control panel to operate, its function, and a link to related extensions and control panels. You'll also encounter an occasional nifty screen shot.

BOB: Regular readers of *MacUser* will also want to flip their August '96 issue open to page 115 to review Ted Landau's article "System 7.5.3 Cleanup." Therein you'll find references to many of Apple's latest additions.

And where would we be without our almost monthly tribute to Casady & Greene's Conflict Catcher 3? "Catch 3" provides terse descriptions of most extensions and control panels. Just open the Conflict Catcher control panel and click on a file's name to get the scoop.

Bob LeVitus is the author of 20 computer books and is a columnist for the Houston Chronicle. *Christopher Breen recently coauthored* The Macintosh Bible Guide to Games, *published by Peachpit Press.*

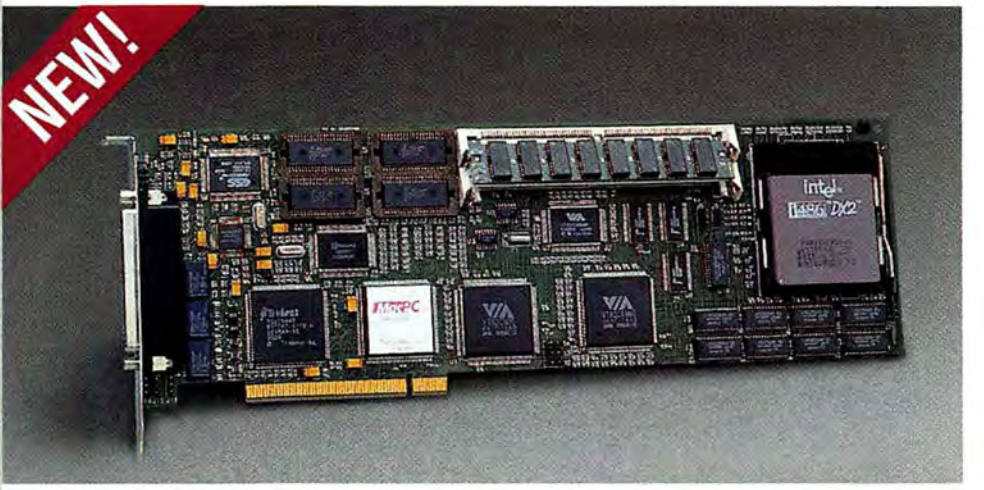
You can find the shareware and freeware programs referenced in this article at *MacUser's* Software Central (http://www.zdnet.com/macuser/software/). You can also find them in the *MacUser* areas on CompuServe (GO ZMC:MACUSER) and America Online (keyword MACUSER).

the ULTIMATE MAC PC CARD

$599

Includes DX2/80, 8MB & MS-DOS

Run any PC Game with full 16 bit Sound!



OrangePC® 425 Mac PC Card

Put an OrangePC card into your Mac, and it becomes a PC, with your choice of DOS™, Windows® or Windows®95. Ideal for home, education, and small business.

- Runs all PC Games & Programs on your Mac. Includes free networking software.
- Game Port and 16 bit Sound Blaster® In/Out, Serial and Parallel Ports.
- OrangePC runs on all PCI Power Macintoshes.
- OrangePC options include: Windows or Windows 95, 5x86 120Mhz processor.

Available at:

MacPowerhaus (800) 615-3183

And other major Apple® retailers.

Orange Micro inc.

"16 Years of Innovation and Excellence"

© Oranger Micro, Inc., 1996

CIRCLE **131** ON READER SERVICE CARD

Great Games Under $35.00

THUNDERING POWER. EXPLOSIVE ACTION.

Terminal Velocity is absolutely the most exhilarating flight game available for the Macintosh. It offers fast 3D texture-mapped graphics, full 360-degree flight movement and 7 weapons of extraordinary destruction. Fight your way through 9 unique planets with an awesome array of spectacular air-to-air and air-to-ground combat action.

"...gripping high-speed action from moment one."
-Computer Gaming World

"A symphony of titillating action and g-force slurping excitement..."
-Strategy Plus

"...The 3D environments are simply breathtaking ...the worlds are like nothing seen before in computer games."
-Computer Player

$34.99
(Requires Power Macintosh. CD-ROM only)

Mac Arcade Pak

Explosive, gut-wrenching arcade action! Includes modern-day versions of Pac-Man™, Tetris™, Asteroids™, Missile Command™ and Moved™.

$24.99

Mac Arcade Pak 2

More red hot arcade action with five of the best arcade classics ever! Modern-day versions of Pac-Man™, Gauntlet™, Asteroids™, Galaxian™ and StarCastle™. Includes a sequel to MacWorld 1995 Hall of Fame and a runner-up for Inside Mac Games 1995 Best Arcade Game.

$24.99
(CD-ROM only)

Solitaire Game Pack

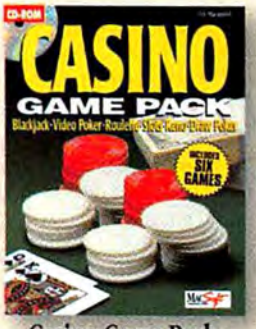
Clock, Klondike, Golf, Monte Carlo and Patience Solitaire. Great graphics and on-screen help!

$24.99

Absolute Solitaire

We asked dozens of solitaire fanatics to help us design the perfect solitaire package. Absolute Solitaire is what they created. Includes 24 new games and a brand new interface for serious solitaire gameplay.

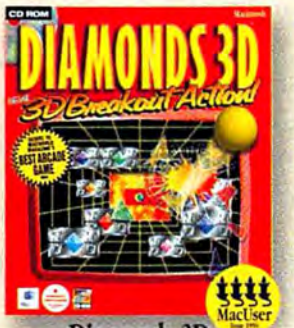
$24.99



Casino Game Pack

Quality collection of six popular casino games: Blackjack, Video Poker, Roulette, Slots, Keno and Draw Poker.

$24.99
(CD-ROM only)



Diamonds 3D

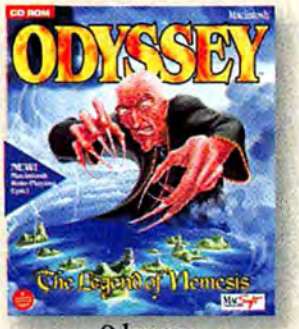
Breakout in three dimensions! Inside Mac Games calls it "Fun and addictive. The best breakout-style game we've played." The ball doesn't bounce up and down, it comes right at you!

$24.99
(CD-ROM only)

Game Parlor

Outstanding collection of five popular strategy games: Chess, Checkers, Backgammon, Solitaire, Crosswords.

$24.99
(CD-ROM only)



Odyssey: The Legend of Nemesis

The most advanced Macintosh role-playing game ever! Venture into the mystical lands of Odyssey. Discover nine islands of extraordinary adventure, fight epic battles and dwell amongst the fascinating inhabitants.

$34.99
(CD-ROM only)

Lots more. Call for a free catalog.

Available now from your favorite reseller, or by calling 800-229-2714

Please add $2.95 per order for shipping and handling if ordering by phone.

MacSoft™

WizardWorks Group, Inc. • 3850 Annapolis Lane, Suite 100 • Plymouth, MN 55447 612/559-5140

CIRCLE 27 ON READER SERVICE CARD

The *MacUser* Editors'

GiFT GUiDE

If it's visions of rejected gifts rather than sugarplums that dance in your head, let us help with a few sure-to-please gift ideas.

IT'S THAT WONDERFUL TIME of the year again. Time to brave the icy winds, the traffic jams, and the grumpy shoppers who'd rather be in front of a fireplace sipping hot cocoa than marching up and down a shopping mall. Ah, yes, we too can't wait to search from store to store for umpteen perfect gifts to satisfy those nearest and dearest to our hearts, not to mention those we don't really like much but have to buy gifts for anyway. As that list of gift recipients grows longer and longer, let us help you choose some inexpensive gifts before you ever step out of the house.

PHOTOGRAPHY / CHLOE ATKINS

WITH 2-MILLION-PLUS Iomega Zip-drive owners out there, chances are you've got one or more of those people on your gift list. Show those people you care with an accessory or two that'll make their Zips' lives a bit more stylish, comfortable, and — dare I say it? — zippy.

For traveling Zipsters, how about a **Zip carrying case** — either the drive-size small version ($14.95) or the large one ($29.95), big enough for the drive, power brick, cables, and a few cartridges? Portability is more than just an attractive carrying case, though — it's also the freedom from wall sockets provided by the **Zip Unleashed!** rechargeable battery pack ($49). Also invaluable for travel is the compact **Universal Power Switching Supply** ($39.95), which can be used most everywhere in the world.

Back at home, a **Zip Disk Caddy** ($9.95) will prevent desktop clutter and a pack of three **Zip Jewel Cases** ($2.95) will replace the inevitable misplaced cases. If that's just too practical, you could wow 'em with an **Iomega Golf Umbrella** ($18) or **Sports Bag** ($25) — or even a set of two **Iomega coffee mugs** ($10). No matter what finery you choose, just call Iomega at 800-818-9728, ext. M21, or 801-778-1000 to place an order. */ RIK MYSLEWSKI*

REMEMBER WHEN you received your first camera? Mine was a blue Brownie (go figure), but I still remember the delight of ripping open the paper to see that Kodak box. This year, give the computer fans in your life their first Kodak *digital* cameras. **Kodak's Digital Science DC20** ($395) is a pint-sized point-and-shoot digital camera that's perfect for budding digital artistes. Its limited image quality makes it more suitable for Web pages than for print pieces, although it's fine for personalized thank-you notes and secret club newsletters. It makes a good combo with Kai's Power Goo. 800-235-6325 or 716-724-4000. */ PAMELA PFIFFNER*

STRUGGLING TO FIND the right gift for that psychedelic someone who's into VW vans; tie dye; and making love, not war? For about $50, you can get **Kai's Power Goo,** from MetaTools (800-472-9025 or 805-566-6200). Power Goo turns still pictures into fluid images you can twist, turn, shrink, and bulge. You can also combine images for knee-slapping results or import pictures of your family and friends and subject them all to the Jim Carrey treatment.

For a complete Goo Gift Pack, you'll also need to give the tool that sets the proper mood for all that gooing: a **Lava Lamp** ($50), from Lava Lite (800-352-5282 or 312-237-5700). / *ROMAN LOYOLA*

A LONG TIME AGO, in a galaxy far, far away, getting a great gift for avid Mac gamers was a challenge worthy of a Jedi Knight. Luckily, Mac games are today truly becoming a Force to be reckoned with, and nowhere is this more obvious than with my favorite game of 1996: LucasArts Entertainment's **X-Wing Collectors CD-ROM** ($29.95). Besides coming up with one of the most detailed and playable sci-fi simulations on any platform, LucasArts built X-Wing Mac to take full advantage of the Mac, with better graphics and 3-D rendering than the Windows version. 800-985-8227 or 310-264-5579.

You need a joystick to play this game right, and CH Product's **FlightStick Pro** (approximately $80) is my favorite. As a left-handed gamer, I especially appreciate the FlightStick's ambidextrous button configuration. 800-624-5804 or 619-598-2518.

The finishing touch for the star-fighter jockey on your holiday gift list is a scale-model X-Wing to go on top of a monitor. Micro Machines' **Star Wars Action Fleet** offers an excellent prebuilt one for around $10. You should be able to find the Micro Machines models in any of your favorite toy stores. / *ANDREW GORE*

FOR THAT MEMBER OF THE FAMILY who snaps photos in rolls per minute at every family gathering, I have the perfect item: Storm Technology's **EasyPhoto Reader** (around $200). This compact color scanner for snapshots offers an inexpensive and convenient way to get photos into a Mac. It's small and light enough to hold in one hand, and it comes with basic image-editing software that will get the red-eye, and other minor defects, out. Once a photograph has been enhanced, images can be cut and pasted into anything you want, from greeting cards to family newsletters. 888-438-3279 or 415-691-6600.

Another gift idea I recommend, because it can actually save you money, is Vocaltec's **Internet Phone.** Your long-distance bills will quickly decrease if you treat yourself and those you call long distance to a copy of this package. For the price of the software (about $50) and your Internet connection, you can call your brother in Japan or your cousin in Italy, using your Mac and the Internet. Your cousin's running Windows? No problem; Internet Phone can work across platforms. 800-843-2289 or 201-768-9400. / *SUSAN JANUS*

YOU MUST HAVE one of those friends who's not a programmer but is kind of a know-it-all. You know, the one who likes to brag about logging into an Internet account from a UNIX command line and about learning HTML without the help of "sissy" WYSIWYG tools. Isn't it about time you challenged your pal? ***Learn Java for the Macintosh in 21 Days*** ($40; Indianapolis: Hayden Books, 1996) promises to take readers to the bleeding edge of Internet programming before the rent is due next month. The development environment (Roaster, from Natural Intelligence) is included with the book. / *SHELLY BRISBIN*

THE SECRET TRUTH IS that we all want Legos but won't admit it. Finally, our desire can be satisfied — maturely — with **Gryphon Bricks** (around $40), a 3-D virtual construction set. This program, from Gryphon Software, is even cooler than Legos, with more than 200 styles of bricks, including arches, doors, and human figures. Grab, drag, rotate, and nudge bricks to build 3-D creations. Even make a QuickTime animation of the project's construction. Best of all, this game puts an end to some familiar Legos pitfalls: You never run out of bricks, and they don't get lost under the furniture for the dog to snack on. 800-795-0981 or 619-536-8815.

This next gift idea — Connectix's **RAM Doubler 2** ($99) — may not be as entertaining as electronic Legos, but it's an essential for every Mac owner and it's cheap. The previous version was a best-selling Mac product that alleviated the hunger pangs of many memory-hungry Macs. So, chances are that some people on your holiday list already know and love it. Version 2 is an even better item to fit into the stocking tacked to the mantel, because it goes beyond doubling memory — it triples it, up to a maximum of 256 MB. You should get no glum looks even after the recipient of RAM Doubler 2 has spent time using your thoughtful gift, since Macs running this latest version are as speedy as those running the previous version. While you're at it, sneak a copy into your own stocking and sign it *Santa — MacSanta,* that is. 800-950-5880 or 415-571-5100. / *JIM SHATZ-AKIN*

PHOTOGRAPHY / CHLOE ATKINS

Until now, the on-ramps to the Internet have been under construction.

Introducing the Apple Internet Connection Kit.

Getting hooked up to the Internet can be a messy process. That is unless you've got exactly the right tools. Presenting the Apple® Internet Connection Kit. It's everything you need to get on and get around the Internet quickly, easily and with a minimum of frustration. Here's what you receive: Netscape Navigator™, Claris Emailer™ Lite, Progressive Networks RealAudio, NewsWatcher, Fetch, the Apple Internet Dialer, Quicktime® VR Player and more. Plus, if you come across anything you don't understand, Apple Guide on-line help is there to assist you right away.

Just think, 30 minutes after opening the box, you could be participating in discussion groups, E-mailing Aunt Helga in Denmark, visiting the Louvre, the Library of Congress or maybe even the local chicken joint. (Seems like everybody's got a Web site nowadays.)

Visit your Apple reseller, or order direct by calling **1-800-950-5382 ext. 784.** And when you do get on the Net, check out our Web site at http://www.apple.com.

Apple. The power to be your best.

CLARIS Em@iler

NETSCAPE

©1995 Apple Computer, Inc. All rights reserved. Apple, the Apple logo and QuickTime are registered trademarks of Apple Computer, Inc. Claris EMailer is a trademark of Claris Corporation. Netscape Navigator is a trademark of Netscape Communications Corporation. All other trademarks are the property of their respective owners.

SANTA'S HANDS TOO SORE to stuff stockings this year? Help him or Mrs. Claus relax their overworked mouse-hand on a **Comfort Point** (about $25), from GBM Design. This cushioned, contoured platform supports your hand as it skates behind your mouse, trackball, or keyboard, tethered by a small Velcro tab. This device helps you avoid painful wrist strain in two ways — your wrist stays flat, and you use your fingers to push your mouse rather than squeeze it. This hand-y ergonomic gift is especially appropriate for designers and other heavily mouse-dependent folk. Available in lefty and righty versions, all in basic black. 800-429-3746 or 310-305-8931. */ SCHOLLE SAWYER*

EMBARRASSED BY FRIENDS who look clumsy and unhip toting laptops in boring black shoulder bags? Give a boost to fashion-underachievers with a Respect **LapPak** ($98). The LapPak injects funky chic into the world of the computer user with four styles, including my favorite: groovy red and black with racing stripes. It's padded to protect your friend's "PowerBaby" and has quite a bit of storage for disks, business cards, pens, and even a beeper and cell phone. The padded shoulder straps zip off to transform the backpack into a briefcase, and a built-in detachable wrist pad makes typing more comfortable. 415-512-8995. */ BROOKE WHEELER*

IF STUPID SITCOMS, music videos, or a liberal-arts education have filled the mind of anyone on your gift list, then the ideal gift for them is Jeopardy's racy twin brother — **You Don't Know Jack X-tra Large** (about $40), from Berkeley Systems. If you're lucky, you might get to join in on a game, since it allows up to three players, and prove your knowledge of such topics as Mathematics and Sports Involving Ugly Pants or Fun Things to Stick in a Blender. 800-344-5541 or 510-540-5535.

How did former Apple president John Sculley betray the Mac? What did the first Apple Computer logo look like? What ever happened to the original Mac team? You'll get the answers to these questions and many more in the endlessly entertaining book ***The Mac Bathroom Reader*** ($12.99; San Francisco, CA: Sybex, 1994). It contains anecdotes about the personalities and the circumstances behind the Macintosh; its precursor, the Apple II; and other early personal computers. 800-227-2346 or 510-523-8233. */ CAROLYN BICKFORD*

PHOTOGRAPHY / CHLOE ATKINS

The Two Dads

BY RIK MYSLEWSKI AND JIM SHATZ-AKIN

JIM: A sad lad had a flask.
RIK: New screenplay for Nicholas Cage?
JIM: No. I'm learning to touch-type with this month's batch of programs.
RIK: Ah. Only learned the middle tier of keys, eh?
JIM: Yep. But I'm progressing fast. All four programs offer good tutoring in typing basics.
RIK: But what counts in a home app is extras that encourage practice.
JIM: That — and, if possible, some bonus educational value to boot.
RIK: The Learning Company's **Read, Write & Type!** ▶ serves up both.

JIM: Right. Its virus-zapping game combines phonetic reading skills with keyboarding — great for prereaders.
RIK: But for older kids, arcade action boosts practice, right?
JIM: Well, maybe. The other three programs all offer game play — but with mixed success.
RIK: The BlastOff game in Sunburst Communications' **Type to Learn,** for instance . . .
JIM: Great graphics, slooooooow game play.

RIK: Thomson Learning Tools' ◀ **PAWS in Typing Town** offers *lots* of arcade games.
JIM: But typing has little to do with game play: Fast, accurate typing earns you credits (such as racing fuel or game-clock time) — then you play a 30-second mouse-based game.
RIK: *Yawn.* So were any of the games good?
JIM: My favorite was the Missile Command-like game in Davidson's **Typing Tutor 7:** You type words as they drop from the sky to prevent them from hitting your cities.
RIK: Hmmm. Who'd ever think typing would be *fun?*
JIM: Glad dad.

PAWS in Typing Town ★★★½

Ages: 8 and up.
Price: $35 estimated street (CD-ROM).
Sound typing-instruction lessons are incompletely integrated with keyboard-based arcade games, a Journal word-processing module (with clip art), and QuickTime movies of proper keyboard techniques. Game activities don't match well with student skill level.
Company: Thomson Learning Tools, Cincinnati, OH; 800-824-5179 or 513-271-8811; http://www.thomson.com/tltools.html.
Reader Service: Circle #420.

Read, Write & Type! ★★★★

Ages: 6 – 8.
Price: $50 estimated street (CD-ROM).
Cutesy-but-clever game format combines typing exercises with early-reading lessons: Keys represent sounds as well as letters. You tell increasingly elaborate stories by accumulating keyboard knowledge.
Company: The Learning Company, Fremont, CA; 800-227-5609 or 510-792-2101; http://www.learningco.com/.
Reader Service: Circle #421.

Type to Learn, Home Version ★★★½

Ages: 7 and up.
Price: $30 estimated street (CD-ROM).
Good blend of solid instructions and fun activities — although BlastOff spaceship game takes *far* too long to move between scenes. Word processor is very good but feels detached from the rest of the program.
Company: Sunburst Communications, Pleasantville, NY; 800-786-3155 or 914-747-3310; http://www.nysunburst.com/.
Reader Service: Circle #422.

Typing Tutor 7 ★★★★

Ages: 12 and up.
Price: $30 estimated street (CD-ROM).
Noncartoony design is well suited for adults, older kids. Fun, fast-paced Missile Command-style game is the best of the bunch. Games match well with lessons. Excellent progress reporting lets you isolate areas for practice.
Company: Davidson/Simon & Schuster, Torrance, CA; 800-457-8357 or 310-793-0600; http://www.davd.com/.
Reader Service: Circle #423.

DATA BROADCASTING CORPORATION

STonline™ from SPORTS ILLUSTRATED

USA TODAY

THE WALL STREET JOURNAL INTERACTIVE EDITION

ZDNet™

After Dark® Online is the automatic Internet news delivery service you've been waiting for. Coming from Berkeley Systems, the company who invented screen savers, Flying Toasters™ and more, you get the top news providers in the business broadcasting their late-breaking stories, inside scoops and in-depth features right to your desktop. Never has such a formidable group of news sources been put together. It's the news how you want it, when you want it. After Dark Online works with your current Internet service provider, browser and all versions of After Dark. It even works with the popular After Dark Randomizer, so you can alternate your news with Flying Toasters and more. And, just like a screen saver, the news comes to you without you lifting a finger. Download it now because it's truly the ultimate screen saver.

©1996 Berkeley Systems, Inc. After Dark, the Flying Toaster image and the Berkeley Systems logo are registered trademarks. Flying Toasters is a trademark of Berkeley Systems, Inc. All other trademarks are property of their respective holders.

BERKELEY SYSTEMS

CIRCLE 115 ON READER SERVICE CARD

The Game Room

BY ROMAN LOYOLA

YOU'LL LAUGH, YOU'LL CRY — heck, you'll even find yourself lost on a non-Gilligan-related deserted island or in a haunted museum in this month's Game Room. And just for kicks, I'll throw in a little tour of LucasArts' game lab and a sneak peek at what's next from the folks who brought you X-Wing.

Don't Quit Your Day Job

Remember the stand-up-comedy boom of a few years ago? People were flocking to clubs, and TV shows featuring stand-up comics and their routines were on every channel. Like most fads, the stand-up-comedy boom ended — maybe because too many comics were stealing other comedians' acts; maybe because of overexposure; or maybe because if it hadn't ended, you wouldn't have been able to call it a fad.

Don't Quit Your Day Job came out a few years too late. It's a game that probably would have prospered during stand-up comedy's glory days back in the '80s. You play a talent scout for a late-night TV show who needs to book a comedian — a really good comedian — or lose your job. You head off to the world-famous Improv comedy club in search of the latest star.

Because you're the new kid in town, Bud Friedman, the owner of the club, won't let you inside to the main stage — you have to have the right connections. You get those connections by exploring the exterior lobby of the Improv and talking to people. But, as all comedians know, timing is everything, and you have to be sure you talk to the right people at the right time. Approach someone at the wrong time, and you get sent to Hell's Basement, where you must explore The Curse of the CD-ROM Hallways.

As a game, Don't Quit Your Day Job is a total joke. Talking to the characters can be amusing, but when every sentence is a play on words, it gets tiring fast. The animation is primitive, and the interface lacks finesse — walking down a hallway can be a chore.

The walls of the club are plastered with photos of comedians. Click on a photo, and you get to watch a short monologue, which is much more fun than playing the game itself. Clips from Steven Kravitz, John Mendoza, and other comedians are very entertaining. One thing you notice after watching a few clips is that poking fun at one's own heritage or ethnic background is a prevailing theme, and if you're the sensitive type, which I'm not, you may be offended.

When you get sent to The Curse of the CD-ROM Hallways, you're treated to a spoof of a video game. One parody, called Missed, is basically a series of underwhelming rendered graphics. Once you finish one of the parodies, you get sent back to the lobby of the Improv to try again.

Although the spoofs are cute and some of the monologues are great, it's not enough to make Don't Quit Your Day Job a worthwhile purchase. Rather than waste money on this game, spring for a visit to a comedy club. You'll have a better time.

Sinkha

Sinkha, from Mojave (formerly Strata Interactive), isn't a game — it's a graphic novel on CD-ROM. Nonetheless, Sinkha makes good use of the CD-ROM format, albeit in a limited fashion.

Sinkha is the story of Hyleyn (see figure below), a young girl yearning to escape Thalissar, the world she's trapped on. She seeks refuge with the Sinkha, godlike creatures worshipped by the inhabitants of Thalissar. Hyleyn decides to contact the Sinkha, and the story tells what happens next.

Sinkha uses the CD-ROM format to show off its gorgeous 3-D images — it would make a great coffee-table book. No detail was spared, with the landscape, spacecraft, robots, and animals beautifully and imaginatively rendered. The lighting effects are used to their fullest. The human characters look surprisingly real, and if they could move, you'd have a hard time convincing someone they weren't. Don't expect to see a lot of animation, however. Playing Sinkha is not a multimedia experience. In most instances, the animation is restricted to a spaceship moving across the screen or to a robot turning its mechanical head. Sinkha's use of sound is limited to background music that's reminiscent of Brian Eno's Ambient series, but it does a good job of setting the mood.

Where Sinkha fails is in the story. It's just not that interesting. There are lots of holes that leave you confused, and the writing is, well, even more stilted and sloppy than that of the average graphic novel. Fortunately, there's a Web site dedicated to the story of Sinkha (http://www.sinkha.com/), and it provides a lot of information that helps make sense of the story. But it does nothing to make the story better. You can use the Web site as a kind of preview and decide for yourself if Sinkha is the type of science fiction you'd be interested in.

One point needs to be made: Many of the images of Hyleyn, identified in the CD-ROM as "a young girl," might be considered sensual. The Web site says that she *could* be 16 years old, but her true age is unknown. The overtones of pedophilia (an old man being forthcoming about his desire for Hyleyn, and images of Hyleyn in revealing, suggestive poses) can be quite powerful, if not upsetting to some. These images are by no means graphic or risqué, but some viewers may find them inappropriate. Sinkha is definitely not for younger audiences.

If you check out the Web site and like what you see, get the CD-ROM and judge for yourself — but don't say I didn't warn you. Or if you're into checking out what artists are doing with 3-D computer graphics these days, Sinkha's a great portfolio. Sinkha is also available as a printed graphic novel, which might be a better option, considering the CD-ROM version's $50 price tag.

Odyssey

Back in junior high, I could never get into RPGs (role-playing games). Dungeons & Dragons was popular but involved a great investment of time. And, honestly, I was more intrigued by the existence of 20-sided dice than I was by any practical application for them.

You would think this lack of RPG savvy would cause me not to be a fan of any Mac RPG. However, Odyssey held my interest. In Odyssey, you play a character who has been stranded on an island and you must journey through that island, plus five others, to get home.

Odyssey's strength is in its detail. There are tons of characters to meet, lots of mystical powers to gain, and a large arsenal of weapons to exploit.

Interacting with other characters and the game environment is easy, thanks to a simple and intuitive interface. Items are stored in a Mac-like folder system, and actions have a corresponding key command. The characters you meet and talk to are interesting. The puzzles in Odyssey are challenging and provide you with information you need for continuing your journey through the islands.

Odyssey's weakness is in its graphics. The view of the game is from overhead, like in Blizzard Entertainment's tour de force WarCraft, but the detail isn't as fine. What graphics there are do nothing to enhance the game play. Odyssey is definitely stronger on game play than it is on eye candy.

Shivers

With a name like Shivers, you'd think I'd get really scared while playing this game — or at least get really cold. Actually, I got really bored.

Much as I hate to make this tired analogy, Shivers is a Myst-like game (I won't compare it to Myst, since I think Myst is overrated). Your character is trapped inside an unfinished museum of mysterious, unexplained phenomena. Evil spirits roam, wreaking havoc, and it's up to you to capture them before the night is through. The catch is you have to capture them in special pots and talismans corresponding to the element each spirit has conquered.

Most of the time, you wander through the museum, checking things out and finding clues. Eventually, you run into a dead end, and the only way through is to solve a puzzle. The puzzles are neither too hard nor too easy. However, all this wandering and puzzle solving didn't keep my attention for long.

Shivers contains some great-looking graphics. After you've finished the game, you can wander through the museum some more. But the old "great graphics, explore, and solve puzzles" combination is just that — old. And because this combination has been done a lot in CD-ROM games, it takes a strong, interesting story line to make such games feel fresh. Since Shivers' story line isn't all that fresh or interesting, you can't help but feel like you've played this game before.

Roman Loyola gets that feeling of déjà vu a lot in The Game Room, which is why he hasn't quit his day job as an associate editor in MacUser's *Features department.*

Sneak Peek: A Visit to LucasArts

Sometimes it's good to get out of the house, or in this case, The Game Room. So when LucasArts invited me to visit its labs for a look at the next round of games, how could I say no? Especially when that visit included lunch at George Lucas' sprawling Skywalker Ranch. (No, I didn't catch a glimpse of the hirsute creator of *Star Wars,* although I did "do lunch" two tables away from *Batman* director/producer Tim Burton. Oh, what I won't suffer to produce the best Game Room possible.)

Among the many upcoming Mac titles that LucasArts showed me was a first-person shooter called Outlaws. Although most first-person shooters are based on science-fiction fantasy themes, Outlaws will be the first to be set in a Sergio Leone-type Western.

Instead of laser guns and futuristic cannons, your character will be armed with a six-shooter, rifles, and shotguns. Because Outlaws is based on an improved version of the Dark Forces engine, you'll be able to shoot out windows in the rustic buildings around town as well as ride a mining car through deep tunnels, popping off bad guys as you speed by. The new engine allows for slopes and radically angular structures, something Dark Forces had trouble dealing with.

Expect Outlaws to debut as early as January.

LucasArts is also feverishly working on Jedi Knight, the sequel to Dark Forces (see figure above, left). Although I wasn't able to see the game itself, I did see some amazingly realistic character animations. I saw smoothly rendered 3-D animations of Kyle (the main character), a Greedo-type bounty hunter, and a Stormtrooper. There wasn't any noticeable frame dropping or any glitches or pixelation in the animations. LucasArts hopes to replicate these incredible character animations in the actual game, which will be the first to allow players to wield a light-saber and use the Force (the story is very reminiscent of the classic movie *The Seven Samurai*). Judging by the trailer the company is putting together plus the production storyboards I was allowed to preview, Jedi Knight promises to be the best first-person shooter (or maybe *slasher* would be more apropos) the company has yet produced. LucasArts says that it plans a simultaneous release for both Windows 95 and Mac OS systems early next year.

I also saw a beta version of TIE Fighter (see figure above, right), the flight simulator that puts you into the cockpit of an Imperial starfighter. If you've played X-Wing, you'll be familiar with the game play of TIE Fighter, because both games are based on the same flight engine and have many controls in common. There will be some interesting differences as well. First off, you'll have to take into account the weaknesses and strengths peculiar to the TIE Fighters, as opposed to the craft in X-Wing, to succeed in this game. Another change is that there will be at least as many missions as there are in X-Wing, which has over 130. You'll get to pilot an assortment of Imperial craft, including standard TIE Fighters, TIE Bombers, TIE Advanced Fighters, and Gunboats. LucasArts is also working on X-Wing versus TIE Fighter for the Mac, which allows multiple players on a network to battle each other. Of all the things I saw during my visit, the thought of being able to take on my fellow editors with my stock X-Wing, showing them the true power of the Force, was the most exciting. I just can't wait.

GAME POINT

December turned out to be a tough month for titles visiting The Game Room. Take the money you'd spend on Don't Quit Your Day Job, and buy two tickets to a comedy club. Sinkha is a stunning graphic novel that, like a lot of its ilk, is a pretty face and very little else. Odyssey is an enjoyable role-playing game with a great interface. And you're better off leaving Shivers out in the cold. Let's just hope we'll be able to ring in the new year with a better selection of games.

Don't Quit Your Day Job ♦♦

Price: $35.95 (list).
Company: Phillips Media, Los Angeles, CA; 800-883-3767 or 303-739-4131.
Reader Service: Circle #424.

Sinkha ♦♦

Price: $49.95 (list).
Company: Mojave, St. George, UT; 801-652-5300.
Reader Service: Circle #425.

Odyssey ♦♦♦

Price: $34.99 (list).
Company: MacSoft, Plymouth, MN; 612-559-5140.
Reader Service: Circle #426.

Shivers ♦♦½

Price: $39.95 (list).
Company: Sierra On-Line, Bellevue, WA; 206-644-4343.
Reader Service: Circle #427.

The LLB Company, Inc.

1-800-848-8967

FREE CATALOG! 1.800.848.8967

Electronic orders: Compuserve @ 73423.1272 @ 6mpuserve.com

- P.O.'s accepted upon approval
- All major credit cards accepted - No surcharge - when shipped
- Prices subject to change, not responsible for errors
- We export to most countries in the world
- Orders received before 8:00 pm EST weekdays shipped same day
- Open 6am to 7pm M-F. 9am to 4pm Saturdays
- Returns subject to a 15% restocking fee

E-Mail us!

The LLB Company, Inc. 13228 NE 20th St., Suite B, Bellevue, WA 98005

UR0796

AIRBORNE EXPRESS OVERNIGHT $7.00 up to 10lbs

DRIVES

APPLE
2.1GB ..... $765 | 1.2 GB ..... $435 | 4GIG 1089

QUANTUM (EXTERNAL)
1.2GB Ext. Fireball ... $359 | 2.1GB Int/ Ext. ... $499/599
ATLAS 4.3 GB 8.6 ms Ext. ... 1039

NEC
4XC 7CD Changer ... $369
2X CD Recorder/Writer ... $1375
4X CD Recorder/Writer ... 1999

FWB
Iomega Zip Drive ... $149*
Jaz 1.0GB Drive ... 459*
* After Manufacturer's rebate

PINNACLE MICRO
RCD1000 w/10 Recordable CD's ... $1295
RCD5020 Ext. CD Recorder ... 1265
APEX 4.6GB Optical Drive ... 1589

ACCESSORIES

ZIP
CARRYING CASE & CTG HOLDER ... $29
MINI CASE (HOLDS DRIVE & 1 CTG) . 15
CADDY - 6 DISKS W/W/O CASE ... 12

ADESSO TRU-FORM EXT. KEYBOARD ... $89
TRU-FORM EXT.KEYBD W/PRNTR ... 100

WACOM 4X5 ARTPAD II ADB W/ERASER $139
ARTZ II 6X8 GRAPHICS TABLET . 315
ARTZ II 12X12 GRAPHICS TABLET ... 439

CPU's

!!!NEW!!!

UMAX
SUPERmac® S900
MacOS™ Compatible
150MHz 604 PowerPC Processor
512K L2 Cache
16MB RAM (expandable to 1GB)
2GB Int. Fast-SCSI Hard Drive *(S900L only)*
8X Int. CD ROM Drive
IMS Twin Turbo 128-bit 4MB
VRAM PCI display board *(S900L only)*
16-bit Stereo sound
and much more... call for details!
SUPERmac® S900L - $3995
SUPERmac® S900D* - $3095
(No hard drive or graphics card)*

MODEMS

GLOBAL VILLAGE
Teleport Gold II 14.4 ... $112
PowerPort Platinum Internet 28.8 V.34 209
PowerPort Platinum PC Card 28.8 ... 349
PowerPort Platinum PRO PC Card ... 519

SUPRA
SUPRA Simple Internet 28.8 Ext. ... $159
SUPRA 28.8 V.34 ... 175
SUPRA 28.8 PB FAX Modem ... 165
SUPRA EXPRESS 144 PLUS ... 45
SUPRA EXPRESS 288 External V.34 ... 149

US ROBOTICS
28.8 Sportster V.34 Internet Bundle ... $175
Sportster14,400 Mac & Fax ... 78
28.8 V.34 PCMCIA Sportster ... 291

TDK
28.8 V.34 PCMCIA PB190/5300 ... $259
Global Class 288 V.34 PCMCIA ... 315

Motorola
Montana PCMCIA 28.8 ... $239
Power 28.8 V.34 ... 270
ISDN Bitsurfer PRO ... 369

MEGAHERTZ
Cell Capable Cruise 28.8 $259
Cruise Card 28.8 ... 259

ACCELERATORS

DAYSTAR
NPOWER 604E UPGRADE $1485
Turbo 040 40MHZ w/cache ... $679
Turbo 040i 33MHZ w/cache no FPU .. 609
PowerPro 601 100MHZ w/cache ... $1240
Turbo 601 100 MHZ w/adapter ... 1175
PowerCard 601 100MHZ ... 959

SCANNERS

EPSON 1200C PRO ... $1202
VISIONEER PaperPortVX for Mac ... 295
CoolScan II External ... $1349

Nikon ELECTRONIC IMAGING
Super CoolScan 2049

AGFA
StudioScan IISI ... $795
ARCUS II ... 1941
POLAROID SPRINTSCAN ... 1555

UMAX
POWERLOOK I I ... $1988
VISTA S-12 PRO+ ... 958
VISTA S-12 LE+ ... 798
VISTA S-6 E PRO/LE ... 674/634

PRINTERS

APPLE
Color Stylewriter 2500 ... $375
Laserwriter 4/600 ... 895
Personal Laserwriter 320 ... 809

HEWLETT PACKARD
HP LaserJet 4MV ... $2840
HP LaserJet 5P ... 888
HP LaserJet 5si ... 2860
HP DesJET 870CXI ... 512

EPSON
STYLUS COLOR 1500 PRINTER ... $995
STYLUS COLOR PRO XL PRINTER ... 1795

We Carry All Printer Supplies

PRINTER SUPPLIES

APPLE
APL M0089LUA PRSNL LW LS/CS/NT/NTX ... $72
APL M1402LL/A NU-BUS ADAPTER CENTR ... 65
APL M1949/50/51G/A CLR STYLWRTR PRO CYAN/MGNTA/YFL 9
APL M1960G/A LSRWTR SEL 300/310/360 TNR ... 95
APL M2795G/A LSRWRTR IISC/IINT TONER ... 64
APL M3240/2G/A CLRSTYLWTR2400 HIPERF. BLACK. ... 29
APL M3329G/A CLR STYWTR 2400 REPLACEMENT COLOR . 19
APL M3330GIA CLR STYLWTR 2400 REPLACEMENT BLACK .. 7

EPSOn
EP 317344 720 DPI COATED PAPER ... $22
EP 379557/56 720 DPI COATED PAPER LTR/LEGAL 13/35
EP 5020034/36 STYLUS PRO XL CLACK/COLOR ... 19/32
EP S041044 720 DPI COATED 11X17 200 SHEET ... 55
EP S 041060 360 DPI COATED PAPER 100 SHEETS. ... 14
EP S041069 SUPERB 13X19 720 DPI 100 SHEETS ... 40

HEWLETT PACKARD
HP 282242 500 SHEET LOWER TRAY 4V/MV ... $335
HP 282244 250 SHEET LEGAL TRAY 4V/MV ... 99
HP 282249 250 SHEET LETTERTRAY 4V/MV ... 99
HP 311743 2000 SHEET FEEDER FPR SP/MP ... 919
HP 311744 MULTI BIN UNIT FOR 5SI. ... 1335
HP 397918 DESKWRITER 600 CLR CTG. ... 33
HP 397945 DESKJET 600 COLOR KIT. ... 41
HP 397948 DESKJET 850C CLR CTG ... 39

MONITORS

AV1710AV . APPLE VISION 1710 AV 26MM $1,069
MS1705 MULTISCAN 17" 28MM ... 759
MS20 . MULTISCAN 20" ... 1,989

SONY
15SF ... SONY 15" SFZ MULTISCAN $515
17SE1 ... SONY 17" 17SE1 ... 1,150
17SF ... SONY 17" MULTISCAN ... 939

NEC
XV15+ .... MULTISYNC XV15+ 15" ... $525
XV17+ .... MULTISYNC XV17+ 17" ... 895

HITACHI-RASTEROPS
MC17 ... SUPERSCAN 17" ... $965
MC20 ... SUPERSCAN 20" ... 1,485
MC21HR ... SUPERSCAN 21" ... 2,159

radius
PressView 21SR ... $3,439
PressView 17SR ... 2,105
PrecisionView 21 ... 2,495
PrecisionView 17 ... 1,035

MEDIA

SONY
DG90MA $8

4MM/8MM DAT
DDS 4MM 1.3 GB Data Cartridge ... $7
DDS 4MM 2 GB Data Cartridge ... 8
DDS 4MM 4 GB Data Cartridge ... 23
DAT 90MIN 4MM Tape ... 85

SONY CD-Recordable
74 Min 4x 650MB / 10 Pack ... $8/73

Magneto Optical Disks
5.25" MO1.3GB 1024k b/s/1.2GB 512k b/s $60
5.25" MO650MB 1024k b/s/594MB 512k b/s ... 55
3.5" MO230MB/Mac Formatted ... 20/22
3.5" MO128MB / w/ Mac Format 3-Pack 44/50
3.5" MO230M / w/ Mac Format 3-Pack ... 55/60

Verbatim

DATALIFE 4MM/8MM DAT
8mm, DL 112 Meters 2.5/5.0GB ... $6.50
4mm, DL 112 Meters 2.5/5.0GB ... $6.50

Magneto Optical Disks
128MB 3.5" Rewritable / w/Mac Format ... 16/18
230MB 3.5" Rewritable / w/Mac Format .. $20/22
650MB 5.25 512B/S / 600MB 5.25 1024B/S ... 51
1.2GB 512B/S / 1.3GB 1024B/S ... 60

IOMEGA
Iomega ZIP Cart. 100MB ... $19
- 3pack ... 49.50
-10 Pack ... 139
Iomega Jaz 1GB Cart. ... 123
- 5 Pack ... 479
Iomega Jaz 540MB Cart ... 69
- 5 Pack ... 294

VIDEO

FOCUS ENH. LTV MICRO FOR MAC ... $139

IMS
TWIN TURBO 128M PCI 2MB RAM ... $370
TWIN TURBO 128M PCI 4MB RAM ... 569

MATROX
MGA MILLENIUM PCI 8MB ... $867

NUMBER NINE
IMAGINE 128 PCI 4MB 16.9 75HZ ... $695
IMAGINE 128 PCI 8MB 16.8 80HZ ... 900

TRUE VISION
TARGA 2000N NUBUS FOR MAC ... $2,579
TARGA 2000 PCI FOR MAC ... 4,165

radius
THUNDER IV GX-1600 .. $2,095
VIDEO VISION STUDIO 2.0 2,529
PRECISION COLOR 8/1600 PCI ... 505
THUNDERCOLOR 30/1600 PCI ... 2,105

UMAX
Powerlook II

$1525

GLOBAL VILLAGE

PowerPort Platinum PC Card $349

QUANTUM
1.2GB EXT. TRAILBLAZER $359
2.1GB INT. ... 599
4.3GB ATLAS - INT. ... 999

NUMBER NINE
128 PCI 8MB 16.8
$900

The LLB Company, Inc.

1-800-848-8967

nternational: 206.746.0229 WEB SITE: HTTP://llb.com Fax: 206.746.5168

MEMORY

Standard 30-pin SIMMs

1MB 100/80/70NS	$12/13/33
2MB 80/70NS	26/32
4MB 80/70NS	30/36
8MB 70NS	89
16MB 70NS	179

30-pin, 9 bit PC SIMMS

1MB 70NS	$30
4MB 70NS	65

8MB 72PIN $48

4MB PAL SIMMs for II,IIx

4MB 70NS	$62

64-pin SIMMs for IIfx

1MB 80/70NS	$26/43
4MB 80/70NS	65/99
8MB 70NS	110
16MB 70NS	420

72-pin SIMMs

4MB 70/60NS/EDO	$26/28/45
8MB 70/60NS/EDO	48/50/54
16MB 70/60NS/EDO	95/100/146
32MB 60NS/EDO	195/252

72-pin, 36 bit PC SIMMS

4MB 70NS	$49
8MB 70NS	89
16MB 70NS	126
32MB 70NS	310

168-pin DIMMs

4MB 60NS	$42
8MB 60NS	58
16MB 60NS	100
32MB 60NS	199
64MB 60NS	395

PB 5300 Series

8MB/12MB RAM	$44/160
16MB/32MB RAM	184/330

PB 190 Series

4MB/8MB 70NS	$75/120
12MB/16MB 70NS	160/230
32MB70NS	395

PB500 Series

4MB/8MB RAM	$74/94
16MB/32MB RAM	160/355

PBDUO 210/230 Series

PB DUO-4MB/8MB	$75/140
PB DUO-12MB/14MB	152/245
PB DUO-20MB/28MB	270/390

PB2300 Series

PB 2300-4MB/8MB/16MB	$85/115/185
PB 2300-20MB/32MB/36MB	255/360/380

What type of Memory do I need?

Standard 30-Pin Simms: Plus, SE, SE 30, Classic, Classic II, Color Classic, LC, LCII, Performa 200, Performa 400-430, Performa 600, Quadra 900/950, Mac II, IIx, IIcx, IIsi, IIci, IIfx, IIvx, IIvi.

Standard 72-Pin Simms: Quadra 605/630, 610, 650, 700, 800/840AV, LCIII, LC475, LC630, Performa 450-560, 575 and 6115CD, PowerMac 6100, 7100, 8100, WS 80, WS60, WS 95, WS 6150 and WS 8150, 9150.

168 Pin Dimms: PowerMac 9500, 8500, 7500, 7200

POWERBOOK ACCESSORIES

PB 5300 SERIES

/STBAT5000 VST PB 190/5300 BATTERY NIMH	$163
/STBAT5001 VST PB 190/5300 BATTERY/CHARGER 5000	299
/ST SCH5000 VST CHARGER 5000 W/AC ADAPTER	199
/ST BAT5300 VST PB5300 BATTERY/CHARGER/AC ADAPTER	329
/STEBAD5000 VST PB5300 POWER ADAPTER AC	159
/STEBAD5001 VSTPB5300 POWER ADAPTER AC/DC	229
PB1522 APPLE AC ADAPTER	59
PB1519NIMH INTERNAL BATTERY PB5300	189
PB1520 SUPERCHARGER BATTERY CHARGER PB5300	95
PB1521 MINI A/C ADAPTER PB 5300	69

PB 500 SERIES

/STBAT0500 VST PB500 INTERNAL BATTERY	$129
/STSCH1000 VST CHARGER 500	159
/STSCH1001 VST CHARGER 500 AC BUNDLE	229
PB1507 PB500/BB AUTO ADAPTER	65
PB1523 APPLE A/C ADAPTER PB500	119
APLM2995LL/C APL PCMCIA EXPANSION MODULE	215
APLM3081LL/A APL PB500 POWER PC UPGRADE CARD	1229

PB DUO 210/230/280 SERIES

PB1504 POWERBOOK DUO AUTO ADAPTER	$69
PB1513 SLIMPACK BATTERY FOR DUO	253
PB1515 MINI A/C ADAPTER FOR DUO	50

PB 100 SERIES

PB1511 BATTERY PB 100	$49
PB1512 SLIMPACK EXTERNAL BATTERY PB100-180C	145
/STC1001 VST THINKPACK COMPLETE	115

ALL PB SERIES

PB1503 INTERNAL BATTERY FOR PB140-180C	$59
/STPBT2003 VST PB TOOLS VERSION 2.0	59
K 236633 KENSINGTON SECURITY SYSTEM	31

FPUs/CoProcessors Video RAM/Cache

FPU's/Math CoProcessors

Centris FPU 25MHz	$189
FPU 33MHZ DUO/P600	52
FPU Color Classic 16MHZ	44
FPU LCIII 25 MHZ	49
FPU LC/LCII 16 MHZ	49
LC575 33MHZ Math CoProc.	240

VRAM/CACHE BOOST YOUR MAC!

256K 80NS Video RAM	$13
512K Video RAM	20
1MB Video RAM PM72/75/8500	49
2MB Video RAM PM 9500	189
256K/512K Cache Card	72/220
1MB Cache Card	355
256K Cache Dimm PMPCI256	69
512K Cache Dimm PMPCI512	139

We also offer quality products by Kingston, and Viking.

RUMI
270MB SYQUEST DRIVE WITH CARTRIDGE
$99
FINAL SALE

Newer TECHNOLOGY
NUPOWR
167MHZ -8MB..$899
NUPOWR is the PowerPC Upgrade for the PB500 Series

APPLE
LASERWRITER 16/600
$2249

IOMEGA
JAZ 1GB
2.5 SCSI DRIVE
$459*
*After Manufacturer's Rebate

DAYSTAR
NPOWER
180MHz DUAL 604E UPGRADE
$1485

SONY
CD RECORDABLE
650 MB 74 MIN
$73

CIRCLE 23 ON READER SERVICE CARD

THE BEST DEALS

MacMall

YOUR #1 MAC SOURCE!

MacMall

THE CATALOG WITH THE GREAT DEALS

Authorized Catalog Reseller

POWER COMPUTING

PowerCenter 132

The perfect business and multimedia machine! It includes 132MHz of blistering PowerPC™ speed, 1GB HD, 4X CD-ROM, 64-bit PCI video card, 16MB of RAM, 3 PCI slots, mouse and keyboard. Order yours today. And start knocking down your business projects

132MHz
16/1GB/4XCD
$1895
#84633

Or lease for $76 per month

Monitor not included

MORE POWER COMPUTING DEALS!

Model/MHz	Processor	RAM/HD/CD	Price	Order #
PowerCenter 150	PowerPC™ 604	16/1GB/4X	$2,095	#84634
PowerBase 180*	PowerPC™ 603e	16/1.2GB/8X	1,595	#84647
PowerBase 200*	PowerPC™ 603e	16/1.2GB/8X	1,895	#84649
PowerBase 240*	PowerPC™ 603e	16/1.2GB/8X	2,295	#84651
PowerTower 180e	PowerPC™ 604e	16/2GB/8X	3,295	#84637
PowerTower 200e	PowerPC™ 604e	16/2GB/8X	3,595	#84638
PowerTower Pro 180	PowerPC™ 604e	16/2GB/8X	4,195	#84639
PowerTower Pro 200	PowerPC™ 604e	16/2GB/8X	4,495	#84640
PowerTower Pro 225	PowerPC™ 604e	16/2GB/8X	4,995	#84641

Tower models available. Please call for details

SUPERMAC C500/160

UMAX Computer Corporation

Introducing the Newest MacOS™ Compatible SUPERmac® C500/160

It's a serious tool for fun and business! The new SUPERMac C500 is loaded with a fast 160MHz 603e PowerPC processor (for fast-paced game and more practical application performance). And it includes a big 1.2GB fast-SCSI hard drive, two high-speed PCI slots for easy expandability and much more.

160MHz
16/1.2GB/8XCD
$1495
#84658

HOT NEW PRODUCT!

Monitor sold separately

MORE UMAX DEALS!

Model/MHz	Processor	RAM/HD/CD	Price	Order #
Supermac C600L/180	PowerPC™ 603e	16/2.1/8X	$1,795	#84660
Supermac C600L/200	PowerPC™ 603e	16/2.1/8X	1,995	#84659
Supermac J700L/150	PowerPC™ 604	16/2.1/6.7X	2,995	#84657
Supermac S900L/180	PowerPC™ 604e	32/2.1/8X	3,795	#84654
Supermac S900L/200	PowerPC™ 604e	32/2.1/8X	3,995	#84655

CONNECTIX RAM DOUBLER

RAM Doubler 2.0

Up to triple your RAM for just...

$24.99*
#82525

*Price after $25 mail-in rebate for previous owners of version 1.0 or higher. Price before rebate is $49.99

SONY 17"

SONY

Multiscan® 17sfII Trinitron Graphic Display

17" Trinitron CRT (15.9" viewable image size) with resolutions up to 1280 x 1024NI, .25mm Dot Pitch.

$769.99
#77252

SUPRA EXPRESS 14.4

14.4Kbps Fax/Data Modem for Mac®

$34.99
#67021

33.6 External Data/Fax Modem

$89.99* #82946

*Price after $20 mail-in rebate. Price before rebate is $109.99

HP DESKWRITER 680C

HP DeskWriter 680C Printer

- Prints up to 5 ppm in black, 1.5 in color
- HP's ColorSmart technology
- two-sided printing

$289.99
#79788

Also: $319.99 w/Kai's PowerGoo #82777

PEAK NET.JET

Peak Net.Jet

Turbo charge your Net! Save $$ on connect charges.

$29.99
#84377

ARRIVA

Arriva 1.1GB External Hard Drive

Super-durable enclosure, 5-year warranty, 5400 rpm rotational speed, 512KB cache, 10ms average access time.

$339.99
#82913

Arriva™

ARRIVA

Arriva Jaz Drive, 1GB, 10-12MS

Includes a FREE 1GB Jaz disk, 5.4MB/sec transfer rate, SCSI Connection, 12ms seek time, 17ms access time, 256 Cache read/write.

$479.99
#82915

Call by 11:00pm EST for Delivery by 10:30am the Next Day via FedEx Priority Overnight!

CALL THE NUMBER BELOW TO GET YOUR **FREE! CATALOG**

LIMITED TIME OFFER Get a Connectix

QuickCam FREE!

Free with your purchase of ANY Desktop or PowerBook® CPU from MacMall, after manufacturer's and MacMall rebates, tax if any, not rebated. Not valid with any other offers. Call for details.

NEW! DETAILER

Fractal Design Corporation

Detailer Upgrade CD Mac®/PowerPC™

Amazing 3D paint program! INCLUDES FREE Designer 4.1. While supplies last.

$148.99 #83524

Detailer™ CD Mac®/PowerPC™ $299.99 #82528

NEW! EXPRESSION

Expression CD Mac®/PowerPC™

The revolutionary natural-media vector drawing tool.

$148.99 #83711

Expression™ CD Mac®/PowerPC™ $299.99 #82974

IOMEGA® ZIP SCSI DRIVE

Store your documents safely and quickly on 100MB cartridges.

Includes one FREE cartridge

*Price after $50 mail-in rebate.

$149.99* #69404

IOMEGA® JAZ DRIVE

NEW LOW PRICE!

1GB Removable Storage Drive!

Imagine: you can fit your whole hard drive on one Jaz cartridge!

$499.99* #74475

CORELDRAW 6

CorelDraw 6 CD Mac®/PowerPC Competitive Upgrade with Free Descent CD

Super integrated graphics and word processing!

$148.99 #82852

CorelDraw 6 Mac®/PowerPC™ with FREE Descent CD $389.99 #82836

BLACK BOX 2.0

Black Box 2.0 Mac®/PowerPC™ 3.5" Diskette

10 awesome Photoshop filters!

$89.99 #81437

SYQUEST SYJET 1.3GB

HOT NEW PRODUCT!

***NEW!* syjet 1.3GB**

Removable External SCSI Drive

Back-up all your work quickly with the NEW SyJet 1.3GB removable drive! Its quick 12 msec. average seek time provides blazing-fast removable storage for your graphics, audio, video and more!

SyQuest® TECHNOLOGY

Internal SCSI also available

$499.99 #81323

CD-ROM DRIVES AND BUNDLES

4X External CD-ROM Drive

With this quad-speed CD-ROM drive you get 150ms access time, a 614KB/sec data transfer rate, SCSI-2 connection and power tray loading.

as low as $139.99 #78387

HI-VAL 8X External CD-ROM Drive & FWB Software

The HI-VAL 8X CD-ROM drive gives you virtually instant access to your CDs. Ultra-smooth data transfer set-up is included. Plus, you can choose from our value-packed bundles.

- 145ms access time
- 256KB buffer memory
- Includes FWB software, SCSI cables and terminator

8x External CD-ROM & FWB software $289.99 #80609

8x External CD-ROM & FWB software, Grolier's Encyclopedia, Marathon 2 and A-10 Attack $339.99 #80611

MARATHON INFINITY

Marathon Infinity CD Mac®

Marathon is based on the Marathon 2 world, and consists of : *"Blood Tides of Lh'owon"*, a 30-level scenario with new textures, landscapes and monsters.

New 10mm hyper accurate Flechette SMG weapon and the second trigger fires a burst underwater!

$37.99 #81434

BUNGIE

ABUSE

Abuse CD Mac®

The action in Abuse is fluid and furious as you battle your way through a high-security prison crawling with inhuman monsters.

Play Abuse and create your own game with its built-in Level Editor

$38.99 #82052

BUNGIE

GRYPHON™ BRICKS

Gryphon Bricks™ With your choice of more than 300 brick styles, you can build anything your imagination dreams up.

$29.99 #81866

GRYPHON

BATMAN AND ROBIN

Adventures of Batman and Robin Activity Center CD

Explore the world of *Batman and Robin*! As you enter the *Bat Cave* and *The Streets of Gotham City*, prepare yourself for mind-bending puzzles, games and fun.

Mac®/PPC™/ Windows

$29.99 #84475

GRYPHON™

Call 1·800·217·9498

CIRCLE **18** ON READER SERVICE CARD

THE BEST DEALS

MacMall

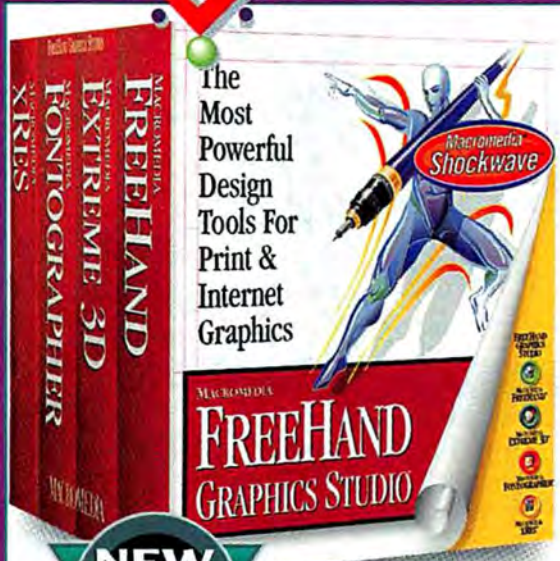
YOUR #1 MAC SOURCE!

MacMall

THE CATALOG WITH THE GREAT DEALS

Authorized Catalog Reseller

FREEHAND™ GRAPHICS STUDIO



FreeHand™ Graphics Studio 7 Upgrade CD

Unleash your creativity with Macromedia's FreeHand Graphics Studio 7 and Shockwave for state of the art design on the Internet. Includes FreeHand 7, the leading tool for design, illustration and page layout; Macromedia xRes, for fast, high-res, image editing and creation; Extreme 3D, for fast 3D modeling, animation and photorealistic rendering; and Fontographer, the industry standard for type design. Everything you need to create dynamic graphics using bitmaps, fonts, vectors and 3D models. And you can publish your images on the Web with transparent GIFs and Shockwave. Altogether, the most powerful design tools for print and Internet graphics.

FreeHand Graphics Studio 7 Includes:
1. New Freehand™ 7
2. Extreme 3D™
3. Fontographer 4.1
4. Macromedia xRes™ 3

- Wide ranging compatibility with other programs and platforms
- Create spectacular special effects ranging from Calligraphy to starbursts
- Contains 10,000 clipart images, 500 fonts, 250MB of high-resolution photography and dozens of 3D models
- Supports popular internet formats for publishing on the World Wide Web

FreeHand™ Graphics Studio 7.0 Upgrade CD Mac® **$189.99** #84730

FreeHand Graphics Studio 7 CD Mac®	$399.99	#84729
FreeHand 7 CD Mac®	$399.99	#84678
FreeHand 7 Upgrade CD Mac®	$139.99	#84727
FreeHand 7 Competitive Upgrade CD Mac®	$139.99	#84809

QUICKEN DELUXE/MACINTAX

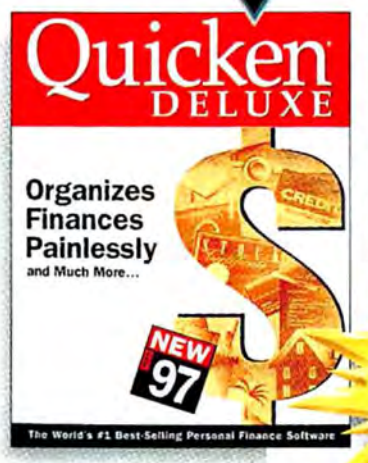
Quicken Deluxe 7.0 CD/ MacInTax Deluxe Bundle

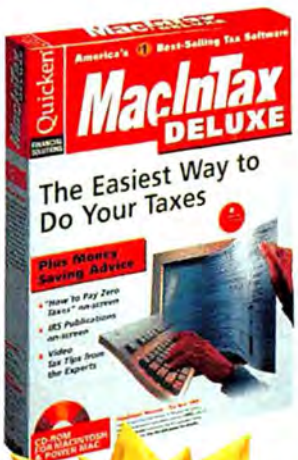
NEW VERSION!

Quicken Deluxe 7.0

Includes everything in Quicken '97

- Step-by-step Retirement Planner creates a personalized action plan to help meet your retirement goals
- Tax Deduction finder saves you money on taxes
- Debt reduction planner helps you get out of debt sooner
- Plus Quicken Home Inventory, Mutual Fund Finder & much more...
- 32-bit speed and Windows® 95 compliant





MacInTax Head Start Deluxe 7.0

Ordering MacInTax Head Start Deluxe now makes good financial sense! It was priced at $89.99, but thanks to a mail-in rebate, you pay just $59.99.

You SAVE $30!

And you enjoy the easiest, most comprehensive tax program ever! Use it to calculate your quarterly estimated taxes in seconds. Plan and reduce next year's tax bill. And Intuit guarantees your tax satisfaction, or your money back.

Money Back Guarantee

Quicken Deluxe 7.0 CD/ MacInTax Deluxe Mac® Bundle **$59.99*** #84626

$89.99
-30.00 *mail-in rebate
59.99 your price

Intuit

Quicken 7.0 Mac® ..$39.99 #84357

Call 1·800·217·9498

Call by 11:00pm EST for Delivery by 10:30am the Next Day via FedEx Priority Overnight!

CALL THE NUMBER BELOW TO GET YOUR **FREE! CATALOG**

LIMITED TIME OFFER Get a Connectix

QuickCam FREE!

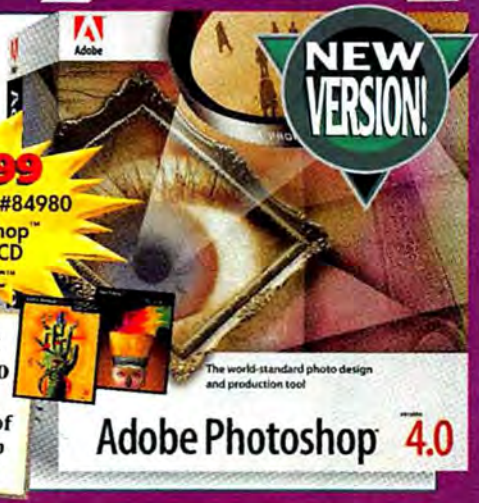
Free with your purchase of ANY Desktop or PowerBook® CPU from MacMall, after manufacturer's and MacMall rebates, tax if any, not rebated. Not valid with any other offers. Call for details.

ADOBE PHOTOSHOP

Adobe™ Photoshop™ 4.0

Order NEW Adobe Photoshop 4.0 and enjoy major time-saving enhancements! You can record editing steps for fast batch editing. Use Guides and Grids for easier image editing. And experiment with 48 new effects filters for a wide range of artistic effects.

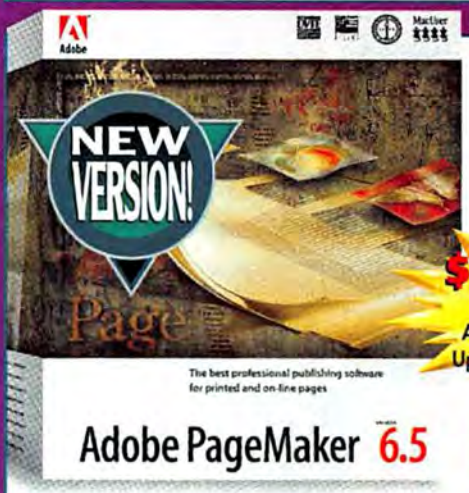
- **Navigator**– save time by zooming instantly to a specific area of an image
- **Actions Palette**– record a sequence of editing steps as an action list that can be used to automate editing and allow batch processing of files
- **Grids**– enjoy easier alignment and layout of elements with definable guides and snap-to grids
- **Adjustment layers**– experiment with color correction and special effects without altering your original image



$129.99 #84980
Adobe™ Photoshop™ 4.0 Upgrade CD Mac®/PowerPC™

FREE Paint Alchemy & Fresco CD by Xaos With your purchase of any of the Photoshop Products on this ad!

Adobe™ Photoshop™ 4.0 CD Mac®/PowerPC™	$539.99	#84979
Adobe™ Photoshop™ 4.0 5-pack CD Mac®/PowerPC™	$1999.99	#84970
Adobe™ Photoshop™ 4.0 CD Upgrade 5-pack Mac®/PPC	$699.99	#84967



LIMITED SUPPLY ON SPECIAL PRICE PACKAGES

ADOBE PAGEMAKER 6.5

Adobe PageMaker 6.5 FREE with your purchase of PageMaker 6.0

Designed for all your layout needs, Adobe® PageMaker® 6.5 is the best professional publishing software for printed and on-line pages. Expand your design possibilities with breakthrough features—including document-wide layers and automatic reformatting of publications. Use a new interface that looks and feels even more like those in the Adobe Photoshop® and Adobe Illustrator programs. And, when you're ready for Internet publishing, simply export pages to HTML format or Adobe Portable Document Format (PDF). No other software makes it so easy to produce sophisticated pages in any medium, using Macintosh, Power Macintosh, Windows® 95, or Windows NT® 4.0-compatible personal computers.

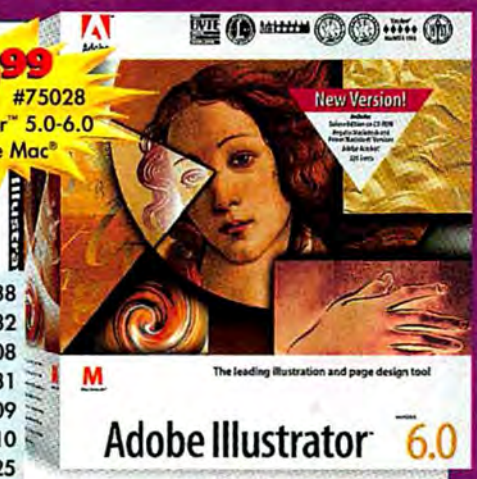
$129.99 #72972
Adobe Pagemaker 6.0 Upgrade CD Mac®/PowerPC™

Adobe™ PageMaker™ 6.0 CD Mac®/PowerPC™	$539.99	#72971
Adobe™ PageMaker™ 6.0 CD Competitive Upgrade Mac®/PowerPC™	$179.99	#77648

ADOBE ILLUSTRATOR 5.0-6.0

Adobe Illustrator 6.0 Upgrade CD Mac®

It's the leading illustration and page design tool! Use Adobe Illustrator's built-in color separations and control palette for precise positioning of your design elements. Its trapping, layers, multiple undos and multi-colored gradients make it easy to refine your artwork. Use its pressure-sensitive calligraphic pen tool to create custom effects. Plus, it includes a FREE Deluxe CD-ROM with Photoshop compatible filters & much more. Order it today. It even includes Adobe Type Manager for clean, perfect type.



$89.99 #75028
Adobe Illustrator™ 5.0-6.0 CD Upgrade Mac®

Adobe™ Illustrator™ 6.0 with FREE PageMill 1.0 CD & 3.5" Diskette Mac®	$388.99	#83738
Adobe™ Illustrator™ 3.2-6.0 CD Upgrade & FreeHand Crossgrade Mac®	$98.99	#75032
Adobe™ Illustrator™ 3.2-6.0 CD & 3.5" diskette Upgrade & FreeHand Crossgrade Mac®	$124.99	#78308
Adobe™ Illustrator™ 5.0-6.0 Upgrade CD & 3.5" Diskette Mac®	$124.99	#75031
Adobe™ Illustrator™ 3.2-6.0 5-pack Upgrade CD & 3.5" Diskette Mac®	$449.99	#78309
Adobe™ Illustrator™ 5.0-6.0 5-pack Upgrade CD & 3.5" Diskette Mac®	$399.99	#78310
Adobe™ Illustrator™ 6.0 5-pack Upgrade CD & 3.5" Diskette Mac®	$1399.99	#78325

Call 1·800·217·9498

CIRCLE 18 ON READER SERVICE CARD

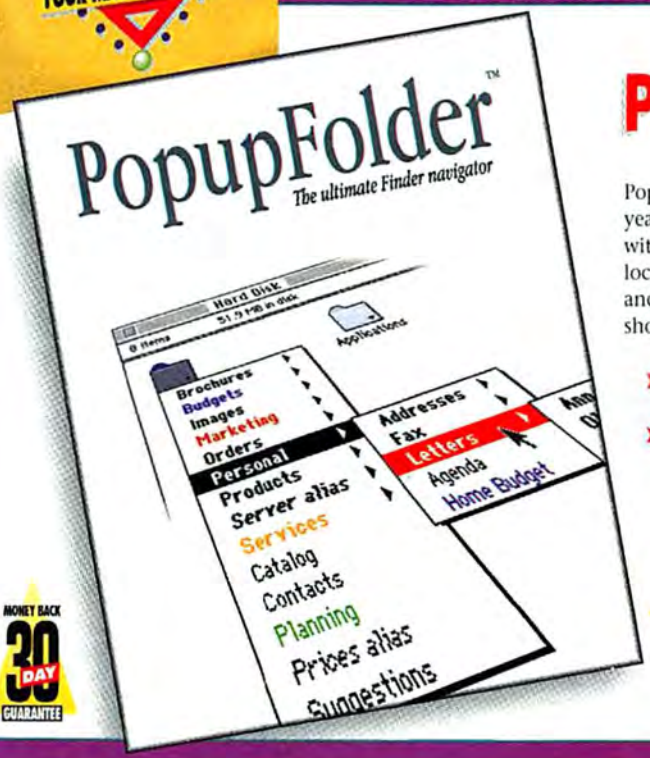
MacMall

WILL BEAT ANY PRICE ON OVER 20,000 PRODUCTS!

(Maybe More) Some limits apply, call for details.

Authorized Catalog Reseller

POPUPFOLDER 2.0



PopupFolder 2.0

PopupFolder just might be the coolest Mac® product you can order this year! Use it to locate anything (from individual files to entire programs) with a single click. Then, use it to open it or even drag it to another location, all with one mouse motion. It even works inside all your Open and Save windows. Order it today. Some folks think it's how the Mac OS™ should've been originally designed.

- Save yourself tons of navigation time
- Drag and drop filing
- Customize your menus
- Works on any folder or disk on your desktop

MONEY BACK 30 DAY GUARANTEE

PopupFolder 2.0
$29.99
#82322

ASD Software Inc.

DISKGUARD

ASD Software Inc.

DiskGuard 1.6

"DiskGuard is remarkably easy to use... a winner!" —MacWEEK
Now you can protect your sensitive files with easy-to-use security! DiskGuard gives you single password access to everything, while a second password gives others access during the days and hours you specify. Your private folders remain locked and invisible to prying eyes.

- Two password levels
- Secure screen locking to keep others from looking at your screen while you're away from your desk
- Simple folder protection with a single click
- Network administration

DiskGuard 1.6
5 User ..... $268.99 #77244
DiskGuard 1.6
10 User ..... $459.99 #82413

$74.99
#74930

MacWeek ♦♦♦♦
MacWorld MW ★★★★

FILEGUARD

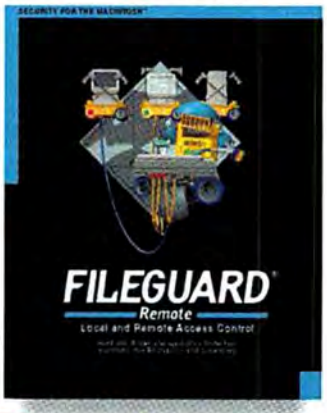
ASD Software Inc.

FileGuard 3.0

MacUser says "FileGuard offers tremendous ease of use... about as much security as you can get in one package." It protects your hard drives, files, folders, and applications for any number of different users. It keeps logs of what every user does, includes encryption and more!

Network Administration Solutions

FileGuard 3.0
5 User ..... $459.99 #82390
FileGuard 3.0
10 User ..... $739.99 #82391



Received a **5-Mice** Rating from MacUser!

Version 2.9

$139.99
#82389

Call 1·800·217·9498

Call by 11:00pm EST for Delivery by 10:30am the Next Day via FedEx Priority Overnight!

CIRCLE 18 ON READER SERVICE CARD

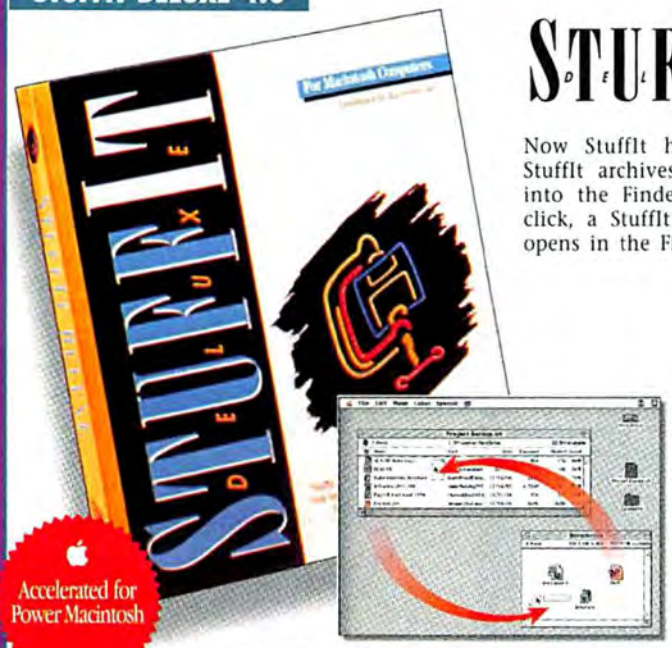
CALL THE NUMBER BELOW TO GET YOUR **FREE! CATALOG**

LIMITED TIME OFFER Get a Connectix

QuickCam FREE!

Free with your purchase of ANY Desktop or PowerBook® CPU from MacMall, after manufacturer's and MacMall rebates, tax if any, not rebated. Not valid with any other offers. Call for details.

STUFFIT DELUXE 4.0



Accelerated for Power Macintosh

StuffIt 4.0

Aladdin Systems

Now StuffIt has a browser! Your StuffIt archives are now integrated into the Finder. With one double-click, a StuffIt archive immediately opens in the Finder and displays its contents. StuffIt archives now act like folders in the Finder, except the files in them take up MUCH less disk space. Order today and see your Mac's hard drive space efficiency skyrocket!

- **NEW!** Faster Stuffing & Expansion
- **NEW!** Drag & Drop Segmenting
- **NEW!** Easier Ways To Backup
- **NEW!** SpaceSaver "tags"
- **NEW!** Improved Interface

Seeing what's inside your StuffIt compressed files is now as easy as Drag n' Drop. With StuffIt Browser there is NO need to decompress!

MONEY BACK 30 DAY GUARANTEE

All Aladdin Software comes with a 30-Day Money Back Guarantee

$74.99 79363
StuffIt Deluxe 4.0 Mac™/PowerPC™ 3.5" Diskette

StuffIt Deluxe V4.0 Upgrade Mac™/Power PC™ 3.5" Diskette
$39.99 #79368

DESKTOP TOOLS

Aladdin's Desktop Tools
Mac™ 3.5" Diskette

Tear down the barriers between you and your work! It's easy with Aladdin's Desktop Tools. Your copying and trashing items are accelerated. You can save time by using keyboard equivalents to Finder commands. Copy in the background (while you keep working). Securely erase sensitive files. And much more. Order it today. It's simply a better way to work on your Mac.

- Switch printers instantly using Desktop Printer
- View files instantly
- Speeds up your Finder

$48.99 #71811

Aladdin Systems

CYBERFINDER

CyberFinder Mac™

CyberFinder is the easiest way of navigating the Internet from your Finder. It lets you create bookmarks in the Finder for all your favorite Internet resources Just double-click a bookmark icon and CyberFinder will automatically launch the appropriate application and takes you there. You can go any place on the Net from within any application you happen to be working in.

$19.99 #85155

Aladdin Systems

Call 1·800·217·9498

THE BEST DEALS

MacMall

YOUR #1 MAC SOURCE!

MacMall

WILL BEAT ANY PRICE ON OVER 20,000 PRODUCTS!

(Maybe More) Some limits apply, call for details.

Authorized Catalog Reseller

POPULAR PHOTOGRAPHY

HOT NEW PRODUCT!

Popular Photography CD

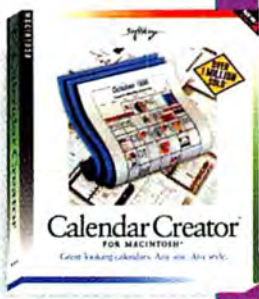
Popular Photography, the leading photography magazine, now offers a exceptional collection of 500 royalty free images for desktop publishing. Images come in two resolutions; one ideal for on-screen display and the other for printing. These high quality images can be used "as-is" in any Macintosh or Windows based word processor, desktop publishing and presentation program, or they can be imported into an image editor, such as PhotoFinish for stunning special effects. Lower resolution photos are also great for creating World Wide Web pages.

- All images picked by the editors of Popular Photography from their own photographers
- Images have been carefully scanned, digitized and color corrected from the original slides
- Images come in two sizes—all 300 DPI and all 24 bit:
  - -800 x 600: for on-screen presentations, high quality final printed output
  - -320 x 200: for draft printing, Web page graphics, as placeholders while editing final documents

Popular Photography
Mac®/Windows® 95/Windows™
$39.99 #84341

CALENDAR CREATOR 2.0

Calendar Creator



Now you can create spectacular custom calendars! Just order Calendar Creator. You can produce them in any format and size—even big picture wall calendars. Choose from yearly, monthly, weekly and daily formats. Design them with clip art images, your favorite typefaces and color banners. You can even use your own scanned photos and drawings as part of your wall calendar or datebook.

Calendar Creator w/FREE Special Occasions
Mac® v2.0
$46.99 #75524

SoftKey

STARPLAY GAMES

Hot New Games from StarPlay

HOT NEW PRODUCT!

Alley 19 Bowling

NEW! Cruise back to the 50s and roll a few frames with Alley 19! Its unique mouse-controlled throwing action replicates the true bowling experience. Computer opponents, full-motion characters, fun 50s graphics, original soundtrack. Full network play up to four bowlers. Bowling shoes optional!

Alley 19™ Bowling CD Mac®
$36.99 #84002

HOT NEW PRODUCT!

Souls in the System

New! The ultimate network combat with over 25 levels filled with cyber-enemies and challenging mazes.

Head to head modem/network play with one copy. Sequel to ShadowWraith (*'95 Arcade Game of the Year—Gamewire*).

Souls in the System™ CD Mac®
$36.99 #84003

Games of Fame Bundles

Mega-Hit, Mega-Value Bundles! Games so big, they'll make your Mac spin!

NEW! With **Vol. 3** enjoy full versions of **Warcraft** ('95 Premier Finalist—*Computer Gaming World*), **Marathon** ('95 Best Network Game—*MacWorld Game Hall of Fame*), **A-10 Attack! LE** with 8 missions ('96 Best Mac Game—*PC Entertainment*).

Games of Fame Vol.3 CD Mac®
$36.99 #83034

Vol. 1 contains classic hits, must-haves for every gamer's library. Full versions of **Crystal Caliburn Pinball** (Arcade Game of the Year—*IMG*), ***Pathways into Darkness*** (Best Adventure Game of the Year—*MacWorld*), **F/A-18 Hornet Classic** (Best Flight Simulator of the Year—*MacWorld*).

Games of Fame Vol. 1 CD Mac®
$29.99 #75540

Games of Fame Vol. 2 CD Mac®
$29.99 #80073

For great family fun, give **Vol. 2** a whirl! Full versions of **Loony Labyrinth Pinball** (Golden Triad winner—*CGR*, 4-1/2 mice—*MacUser*), **Pegleg** (Best Shoot-'Em up of the Year—*MacWorld*), **Glider Pro** (Best Action Game—*MacWorld*) BONUS: two games from **Eric's Ultimate Solitaire.**

Crystal Caliburn & Loony Labyrinth Pinball Bundle **$49.99** #66706

Call 1·800·217·9498

Call by 11:00pm EST for Delivery by 10:30am the Next Day via FedEx Priority Overnight!

LIMITED TIME OFFER Get a Connectix

QuickCam FREE!

Free with your purchase of ANY Desktop or PowerBook® CPU from MacMall, after manufacturer's and MacMall rebates, tax if any, not rebated. Not valid with any other offers. Call for details.

FREE! CATALOG
SEE BELOW

INTERPLAY GAMES

Mario Teaches Typing 2.0 CD Mac®/Windows™

Your child can learn to type with Mario. He actually talks you through each easy-to-learn lesson!

Flipper CD Mac®/Windows™

Join Flipper and his pal Sandy in an exciting and educational adventure! You can learn about the environment. Participate in skill-building games. And enjoy actual footage from the movie.

ChessMates CD Mac®/Windows™

It's chess come to life! Wigby the Wizard guides and teaches young minds to play chess, step by step. Classic chess strategies are taught using fun animated chess pieces.

Mario Fundamentals CD Mac®/Windows™

Mario's here to teach your child five classic games! Learn to play Checkers, Go Fish, Dominoes, Yacht and Backgammon. Order it today and watch your child enjoy learning the basics.

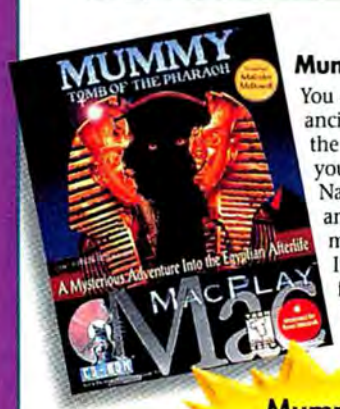
Mario Teaches Typing 2.0 CD Mac®/Windows™	$29.99	#82951
Flipper CD Mac®/Windows™	29.99	#82950
Chess Mates CD Mac®/Window™	29.99	#82952
Mario Fundamentals CD Mac®/Window™	29.99	#82953
Pro Pinball CD Mac®/Windows™	34.99	#84692
Blood & Magic CD Mac®/Window™	44.99	#84690
Drawing Adventures CD Mac®/Window™	34.99	#82956

Pro Pinball CD Mac®/Windows™

It's the only pinball game that lets you view the entire table from six different angles. The state-of-the-art graphics give you the most awesome and realistic pinball environment around.

Blood & Magic CD Mac®/Windows™

The first real-time, strategy computer game based on the Forgotten Realms, where you lead a range of AD&D characters into epic battles of good and evil.



Mummy CD Mac®/Windows™

You discover 3,000 year old tombs of an ancient Pharaoh. Now you must guard the tombs, their secret treasures and your life from murderous intruders. Navigate through deadly passageways and battle mummies to unlock the mysteries of the Egyptian afterlife. It's packed with 50 minutes of full-motion video, 50 different locations and challenging puzzles.

Mummy
CD Mac®/Windows™
$39.99
#82955

Virtual Pool
CD Mac®/Windows™
$39.99
#84689

Virtual Pool™ CD Mac®/Windows™

It's the definitive pool simulation game! If you're a novice player, you'll learn the basics, and even pool sharks can improve their game. Its fully-rendered 3D controlled pool table has balls that roll, skid, collide and move with stunning realism. Plus, you can play four great pool games played according to professional rules. Order your virtual pool hall today.

Enter the Dream Machine Sweepstakes

YOU COULD WIN THIS **PORSCHE® BOXSTER**

For Our Full Line Catalog & Get All The Details
Call 1•800•217•9498

No purchase necessary. For complete details including official rules see the MacMall catalog 57 or higher. Sweepstakes open to US residents 21 years of age or older. Void where prohibited. Car depicted is a prototype. Actual car to be awarded may vary. Prices and specifications subject to change without notice. Limited to stock on hand. IMPORTANT: While we do our best to check errors, mistakes may occur–Call to verify pricing.

Get your FREE Catalog(s) today!

Please check catalog(s) you wish to receive.

❑ MacMall ❑ PC Mall ❑ DataCom Mall

OFFER CODE **MacUser ZMUS6C1**

Name _____

Address _____

City _____

State _____ Zip _____

Mail to:
MacMall, Dept. ADV.,
2645 Maricopa St.,
Torrance, CA 90503

CIRCLE **18** ON READER SERVICE CARD

Call 800-289-5385 • 24 Hrs x 7 Days a Wk

APS TECHNOLOGIES:

HIGH-TECH 2 GIG FOR ONLY

$349.95 Internal configuration

Quantum

APS Q 2100

- ✔ MR heads, PRML and Ultra SCSI Technology
- ✔ Reliable 4500 rpm mechanism
- ✔ 3-year warranty

Give your Mac the extra storage space it needs by installing the new APS Q 2100. At only 20¢ per MB internal, the APS Q 2100 is the value leader in 2GB SCSI hard disk drives. Its performance is a great match with any application, and it is backed by a 3-year warranty.

BACKUP MADE QIC AND EASY!

APS *HyperQIC*™

$449.95 External configuration

- ✔ Backup your precious data
- ✔ 4GB native capacity!
- ✔ Uses TR-4 and QIC-Wide 3080XLF cartridges

MacWEEK · MacUser 2D LABS

A $149 value – FREE

The APS HyperQIC has a price tag hundreds of dollarslower than a DAT, yet it offers you the same capacity and similar transfer rates. APS HyperQIC gives you up to 8GB of capacity with software data compression.

STEAL THIS 8X CD-ROM DRIVE!

APS CD8 8X

$199.95 Internal configuration

- ✔ High performance 8X CD-ROM drive
- ✔ Great for home and office CD-ROM use

Slimline case $229.95*

Smooth full-screen video output, the 8X performance of the new APS CD8 supercharges any CD-ROM application! Its speed enhances multimedia AND business CDs. At this incredibly low price, you can hardly afford to live with that old 2x or 4x CD ROM drive.

*Does not include DaTerm™

THE IC²ING ON THE CAKE

Now introducing IC²E, the industry's hottest (and coolest) enclosure cooling technology.

A radical new concept in drive mechanism climate control, APS exclusive IC²E system uses digital technology to sense heat build-up around the drive mechanism. Applying that information, IC²E controls a high-performance, super-efficient ball bearing fan subsystem to maintain mechanism temperature comfortably within the manufacturer's specified operating range. Should the mechanism exceed the specified operating temperature range, the intelligent IC²E circuitry provides a clear indication that a thermal problem exists. This approach drastically reduces cooling noise at low ambient temperatures, and improves both fan and drive mechanism life.

APS DESKTOP DRIVES

Model	Capacity/Awards	Internal	SR2000
APS Q 1280 Quantum Fireball TM	1222MB	$249.95	$349.95
APS Q 2100 Quantum Fireball TM	2100MB	349.95	449.95
APS Q 3200 Quantum Fireball TM	3200MB	499.95	599.95

- 30-day money-back guarantee on all APS brand products. Your risk is the cost of shipping.
- Drive-for-Drive Repair or Replacement Warranty. APS will, at its discretion, replace or repair products found to be defective according to the terms of the product's warranty.
- Refused orders subject to 20% restocking fee.
- 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 may need to install system software appropriate to your machine before using our hard drives.
- Not responsible for typographical errors.
- Copyright © 1996 APS Technologies

APS HIGH-PERFORMANCE DRIVES

Model	Capacity/Awards	Internal	SR2000
APS I 2160 IBM Ultrastar ES	2063MB	$399.95	$499.95
APS MS 4.0 Micropolis 3243	4064MB	899.95	999.95
AV or Fast/Wide available for an additional $100.00			
APS MS 9000 Micropolis 3391	8669MB	1899.95	1999.95
Fast/Wide available for an additional $100.00			

POWERBOOK DRIVES

Model	Capacity/Features	Drive Type	Internal
APS Q 1.08 Quantum Europa	1037MB 3800 rpm	Fast ATA2	$399.95*
APS I 1.2 IBM Travelstar DPRS-21215	1200MB 4900 rpm	SCSI-2	699.95*

*While supplies last

These products are performance-matched for optimal performance in the PowerPC environment.

CALL FOR YOUR FREE Fall 1996 **CATALOG**

REMOVABLE MEDIA SPECIAL

	SALE PRICE
IOMEGA Jaz Cartridge	$99.95
NOMAI 540 Cartridge	59.95
5pk Olympus 230 MO	49.95

Call for information about our ultra-high capacity drives, professional backup and server products.

MacWorld Magazine World Class Award · MacUser Editor's Choice Award · Consultants Choice Award

MW ★★★★ · MacWEEK · BMUG · MAC HOME JOURNAL · MW EDITORS' CHOICE · MW SERVICE HERO · MacWorld · MacLeod Recommends

THE NAME TO REMEMBER IN MACINTOSH STORAGE

APS JAZ FESTIVAL!

END THE REMOVABLE BLUES

Now get a Jaz drive with 3 cartridges **for Just** **$599.95** External configuration

Available in AC only portable SR 1000 enclosure or our award winning SR 2000 enclosure (pictured)

APS Jaz

Includes THREE cartridges

- ✔ Hard drive performance
- ✔ Huge 1GB capacity on removable media
- ✔ Choice of deals

APS Jaz drive with 1 cartridge $499.95

APS Jaz. The immense 1GB capacity of its removable media has changed the removable storage market forever! The APS Jaz's performance rivals most fixed-platter hard disk drives; and who would you rather buy it from than APS?

BEST VALUE OPTICAL!

APS 230 MO

- ✔ Up to 217MB of reliable optical storage
- ✔ 256KB cache buffer delivers great performance
- ✔ Available in AC-only portable or SR 2000 enclosure

$299.95* External configuration SR 1000 enclosure as pictured

*Only with the purchase of an Olympus 230MO media 5-Pack at $49.95, total price $349.95

Our best value ever in removable media devices, the new APS 230 MO is the perfect solution for your growing data storage needs. It's compatible with 230MB and 128MB MO cartridges and delivers excellent MO performance.

APS 230 MO in SR 2000 enclosure $379.95

2GB OF REMOVABLE STORAGE FOR ONLY $499.95 External configuration

Price includes 4 cartridges

APS M540

- ✔ 540MB capacity on removable media
- ✔ Full SyQuest 270 media compatibility

Attention graphics professionals and desktop publishers: you now have a high-capacity, high-performance removable disk alternative. The new APS M540 provides 540MB of storage on reliable, single-platter media and is capable of transfer rates of up to 2.68MB/sec. It's also read/write compatible with SyQuest 270 cartridges.

Back UPS® Office™

- UPS and surge protection in one unit
- Helps prevent harmful line noise
- 3 outlets offer instantaneous battery backup, while 3 other outlets provide spike and surge protection

106394 **$159.95**

Mac-Cable-Check™

- Test all of your Mac cables for continuity and wiring configurations
- Identifies open, shorted, and cross connected wires
- Tests cables with any combination of these connections: Centronics 50 M/F, RJ11/45 Telephone, MINI DIN 4/8 Male, DB 25 Male, DB 15 M/F, DB 9 M/F, HDI 30, DIN 5 Male, RG 58/59 BNC Coax

106438 **$159.95**

4mm Carousel

- Revolving desktop modular unit
- Base unit holds 40 cartridges
- Add-ons units are also available

101579 **$169.95**

APS QIC & DAT BACKUP SYSTEMS

Model	Capacity/Awards	Internal	SR2000
APS HyperQIC™ Travan 4 Conner QIC 3095 Mech.	8GB MacWEEK LABS	N/A	$449.95
APS ProDAT® DDS-2 Non Compression Mech.	4GB	$649.95	699.95
APS HyperDAT® Pro DDS-2 High Speed Mech.	8GB	949.95	999.95

APS MO DRIVES

Model	Capacity/Features	SR1000	SR2000
APS 230 MO	Up to 217MB	$299.95*	$379.95
APS 640 MO	640MB		599.95
APS 2.6GB MO	4MB cache		1799.95

*Only with the purchase of an Olympus 230MO media 5-Pack at $49.95, total price $349.95

APS REMOVABLE DRIVES

Model	Capacity/Awards	SR 1000	SR 2000
M540	500MB	N/A	$299.95
APS M540 (with 4 cartridges)		N/A	499.95
APS Jaz (with a cartridge)	1GB	$499.95	499.95
APS Jaz (with 3 cartridges)	1GB	599.95	599.95

DRIVE NEEDS FROM SONY

106590	New! TRAVAN 4GB Cartridge	$36.95
1021-308	QW-3080 Cartridge	29.95
1021-060	60M DAT Tape	6.95
1021-090	90M DAT Tape	8.95
1021-120	120M DAT Tape	21.95
106626	640MB MO	46.95
106627	2.3GB MO	89.95
106623	2.6GB MO	96.95

APS CD-ROM DRIVES

Model	Internal	External
APS CD8 8X CD-ROM	$199.95	$229.95
APS CD8 Pro 8X CD-ROM in SR 2000 case	299.95	
APS CD Changer 8X 4 Disc CD changer	599.95	
APS CD-R Plus 2X record/4X read CD-R	699.95	
APS CD-R Pro 4X4 performance CD-R	1299.95	
Retrospect CD-R drop in driver (with drive purchase)	49.95	

To receive an automated fax listing of all APS documents, call 800-374-5802 from any touch-tone telephone.

Then call 816-920-4150 from a fax machine with a handset or fax modem and follow the instructions.

VISA MasterCard DISCOVER AMERICAN EXPRESS Card TeleCheck

Visa, MasterCard, Discover, American Express: No Surcharge
Same day shipping for personal checks (Restrictions apply)

Call 800-289-5385

Visit our Web Page at http://www.apstech.com/
International Sales: (816) 920-4109

CIRCLE **148** ON READER SERVICE CARD

APS Technologies

Call 800-289-5385 • 24 Hrs x 7 Days a Wk

The Mac Zone®

Established 1986

your Macintosh® catalog SuperStore™

Serving Mac users since 1986

Performantz 1GB External Hard Drive

Only **$329.98**

- New space-saving design
- Switchable active termination #88988

5 YEAR WARRANTY

US Robotics Pilot 1000 for Mac

Only **$319.98** #32775

NEW!

Stores over 1000 records

Global Village Teleport Platinum

V.34/28.8 Internet Edition

TOP SELLER!

Only **$199.98** #85640

Includes Netscape Navigator!

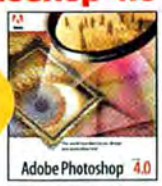
UMAX Vista-S6E Scanner

Only **$299.98** #83501

FREE! PhotoDeluxe and Presto! PageManager

Adobe Photoshop 4.0 Upgrade

Only **$148.98** #83084



Batch-process files with a single click!

New features improve productivity!

Viewsonic 17GA Monitor

16" viewable image size

Only **$739.98** #88429

"A real multimedia bargain..." –MacUser

SyQuest SyJet 1.4GB External SCSI

NEW!

Only **$498.98** #83364

The bottomless hard drive that really flies!

Symantec SAM 4.5 Full/Upgrade

Only **$28.98*** #00116

*After $40 mfg mail-in rebate. Upgraders only! Low Mac Zone Price $68.98

Now makes Net surfing safe – A great value!

PERFORMANTZ™ 10X CD-ROM External Drive

Only **$259.98** #83437

Hot! Top speed, top performance!

Microgram Fearless Lou's Burning Fuse

Only **$34.98** #86879

Kids use math to help Lou defuse the bomb!

BOCA FastMac 336 V.34 FaxModem

Only **$99.98*** #84031

*After $30 MZI mail-in rebate. Offer ends 12/31/96. Low Mac Zone Price $129.98

FREE Internet Kit w/Netscape Navigator 2.0!

Only **$279.98** #83409

NEW EPSON STYLUS COLOR 500 INKJET PRINTER!

EPSON

Fractal Design Detailer w/FREE Designer by RayDream

Only **$294.98** #83051

FRACTAL DESIGN CORPORATION

Okidata Laser Perfect Printer

New low price on a PostScript 600 dpi class printer

Only **$399.98** #93689

OL410e/PS

Exclusive offer!

ADD MEMORY

BOOST YOUR MAC's PERFORMANCE!

16MB KIT

#38362

$97.00

Before you buy, call The Mac Zone

1-800-436-8000

For the best Macintosh products at better than Warehouse and Superstore prices.

Fax (206) 430-3500 • International (206) 430-3550 • CompuServe code: GO MZ

CORPORATE SALES	GOVERNMENT SALES	EDUCATION SALES	INTERNATIONAL SALES
1-800-258-0882	1-800-372-9663	1-800-304-0253	1-206-430-3570

A NASDAQ® COMPANY Ticker Symbol: MZON

© Copyright 1996 Multiple Zones International Inc. All rights reserved. The Mac Zone is a federally registered trademark.

Full Line of Apple® Macintosh® Computers

Overnight Delivery AIRBORNE

- Over 5000 Products
- Overnight Delivery only $3 (up to 10 lbs)
- The Hottest Bundles!
- Low Prices Everyday

ORDER ANYTIME 24 HOURS A DAY 7 DAYS A WEEK

Authorized Catalog Reseller

Microtech International 800MB Roadrunner

Internal PowerBook Hard Drive
Low power usage – rugged portability!

Only $649.98
#89641

Call for full line of Bluestorm drives & RAIDs

Jaz 1GB External Drive

iomega

Includes One FREE Cartridge

Only $499.95
#25659

LOWEST PRICE EVER!

NEW

PowerComputing PowerBase™ Series

AS LOW AS $1495

OR LEASE FOR AS LOW AS $76/MO

Desktop model shown. Monitor sold separately.

Order #	Description	Price
#83732	PowerComputing PowerBase 240 603e 16/1.2GB 8X DT	$2195.00
#83733	PowerComputing PowerBase 200 603e 16/1.2GB 8X DT	$1795.00
#83734	PowerComputing PowerBase 180 603e 16/1.2GB 8X DT	$1495.00
#83735	PowerComputing PowerBase 240 603e 16/1.2GB 8X MT	$2295.00
#83736	PowerComputing PowerBase 200 603e 16/1.2GB 8X MT	$1895.00
#83737	PowerComputing PowerBase 180 603e 16/1.2GB 8X MT	$1595.00

SUPERMAC™ MacOS Computers

NEW!

As Low As $2995

Monitor sold separately.

UMAX Computer Corporation

#90930 5900L 16/2GB . . . $3695.00
#90931 5900D $2995.00

Sleepless in Seattle...

You bet! We're here 24 hours a day, 7 days a week to serve you when you need us.

1-800-436-8000

Call Today for Your FREE CATALOG!

Shop The Mac Zone ONLINE!

- Online Shopping
- Internet Address: Visit our store on marketplaceMCI: www.maczone.com
- CompuServe type: GO MZ

The Mac Zone – Trusted Internationally

Australia	Indonesia	Poland
Austria	Israel	Portugal
Benelux	Italy	Scandinavia
Brazil	Japan	Singapore
Central America	Kenya	Spain
Chile	Korea	Switzerland
Colombia	Malaysia	UAE/Middle East
France	Mexico	United Kingdom
Germany	New Zealand	Venezuela
Hong Kong		

Your Source Code MU612

Circle 135 on the reader service card

YES! START MY FREE 1-YEAR CATALOG SUBSCRIPTION ASAP!

☐ MAC ZONE ☐ PC ZONE ☐ The Home Computer CATALOG

Name _____

Address _____ Apt _____

City _____ State _____ Zip _____

Mail to: The Mac Zone, 707 South Grady Way, Renton, WA 98055-3233

I buy primarily for:
_Home Use
_Business Use
_Work-from-Home Use

Your Source Code MU612

CALL CLUBMAC FIRST!

1-800-258-2622 1-800-CLUBMAC 1-800-258-2622

REMOVABLE STORAGE

Zip 100MB Drive

$199.95
-$50.00
$149.95

I044 1010

iomega

*Manufacturers Mail-in Rebate (ends 9/30/96)

Includes One Free Cartridge

Jaz 1.0GB Drive

Includes One Free Cartridge

I044 1014

In Stock

$499.95

ClubMac 200 SyQuest

FEATURING SyQuest REMOVABLE TECHNOLOGY

as low as $23

$389

C104 1801

C104 1801	ClubMac 200MB 5.25" Removable*	$389
S198 2002	SyQuest EZ Flyer 230MB Removable	$299
C104 2500	ClubMac Nomai 540MB Removable*	$299

* Cartridge not included

Part	Media	Qty 1	Qty 10	Qty 20
S198 1010	44MB	$40ea	$39.50ea	$39ea
S198 1011	88MB	$44ea	$43.50ea	$43ea
S198 1012	200MB	$69ea	$68ea	$67ea
S198 1013	105MB	$35ea	$34.50ea	$34ea
S198 1014	270MB	$57ea	$56ea	$55ea
S198 2010	EZ135MB	$24.95ea	$23.95ea	$23ea
S198 2011	EZ230MB	$30ea	$29.50ea	$29ea
N220 1005	Nomai 540MB Media			$59

CD-ROM DRIVES

ClubMac 4.4X

$139

Features:
676KB/sec data transfer
190ms avg access time
Caddy-less design

C104 1700

CLUBMAC		
C104 1750	ClubMac 8X-Speed CD-ROM Drive 140ms 1200k/sec	$229
C104 1700	ClubMac 4.4X-Speed CD-ROM Drive 140ms 676k/sec	$139
NEC		
N024 5501	MultiSpin 8Xe CD-ROM Reader 130ms 1200k/sec	$449
N024 1070	MultiSpin 4Xc 7 Disc Changer 350ms 600k/sec	$339

CD RECORDABLE

NEW LOW PRICE

$999

YAMAHA

Y010 1002

CD Recorder 4X

CLUBMAC		
C104 1780	ClubMac 2X/4X CD-ROM Recorder w/Toast CD ROM Pro 3.0 Mastering software	$599
YAMAHA		
Y010 1002	Yamaha 4X CD Recorder w/Toast CD ROM Pro 3.0 Mastering software	$999

TAPE BACKUP

$879

C104 1303

DDS-2 DAT Drive

C104 0901	2-4GB SCSI QIC MiniCartridge Drive*	$429
C104 1303	4-8GB DDS-2 DAT Drive	$879
C104 1302	4-8GB Performance DAT Drive	$999
MEDIA		
T010 1030	3M Travan TR-4 4-8GB	$39
S100 1043	Sony QW3080XLF QIC/WIDE 2-4GB	$29
V010 1018	Verbatim 90M 4mm DAT 2-4GB	$9

*Cartridge not included

MEMORY

SOUTHLAND MICRO SYSTEMS

ClubMac Slashes Memory Prices

Guaranteed Compatibility

Memory prices fluctuate frequently, please call for latest prices.

memory as low as $20

32-Bit 72pin SIMMS		
M101 1031	4MB 1X32 70NS	$39
M101 1054	8MB 2X32 70NS	$69
M101 1072	16MB 4X32 70NS	$139
M101 1070	32MB 8X32 70NS	$285
8-Bit 30pin SIMMS		
M101 1017	1MB 1X8 70NS	$20
M101 1026	2MB 2X8 70NS	$30
M101 1042	4MB 4X8 70NS	$58
64-Bit 168pin DIMMS (PCI PowerMac, Umax, PowerComputing)		
M101 1080	4MB DIMM Module	$55
M101 1081	8MB DIMM Module	$75
M101 1082	16MB DIMM Module	$139
M101 1083	32MB DIMM Module	$285
M101 1084	64MB DIMM Module	$515
PowerBook 2300		
M101 2004	8MB Module	$135
M101 2006	16MB Module	$249
M101 2008	24MB Module	$349
PowerBook 190		
M101 1098	4MB Module	$85
M101 1099	8MB Module	$125
M101 2000	16MB Module	$199
M101 2001	24MB Module	$335
M101 2002	32MB Module	$449
PowerBook 520,520C,540,540C		
M101 1037	4MB Module	$95
M101 1059	8MB Module	$125
M101 1007	16MB Module	$229
M101 1029	32MB Module	$429
Video RAM		
M101 1085	2MB VRAM for ATI XClaim GA	$165
M101 1020	256K VRAM	$25
M101 1047	512K VRAM 8100 & 605	$30
M101 1086	1MB VRAM 7200, 7500, 7600, 8500	$65
Cache Memory for PowerMacs & PowerPC Performas		
M101 1019	256K level 2 cache 7100, 8100	$85
M101 1045	512K level 2 cache 7100, 8100	$179
M101 1087	256K 7200, 7500, 7600, 8500	$85
M101 1088	512K 7200, 7500, 7600, 8500	$179

ACCELERATORS

DAYSTAR DIGITAL

nPower 360+

Dual Processor Card for PowerPCI!

D040 1059

NEW

$1499

DAYSTAR		
D040 1059	nPower 360+	$1499
Performa, Quadra, 605 & 630, LC 470,570 & 580		
D040 1057	100Mhz PowerCard 601	$969
Mac II, IIX, IICX, IISI, IIVI, IIVX, SE/30 & Performa 600		
D040 1018	40/80 Turbo 040 with 128 cache	$655
D040 0046	Mac IIcx Adapter Turbo 040	$129
Quadra and Centris 620, 650, 700, 800, 900, and 950		
D040 1043	100MHz PowerPro 601 with 1MB cache	$1199
D040 1053	100Mhz PowerPro Adapter (610 only)	$105
D040 1039	66Mhz Turbo 601 (IIci)	$499
D040 1049	66Mhz Turbo 601 (IIsi)	$499
D040 1051	66Mhz Turbo 601 (IIvi, IIvx, Performa 600)	$499
D040 1048	100Mhz Turbo 601 (IIci)	$1139
D040 1050	100Mhz Turbo 601 (IIsi)	$1139

HARD DRIVE STORAGE

540MB BLOWOUT

IBM

$139

540MB Deskstar SCSI drive from IBM. With great performance.

C104 1002

128K BUFFER
4500 RPM

Quantum Atlas™

$899

Internal
Atlas
C104 0005

4GB

4GB Seagate Barracuda™ 4

Internal
C104 1002

- 8.5ms average seek time
- 1,024KB multi-segmented cache
- 7,200 RPM Rotational Speed
- Fast SCSI-2 Interface
- Up to 800,000 hours MTBF

$1099

Quantum TEMPEST 2.1GB

Internal
C104 0013

$399

128K CACHE
4500 RPM

IBM	Model Number	Access	Internal	Price	External	Price
540MB IBM	06H8559	12ms	C104 1002	$139	C104 1052	$199
2.1GB IBM	07H1127	12ms	C104 1001	$379	C104 1051	$439
QUANTUM						
1280MB Tempest	Q31280TMS	10.5ms	C104 0015	$299	C104 0065	$359
2150MB Tempest	Q32150TMS	10.5ms	C104 0013	$399	C104 0063	$459
3255MB Tempest	Q33255TMS	10.5ms	C104 0014	$499	C104 0064	$559
2150MB Atlas	QXP32150	8ms	C104 0004	$689	C104 0054	$749
4280MB Atlas	QXP34300	8ms	C104 0005	$899	C104 0055	$959
SEAGATE						
2.1GB Barracuda 2LP	ST32550N	8ms	C104 0300	$749	C104 0350	$809
4.3GB Barracuda 4	ST15150N	8.5ms	C104 0301	$1099	C104 0351	$1159
9.1GB Elite 9	ST410800N	11ms	C104 0305	$2099	C104 0355	$2199

POWER BACKUP

APC AMERICAN POWER CONVERSION

as low as $239

APC		
A080 1035	Back-UPS Pro 420 420VA UPS 4 outlets	$239
A080 1036	Back-UPS Pro 650 650VA UPS 4 outlets	$299
A080 1047	Back-UPS Pro 1000 1000VA UPS 4 outlets	$389
A080 1044	Back-UPS Pro 1400 1400VA UPS 6 outlets	$525

ClubMac®

WARRANTIES: All items manufactured by ClubMac are returned to ClubMac for warranty repair. All other items carry manufacturer's warranty. MONEY BACK GUARANTEE: All products manufactured by ClubMac carry a 30 day money back guarantee. ClubMac extends all other manufacturers' return policies to its customers. Non-ClubMac products carry 30 day money back guarantee when specified. RETURNS: Call for RMA number. Any product that is returned WITHOUT an RMA number will be refused. ALL PRODUCT INFORMATION AND PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE. NOT RESPONSIBLE FOR TYPOGRAPHICAL ERRORS.

ORDER 24 HOURS A DAY • 7 DAYS A WEEK

1-800-258-2622

Order On-Line @ http://www.club-mac.com

Inquiries & International Sales
(714) 768-8130
24 Hours a day 7 days a week

Corporate/Educational Sales
(800) 258-2621
M - F: 5am - 5pm PST

FANTASTIC PRICES! GREAT PRODUCTS! HUGE SELECTION! THE BEST SERVICE!

NETWORKING

ASANTÉ

A120 1010	10BaseT FriendlyNet Adapter FN10TA	$29.95
A120 1011	Thin FriendlyNet Adapter FNTNA	$44.95
A120 1041	Thin FriendlyNet Adapter FNBNC	$44.95
A120 1009	10BaseT/Thin FriendlyNet Adapter FN10T/TN	$79.95
A120 1083	10/100 PCI Card w/Net Doubler	$199
A120 1084	10/100 Nubus Card w/Net Doubler	$279
A120 1078	ASANTEFAST 10/100 Bridge	$889
A120 1081	FriendlyNet PC Card 10BT	$159
A120 1082	FriendlyNet PC Card 10BT/Thin (for PowerBook)	$189
A120 1039	Thin/10BaseT Micro SCSI Ether. Micro EN/SC	$265
A120 1001	10BaseT Hub 12 RJ45, 1 AUI, 1 BNC 10THUB/12	$235
A120 1003	10BaseT Hub 8 RJ45, 1 AUI, 1 BNC 10THUB/8	$129
A120 1050	10BaseT Hub 24 RJ45, 1 AUI 10THUB/24	$379

DAYNA

D300 1025	EasyNet 10Base-T AUII Adapter	$32
D300 1060	EasyNet BNC AUII Adapter	$39
D300 1013	MiniHub 5 5 RJ45, 1 cross-over	$89
D300 1029	MiniHub 8 8 RJ45, 1 cross-over	$119
D300 1057	Hub 16 16 RJ45, 1 BNC, 1 AUI	$245
D300 1055	Communicard Plus Ethernet 28.8 Fax Modem	$439
D300 1049	Communicard 10BT 10BT/Ethernet	$145
D300 1050	Communicard 10BT BNC 10BT/Thin Ethernet	$169
D300 1044	10/100BT Adapter PCI	$180
D300 1045	10/100BT Adapter Nubus	$319
D300 1058	10/100BT Adapter PDS	$275
D300 1046	100Base-T Hub 12 port fast hub	$1239

FARALLON

F010 1043	Farallon Fast 10/100 Card Nubus	$239
F010 1019	Farallon 10BT Starlet 8 Hub	$125
F010 1032	Farallon 10BT Starlet 4 Hub	$105
F010 1053	Farallon Ethernet LAN/Modem PC card	$445
F010 1054	Farallon Netopia ISDN Modem	$295
F010 1017	Farallon Etherwave LC 10BT	$149
F010 1055	Farallon Streamline Starlet 16 Hub	$239
F010 1057	Farallon ISDN Internet Router w/Appletalk	$1125

COMPATIBLE SYSTEMS

C300 1004	MicroRouter 900i	$899
C300 1002	MicroRouter 1220i	$1899

GRAPHIC CARDS

RADIUS

R013 1012	Precision Color Pro 24XP (Nubus)	$299
R013 1061	Thunder IV GX•1152 up to 1152 x 870	$449
R013 1060	Thunder IV GX•1360 up to 1360 x 1024	$569
R013 1059	Thunder IV GX•1600 up to 1600 x 1200	$679
R013 1081	ThunderPower 30/1920 (PCI)	$1729
R013 1070	Thunder 30/1152 (PCI)	$799
R013 1071	Thunder 30/1600 (PCI)	$999
R013 1072	ThunderColor 30/1152 (PCI)	$1599
R013 1073	ThunderColor 30/1600 (PCI)	$1999
R013 1069	PrecisionColor 8/1600 (PCI)	$349

ATI

A143 1010	XClaimGA 2MB PCI video card	$245
A143 1009	XClaimGA 4MB PCI video card	$345
A143 1012	2MB VRAM upgrade for XClaimGA	$235

EA REASEARCH

E103 1001	EasyColor 24 1152 Graphics Card (NuBus)	$725
E103 1002	EasyColor 24 1360 Graphics Card (NuBus)	$899
E103 1003	EasyColor 24 1600 Graphics Card (NuBus)	$985

INTEGRATED MICRO SOLUTIONS

I143 1002	Twin Turbo 128M 2MB PCI	$359
I143 1001	Twin Turbo 128M 4MB PCI	$579
I143 1003	Twin Turbo 128M 8MB PCI	$995/$899*

*With purchase of Umax CPU

RASTEROPS

R053 1037	Opticolor 128 4MB PCI	$549
R053 1038	Opticolor 128 8MB PCI	$1199

MONITORS

RADIUS

R016 1031	PressView 17SR 17", 1600x1200	$1999
R016 1032	PrecisionView 21 21", 1600x1200	$2399
R016 1034	PressView 21SR 21", 1600x1200	$3369

RASTEROPS

R053 1031	SuperScan MC20 20", 1600x1200	$1395
R053 1032	SuperScan MC21 21", 1600x1200	$1899

NEC

M026 1031	XV15+ 15", 1024x768	$469
M026 1036	M500 15", 1024x768	$529
M026 1032	XV17+ 17", 1024x768	$779
M026 1037	M700 17", 1024x768	$799

SONY

S106 1021	Multiscan 15SXII 15", 1024x768	$399
S106 1018	Multiscan 17SFII 17", 1024x768	$799

VIEWSONIC

V056 1017	15GA w/Speakers 1024x768 (14" viewable)	$479
V056 1016	17GA w/Speakers 1024x768 (16" viewable)	$755
V056 1024	P810 1600x1200 (20" viewable)	$1725

MAG INNOVISION

M156 1006	Technitron DX1595 15", 1024x768	$369
M156 1012	Technitron DX700T 17", 1024x768	$725

PRINTERS

EPSON

E047 1031	Epson Stylus 500	$279
E047 1019	Epson Stylus Pro	$379
E047 1022	Epson Stylus Pro XL w/Live Picture 2.5	$1799

HEWLETT PACKARD

H047 1067	HP DeskWriter 680C Color InkJet	$319
H047 1076	HP DeskJet 870CXI Color InkJet	$499
H047 1030	HP LaserJet 5MP Printer	$1045

MODEMS

GLOBAL VILLAGE

G050 1022	TelePort Platinum 28.8 data (Internet Ed)	$169††
G050 1019	PowerPort Platinum PC Pro 28.8/10BT	$449††

†Price after $30.00 mail-in rebate, good from 7/1/96 - 9/30/96
††Price after $50.00 mail-in rebate, good from 7/1/96 - 9/30/96

BEST DATA

B020 1001	2834FLXMAC 28.8 v.34 Fax/Modem	$109*

U.S. ROBOTICS

U020 1025	28.8 Sportster Voice for Mac 36.6 data	$179*
U020 1021	...28.8 Sportster for Mac 33.6 data	$149*

*After $20.00 mail-in rebate

DIGITAL CAMERAS

KODAK

K043 1003	Kodak DC20 Camera	$299
K043 1001	Kodak DC40 Camera	$599
K043 1002	Kodak DC50 Zoom Camera	$999

EPSON

E043 1005	PhotoPC for the Mac Color Digital Camera	$399

SCANNERS

AGFA

A055 1022	Agfa SnapScan for MAC 600DPI 24-Bit	$365
A055 1011	Agfa StudioScan IIsi	$699
A055 1015	Agfa StudioStar LE w/PhotoShop LE	$825
A055 1017	Agfa StudioStar w/PhotoShop full	$975
A055 1001	Agfa Arcus II Desktop Pro Scanner	$1995

UMAX

U010 1061	Vista S6E w/PhotoDeluxe	$399
U010 1052	Powerlook II w/transparency adapter	$1995

EPSON

E045 1013	ES1000C LE-MAC Color Scanner	$595

RELISYS

R060 1016	Scorpio (e-Desk, OmniPage LE)	$369
R060 1020	Scorpio (above + Photoshop LE)	$419

DIGITAL VIDEO

RADIUS

R013 1018	VideoVision Studio 2.5.1 (Nubus)	$1599
R013 1079	VideoVision Studio 2.0 (PCI)	$3795

TRUEVISION

T043 1008	Bravado 1000 (PCI)	$899
T043 1001	Targa 1000 (PCI)	$2499
T040 1001	Targa 2000 (PCI)	$3995

DIGITIZING TABLETS

WACOM

W010 1026	ArtPad II 4x5	$139
W010 1027	ArtPad II 4x5 w/Dabbler	$149
W010 1028	ArtZ II 6x8	$298
W010 1029	ArtZ II 12x12	$425
W010 1030	ArtZ II 12x18	$695

CALCOMP

C290 1010	DrawingSlate II 4x5 w/Dabbler	$99
C290 1002	DrawingSlate II 6x9	$205
C290 1001	DrawingSlate II 12x12	$229
C290 1004	DrawingSlate II 12x18	$299

SOFTWARE

ADOBE

A030 1003	Illustrator 6.0 CD upgrade	$95.95
A030 1001	Photoshop 4.0 upgrade	$149.95
A030 1060	PhotoDeluxe 1.0	$79.95
A030 1015	PageMaker 6.0 upgrade	$139.95
A030 1002	Premiere 4.2 upgrade	$134.95
A030 1063	After Effects 3.0	$624.95
A030 1054	PageMill 1.0 w/ free upgrade to 2.0	$95.95
A030 1061	SiteMill 1.0	$185.95

APPLE

A109 1348	Apple Internet Connection Kit 1.2 (AICK)	$45.95
B020 1005	Internet Kit w/Best Data 28.8 V.34 modem	$154.95*
A109 1370	Apple Remote Access Client 2.1	$49.95
A109 1372	Apple Remote Access Personal Server 2.1	$179.95
A109 1371	Apple Remote Access MultiPort Server 2.1	$955.95
A109 1196	System 7.5.3 upgrade w/AICK	$48.95

*After $20.00 Mail-in Rebate.

CASADY & GREEN

C049 1003	Conflict Catcher 3.04 upgrade	$38.95

QUARK

Q069 1001	QuarkXPress 3.3 CD	$658.95

CLARIS

C089 1002	FileMaker Pro 3.0 competitive upgrade	$95.95
C089 1003	FileMaker Pro 3.0 Server upgrade	$289.95
C089 1039	Claris Home Page 1.0	$99.00
C089 1026	ClarisWorks 4.0 bundled w/CPU or Storage	$59.95
C089 1037	Claris Emailer 1.1	$44.95
C089 1036	Claris OfficeMail 1.0	$275.95

CONNECTIX

C149 1020	RAM Doubler 2	$28.95*
C149 1010	Speed Doubler	$53.95

*After $25 mail-in-rebate for users of previous versions.

COREL

C309 1017	COREL DRAW 6.0 Suite upgrade for Mac	$149.00
C309 1016	COREL WordPerfect 3.5 upgrade for Mac	$89.00

FRACTAL

F039 1003	Painter 4.0 upgrade	$129.00
F039 1009	Poser	$89.00
F039 1002	Dabbler 2 CD	$39.00
F039 1022	Ray Dream Designer 4.1	$89.00
F039 1024	Ray Dream Studio 4.1 upgrade	$149.00
F039 1028	Animation Bundle (Painter & Studio)	$499.00
F039 1030	Modeling Bundle (Designer & Poser)	$149.00
F039 1016	Garden Hose	$39.00

INSIGNIA

I029 1006	SoftWindows 3.0 upgrade	$74.00
I029 1013	SoftWindows 95 upgrade (CD only)	$145.00

MACROMEDIA

M209 1027	Extreme 3D	$498.95
M209 1024	Macromedia xRes 2	$479.95
M209 1028	Fontographer 4.1	$328.95
M209 1046	FreeHand Graphics Studio 2.0 upgrade	$289.00
M209 1037	Director Multimedia Studio 2 upgrade	$489.00
M209 1027	Extreme 3D	$498.95
M209 1004	FreeHand 5.5 upgrade f/5.0 w/2 plug-ins CD	$78.95

METATOOLS

H059 1001	Kai's Power Tools 3.0	$119.00
H059 1005	Final Effects AP	$139.00
H059 1003	KPT Bryce 2.0	$165.00
H060 1006	KPT Vector Effects	$119.00
H059 1006	Kai's Power Goo	$45.00

MICROSOFT

M089 1021	Office Standard 4.21 upgrade CD or Disk	$275.95
M089 1034	Word 6.0.1 upgrade	$118.95
M089 1029	Excel 5.0 upgrade	$118.95
M089 1040	Works 4.0	$49.95

Call 1-800-258-2622 for a FREE subscription to the ClubMac Catalog.

Authorized Catalog Reseller

HOURS A DAY 24 OPEN 7 DAYS A WEEK

Technical Support
(800) 854-6227
M - F: 6am - 6pm PST
Sat: 8am - 1pm PST

ClubMac E-Mail Addresses
ClubMac Sales ....cmsales@club-mac.com
Customer Service ...custsvr@club-mac.com
Technical Support...techsup@club-mac.com
7 Hammond, Irvine CA 92618

ORDER 24 HOURS A DAY • 7 DAYS A WEEK
1-800-258-2622
Order On-Line @ http://www.club-mac.com

When placing an order please mention source code
681296

ClubMac®

1-800-258-2622 1-800-CLUBMAC 1-800-258-2622

Price, Value,

DI$COUNT PRICE$ ON QUALITY HARDWARE, $OFTWARE & ACCE$$ORIE$

Advanced Mac OS™ for Graphics Pros!

AS LOW AS

$2995 Customizable base system

SuperMac S900D Mini Tower Computers

- 150MHz,180MHz, 200MHz or dual 180MHz PowerPC™ 604 Processor!
- Exclusive UMAX technology provides easy upgradability to dual processors or to a higher speed processor!
- 128-bit data path to 16MB interleaved memory!
- 6.7x or 8x Speed CD-ROM Drive!
- 6 PCI Slots!
- 5 Expansion Bays! (3 external, 2 internal)

UMAX Computer Corporation

Upgrade Options

#90931 UMAX SuperMAC S900D 6.7xCD-Rom, 16/No HD $2995.00
#90930 UMAX SuperMAC S900L 6.7xCD-Rom, 16/2GB $3695.00
#90934 UMAX SuperMAC S900L/180DP 32/2.1GB 8x IMS ...$4695.00
#90935 UMAX SuperMAC S900L/200 32/2.1GB 8x IMS.....$4295.00
#90936 UMAX SuperMAC S900L/180 32/2.1GB 8x IMS.....$3995.00
#90937 UMAX SuperMAC J700L/150 16/2.1GB 6.7x DT.....$2995.00

Extended keyboard and mouse included!

#90933 SuperMac P150 (604/150 A.S.P.D. Processor Card) $995.00
#90932 SuperMac E100 (UltraWide SCSI III & 100Base-T) $495.98

THE BEST OF PERFORMANTZ™ AT THE LOWEST PRICES!

PERFORMANTZ™

Performantz Hard Drives

- Backed by a *30-DAY MONEY-BACK GUARANTEE*
- *FIVE-YEAR* warranty on Hard Drives
- And a *DEDICATED* Performantz Help Line.

Capacity	Average Access Time	Sustained Transfer Rate	Buffer	Order #	Price
EXTERNAL HARD DRIVES					
1.0GB	10ms	3.6MB/sec.	512K	#88988	$299.98
2.0GB	10ms	3.0MB/sec.	512K	#84431	$534.98
4.3GB	8.5ms	4.8MB/sec.	512K	#88990	$999.98
INTERNAL HARD DRIVES*					
1.0GB	10ms	3.6MB/sec.	512K	#88992	$264.98
2.0GB	10ms	3.0MB/sec.	512K	#84432	$439.98
4.3GB	8.5ms	4.8MB/sec.	512K	#88994	$949.98

* Internal hard drives require internal mounting kit – available for all Macs

TAPE BACK-UP DRIVES

#88991 8.0GB DDS/2 DAT w/Retrospect $1129.00

As Low As **$289.98**

As Low As **23¢** Per MB

*Warranty applies only to external & internal hard drives.

Call MAC BARGAIN$* before you buy!

1-800-407-7404

Add applicable sales tax (only in OH, WA). All shipments refer to "in stock" items, barring system failure, etc. Not responsible for typographical errors. Credit cards are not charged until the order is shipped. Most products ship the same day for overnight delivery. Overnight delivery is only $7 for the first 7 pounds and $1 for each additional pound. Call for international shipping rates. Returns subject to a restocking fee. Prices and product availability subject to change without notice. Specials and promotions may be limited to stock on hand.

Availability!

High-Caliber Systems for an Entry Level Price!

NEW! PowerBase™ Series

- 240, 200 or 180MHz PowerPC 603e processor with a 256K L2 cache and 1.2GB IDE hard drive
- 8X CD-ROM drive
- 3 PCI slots
- 3D on-board graphics acceleration
- 16MB RAM, expandable to 160MB
- 2MB EDO DRAM
- 105-key ADB keyboard and mouse
- Upgradable CPU card
- Toll-FREE lifetime technical support

ORDER #	PowerBase Computers	LOW ZONE PRICE
#83734	PowerBase 180 603e 16/1.2GB 8xCD Desktop	$1495.00
#83733	PowerBase 200 603e 16/1.2GB/8xCD Desktop	$1795.00
#83732	PowerBase 240 603e 16/1.2GB/8xCD Desktop	$2195.00
#83737	PowerBase 180 603e 16/1.2GB/8xCD MiniTower	$1595.00
#83736	PowerBase 200 603e 16/1.2GB/8xCD MiniTower	$1895.00
#83735	PowerBase 240 603e 16/1.2GB/8xCD MiniTower	$2295.00

PowerCenter and PowerTower Series

- 120, 132 or 150MHz PowerPC™ 604 processor
- Integrated floating-point processor and 32K cache
- 8 or 16MB RAM, upgradable to 256MB
- Keyboard & mouse
- Level-2 Cache
- 850MB or 1GB hard drive
- 1MB VRAM
- 4X speed CD-ROM drive

ORDER #	PowerTower Computers	LOW ZONE PRICE
#86641	PowerTowerAV 604/180 32/2GB AV	$5580.00
#86635	PowerTower 604/166 16/2GB 4xCD Tower	$2895.00
#86636	PowerTower 604/180 16/2GB 4xCD Tower	$3095.00
#86642	PowerTower Pro 180 16/2GB/8xCD	$4195.00
#86643	PowerTower Pro 200 16/2GB/8xCD	$4495.00
#86644	PowerTower Pro 225 16/2GB/8xCD	$4995.00

ORDER #	PowerCenter Computers	LOW ZONE PRICE
#86633	PowerCenter 604/132 16/1GB 4xCD Desktop	$1895.00
#86634	PowerCenter 604/150 16/1GB 4xCD Desktop	$2095.00
#86638	PowerCenterAV 604/132 24/2GB AV	$3009.00
#86639	PowerCenterAV 604/150 24/2GB AV	$3209.00

BOOST YOUR MAC's PERFORMANCE... ADD MEMORY!

ORDER #	Memory	LOW ZONE PRICE
#90377	8MB 70ns DIMM (1x64)	$49.98
#90378	16MB 70ns DIMM (2x64)	$99.98
#90379	32MB 70ns DIMM (4x64)	$199.98
#90380	64MB 70ns DIMM (8x64)	$399.98
#06729	4MB 70ns SIMM (1x32)	$29.98
#06755	8MB 70ns SIMM (2x32)	$49.98
#06807	16MB 60ns SIMM (4x32)	$99.98
#89439	1MB VRAM DIMM for 7200/7500/8500	$49.98
#27257	256K Cache 7200/7500/8500 DIMM	$62.98

DI$COUNT PRICE$ ON QUALITY HARDWARE, $OFTWARE & ACCE$$ORIE$

IF YOU DON'T SEE IT... CALL!

MAC BARGAIN$®

FAX: 1-206-430-3520 INT'L PHONE: 1-206-430-3558
E-Mail Address: mac.bargains@mxi.com
707 South Grady Way, Renton, WA 98055-3233

CIRCLE 108 ON READER SERVICE CARD

Our Knowledgeable Sales Advisors help make buying easy!

YOUR SOURCE CODE BU612

©1996 MZI, Inc. Renton, WA ™Trademarks of all companies listed in this ad. All rights reserved.

MAC BARGAIN$®

DI$COUNT PRICE$ ON QUALITY HARDWARE, $OFTWARE & ACCE$$ORIE$

Buy with Confidence *Online* from MAC BARGAIN$.

- NEW! To place an order, e-mail to mac.bargains@mzi.com
- NEW! For detailed product information, e-mail to mac.bargains.info@mzi.com
- Over 2500 products in stock

Sony Multiscan 17se II Color Monitor

Only $899*

*While Supplies Last

- Size:17" Trinitron CRT (16" viewable image size)
- The perfect choice for demanding business applications and graphics
- Maximum Resolution: 1280x1024 at 75Hz
- Aperture Grille Pitch: .25mm
- Refresh: 48-150Hz
- For more information, e-mail keyword 17SEII

Sony #06909

Iomega 1GB Jaz Drive

Only $499

One 1GB disk included.

- Faster than most hard drives
- 5.53MB/second transfer rate and 17ms access time
- Provides 1GB of space on each cartridge
- Completely portable – weighs about two pounds
- For more information, e-mail keyword JAZSCSI

Iomega #25659

Umax Vista-S6e Scanner

Only $299

- 600x300 dpi (4800 interpolated) resolution
- Includes full version of Adobe Photo Deluxe, Presto! and PageManager (with OCR)
- Scan size: 8.5x11.7" w/Single-pass scanning method
- For more information, e-mail keyword VISTAS6

Umax #83501

Adobe

88827	Adobe After Effects 3.0 CD	$604.25
06263	Adobe Dimensions 2.0	$121.38
95314	Adobe Fetch 1.2 Single User	$93.98
88207	Adobe Illus 5.0 To 6.0 Upgr CD/3.5"Mac	$125.98
87610	Adobe Illustrator 6.0 CrossGrade CD & 3.5"	$125.98
87628	Adobe Illustrator 6.0 CrossGrade CD f/Freehand	$92.98
88205	Adobe Illustrator 5.0 to 6.0 Upgr CD	$92.38
88206	Adobe Illustrator 6.0 CD & 3.5	$364.98
91256	Adobe PageMaker 6.0 CD & 3.5"	$545.98
99605	Adobe PageMaker 6.0 Competitive Upgr	$182.99
91255	Adobe PageMaker 6.0 Upgrade	$135.98
83932	Adobe PageMill 2.0 Upgrade	$48.98
83060	Adobe PageMill 2.0 w/PageMill Handbook	$95.66
38523	Adobe Persuasion 4.0 Mac & Win	$252.65
38524	Adobe Persuasion 4.0 Upgrade	$124.98
83084	Adobe Photoshop 4.0 Upgrade	$157.00
83083	Adobe Photoshop 4.0	$544.98
04670	Adobe Premiere 4.2 CD	$484.98
87636	Adobe Sitemill	$179.98
03971	Adobe Streamline 3.1	$122.32
92218	Adobe SuperPaint Deluxe 3.5	$68.98
92249	Adobe TextureMaker 1.0 Mac & PowerMac	$128.98
95307	Adobe Type Twister 1.0 for Mac	$29.98

AEC Software

03456	Fast Track Schedule 4.0 PowerMac Or Mac	$169.98

Aladdin

05827	StuffIt Deluxe 4.0	$70.43
85605	StuffIt Deluxe 4.0 Upgrade	$39.98
87434	StuffIt Dlx 4.0/Conflict Catcher 3 Bndl	$79.98

Alien Skin

92297	The Black Box 2.0	$87.24

Alsoft

00618	DiskExpress II 2.2	$42.61
04543	Master Juggler 2.0	$42.98

Bestware

04712	MYOB Accounting 6.0	$76.49

Berkeley Systems

83662	AfterDark 4.0 w/$10 - Rebate	$28.98
83667	You Don't Know Jack Sports	$28.98

Broderbund

86677	Logical Journey Of The Zoombinis	$37.98
97733	MYST	$48.98
88862	Passage to VietNam Mac/Win CD	$39.98

Bungie Software

96284	Marathon	$37.98
88450	Marathon 2 Durandal	$44.38

Caere

05161	OmniPage Direct 2.0	$62.33
91304	OmniPage Pro 6.0 Upgrade	$145.78

Casady and Greene

91310	Conflict Catcher 3 Competitive Upgrade	$44.98
86011	Conflict Catcher 3/Ram Dblr/Speed Dblr Bndl	$93.05
95255	Glider Pro	$28.98

Claris

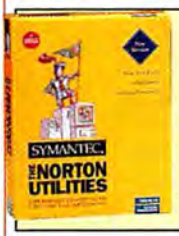
84075	Claris Emailer 1.1	$48.98
86444	Claris Organizer 2.0	$68.98
18052	ClarisDraw 1.0v3	$184.98
99734	ClarisImpact 2.0	$81.49
93424	ClarisWorks 4.0	$117.73
92638	ClarisWorks 4.0 Comp/Ver Upgrade	$63.28
88830	FileMaker Pro 3.0	$182.72
88829	FileMaker Pro 3.0 Ver/Comp Upgrade CD/3.5	$94.67
85770	Internet Conn Kit w/Mission Impossible	$45.00
04140	MacProject Pro 1.5	$364.98
06525	MacWrite Pro 1.5	$88.98

Only $629

QuarkXPress 3.32 for Mac/Power Mac *#95320*

Connectix

91300	Conflict Catcher 3	$59.75
86011	Conflict Catcher 3/RAM Dblr/Spd Dblr Bnd	$93.05
96785	Connectix RAM Doubler 1.6	$53.98
90375	Connectix Speed Doubler for Mac V1.1	$53.23
90149	Connectix RAM/Speed Doubler Bundle	$75.46



Only $92.98

Norton Utilities V3.2 *#04890*

Corel

84053	CorelDraw 6	$384.98
84052	CorelDraw 6 Ver/Comp Upgrade	$144.98
91628	Corel GALLERY 2 (Mac)	$49.98
31722	Corel Pro Photo Vol13-Txtrs,Backgds&Objs	$133.75
92234	Corel Stock Photo Library 1 w/World's Bo	$849.98
91276	Corel Stock Photo Library 2	$849.98
03972	WordPerfect 3.5 Full Version CD-ROM	$154.98
83933	WordPerfect 3.5.1 CV Upgrade CD-ROM	$79.98

Dantz

02586	Dantz Retrospect 3.0	$138.57
04194	Dantz Retrospect W/10 User Remote	$250.38

Dataviz

96907	MacLink Plus/PC Connect 8.0	$119.98
96908	MacLink Plus/Translators Pro 8.0	$94.48

Datawatch

02077	Virex 5.6 for Mac	$59.50
89501	Virex 5.6 Vers Upgr	$28.98

Delrina

97921	Delrina Fax Pro for Mac	$52.50

Epson

87990	Epson PostScript Level2 SW f/Stylus Pro	$206.25
86841	Epson PostScript Level2 SW f/Stylus XL	$259.99

Equilibrium

98360	DeBabelizer Toolbox 1.6	$249.49

Extensis

91343	Extensis QXTools	$98.98

Farallon

96801	Farallon Timbuktu Pro f/ Mac 2.0 2-Pack	$189.98
96800	Farallon Timbuktu Pro f/Macintosh 2.0	$125.49

Fractal

37624	Fractal Design Dabbler 2.0 CD	$44.98
83073	Fractal Design Expressions	$289.98
83051	Fractal Design Detailer	$289.98
00665	Fractal Design Painter 4 For Mac	$340.98
93967	Fractal Design Painter 4 Upgr For Mac	$119.49
91289	Fractal Design Poser	$90.98

FWB

00555	Hard Disk Toolkit 1.80	$115.98
05476	Hard Disk Toolkit Personal Ed 1.76	$46.98
06271	FWB CD-ROM Toolkit 2.0 CDT	$48.98

GDT

94262	GDT Softworks StyleScript 2.0	$94.98
94262	GDT Softworks StyleScript w/Type On Call	$93.79
00642	PowerPrint 3.0	$95.43

GraphSoft

97781	MiniCad 6.0	$535.65

GT Interactive

92035	Doom II For Mac	$44.98
87501	The Ultimate Doom CD	$39.98

Insignia

98471	SoftWindows 3.0 for PowerMac 3.5 Disk	$299.98
98475	SoftWindows 3.0 for PowerMac CD	$290.98
89308	SoftWindows 3.0 for PowerMac CD Upgrade	$79.59
87440	SoftWindows 95 for PowerMac CD	$335.09
87442	SoftWindows 95 for PowerMac CD Upgrade	$146.65
94287	SoftWindows for Mac	$272.99
91088	Softwindows for Performa	$136.98

Intuit

93222	Quickbooks 4.0 For Mac	$122.24
89653	Quickbooks Pro 4.0 For Mac	$184.10
04230	Quicken 6 For Mac	$41.60
89685	Quicken Deluxe 6 For Mac	$59.03

Jian Tools

04257	Jian Biz Plan Builder 5.0 Mac w/Video	$80

Jump Development

92896	Optimem RAM Charger 2.0	$53

Leister Productions

05984	Reunion 4.0 The Family Tree Software	$97

MacroMedia

88730	Director 5.0 w/Shockwave	$831
92265	Director Multimedia Studio 2.0	$936
86007	Director Multimedia Studio 2.0 Upgrade	$486
88748	Extreme 3D Competitive Upgrade	$198
04537	Fontographer 4.1	$307
84211	FreeHand 4.0 to 5.5 Upgrade	$139
87150	Freehand 5.0 to 5.5 Upgr w/XAOS Tools	$78
92290	FreeHand Graphic Studio 2.0	$593
86005	SoundEdit 16 2.0 PI Deck II 2.5	$386

MetaTools

95335	Bryce 2.0	$172
84479	Kai's Power Goo	$48
06668	Kai's Power Tools 3.0	$114
86018	Kai's Power Tools 3.0 and Qxtools Bdl	$143
91258	Vector Effects 1.0	$113

Microsoft

99702	MS Cinemania '96 For Mac CD	$27
95750	MS Encarta 1996 Mac CD	$48
00227	MS Excel 5.0 for Mac	$290
04545	MS Excel 5.0 for MacVers on Upgrade	$114
04293	MS Flight Simulator 4.0 Mac	$39
99696	MS Fox Pro 2.6 for Mac	$85
18059	MS Office 4.2.1 Comp/Version Upgrade	$273
96024	MS Office 4.2.1 Comp/Version Upgrade CD	$261
03233	MS Office 4.2.1 for Mac CD	$445
00427	MS Office 4.2.1 Mac	$445
06300	MS PowerPoint 4.0 Version Upgrade	$118
04161	MS Project 4.0 For Mac	$424
04898	MS Word 6.0.1 For Mac	$284
00596	MS Word 6.0.1 Version Upgrade	$113
05750	MS Works 4.0 for Mac	$42

Nisus

03479	Nisus Writer 4.1 Mac	$144

Now Software

84065	Now Up To Date/Now Contact/Now Utilites 6.5	$105
86085	Now Up to Date/Now Contact 3.6	$64
04191	Now Utilities 6.5	$79
86442	Now Utilities 6.5 Upgrade	$28

ParSoft

88389	A-10 Attack CD-Rom	$47

Qualcomm

91072	Eudora Pro Mac	$58

Quark

95320	QuarkXPress 3.32 Native PowerPC	$639
82500	QuarkImmedia	$639

SoftKey

95594	Amer Her Dlx Talking Dictionary Mac/Win	$30
03631	Calendar Creator 2.0 Mac	$37
00641	WriteNow 4.0 W/Correct Grammar	$43

Only $24.98*

Suitcase V3.0 Full/Upgrade *#04776*

* After $40* mail-in rebate for previous users. Regular price $64*

Symantec

06231	ACT! 2.5 For Mac	$148
03481	MacTools 4.0 Pro	$88
06997	Norton DiskDoubler Pro 1.1	$72
04890	Norton Utilities 3.2	$92
93976	Norton Utilities 3.2 Upgrade	$38
00116	SAM 4.0 Full/Upgrade	$63
04776	Suitcase 3.0 Full/Upgrade	$64

T/Maker

91303	ClickArt Incredible Image Pak 25000	$45
87188	ClickArt Handwritten Fonts	$36

Call MAC BARGAIN$® *before you buy!*

1-800-407-7404

Add applicable sales tax (only in OH, WA). All shipments refer to "in stock" items, barring system failure, etc. Not responsible for typographical errors. Credit cards are not charged until the order is shipped. Most products ship the same day for overnight delivery. Overnight delivery is only $7 for the first 7 pounds and $1 for each additional pound. Call for international shipping rates. Packaging and handling $4 per order for delivery in the USA. Returns subject to a restocking fee. Prices and product availability subject to change without notice. Specials and promotions may be limited to stock on hand.

For the Best Deals Around!
1-800-407-7404

Monitors

Hitachi

286	Rasterops SuperScan MC 17	$899.98
077	Rasterops SuperScan Mc 21	$1,889.00

NEC

642	NEC Multisync C400 14" Monitor	$299.98
793	NEC Multisync M700 Clr Monitor 17"	$879.98
719	NEC XE21 21" Color Mtrs	$1,750.16
721	NEC XP17 17" Color Mtrs	$1,049.98

Sony

966	SONY MAC1 Adapter For sf Series Monitor	$9.98
675	Sony Multiscan 15sx Monitor	$399.98
676	Sony Multiscan 15sf II Monitor	$483.23

U.S. Robotics — As Low As $79.98

Modems

406	Mac & Fax Sportster Voice 28.8 V.34	$194.98
701	Mac & Fax Sportster 14.4 Fax/Data	$79.98
953	Mac & Fax Sportster 28.8 V.34	$174.98

677	Sony Multiscan 17sf II Monitor	$779.98
909	Sony Multiscan 17se II Monitor	$959.98

Viewsonic

429	ViewSonic 17GA Monitor/Adapter Bundle	$738.00
431	ViewSonic 17GS Monitor w/Adapter Bundle	$679.98
296	ViewSonic GT770 17" Color Monitors	$728.00
932	ViewSonic PT770 17" Color Monitor	$849.98
486	ViewSonic P810 Monitor/Adapter Bundle	$1,688.00

Video/Graphics Boards

ATI

136	ATI Exclaim GA 4MB PCI	$424.98

Connectix

317	Connectix Color QuickCam for Mac	$226.40
884	Connectix QuickCam for Macintosh	$89.98

Radius

907	Radius Thunder 30/1600 PCI Video Card	$1,049.00
905	Radius ThunderQar 30/1600 PCI Vid Card	$1,893.00

Accelerators

DVC

361	DVC Equalizer Power Mac 6100 7100 & 8100	$68.97

FWB

124	FWB PCI SCSI JackHammer	$378.35
121	FWB SCSI JackHammer	$444.67

Imagine

257	Imagine 128 8MB PowerMac Accel Cards	$999.98
256	Imagine 128 PowerMac Accel Cards 4MB	$654.50

Communications/Modems

Global Village

312	PowerPort Platinum Pro V.34/10-T PC Card	$476.67
313	PowerPort Platinum V.34 PC Card	$316.37
748	TelePort Gold II	$59.98
640	TelePort Platinum Internet Edition	$193.84

Megahertz

528	CruiseCard Cellular Ready Xjack 288 Mac	$239.98

Supra

353	Supra FAXModem V.34 288 Ext Mac	$199.98
309	SupraExpress 28.8 V.34 FAXmodem Mac	$139.98

US Robotics

406	Mac Sportster Voice v.34 28.8	$194.98
701	Mac & Fax Sportster 14.4 Fax/Data Modems	$79.98
953	Mac & Fax Sportster 28.8 V.34	$174.98

Storage Devices

LaCie

295	LaCie 2160MB IBM Ext HD	$649.98
878	LaCie IQ 2160MB Int HD	$589.98
312	LaCie 1280MB Quantum HD Ext	$353.24
330	LaCie iQ 1280MB Internal HD	$287.25

MicroTech

174	MicroTech 200MB SyQuest External Drive	$364.98
191	MicroTech RoadRunner 320MB Int PB Drive	$324.98
619	Road Runner 500MB PowerBook Drives	$449.98

Performantz

046	Performantz 200MB SyQuest Drive w/o CTG	$348.98
048	Performantz 270MB SyQuest Drive w/o CTG	$348.98
044	Performantz 44/88MB SyQuest Drive w/o ct	$296.31

ProMax

255	ProMax External Jaz Drive With Lido 7 SW	$559.98
199	ProMax Iomega Jaz Cartridge 1GB	$109.98

VST

7426	VST Expan Bay 230MB MO Dr f/PB 190/5300	$394.44

CIRCLE **108** ON READER SERVICE CARD

Media

Fuji

94094	FUJI 3.5" MF2HD Mac Formatted 10Pk 1.4MB	$7.98
91952	FUJI CDR-74	$8.72
05717	Fuji DG90M 4mm Data Grade Tape 1.95GB	$7.03

Iomega

97291	Bernoulli MultiDisk 150MB Single Cart	$92.29
91161	Zip Media Mac100 10 Pack	$142.83
91160	Zip Media Mac100 3 Pack	$47.89
91159	Zip Media Mac100 Single	$17.36

Kyocera

86251	Kyocera CDR-74	$8.98

Philips

89805	Philips CD-Recordable 74 Min Disk	$7.33

Sony

01140	Sony 3.5" 230MB M.O. 512b/s	$19.98
14368	SONY CD-R 650MB (74 Min)	$7.98

SyQuest

00278	SyQuest 200Mb 5.25" Removable Cartridge	$63.98
97992	SyQuest 270MB 3.5" Removable Cartridge	$59.98
02183	SyQuest 44MB Cart Unfo	$40.98
00183	SyQuest Cart 88MB	$43.98
24910	SyQuest EZ135MB 3.5" Cartridge 10Pk	$179.98
24909	SyQuest EZ135MB 3.5" Cartridge 5Pk	$94.98

Verbatim

91979	Verbatim 230MB 3.5" M.O. Mac Formatted	$22.98
01169	Verbatim 230MB 3.5" R/W 1024b/s	$19.98
21922	Verbatim CD-R 74min 4X	$7.98

CD-Rom/Multimedia

Performantz

85899	Performantz 4xCD Drive w/'96 G'rolier	$159.98
84302	Performantz 8x Ext CD Drive w/'96 Grolier	$269.98

Sony

86839	Sony SRS-300D Speakers w/sub	$169.98
32804	Sony SRS-PC21 PC Speakers	$24.98

SyQuest Syquest Cartridges — As Low As $19.98

SyQuest

24935	EZ135 SCSI Drive & Cartridge	$119.98
24998	EZ135 SCSI Cartridge (Single)	$19.98
24909	EZ135 SCSI Cartridge 5-Pack	$94.98
24910	EZ135 SCSI Cartridge 10-Pack	$179.98
99922	Syquest 105MB Cartridge	$39.98
00278	Syquest 200MB Cartridge	$63.98
97992	Syquest 270MB Cartridge	$51.98
02183	Syquest 44MB Cartridge	$40.98
00183	Syquest 88MB Cartridge	$43.98

Scanners

AGFA

84141	AGFA SnapScan	$379.00
06685	AGFA StudioStar	$848.00
02135	AGFA Arcus II Scanner, MAC Version	$1,919.44
84140	Agfa StudioScan IIsi Color Scanner	$599.98

Epson

91939	Epson ES-1000C Flatbed Scanner	$579.98
02133	EPSON ES-1200C Mac Scanner	$949.56
02110	EPSON ES-1200C Pro-Mac Scanning System	$1,120.43
06919	EPSON Transparency Unit - Enhanced	$626.99

Umax

88594	Umax Powerlook II Full Photoshop & TMA	$2,383.33
84149	Umax Powerlook II w/TMA & LE Photosho	$1,898.00
21401	Umax Transparency Adapter for Vista	$385.00
83053	Umax Vista S-6E w/Adobe PhotoShop	$599.98
83505	Umax Vista-S12 w/Adobe Photoshop LE	$775.00

Visioneer

86783	PaperPort Vx SCSI Adapter for Mac	$69.98
88164	Visioneer PaperPort Vx For Macintosh	$290.72

Input Devices

Adesso

91854	Adesso Soft Touch keyboards	$47.69
90766	Tru-Form Extended Keyboard	$84.99
91099	Tru-Form Extended Keyboard w/Pointer	$99.05

Colcomp

91862	Drawing Slate II 12x12 w/Pressure pen	$224.00
91869	Drawing Slate II 12x18 w/Pressure Pen	$293.32
91864	Drawing Slate II 6x9 w/Pressure Pen	$192.57

Gravis

05998	Gravis MouseStick II	$45.74
89394	Advanced Gravis FireBird For Mac	$67.98

Kensington

89379	Kensington Mouse 1.0	$57.66
93628	Kensington Thinking Mouse ADB	$83.97
87483	Turbomouse 5.0	$99.98

Thrustmaster

95201	Thrustmaster Flight Control System	$98.65
95200	Thrustmaster Weapons Control System	$58.18

Wacom

90644	ArtPad II (ADB) w/Dabbler Bundle	$154.98
90643	ArtPad II (ADB) w/Erasing UltraPen	$144.38
90646	Artz II 12x12 (Serial) w/Erasing UltraPn	$429.98
90645	Artz II 6x8 (ADB) w/Erasing UltraPen	$297.06

Printers

Epson

90488	Epson Multi-Protocol Ethernet Interface	$397.55
83409	Epson Stylus Color 500 Inkjet Printer	$279.98
89901	Epson Stylus Color Pro Ink Jet Printer	$375.00
87980	Epson Stylus Color Pro XL InkJet Printer	$1,799.00

HP

36156	HP DeskJet 870Cse InkJet Printer	$499.00
88902	HP DeskWriter 600 Printer	$199.98
94057	HP DeskWriter 660C InkJet Printer	$279.98
86345	HP DeskWriter 680C InkJet Printer	$319.98
82666	HP LaserJet 6MP Printer	$949.00
82652	HP LaserJet 5L Xtra w/PowerPrint	$577.00
13692	HP Tri-Chamber ColorPrint Cartridge	$28.98

Power Backup/Batteries

Americas Power Co

19035	APC Back-UPS 1250	$449.98
07150	APC Back-UPS 280	$99.98
99364	APC Back-UPS 400	$138.50
11651	APC Back-UPS 600	$244.59
27097	APC Back-UPS Pro 420 PnP	$241.65
94395	APC Personal Surge Arrest 7 Outlet w/Ph	$23.98
94393	APC Prof Surge Arrest 7 Outlet w/Phone	$35.75
94917	Powerchute for MAC	$68.99

BatteryTechnology

87494	BTI 2-Slot Batt Chgr f/lm 5300/190 Batt	$86.66
88751	BTI Auto Pwr Adpt f/PB 5300/190 Series	$74.98
6022	BTI PB 140-180c 3.2Ah Battery	$58.49
06641	BTI PB 140-180c Power Charger	$54.49
85820	Internal 5300/190 Battery	$113.33

Mobile Computing

Curtis

85817	Curtis Accessory Pouches	$4.98
85816	Curtis Cellular Phone Holder	$4.98

DoubleCase

87219	ZipPac Hard Case w/Iomega Zip Drive Bndl	$222.79
88293	ZipPack Hardcase	$34.98

Targus

06023	Targus Notepac Case Black	$29.99
07454	Targus Universal PowerBook Case	$61.18

MEMORY

30-pin SIMMS

05653	2MB 80ns Upgrade Kit (2-1MB SIMMS)	$19.98
05655	4MB 80ns Upgrade Kit (2-2MB SIMMS)	$39.98
05656	8MB 80ns Upgrade Kit (2-4MB SIMMS)	$62.98
05654	16MB 80ns Upgrade Kit (4-4MB SIMMS)	$129.98

72-pin SIMMS

06734	4MB 60ns SIMM (1x32)	$29.98
06729	4MB 70ns SIMM (1x32)	$29.98
06756	8MB 60ns SIMM (2x32)	$49.98
06755	8MB 70ns SIMM (2x32)	$49.98
06807	16MB 60ns SIMM (4x32)	$99.98
95693	16MB 70ns SIMM (4x32)	$99.98
96721	32MB 60ns SIMM (8x32)	$199.98

168-pin DIMMS

90377	8MB 70ns DIMM (1x64)	$49.98
90378	16MB 70ns DIMM (2x64)	$99.98
90379	32MB 70ns DIMM (4x64)	$199.98
90380	64MB 70ns DIMM (8x64)	$399.98

PowerBook 190 Series

28323	8MB Mem Module	$99.98
28324	16MB Mem Module	$199.98
28325	24MB Mem Module	$239.98
28326	32MB Mem Module	$399.98

PowerBook Duo 200/2300 Series

06694	8MB Mem Module	$99.98
95687	16MB Mem Module	$199.98
28332	36MB Mem Module	$499.98

TelePort Platinum for Desktop Systems

Only $193

- Voice/Fax and Fax/ARA flexible call handling
- Flash ROM upgradable to upcoming 33.6 Kbps standard (available later this year)
- Includes the most popular Web browser and Internet service access
- For more information, e-mail keyword GLOBLPLAT288

GlobalVillage #85640

YOU'VE GOT TO SEE IT IN EPSON COLOR.™

Epson Stylus Color Pro Ink Jet Printer

- 720 dpi, photo-quality color
- True black laser-quality text
- Optional network capability
- Two-year limited warranty
- Works with Macintosh and Windows
- For more information, e-mail keyword EPSCLRPRO

New Low Price $375

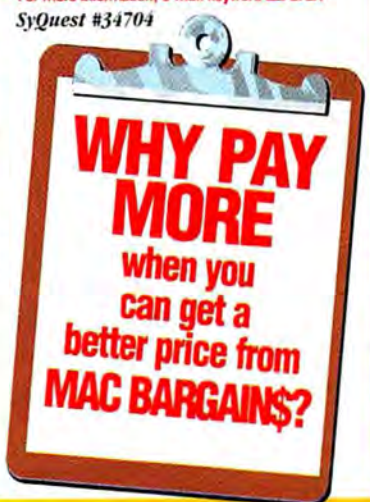
Epson #89901

Only $298.98

SyQuest EZFlyer 230

- The fastest removable cartridge drive in its price range!
- Proven, award-winning technology by the world's leading drive manufacturer
- 13.5ms average seek time; 2.4MB/sec. sustained data transfer rate
- One-year warranty on drive; limited lifetime warranty on cartridges
- For more information, e-mail keyword EZFLYER

SyQuest #34704



DI$COUNT PRICE$ ON QUALITY HARDWARE, $OFTWARE & ACCE$$ORIE$

IF YOU DON'T SEE IT... CALL!

MAC BARGAIN$®

FAX: 1-206-430-3520 INT'L PHONE: 1-206-430-3558
E-Mail Address: mac.bargains@mzl.com
707 South Grady Way, Renton, WA 98055-3233

Our Knowledgeable Sales Advisors help make buying easy!

YOUR SOURCE CODE **BU612**

©1996 MZI, Inc. Renton, WA ™Trademarks of all companies listed in this ad. All rights reserved.

radius™ Quantities are Limited...

AWARD WINNING PRODUCTS

DISPLAYS

TWENTY ONE INCH DISPLAYS

21 Inch DiamondTron Monitor — $1999*

- Rated Superior to Trinitron
- Two year Mfr's Warranty
- Largest Aperture Grille monitor available
- Up to 1600x1200 on Macs and PCs
- Full Digital Control from Keyboard

Radius SuperMatch 21 TXL	from $1699*
Radius PrecisionView 21	$CALL
Radius PressView 21sr	from $2899*
NEC	$CALL
Radius PrecisionColor Display 21	$1499*
RasterOps SuperScan MC 21	$CALL
Radius Multiview 21	$CALL
Radius 21 inch Grayscale Display	$799

*With qualifying videocard, accelerator, or computer purchase

TWENTY INCH DISPLAYS

TRINITRON BLOWOUT-LOWEST PRICE EVER! — $999*
While Supplies Last!

20" SONY Trinitron Technology

- Industrial Grade CRT
- Two page WYSIWYG output

SuperMac SuperMatch 20 Plus	$999*
Radius PrecisionColor 20v	$1099*
Digital 20 inch Display Up to 1280x1024	$1399
RasterOps 20 Multimode	$1299
Radius PrecisionColor 19	$899*

Radius IntelliColor Display 20 — $1499

- MacUser, MacWorld, MacWeek Editor's Choice
- 1600x1200 to 640x400

Apple Multiple Scan 20 Display	$CALL
Ikegami 20 inch Grayscale Display	$699
Radius 20 inch Grayscale Display	$699

*With qualifying videocard, accelerator, or computer purchase

SEVENTEEN INCH DISPLAYS

SuperMac/E-Machines T16IIMR — $599*

- Studio Grade Trinitron CRT
- 0.26 Dot Pitch

SuperMatch 17T TRINITRON	$799
PrecisionColor Display 17	from $899
PrecisionView 17	$CALL
Radius PressView 17sr	$CALL
SuperMac SuperMatch 17	from $499*

*With qualifying videocard, accelerator, or computer purchase

PORTRAIT DISPLAYS

Radius Pivot Display — $199*

We have cards for **SE/30, LC, IIsi** Nubus, and Quadras

* With purchase of video card.

PrecisionColor Pivot	$599
Color Pivot LE	$399
Radius Full Page Display	$CALL
Apple Portrait Display	$399
Portrait Display Labs 1700	$CALL
E-machines ColorPage 15 with NUBUS card	$499

VIDEO CARDS

1600x1200 PCI & NUBUS

IMS Twin Turbo 128M ♦♦♦♦MacWEEK — from $299

- 1600 x 1200 to 640 x 480 resolutions
- MPEG video playback
- 128-bit wide architecture
- Interleaved VRAM

Number Nine Imagine 128 8MB — $IN STOCK

MW ★★★★ FASTEST CARD AVAILABLE! -- Macworld
If you need fast graphics redraw, this is your card!

HARD TO FIND NUBUS CARDS IN STOCK!

Radius Thunder II & IV GX Cards	$BELOW COST
Radius Thunder 24/GT (accepts PhotoEngine)	$CALL
Radius ThunderColor 30/1152 & 1600	$CALL
Radius PrecisionColor 8/1600	$399

21" RESOLUTIONS PCI & NUBUS

Radius PrecisionColor 24X	$599
Thunder 8 "Fastest 8 bit card ever"	$CALL
Thunder 24 (DSP available)	$CALL
Radius LeMans GT	$799
SuperMac Ultura LX*	$799
RasterOps Horizon 24*	$899
RasterOps Prism GT	$CALL
Radius PrecisionColor 8XJ	$499

*DSP Available

20/19" RESOLUTIONS PCI & NUBUS

SuperMac Spectrum 24 Series V	$599
Radius PrecisionColor Pro 24XK	$CALL
SuperMac Futura MX	$499
RasterOps PaintBoard Lightning	$CALL
SuperMac Spectrum 8	$199
PowerView/SuperView for Powerbooks	$199/$299

17/16" RESOLUTIONS PCI & NUBUS

Radius 24 bit video cards	from $199
Radius PrecisionColor Pro 24XP	$CALL
SuperMac Futura SX	$299
RasterOps 24 MX	$399

PHOTOSHOP ACCELERATION

Radius PhotoEngine

- Four AT&T 3210 66MHz DSPs
- Accelerates Photoshop Filters
- Up to 15x acceleration on all Macs
- MacUser Editor's Choice
- Available in Daughtercard or NUBUS versions

from $399*
Retail at $999

Adaptive Solutions PowerShop	$CALL
Radius Photo Booster for Quadra/PDS or Rockets	from $199
SuperMac DSP daughter cards for Thunder/Ulturas	$299

COLOR CALIBRATORS

SuperMac Display Calibrator	only $199
SuperMac Display Calibrator PRO	$499
Radius Mac ProSense Calibrator	$799

POWERBOOK 5300

FOCUS enhancements Lapis Color MV Cards — from $249

Compare at $399

- Multiple resolutions up to 21"
- 10BASE-T ethernet
- Uses PDS slot leaving your PCMCIA slot available for other uses.

The Lapis Color MV card is the only solution that does not use your PCMCIA slot, thus allowing for additional uses such as a modem for your PB5300. Since the card was jointly developed with Apple, it is virtually the only ethernet solution that does not drop data packets and is the only external video solution available.

For prices starting from $249, you will not find a better value!

www.cra-sys.com

Supplies Won't Last... SUPERMAC RASTEROPS

AT OR BELOW DEALER COST!

PRINTERS

TABLOID LASERS

GCC Elite XL series 800dpi from $2499
- 11 x 17 full bleed
- PostScript Levels 1&2
- 8ppm heavy-duty Canon engine
- Powerful RISC processor
- Ethernet

QMS PS2210/2220 from $1499
- 20,000 page monthly duty cycle
- 22ppm • Dual-tray input

Hewlett-Packard 4MV $2499
GCC SelectPress 1200x1200dpi $4999
GCC ELITE XL808 & XL1208 $CALL
Radius Proof Positive PTR 220/230 Dye-Sublimation $CALL

Ask about Printers available in 220v!

LETTER/LEGAL

QMS PS1700 for Macs and PCs from $1499
- True Adobe Postscript
- 17ppm output
- Dual Paper output; Duplex Option
- 50,000 print monthly duty cycle

Hewlett-Packard 5mp 600dpi $CALL
Apple Select 360 10ppm, 600dpi $1199
GCC WriteMove II portable printer for Powerbook $CALL

CPU SPECIALS

POWER MACS

All PCI PowerMacs Available -- CALL for Lowest Prices Ever!!

Radius 81/110 from $999
FACTORY CLOSE-OUT! LAST CHANCE!

PowerMac 8500/120, 132, 150, 180MHz from $2399
PowerMac 9500/120, 132, 150, 180MP, 200MHz from $2499
PowerMac 7500/100 & 7600/120 from $1999
PowerMac 7200/90 & 120MHz REDUCED!
Umax S900D & S900L $CALL
Power Computing PowerTower series $CALL

Prices with Monitor Purchase

QUADRA/MAC II SERIES

Centris 660 AV 8/80 *NEW* When purchased with Spigot AV card, only $499
Quadra 800 8/250/CD *NEW* $IN STOCK
Quadra 840AV 8/250/CD *w/ Spigot Power AV* $1999

* with purchase of monitor or video card.

FREE ClarisWorks with every CPU purchase !!

GUARANTEED LOWEST PRICE ON RADIUS DIGITAL VIDEO

Video Vision Studio, PCI and Nubus

- 24bit Full-Screen, Full-Motion Video
- Includes Adobe Premiere and VideoFusion
- Breakout bar supports dual input
- ** with purchase of Studio Array*

CALL FOR BEST PRICE!!

Radius Spigot Pro AV

- Upgrade for Nubus AV Macs
- 24bit Full-Screen, Full-Motion Video
- Includes Adobe Premiere
- ** with purchase of Studio Array*

Radius Spigot Power AV $799

Video Vision Telecast

- Full-motion, broadcast-quality video
- Available as upgrade for Video Vision Users

Video Vision Studio Array

- 4GB RAID Customized for Video Vision
- Includes Fast & Wide SCSI-2 accelerator board
- Chain up to three Arrays together (4GB,8GB,12GB)

If you want quality Digital Video, CRA Systems is "THE SOURCE."

We purchased overstock direct from the manufacturer, so we're passing the savings on! Nowhere else will you see such deep price cuts! Hurry quantities are limited and supplies won't last!

miroMOTION DC20 *M-JPEG PCI video capture & playback* $CALL
Truevision Targa BRAVADO 1000 $CALL
RasterOps MoviePak II *JPEG Daughtercard Upgrade* $CALL
Spigot II Tape *Now Bundled with Adobe Premiere* $499
VideoSpigot Cards Nubus/LC/IIsi from $99
Truevision Targa 1000 & 2000 $CALL

RADIUS 81/110 from $999

CRA SYSTEMS

New and Reconditioned Models of Most Items Available

THE MOST KNOWLEDGEABLE SALES STAFF IN THE INDUSTRY!

CRA Systems, Inc.
300 South 13th St., Waco, TX 76701
Monday thru Friday 9AM to 7PM CST Saturday 10AM-4PM *Sales Dept.Only*
Domestic Sales sales@cra-sys.com Fax 817.750.9050
Consultants/Dealers 817.754.2120 International Sales 817.754.2120
Prices reflect 2% cash discount. Prices subject to change. Not liable for typographical errors. All shipping charges for COD orders to be secured by credit card. Dealers and consultants call for quantity pricing. We ship anywhere. FedEx

800/375-9000

CIRCLE 50 ON READER SERVICE CARD

Serious Tools! Serious Fun!

SUPERMAC

NEW!

ONLY!

$2995

LEASE FOR $103.57/MO.

32662

UMAX J700L

- 604/150 MHz PowerPC processor
- 16MB RAM - expandable to 1GB
- 2.1GB Internal fast-SCSI HD
- 128 bit 2MB video
- 8x Internal CD-ROM drive
- 16-bit stereo
- Free software included too!

Monitor Sold Separately

UMAX Computer Corporation

Low Cost 17" Color Monitor!

High performance at a budget price!

NEW!

- 17" (15.8" visible) high resolution FST monitor with PREVU & Coloright technology
- Max. refresh of 120HZ
- Max. resolution of 1280x1024 (Addressable)

ONLY $579

32691

PRINCETON GRAPHIC SYSTEMS

Model: EO70

CALL 800-800-6227 TO ORDER!

FREE! SIMMS

MEMORY INSTALLATION!

4MB	8MB	16MB	32MB
as low as $39.95	as low as $79.95	as low as $149.95	as low as $279.95

SIMMS as low as $8.75 MB

Purchase a new Mac & memory upgrade together and we'll install your new memory upgrade *at no extra charge!*

TelePort 33.6 Speakerphone Edition

- 33.6 Kbps simultaneous voice/fax/modem
- Built-in speaker and microphone for speakerphone conversations
- Quick access to voice mail, on-screen dialing, speed dial lists and Caller ID

TelePort 33.6 Internet Edition

- Includes Internet access and e-mail software
- Receive fax and voice calls automatically
- Complete address book for phone, fax, e-mail, data, and street addresses

33230 TelePort 33.6 Internet Edition	$169.95
33231 TelePort 33.6 Speakerphone Edition	259.95

ORDER TODAY!

Authorized Catalog Reseller

Full Line of Apple® Systems

800-800-MACs

NEW LOW PRICE! Color QuickCam

Capture still and full motion images, in FULL color at a resolution up to 540x480 pixels!

ONLY! $179.95*

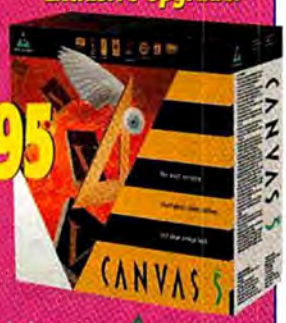
*After $30 mail-in rebate. Offer expires 12/31/96

Connectix

Upgrade Today!

New Release! Exclusive Upgrade!

$99.95



Canvas 5

New features include:

- Unlimited levels of Undo
- Instant 3D extrusion
- More than 30 file import and export filters
- Over 20,000 clip-art images, plus 2,000 fonts!

31383

DENEBA

NEW! DHCP Internet Server

sonic

ONLY! $379

31187

Buy Internet Server for only $379, and get your second Internet Server for just $199*. Runs on any Mac and offers easy setup and maintenance.

*Second Internet Server is available directly from Sonic.

COMMUNICATIONS

28251	BOCA MV34MA Faxmodem 28.8	$169.95
33104	Hayes ACCURA v.34 33.6 Fax	159.95
28309	Megahertz CruiseCard w/XJACK	249.95
32073	Newer LinkCom Faxmodem 33.6	158.95
31755	Pantone ColorWEB	19.95
17968	Pract. Periph. MC288MTII (after $20 rebate)	129.95
18792	Radish Comm InsideLine	99.95
22236	Software Ventures Internet Valet	39.95
30997	Supra Simple Internet 33.6 Faxmodem	159.95
17048	U.S. Robotics Sportster V.34 Fax	179.95
26793	VOCALTEC Internet Phone	44.95
30842	Zoom Faxmodem V34X Plus 28.8/33.6	149.95

MULTIMEDIA/VIDEO

29349	Altec ACS-55 Game Surround Speakers	$179.95
29331	IMS Twin Turbo 128 Bit - 8MB	999
29368	JBL Media Design - 10W Speakers	89.95
25788	Kodak DC40 Digital Science Camera	599
25623	Matrox MGA Millennium 4MB PCI	399
29185	NEC Multisync M700-17"	799
26552	Panasonic KXL-742 4X CD (after $50 rebate)	349
30187	Smart & Friendly CD-R 1002/PRO	699
25228	Sony 17SFII Multiscan	779
21795	Viewsonic 17GA Multimedia Monitor	699

NETWORKING

2775	Asanté 8 Port Hub	$129.95
2583	Asanté FriendlyNet 10T	29.95
24593	Dayna Communicard 10T PC Card	149.95
21362	DaynaPORT Enet LCCommSlot	74.95
23492	Farallon AirDock IR Adapter	69
11499	Farallon EtherWave AAUI Trans	109
1723	Farallon PN303 DIN-8 3 pack	49.95
31170	Mirimar Personal McLan Connect 6.0	179
15490	Sonic 10BaseT Transceiver	33.95
16854	Sonic Micro Print/12	319
14545	Timbuktu Pro for Macintosh	135

STORAGE

27768	Apple External 2GB Drive	$599
19171	Iomega Zip Drive SCSI	149.95*
28233	LaCie 2.1GB Internal Drive	449
30999	MDS 4GB External Drive	999.95
5590	MDS SyQuest 270MB Drive w/cartridge	319.95
32946	Olympus Sys. 230 230MB Optical	359
28222	Optima F8000DAT External 8GB DAT	1199
32700	Pinnacle 4x4 Recordable CD-ROM	1099
28736	Sony 3.5" HD Disks - 50 Pack	15.95**
7070	SyQuest 270MB Cartridge	54.95

*After $50 mfr's mail-in rebate **After $15 rebate

INPUT/OUTPUT

30220	Adesso NU-Form Keyboard	$59.95
21197	Adesso TruForm Keyboard	79.95
22658	Agfa Studio Scan IIsi	749
31213	Agfa Studio Star	869
2373	CoStar LabelWriter XL	149.95
2499	GDT PowerPrint	99.95
31437	HP DeskJet 870 CXi Printer	499
28569	HP LaserJet 5M Printer	1899
25696	Kensington Mouse in a Box	39.95
17589	Kensington Thinking Mouse	69.95
27299	Logitech TrackMan Marble for Mac	89.95
30741	Microtek Internet Edition	579
26232	Microtek ScanMaker E3	329
31301	Mouse Systems MacPoint II	26.95
3005	Mouse Systems A3 Trackball	44.95
26851	Okidata OL1200 PostScript Printer	1449
26399	USTT Infinity 3 Toner Cartridge	119.95
27463	UMAX Vista-S6E	315
24584	Visioneer PaperPort Vx	279.95

INTERNATIONAL CUSTOMERS

Please call 603-446-4444 or fax 603-446-7791. Additional charges & restrictions may apply.

Big Business!

Award-winning software seamlessly integrates four critical business functions: Sales, Marketing, Inventory, and Finance.

23895

$199.95

NEW!

MAXpowr 200MHz PowerPC Upgrade

For Power Mac 7500, 7600, 8500, 9500 and 9515; ideal for speeding CPU intensive tasks such as rendering, Photoshop and more; plug & play installation.

ONLY $999

31789

OUR POLICY • VISA, MASTERCARD, AMERICAN EXPRESS, and DISCOVER cards. No surcharge. • Most products are covered by manufacturer's warranty against defects for at least 30 days from the invoice date. • All returns require prior authorization; please call for an RMA • We are not responsible for typographical errors. • Pricing and promotions are subject to change without notice.

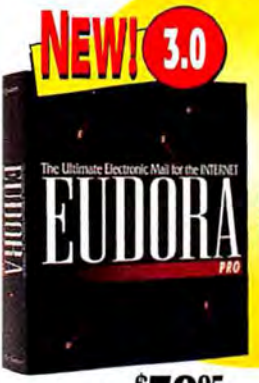
Continental U.S.: Shipping Charges: $5 per order up to 10 pounds. On orders weighing 10 pounds or more, shipping is $1 per pound. Please call for weight/shipping charge information. Items of excessive size and/or weight may require additional days to deliver via a freight carrier. Please check with your sales rep for more details. Barring events beyond our control, all credit card orders phoned in weekdays by 3 a.m. ET will ship Airborne Express for delivery the next business day. Saturday delivery available to many areas upon request at no additional charge. Order all day Saturday thru noon Sunday for Monday delivery. Some areas require an extra day delivery. **APO/FPO, International orders and Hawaii, Alaska, Canada, Puerto Rico & U.S. Virgin Islands:** Shipping may require additional time and charges. All other areas: Call 603-446-4444 or FAX 603-446-7791 M-F 9 a.m.-5:30 p.m. ET.

©1996 PC Connection, Inc., Marlow, NH. MacConnection & the raccoon characters are registered trademarks of PC Connection, Inc. All other trademarks remain the property of their respective companies.

cConnection®

FREE TECH SUPPORT • NEXT DAY DELIVERY • AWESOME SERVICE • CUSTOM SYSTEMS OVERNIGHT!

Eudora Pro 3.0



#1 E-Mail for the Net!

UPGRADE ONLY! $34.95 31172

Exchange stylized letters, electronic news bulletins, software, attachments, and animated cards.

Full Product Version $59.95 30931

1GB JAZ $79.95!*

JAZ includes FREE 1GB cartridge and utilities!

Unlimited personal hard drive that's fast and handles the most demanding applications. Weighs about 2 lbs.

*Price of each 1GB JAZ cartridge with 10-pack purchase 24204

23616 JAZ (external)...$499.95

JAZ Accessories...We've got 'em—Call for details!

iomega

PowerBase 240 NEW!

as low as $1495

LEASE FOR $51/MO.

- 240 MHz PowerPC 603e
- 16MB RAM, 2MB VRAM
- 1.2GB HD, 8X CD-ROM
- 16-bit CD-quality audio

32675

PowerComputing

Monitor Sold Separately

Power Port Juggler

NEW! $119.95 32316

Automatic switch boxes

- Includes five 9-pin connectors
- Works with most Power Macs
- Hook up faxmodems, printers, scanners, MIDI devices, PDAs

FREE! 4.0 Upgrade!

When you buy V. 3.0.5 today!

Adobe Lowest Price! $169.95

Powerful production and photo design software for creating images for print or for the Web.

19249

CONNECT YOUR MAC TO ETHERNET!

NEW! $84.95

32255

DaynaPort E/PCI-M 10T PCI card for the Macintosh

Dayna

SAVE $20!

NOW ONLY $34.95*

29596

Bundle up with Street Atlas USA 3.0 and Phone Search USA 2.0 at a new low value pack price! Access nationwide addresses and over 80 million residential & business phone listings.

*Price after $20 rebate

DELORME

BCS Boston Computer Society names MacConnection "Best All Around Company" 2 years in a row!

Berkeley Mac Users Group awards MacConnection "Best Mac Mail-Order Company!"

BMUG Choice Product

BUSINESS

13510	AEC FastTrack Schedule	$169.95
24056	BestWare M.Y.O.B. w/payroll	134.95
27666	Claris FileMaker Pro 3.0 Upgrade	99.95
31735	DeltaPoint QuickSite	99.95
15070	Jian Bizplan *Builder* 5.0	79.95
16551	Microsoft Office for Mac 4.2 Upgrade	279.95
16552	Microsoft Word 6.0 Upgrade	119.95
8010	Niles EndNote Plus	169.95
14027	Now Up-to-Date/Now Contact V.3.6	69.95

UTILITIES

28320	Aladdin StuffIt Deluxe 4.0	$72.95
20403	C & G Conflict Catcher 3 Version Upgrade	39.95
31151	Connectix RAM Doubler V2	29.95*
12093	Dataviz MacLink+ Translators Pro 8.1	89.95
18815	DataWatch Virex 5.6 Upgrade	24.95
10639	Kent Marsh FolderBolt Pro Upgrade	49.95
33462	Now Utilities 6.5	84.95
16860	Symantec Disk Doubler Pro 1.1 Upgrade	39.95
16323	Symantec Norton Utilities Upgrade	39.95
28859	Symantec Café	94.95
3955	Symantec Suitcase 3.0	69.95

*After $25 Rebate for Previous Owners

GRAPHICS

24561	Adobe After Effects	$649.95
24672	Adobe Illustrator 6	389.95
22197	Adobe PageMaker 6	549.95
25860	Adobe PhotoDeluxe	89.95
19257	Adobe Photoshop 3	559.95
25748	Alien Skin Black Box	89.95
31387	Deneba Canvas 5.0	419.95
1768	Deneba Spelling Coach Pro	49.95
31093	Extensis QX-Tools 2.0	94.95
24535	Fractal Design Painter 4.0	359.95
28802	FutureWave SmartSketch	54.95
24575	LightSource Colortron II	1199
28103	Macromedia Director 5.0 CD	849.95
28079	Macromedia Director Multimedia Studio	969.95
24014	Macromedia FreeHand 5.5	399.95
29023	Macromedia FreeHand Graphics Studio 2	429.95
24509	MetaTools Kai's Power Tools 3.0	129.95
29334	Pantone Survival Kit	129.95
16769	QuarkXPress 3.3.2	649.95
31088	Ray Dream Designer 4.0	99.95
31086	Ray Dream Studio	299.95
7784	Strata StudioPro 1.75 CD	899.95
30268	T/Maker Incredible Image PAK 65000	59.95

EDUTAINMENT

32125	Broderbund MYST w/In The First Degree	$44.95
29359	Delorme Street Atlas USA 3.0	19.95*
32880	Muppet Treasure Island w/stuffed Kermit	44.95
27787	PTS Official Guide to Netscape Navigator	29.95

*After $20 Rebate

Huge 2.1GB!

Enhance the speed and efficiency of your Mac with this LaCie external hard drive! Includes FREE Storage Utilities, a $99 Value!

NEW LOW PRICE! $499

FREE!

28410

CALL TODAY FREE CATALOG

800-986-2313

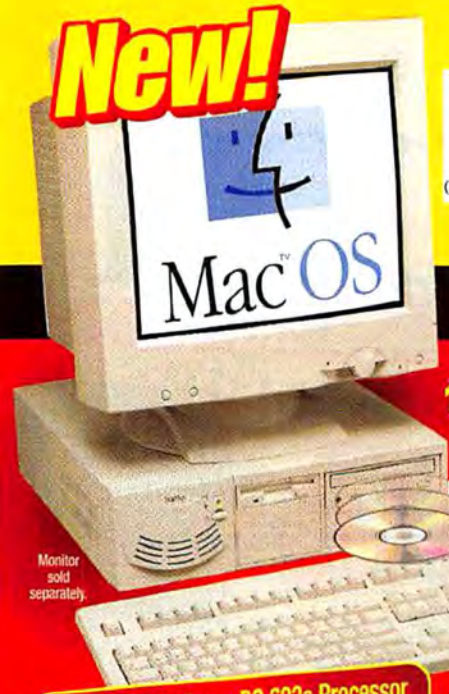
OR FAX YOUR ORDER
603-446-7791
1296MU

CIRCLE 147 ON READER SERVICE CARD

New! MacWAREHOUSE

Authorized Catalog Reseller

We carry over 6,000 products for your Mac! Plus



100% MAC-OS COMPATIBLE SUPER SYSTEMS!

MOTOROLA

- Up to 200MHz PowerPC 603e Processor
- Up to 32MB RAM, expandable to 160MB!
- State-of-the-art 8X CD-ROM Drive!
- Includes 28.8 Modem!

AS LOW AS $1599!

StarMax 3000/160
160MHz, 16MB RAM, 1.2GB hard drive, 8X CD-ROM
Ask for Item # CPU 0447 ..... $1599

StarMax 3000/160 Mini-tower
160MHz, 32MB RAM, 2.5GB hard drive, 8X CD-ROM
Ask for Item # CPU 0448 ..... $1899

StarMax 3000/200
200MHz, 16MB RAM, 1.2GB hard drive, 8X CD-ROM
Ask for Item # CPU 0449 ..... $1999

StarMax 3000/200 Mini-tower
200MHz, 32MB RAM, 2.5GB hard drive, 8X CD-ROM
Ask for Item # CPU 0450 ..... $2399

APPLE HARD DRIVES

2GB AS LOW AS $499

Interchangeable foot pads make it easy to use vertically or horizontally!

2.0GB drive: DRI 1336 $499
3.0GB drive: DRI 1658 $799
4.0GB drive: DRI 1589 $1049

IOMEGA ZIP DRIVE

$199.95 price before rebate
-$50 mail-in rebate
$149.95* Final price after rebate! Offer exp. 1/31/97

LOWEST PRICE EVER! AFTER REBATE

Includes your first disk FREE!†

Ask for item # BND 1429

* After mfr's $50 mail-in rebate. In lieu of rebate you can choose Iomega's "Game Pack-to-Go" Bundle. Options specified on rebate coupon included with product box.
† Zip Tools utility software included on first disk.

3 Ways to Order:

1. Call: 1-800-255-6227
2. FAX: 1-908-905-9279
3. MacWAREHOUSE is now on the Internet

http://www.warehouse.com

✓Hundreds of shareware and demo titles for you to download!
✓Latest information on the newest products!

1. Our customer service staff is ready to take your order 24 hours a day, 7 days a week.
2. We accept the following major credit cards: Visa, MasterCard, Discover, AmEx. Your credit card will not be charged until each item is shipped (no surcharge).
3. CT, NJ, and OH residents add applicable sales tax.
4. Shipping charge for orders under 10 lbs. is $3.00. Orders over 10 lbs. are $1.00 per pound or fraction thereof.
5. Place your order for "in-stock" items up to 12:00 mid night(E) (weekdays), and we will ship same day for overnight delivery (barring system failure, etc.).
6. Many of our products come with a 30-Day Money Back Guarantee. All items we sell come with the MacWAREHOUSE 30-Day Guarantee Against Defects.

30 DAY Money Back GUARANTEE
30-DAY Guarantee Against Defects

© Copyright 1996 Micro Warehouse, Inc. MacWAREHOUSE® is a division of Micro Warehouse, Inc. MacWAREHOUSE® and MicroWAREHOUSE® are registered trademarks and Data Comm WAREHOUSE and MacSystems WAREHOUSE are trademarks of Micro Warehouse, Inc. Apple, the Apple logo, Mac and Macintosh are registered trademarks of Apple Computer, 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.

FREE!

Star Wars REBEL ASSAULT II when you purchase any MEMORY UPGRADE*
Ask for item # AAA 0433
*You pay $2.95 shipping and handling only. While supplies last. Shipped in promotional packaging on CD-ROM.

1MB 30-pin 80ns SIMMs only $19.95
Ask for item # CHP 0022

The SUPERFAST 33.6 Internet Access Kit

Fastest Modem Ever! ONLY $99.95*

Ask for item # BND 1447

*Price reflects $30 mfr's mail-in rebate. Price before rebate is $129.95. Offer good while supplies last.

12X CD-ROM DRIVE

Only $199.95!

Ask for item # BND 1606

*Get MYST and Nova ART EXPLOSION together for only $29.95 with the purchase of a CD-ROM drive at the same time. Ask for item # AAP 0362. Software shipped in promotional packaging.

MYST & Nova ART EXPLOSION Only $29.95*

NEW! Upgrade to FreeHand 7 for only $149.95

Ask for item # UPG 0531 (CD-ROM only)

BONUS! 500 fonts, 500 templates & 10,000 clip art images on CD-ROM!

Upgrade to FreeHand Graphics Studio 7 for only $198.95!
Ask for item # UPG 0532 (CD-ROM only)

NEW VERSION!

Attention SAM & Norton Utilities Owners!

SAM 4.5

Upgrade for only $29.95* After $40 upgrade rebate.

SAM owners ask for item # UTI 1009
Norton Utilities owners ask for item # UTI 1008

*Price reflects mfr.'s $40 mail-in upgrade rebate. Price before rebate is $69.95. See coupon inside SAM box for details.

Visioneer PaperPort Vx™

While supplies last!

$199.95* *Factory reconditioned

Ask for item # RINP 0560 PaperPort Vx (new): INP 0560...$299

CONNECTIX QUICKCAM

GRAY-SCALE ONLY $79.95* after $20 mfr.'s mail-in rebate.

Ask for item # INP 0397

*Price on GrayScale QuickCam reflects a mfr.'s $20 mail-in rebate. Price before rebate is $99.95. Expires 12/31/96.

REHOUSE®

a full line of Macintosh™ and Mac OS computers!

FREE! WITH ANY PURCHASE
F/A-18 Hornet Classic!
WHILE SUPPLIES LAST!
Ask for item# AAA 0429. You pay $2.95 shipping and handling only. While supplies last. Shipped in promotional packaging on CD-ROM.

JAZ DRIVE
Store up to 1GB on one 3.5" cartridge!
$499.95 Includes your first 1.0GB cartridge*
Ask for item # DRI 1119
*Jaz Tools Utility Software included on first cartridge.

17" COLOR DISPLAY
ONLY $499!
15.8" viewable display area, resolutions up to 1024 x 768
Ask for item # MON 0378
PowerUser

NEW! 180MHz PowerPC
100%-compatible Mac OS Computers
- 180MHz PowerPC 603e Processor!
- 16MB RAM (expandable to 160MB)!
- 8X CD-ROM Drive!
- 1.2GB Internal Hard Drive!
- 3 PCI Expansion Slots!

As low as $1499
PowerComputing
Monitor sold separately.
PowerBase is available as a low profile desktop OR Mini-tower case!
MacWAREHOUSE carries a complete line of Power Computing computers!

POWERBASE SERIES
Low Profile 180MHz
Item # CPU 0412....$1499
Low Profile 200MHz
Item # CPU 0409....$1799
Low Profile 240MHz
Item # CPU 0408....$2199
Mini-Tower 180MHz
Item # CPU0411 $1599
Mini-Tower 200MHz
Item # CPU 0410....$1899
Mini-Tower 240MHz
Item # CPU 0407....$2299
Monitor sold separately.

FREE! FM Tuner!
with your purchase of any PowerComputing System.
FM Tuner connects to your ADB port so you can play your favorite FM radio stations on your Mac!
Ask for item # AAA 0440

After Dark 4.0
NEW VERSION!
*Price reflects $10 mfr.'s mail-in upgrade rebate for owners of previous versions.
Price before rebate is $29.95.
ONLY $19.95* After $10 upgrade rebate.
Ask for item # UTI 1004

RAM Doubler 2
NEW VERSION!
Upgrade For Only $29.95
Ask for item # UTI 0986
*Price reflects $25 mfr's mail-in upgrade rebate. Price before rebate is $54.95.
After $25 mail-in upgrade rebate.

HP DeskJet 870Cse
Built-in COLOR!
ONLY $499.95
- Super-sharp 600 x 600 dpi black printing.
- Prints up to 8 ppm in black.

Ask for item # PR 11792

Upgrade WAREHOUSE!
Adobe Photoshop 3.0.5 Upgrade w/ Free Gallery Effects
Ask for item # UPG 0263 (CD ROM/disks) $179
Adobe PageMaker 6.0.1 Upgrade
Ask for item # UPG 0179 (CD-ROM/disks) $149
Adobe Illustrator 6.0 Upgrade from 5.0
Ask for item # UPG 0222 (CD-ROM) $99.95
Claris FileMaker Pro 3.0 Upgrade
Ask for item # UPG 0231 ..... $99.95
Macromedia Director 5 Upgrade
Ask for item # UPG 0248 (Mac CD-ROM)
Ask for item # UP 3348 (Win. CD-ROM) $399.95
Macromedia Director Multimedia Studio 2 Upgrade
Ask for item # UPG 0249 (Mac CD-ROM)
Ask for item # UP 3346 (Win CD-ROM) $498.95
Microsoft Office 4.2.1 Upgrade
Ask for item # UPG 0237 ..... $289
Symantec Norton Utilities 3.2 Upgrade
Ask for item # UPG 0210 ..... $39.95

Adobe PageMill 2.0
NEW VERSION!
Upgrade for as low as $49.95
Ask for item # BND 1554
Upgrade from ANY Adobe product for only $69.95! Item # BND 1595
Adobe PageMill 2.0: BND 1552.....$99.95
Adobe

$20 REBATE when you buy 10 Zip Disks!
Ask for item # MED 0165
Rebate coupon: AAQ 574

1-9 disks	10-19 disks	20+ disks
$19.95 ea.	$16.95 ea.	$14.95 ea.

1GB Jaz Cartridges
Ask for item # MED 0177

1-2 carts.	3-4 carts.	5+carts.
$124.95 ea.	$99.95 ea.	$89.95 ea.

Get a Power User's Tool Kit® FREE! with every order!
Demo loads of powerful programs for FREE—some authors ask that you pay a small fee ($8-$25). The Power User's Tool Kit is FREE when you order from MacWAREHOUSE. You pay only $2.00 shipping and handling. If you would like the disk, please ask for Item # AAA 0201. All programs work with System 7.

To order, call toll-free 24 hours a day, 7 days a week
1-800-344-9320

FREE CATALOG SUBSCRIPTION! Check the appropriate box(es) to receive your FREE 1-year catalog subscription(s) and mail this coupon to: 1720 Oak Street, P.O. Box 3013, Lakewood, NJ 08701

Name
Address Apt.
City State Zip
(Expect to receive your first issue(s) within 4-6 weeks.)

❑ Yes, send me my FREE Power User's Tool Kit. Enclosed is my check for $2.00 to cover shipping & handling. MU1296

❑ MacWAREHOUSE ❑ MicroWAREHOUSE ❑ Data Comm WAREHOUSE ❑ MacSystems WAREHOUSE ❑ MicroSystems WAREHOUSE

For your FREE Canadian Catalog, call toll-free 1-800-603-5139!

CIRCLE 156 ON READER SERVICE CARD

ProDirect

Service•Performance•Price... ALWAYS

800-524-9952

Fax 24 hours a day 612-941-1109
International orders call 612-884-0012

MW EDITORS' CHOICE

90 DAY PERFORMANCE GUARANTEE ON ALL PRODIRECT DRIVES!

SPECTACULAR PRICE!

ULTRAXP FAST & WIDE 2.2GB ONLY $475

• 8MS SEEK • 7200 RPM • 512K CACHE BUFFER • 5 YEAR WARRANTY

IBM PATENTED MR HEAD TECHNOLOGY FOR INCREASED TRANSFER RATE

- AV CONFIGURED FOR MAXIMUM PERFORMANCE
- BEST F&W COST PER MEGABYTE AVAILABLE TODAY
- ADVANCED PRML, MR HEAD TECHNOLOGY

FREE! SHIPPING ON ALL DOMESTIC ORDERS

Internal Configuration

INCREDIBLE AV VALUE!

ULTRA 4GB ONLY $799

Internal Configuration

•7.5MS SEEK •7200 RPM •512K CACHE BUFFER • 5 YEAR WARRANTY

IBM PATENTED MR HEAD TECHNOLOGY

- ADVANCED READ AHEAD CACHE BUFFER CONTROL
- OUR LOWEST PRICE 4 GB EVER (SPECIAL LIMITED TIME OFFER)

AWESOME PERFORMANCE

Quantum ATLAS 1080 ONLY $289

• 8MS SEEK • 7200 RPM • 1024K CACHE BUFFER • 5 YEAR WARRANTY

- GREAT FOR YOUR DATA INTENSIVE APPLICATIONS
- AV TUNED WITH EMBEDDED SERVO TECHNOLOGY
- 1024 BUFFER PROVIDES FASTER TRANSFER RATES

EXTERNALS INCLUDE
- HIGH PERFORMANCE DOUBLE SHIELDED CABLES.
- FREE FWB TOOLKIT
- ACTIVE TERMINATOR OF DAISY CHAIN CABLE
- ALL PDI DRIVES COME PREFORMATTED and tested for TRUE Plug and Play.
- Unlimited Toll Free Technical Support

IBM

9 GB *Ultrastar XP 3.5"*
•8ms Seek •512K Buffer
•7200 RPM •5 Year Warranty
$2375 Internal $2435 External

4.3 GB *Ultrastar XP Wide* $1025 1125Ext
8.5ms Seek 7200 RPM 512K Buffer 5 Year Warranty

2.2 GB *Ultrastar ES* $389 Int 459Ext
8.5ms Seek 5400 RPM 1024K Buffer 5 Year Warranty

LEGENDARY AV PERFORMANCE!

- *INDUSTRY LEADING IBM PATENTED MR HEADS*
- *IDEAL FOR YOUR MOST INTENSE AV OR DTP*
- *1,000,000 MTBF (Mean Time Between Failure)*
- *5 YEAR WARRANTY, 24 HOUR REPLACEMENT*

AWESOME VALUE!

2.2 GB ULTRA XP
• 8 ms Seek • 7200 RPM
•512KBuffer •5Yr.War.
•MR Head Technology
$425 $495 Ext
Fast & Wide
$475 Int $585 Ext

4.3 GB ULTRA XP
• 8 ms Seek • 7200 RPM
•512KBuffer •5Yr.War.
•MR Head Technology
$789 Int $859 Ext
Fast & Wide
$889 Int $989 Ext

MICROPOLIS AV

IT'S HERE & IT'S FAST

9 GIG's Model PDM3291 **3.5"!**
8ms Seek •7200 RPM •512K Cache Buffer • 5 Year Warranty
$1875 Internal $1945 External

AV Tuned Drives Best for Direct to Disk Recording Performance

2.1 GB 8.5 ms Seek	M4221AV 7200 RPM 512K Buffer	$595	$655 5 Year Warranty
4.3 GB 8.5 ms Seek	M3243AV 7200 RPM 512K Buffer	935	995 5 Year Warranty
9.0 GB 11 ms Seek	M1991AV 7200 RPM 512K Buffer	1795	1895 5 Year Warranty

Wide AV Drives

2.1 GB 8.5 ms Seek	M4221WAV 7200 RPM 512K Buffer	$675	$775 5 Year Warranty
4.3 GB 8.5 ms Seek	M3243WAV 7200 RPM 512K Buffer	1020	1080 5 Year Warranty
9.0 GB 11ms Seek	M1991WAV 7200 RPM 512K Buffer	1795	1895 5 Year Warranty

AV SPECIAL!
9 GB M1991AV $1725

Seagate

1080 GB Hawk 2 XL *Ultra SCSI* 11 ms Seek	5400 RPM 512KBuffer	$389	$330 5 Year Warranty
1080 GB ST51080N 11 ms Seek	5400 RPM 512 KBuffer	245	305 5 Year Warranty
2.4 GB ST32155 *Ultra SCSI* 9 ms Seek	5400 RPM 512K Buffer	535	595 5 Year Warranty
2.5 GB *BARRACUDA 2* 8 ms Seek	7200 RPM 512K Buffer	695	755 5Year Warranty
4.3 GB *BARRACUDA 4* 8 ms Seek	7200 RPM 1024K Buffer	995	1055 5 Year Warranty
2.5 GB *F & W BARRACUDA 2* 8 ms Seek	7200 RPM 512 KBuffer	735	835 5 Year Warranty
4.3 GB *F & W BARRACUDA 4* 8 ms Seek	7200 RPM 1024K Buffer	1095	1195 5 Year Warranty
9.0 GB *ELITE* 11 ms Seek	5400 RPM 1024 Buffer	1845	1945 5 Year Warranty
9.0 GB *F & W ELITE* 11 ms Seek	5400 RPM 1024 Buffer	1975	2075 5 Year Warranty

CONNER

2.1 GB 8 ms Seek	C2107S 7200 RPM 512K Buffer	645	705 5Year Warranty
4.3 GB 8 ms Seek	C4207 7200 RPM 512K Buffer	855	915 5Year Warranty

Quantum

420MB *TRAILBLAZER* 14 ms Seek	4500 RPM 128K Buffer 2 Year Warranty	$120 Int	$170 Ext
540 MB *FIREBALL* 8 ms Seek	5400 RPM 512K Buffer 5 Year Warranty	155	215
850 MB *TRAILBLAZER* 14 ms Seek	4500 RPM 128K Buffer 3 Year Warranty	185	245
1080 MB *ATLAS* Best Seek	7200RPM 1024K Buffer 5 Year Warranty	269	329
1280 MB *TEMPEST* 10.5 ms Seek	4500 RPM 128K Buffer 5 Year Warranty	245	315
2.1 GB *TEMPEST* 10.5 ms Seek	4500 RPM 128K Buffer 5 Year Warranty	375	505
3.2 GB *TEMPEST* 10.5 ms Seek	4500 RPM 128K Buffer 5 Year Warranty	445	505
2.0 GB *ATLAS* Best Seek	7200 RPM 1024K Buffer 5 Year Warranty	595	655
4.3 GB *ATLAS* 7.9ms Seek	7200 RPM 2048K Buffer	855	935 5 Year Warranty

Fast & Wide SCSI AV Drives

2.0 GB *ATLAS* Best Seek	7200 RPM 1024K Buffer	655	755 5 Year Warranty
4.3 GB *ATLAS* 7.9ms Seek	7200 RPM 2048K Buffer	935	1035 5 Year Warranty

MAXIMIZE YOUR TRANSFER RATE

PDI POWERRAIDS™

BLINDING SPEED

Our Exclusive 90 Day Performance guarantee.

5 YEAR WARRANTY
48 HOUR REPLACEMENT

UltraStar16GB Wide RAID
- 39.5 MB/SECOND SUSTAINED READ
- 30 MB/SECOND SUSTAINED WRITE
- PRODIRECT CONFIGURED IBM WIDE MECHANISMS WITH 1,000,000 MTBF RELIABILITY
- ATTO ACCELERATORS • REMUS RAID SOFTWARE

ONLY $5895 Model PDUltra16RDS

TEST RESULTS WERE ACHEIVED ON A UMAX S900 604/150MHZ USING PRODIRECT CONFIGURED IBM ULTRASTAR MECHANISMS UTILIZING MULTIPLE ATTO ACCELERATORS and REMUS RAID SOFTWARE. TEST RESULTS WILL VARY DEPENDING ON SYSTEM. PRICE IS EXTERNAL IN A DESKTOP OR

•4GB $2596 $1995 •8GB

ATTO SCSI Accelerators

Express PCI *Ultra SCSI* $345
Single channel RISC based PCI to Fast/Wide SCSI 3 accelerator card for Apple's PCI based computers.

Dual Channel Express PCI *Ultra SCSI* $595
Dual channel RISC based PCI to Fast/Wide SCSI 3 accelerator card for Apple's PCI based computers. Transfer up to 40 MB/Sec.

Silicon Express 2 $425
SCSI 1 & 2 support, transfer rates up to 10.0 MB/sec.,supports multiple block sizes,takes advantage of parallel processing capability.Ideal for graphic design, multimedia applications and More!

Silicon Express 4 $795
Fast/Wide 16 BIT SCSI 2 accelerator card for Apple's Nubus based computers.

FWB SCSI Accelerators

FWB JackHammer $445
Fast/Wide 16BIT SCSI 2 accelerator card for Apple's Nubus based computers. Supports fast/wide SCSI 2 (16 Bit) transfer rates up to 20MB/sec. and fast SCSI 2 (8 Bit) transfer rates up to 10 MB/sec. Full 16 Bit wide support for the latest drives and disk arrays.

FWB PCI JackHammer $385
Single channel RISC based PCI to Fast/Wide SCSI 3 accelerator card for Apple's PCI based computers. Ideal solution for your audio, video, prepress, and real time applications. Transfer rates up to 20MB/sec.Formatting software included.5 year warranty. Call for Disk

CDROM & WRITER

Toshiba 6x CD ROM $289
102 MS, with256 K Cache
Toshiba 4x CD ROM $189
140 MS Seek
Pioneer 4x 6 Disk Changer $375
140 MS Seek
Ultra 8x 4x CD ROM $295
110 MS Seek

Panasonic PD 4 x/650MB $489
4 x CD ROM & 650MB Optical Drive in one!
Yamaha 4x CD Writer/ROM CDE100 1024KBuffer-Multisession $1205
Pioneer 4x CD Writer/ROM DWS114X •1024KBuffer-Multisession $1225
Pinnacle RCD-5040 2 x CD Writer 2x Writer 4x CD ROM 1MB Cache $ 839
Pinnacle Vertex 2.6GB Optical 17 MS Seek, 1024K Cache, SCSI ANSI Standard $1399

All CD Writers come complete with 1 piece of media and Toast Pro software.

•NEVER A SURCHARGE!•
*NO SALES TAX!
• SAME DAY SHIPPING !
• TOLL FREE TECHNICAL SUPPORT!

ProDirect, Inc. 10830 Nesbitt Ave South, Bloomington, MN 55437

DIGITAL TAPE BACKUP

Quantum DIGITAL LINEAR TAPE

SPEED & VALUE
DLT2000XT 30GB
Transfers 150MB Per Minute
Only $2575

MASSIVE STORAGE
DLT4000 40GB
Transfers 180MB/Minute
Only $4495

4GB Conner TRAVANQIC™ Only $485 Ext.
8GB Conner DAT DDS-2,SCSI2 , 60MB/min. $875
8GB DAT Hewlett Packard DDS-2 C1533 SCSI2 , 60MB/min. $1065
8 GB DATSony 7000 SCSI2 , 90 mb Per Minute $1295
24-48GB Hewlett Packard Auto Tape Loader HP1553, 60MB/min., 4mm media $2995

Exabyte

Capacity	Model	MediaInt.	Ext.
2-5GB	8205XL 8mm	$1395	$1485
7-14GB	8505XL 8mm	$2065	$2165

MEMORY

LIFE TIME WARRANTY

STANDARD 30 PIN

4 MB 70/NS	$47
8 MB 70/NS	$265

72 PIN MEMORY

4 MB 70/60 NS	$29/42
8 MB 70/60 NS	$64/69
16 MB 70/60 NS	$124/129
32 MB 70/60NS	$225/229

168 PIN DIMMS

8 MB	60/NS	$79
16 MB	60/NS	$139
32 MB	60/NS	$279
64 MB	60/NS	$579

POWERBOOK MEMORY

Capacity	PB500	DuoDock	PB5300
4MB	$95	$155	
8MB	$165	$255	$143
16MB	$328		$285
24MB	$522		$522
32MB	$599		$599
40MB			$CALL

REMOVABLES

SyQuest

Capacity	
44 MB	$38
88 MB	42
135 MB	19
200 MB	66
270 MB	54
135 MB	17
230 MB	28

CapacityModel	External
88 MB SQ5110C	$295
135MB SQ2135	195
200 MB SQ5200	325
270 MB SQ3270	295

1.0GB Iomega Jaz Drive $395 Includes 1 Free Cartridge
100 MB Iomega Zip Drives 195 Includes 1 Free Cartridge
Jaz Cartridges $97
Zip Cartridges $16

M-F 8 a.m. - 7 p.m. 10:00 am- 3:00 pm Saturday

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.

CIRCLE **75** ON READER SERVICE CARD

CALL MACXTRA NOW!

1-800-553-4230

MAC Xtra DISCOUNTS

FAX your order: 206-746-5324

International calls: 206-746-3803

MAC Xtra DISCOUNTS

PUZZLED BY HOW TO ENERGIZE YOUR MAC?

MEMORY!

LIFETIME WARRANTY

STANDARD 30-PIN SIMMS

4MB 80NS $36!

FOR PLUS, SE, SE 30, CLASSIC/II/COLOR, LC/LCII, PERF. 200/400-430/600, Q 900/950, MAC II, IIX, IICX, IISI, IICI, IIFX, IIVX, IIVI.

1MB 80NS $12
1MB 80NS 13
2MB 80/70NS 25/31
4MB 80NS/70NS ..... 30/35 ✓
8MB 70NS 89
16MB 70NS 179

4mb PAL SIMMs for II/IIx
4MB 80NS $128

64-pin SIMMs for IIfx
1MB 80NS $26
4MB 70NS 65
8MB 70NS ..... 110 ✓
16MB 70NS 420

PC SIMMS
1MB 70NS $29
4MB 70NS 63

72-PIN SIMMS

FOR Q 605/630, 610, 650, 700, 800/840AV, LCIII/475/630, PERF. 450-560/575 & 6115CD, PMAC 61/71/8100, WS 80/60/95/6150/81/ 9150.

4MB 70NS/60NS $21/27
8MB 70NS/60NS ..48/50 ✓
16MB 70NS/60NS ..95/100
32MB 60NS 195

8MB 72-pin 70NS $48!

PC SIMMS (72-PIN)
4MB 70NS $49
8MB 70NS 89
16MB 70NS 126
32MB 70NS 310

168-PIN DIMMS

16MB 60NS DIMM $160!

FOR PM 9500, 8500, 7500, 7200

4MB $48
8MB 58
16MB ..... 100 ✓
32MB 199
64MB 395
ALL 60NS!

POWERBOOK SERIES

PB5300
8MB .... $44 12MB ... 160
16MB .. 184 ✓ 32MB ... 330

PB2300
4MB ... $85 8MB 115
16MB .. 185 20MB ... 255
32MB . 360 36MB ... 390

PB190 SERIES
4MB .... $75 8MB ... 120
12MB .... 160 16MB .. 230
32MB ... 395 **ALL 70NS!**

PB500 SERIES
4MB .... $73 **8MB ... 84** ✓
16MB .... 160 32MB ... 355

PB DUO 210/230
8MB 140
12MB 152
20MB .... 27036MB. . 380

FPU'S/MATH COPROCESSOR/ VRAM/CACHE

CENTRIS FPU 25MHZ ... $186
FPU 33MHZ DUO/P600 51
FPU COL. CLASSIC 16MHZ .. 49
LC575 33MHZ FPU 238
LCIII FPU 25 MHZ 238

POWERMAC 6100, 7100, 8100 VRAM/CACHE

256K 80NS VRAM $13
512K VRAM 20
256K CACHE 70
512K CACHE 220
1MB CACHE 329

POWERMAC 72/75/85/9500 VRAM/CACHE

1MB VRAM 72/75/8500 ... $49
2MB VRAM 9500 189
256K CACHE DIMM 69
512K CACHE DIMM ... 139

POWERBOOK ACCESSORIES

BATTERIES

VST PB5300 BATTERY, CHARGER, AC ADAPTER ... $319
VST PB2300 INT. TYPE III 97
VST PB500 INT. BATTERY .. 125

HARD DRIVES

VST EXP. BAY HARD DRIVE 540/810MB/1.2GB ... $482/615/769

MODEMS

GLOBAL VILLAGE POWER PORT PLATINUM 28.8 V.34 ..... $337
SUPRA 14.4/28.8 PB 163/187
MEGAHERTZ CRUISE CD 14.4 ... 135

SCANNERS & PRINTERS

Visioneer
PAPERPORT VX .. $295

Umax
PowerLook 2000 $4154
POWERLOOK 2000 . $4154
POWERLOOK II ... 1744
VISTA S-12
FULL PHOTOSHOP . 898
VISTA S-6 PS-LE 534

Nikon
COOLSCAN II EXTERNAL $1379
SUPER COOLSCAN 2045

Agfa
STUDIOSCAN IISI $795
ARCUS II 1941

Polaroid SPRINTSCAN .. $1555

Apple
COLOR STYLEWRITER 2500 .. $375
LW 4/600 . 895 LW 16/600 .. 2249

Hewlett Packard
LASERJET 4MV $2840
DESKWRITER 680C 319

Epson
STYLUS COLOR PRO XL PRINTER .. $1795
PRO XL BLACK/COLOR CART. ... 19/35

Printer Supplies
HP DESKJET/WRITER COLOR CART. .. $29
HP DESKJET/WRITER BLACK CART . 26.50
HP LASERWRITER 4V/4MV TONER .. 152
HP LASWERWRITER 4/4M TONER .. 116
APPLE LW 12/600 BLACK TONER 95
APPLE LW 12/600 COLOR TONER *(CYAN, MAGENTA OR YELLOW)* .. 110 *(EACH)*
APPLE COLOR STYLEWRITER HIGH PERFORMANCE BLACK CART. 29
APPLE COLOR STYLEWRITER 2400 BLACK & COLOR CART. 44

MODEMS

Global Village
TELEPORT PLAT. 28.8 V.34 ..... $203
POWERPORT1XX PLAT.28.8 V.34 337
POWERPORT PLAT. PC CARD 28.8 .. 349
POWERPORT PLAT. PC CARD PRO .. 519

Supra
SIMPLE INTERNET 28.8 EXT . $159
SUPRASONIC 33.6 V.34 w/voice . 275
33.6 PB FAX/MODEM . 149
EXPRESS 28.8 EXT V.34 .. 149

Motorola
ISDN BITSURFER PRO $369

US Robotics
28.8 V.34 INTERNET BNDL .. $175
28.8 SPORTSTER EXT VOICE .. 205

Zoom
2400 BPS .. $65 V.FAST 28.8 .. $189
VFX 14.4 V.32BIS S/R FAX 169
VFXV 14.4 V.32BIS W/VOICE ... 148
14.4 EXTERNAL S/R V.42 79

DRIVES

Rumi Syquest 270MB $99!

Apple Ext. Drives
1.2GB $435
2.0GB 765
4.0GB 1089

Quantum
INT. AND EXT. DRIVES
1.2GBEXT. FIREBALL . $359
2.1GB EXT. ULTRASTAR .. 599
ATLAS 4.3GB EXT. .. 1039

Rumi Syquest
200MB SYQUEST W/CART . $99

Iomega
ZIP DRIVE. $199
ZIP CART. 19.50
JAZ 1.0GB DRIVE 499
JAZ 1.0GB CART. .. 123

NEC
6XE MULTI-SPIN CD-ROM DRIVE $369
4XC 7-CHR CD-ROM DRIVE ... 359
4X 4V INT. CD-ROM DRIVE 176

FWB
CD RECORDER/WRITER
2X $1375
4X 1999

MEDIA

Sony
CDR 650 MB 74 MIN $8
CDR 650MB 74 MIN 10-PAK 73
DDS 4MM 1.3GB DATA CTG 7
DDS 4MM 2GB DATA CTG 8
DDS 4GB DATA CTG 23
128MB 3.5 3-PK OP/MAC 50
230MB 3.5 3-PK OP/MAC 55/60
230MB REWRTBL MO 20
850MB/1024 OPT.CTG 52
1.3GB/1024 OPT.CTG 4
2.6GB OPT.CTG.R 10 86
2.3GB OPT.CTG.51 88

Verbatim
128MB 3.5" MAC FORM $18
230MB/512 B/S 3.5" MAC 20
650MB 512B/S OPT.5.25 51
600MB/51/4/512K PREFORM .. 58
1.2GB 512B/S OPT.CTG 60
1.3GB 1024B/S MO CTG 60
DATA 8MM DC 367 ..... 6.50
DATA 4MM DC 197 ..... 6.50
RECRDBL CDROM 74MIN/640MB .. 83

Iomega
ZIP 100MB CARTRIDGE SINGLE .. $19
ZIP 100MB CARTRIDGE 3-PK 45
ZIP 100MB CARTRIDGE 10-PK ... 139
JAZ 540MB 3.5 CTG 5-PK 69/294
JAZ 1GB MAC 3.5 SINGLE CTG.... 123
JAZ 540MB MAC 3.5 SINGLE CTG .. 69
JAZ 1GB MAC 3.5 5-PK CTG 479

MONITORS & VIDEO

Monitors
APPLEVISION 1710AV $1069
NEC MULTISYNC XV15+/17+ .. 523/889
NEC MULTISYNC XE15 620
NEC MULTISYNC XE17 1099
NEC MULTISYNC XE21 1845
NEC MULTISYNC XP17/XP21 ... 1135/2140
WE ALSO CARRY SONY, NSA HITACHI, RADIUS MONITORS

Video
PREC. COL. PRO 24X/XK NUBUS .. $1159/825
RADIUS THUNDER IV GX-1152/1360/1600 ..... 1635/1875/2040
RADIUS THUNDER 24 GT 490
ATI XCLAIM 4MB/2MB CARD 349/249
NUMBER NINE IMAGINE 128 PCI 4MB/8MB CARD 659/900
IMSI TWIN TURBO 128 4MB/2MB CD .. 555/362

ACCELERATORS

66mhz PowerCard 601 $659!

Daystar
POWERPRO 601 80MHZ W/RAM CACHE .. $1441
POWERPRO 601 100MHZ W/CACHE 1231
TURBO 040 40MHZ W/CACHE ... 679
TURBO 040I 33MHZ W/CACHE NO FPU ... 605
TURBO 601 66MHZ FOR IICI, IISI W/ADAPTER .. 851
TURBO 601 66MHZ FOR IIVX, IIVI, P600 851
TURBO 601 100MHZ FOR IICI, IISI W/ADPTR .. 1165
TURBO 601 100MHZ FOR IIVX, IIVI, P600 1165
POWERCARD 601 100MHZ .. 946

POLICIES

PRICES SUBJECT TO CHANGE WITHOUT NOTICE
WE ACCEPT P.O.'S FROM FORTUNE 500 AND EDUCATIONAL INSTITUTIONS

OVERNIGHT DEL. $7.50 AND UP, UPS GROUND $6 AND UP
RETURNS SUBJECT TO APPROVAL & RESTOCKING FEE

CIRCLE **146** ON READER SERVICE CARD

MAC XTRA · 1075 BELLEVUE WAY NE, STE. 114 BELLEVUE WA 98004
PHONE (206) 746-3803 FAX (206) 746-5324
OFFICE HOURS: M-F, 7AM TO 6PM; SAT., 9AM TO 4PM, PST

UR 1196

Product Index

ADVERTISER ..... PAGE

Database Management

NYTEK LLC 800-484-5343 code 3211 151

Display Systems & Video

Corel Corporation 613-728-0826 ext. 3080 125
Epson America 800-GO-EPSON 148
Panasonic www.panasonic.com/alive 103
Portrait Display Labs 800-858-7744 45

Entertainment

Apple Software, Claris 800-950-5382 ext. 784 159
Connectix 800-950-5880 ext. 101 55
Wizardworks 800-229-2714 156

Financial Management

Investment Intelligence Systems Corp. 800-494-WINGZ 35

General Hardware & Accessories

American Power Conversion 888-BUY-APCC ext. 8007 48
Apple Computer, Inc. 800-950-5382 ext. 784 ..... 46-47, 49
Apple Computer, Inc. 800-950-5382 ext. 784 106-107
ATI Technologies 905-882-2600 ..... 37, 39
Kingston Technology 800-588-5427 10-11
Matrox Graphics Systems 800-660-1873 20
Orange Micro 714-779-2772 ..... 144, 155
Power Computing 800-405-7693 ..... Cover 2-8, 1

Graphics & Design

Binuscan 800-881-2352 9
Casady-Greene Inc. 800-359-4920 113
Deneba Software Inc. 800-7-DENEBA 15
Engineered Software 910-299-4843 6
Epson America 800-GO-EPSON 32
Graphsoft 410-290-5114 141
Integrated Micro Solutions 888-IMS-8282 7
Linotype-Hell 800-842-9721 122
Quark, Inc. 800-788-7835 ext. 3007 94-95

Input Devices

Connectix 800-950-5880 ext. 101 55

Internet/Online Products

AT&T WorldNet Service 1-800-WORLDNET ext. 115 99-101
Bare Bones Software 617-676-0650 111
EarthLink Network 800-395-8425 59
Now Software 800-544-2599 31
Specular International 888-334-7386 146
VocalTec Inc. 800-441-4376 51

Mail Order

Bottom Line Distribution 800-990-5689 202
ClubMac 800-258-2622 ..... 60-69, 178-179
Computer Discount Warehouse 800-291-4CDW 193-195

ADVERTISER ..... PAGE

CRA Systems 800-375-9000 184-185
DGR Technologies 800-990-5689 202
Digital Graphix 800-680-9062 199-201
LLB Company, Inc. 800-848-8967 164-165
Mac Bargains 800-407-7404 180-183
MAC Xtra 800-553-4230 191
MacConnection 800-986-2313 186-187
MacMall 800-217-9498 166-173
MacProducts, USA 800-990-5689 202
MacWarehouse 800-434-3039 120-121
MacWarehouse 800-344-9320 ..... 131-138, 188-189
MacZone 800-436-8000 176-177
ProDirect 800-555-1256 190

Networking & Connectivity

Dataviz, Inc. 800-270-0030 54
Farallon Computing 800-463-1988 22

Organizational Tools

AEC Software 800-450-1983 12

Output Devices

Canon USA 800-OK-CANON 81
Epson America 800-GO-EPSON 18-19
Tektronix 800-835-6100 117
XANTÉ Corporation 800-926-8839 145

Performance Enhancers

Connectix 800-950-5880 ext. 101 57

Programming & Systems

Apple Computer, Inc. 800-950-5382 ext. 784 ..... 46-47, 49
Apple Computer, Inc. 800-950-5382 ext. 784 106-107

Resources

AEC Software 800-450-1983 12
Apple Computer, Inc. 800-364-0766 ext. 1025 40

Storage Systems

APS Technologies 800-235-3707 174-175
FWB Software 415-463-3500 119
Maxell Corporation of America 1-888-2-MAXELL 52-53
Nikon Storage Division 888-88-NIKON 56
Olympus Image Systems 800-347-4027 43
Syquest 800-245-2275 2-3

Telecommunications

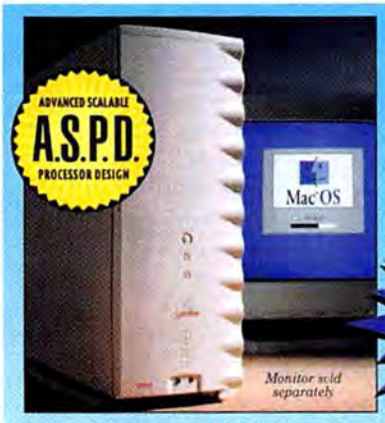
Big Island Communications 800-788-7751 143

Utilities

Berkeley Systems 800-344-5541 161
Dantz Development 1-800-95 BACKUP 17

YOUR MACINTOSH RESOURCE

CDW CIRCLE OF SERVICE



UMAX Computer Corporation

SUPERmac

CALL for the new J and C Series models!

SuperMac S900L Series

Designed from the ground up with flexibility and power in mind, the S900L Series features UMAX's exclusive A.S.P.D. (Advanced Scalable Processor Design). This unique feature provides easy upgradability to dual processors.

✔ 150MHz PowerPC™ 604 or 200MHz PowerPC™ 604e CPU ✔ 16MB or 32MB RAM std., 1GB max. ✔ 2GB hard disk drive ✔ Internal 6.7X or 8X CD-ROM drive ✔ 6 internal PCI expansion slots ✔ 16-bit stereo audio input and output ✔ Includes extended keyboard and mouse ✔ Included software: Casady & Greene Conflict Catcher 3; Asante Net Doubler; FWB CD-ROM ToolKit; FWB Hard Disk ToolKit; Mac OS

150/16MB ..... **$3695.00** CDW 70197

200/32MB ..... **$4295.00** CDW 73853

Other models and configurations available, call CDW® for more information.

CALL for your FREE subscription today!

CDW® is an Apple® Authorized Catalog Reseller

Our catalog features a full line of Apple® Power Macintosh®, Performa® and PowerBook® computers plus Macintosh-compatible peripherals and software.

Authorized Catalog Reseller

Up to $70 in rebates or over $200 in Zip™ accessories*

$50 REBATE or GAME-PAK-TO-GO, a $150 retail value**

**Purchase an Iomega Zip™ Drive and a 10-Pack of Iomega Zip™ Disks and receive either $70 mail-in manufacturer rebates or over $200 worth of Iomega accessories via a manufacturer mail-in coupon. Offer valid 10/1/96-1/31/97. Other restrictions apply.*

iomega

MACUSER EDITORS' AWARD 1995 WINNER — Best New Personal Storage Product

MACUSER EDITORS' AWARD 1995 WINNER — Hardware Product of the Year

Storage

Zip™ Drive

The one drive for all your stuff

$199.95 Zip Drive

- $50.00 Rebate

$149.95 CDW 51390

Game-Pack-to-Go: Deluxe Zip Carrying Case–a $30 retail value; Iomega Triple Stuff Game Pak–a $120 retail value

***Buy a Zip Drive, and receive either a $50 mail-in manufacturer rebate or a "Game Pack-to-Go", a $150 retail value. Offer valid 10/1/96-1/31/97. Other restrictions apply.*

Includes FREE!

Look Your Best Color Pak V2.0*
- Adobe HomePublisher Deluxe V2.0
- Adobe PhotoDeluxe
- Free ink cartridge offer, and more

NEW!

EPSON® Stylus Color 500

Photo-Quality color printing for office or home

▼ Maximum resolution: 720 x 720 dpi black and color ▼ Print speed: 4 ppm black printing, 1 ppm color printing ▼ Fonts: 4 scalable, 5 letter-quality built-in ▼ Paper sizes: letter, legal, A4, B5, statement, executive, user definable ▼ Interfaces: IEEE-1284 parallel, serial ▼ PC and Macintosh compatible ▼ 2-year limited warranty

$279.00 CDW 73069

$20 REBATE or NET STUFF ORGANIZER, a $60 retail value***

$149.95 Ten 100MB Zip Disks

- $20.00 Rebate

$129.95 CDW 51399

Net Stuff Organizer: 2 Zip™ Caddies–a $20 retail value; Offline WWW and multimedia organizer software–a $40 retail value.

****Buy a 10-pack of Iomega-brand Zip™ Disks and receive either a $20 mail-in manufacturer rebate or a "Net Stuff Organizer", a $60 retail value. Offer valid 10/1/96-1/31/97. Other restrictions apply.*

A gigabyte of storage for just $129.95!

800-291-4239

www.cdw.com

COMPUTER DISCOUNT WAREHOUSE™

MU1846 MacUser 12/96

TOP SELLING MACINTOSH SOFTWARE

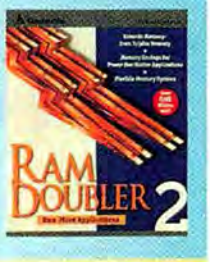
COMPUTER DISCOUNT WAREHOUSE™

RAM Doubler 2

Connectix

$25 upgrade rebate*

This "must have" application triples your memory so you can run more applications and increase your productivity. Works with as little as 8MB or 84MB of memory.



$56.22
CDW 73962

**Owners of RAM Doubler V 1.x are eligible for a $25 mail-in manufacturer rebate. Offer valid through 12/31/96. Restrictions may apply.*

PageMaker V6.0

Adobe

Expand your publishing capabilities

FREE upgrade to V6.5!*

Adobe PageMaker comes packed with extra value–a free Type On Call™ CD-ROM, with 220 fonts unlocked upon registration, and a free Deluxe CD-ROM, with Acrobat Distiller, Private Edition and much more.

Version upgrade **$132.81** CDW 57782

3.5" + CD **$545.78** CDW 57017

Purchase Adobe PageMaker V6.0 on or after 9/9/96 and receive a free upgrade to Adobe PageMaker 6.5. For more information, contact Adobe at 1-800-42-ADOBE (23623). Shipping charges apply. Adobe PageMaker V6.5 is expected to be available at the of October, 1996.

COREL WordPerfect® 3.5

Intelligent Word Processing

Corel WordPerfect offers intelligent features like QuickCorrect™ which automatically correct typos on the fly. Innovative new features like Internet publishing tools give Corel WordPerfect the ability to publish and translate HTML code for you.

◆ Bookmarks ◆ Ability to "Speak" Text using MacinTalk™ ◆ Make it Fit ◆ Apple Guide Support ◆ Macintosh Drag Manager ◆ QuickDraw GX Printing ◆ Easy Open

Version and competitive upgrade ..... **$79.51** CDW 71697

Full version ..... **$152.64** CDW 71946

FreeHand Graphics Studio V7.0 with Shockwave

MACROMEDIA

The most powerful design tools for print and Internet graphics

Unleash your creativity with Macromedia's FreeHand Graphics Studio 7 and Shockwave for state of the art design on the Internet. It includes FreeHand V7.0, the leading tool for design, illustration and page layout; Macromedia xRes V3.0, for fast, high-res image editing and creation; Extreme 3D, for fast 3D modeling, animation and photorealistic rendering; and Fontographer V4.1, the industry standard for type design.

Upgrade, CD ..... **$187.08** CDW 75616

Competitive upgrade, CD ..... **$187.08** CDW 75617

Full version, CD ..... **$412.85** CDW 75615

Adobe

After Effects V3.1	524.72
Dimensions V2.0	126.67
Illustrator V6.0 (3.5" + CD)	376.45
Illustrator V6.0 upg 3.X to 6.0 (3.5" + CD)	114.98
Illustrator V6.0 upg 3.X to 6.0 (CD only)	89.96
Illustrator V6.0 upg 5.X to 6.0 (3.5" + CD)	114.98
Illustrator V6.0 upg 5.X to 6.0 (CD only)	89.96
PageMaker V6.0 (3.5" + CD)	545.78
PageMaker V6.0 upg	132.81
PageMill V2.0	94.93
Persuasion V3.0.2	243.28
PhotoDeluxe	81.20
Photoshop V3.0.5	545.78
Photoshop V3.0.5 vers upg	159.55
Premiere V4.2 CD	494.50
SiteMill V1.0	176.36
SiteMill V1.0 upg from PageMill V1.0	89.96
Streamline V3.0	123.11
Type Manager V4.0	47.45
Type Reunion Deluxe V2.0	44.44
Apple® Home Office Collection	26.77
Apple® System 7.5 upg	95.41
Apple® System 7.5.3 upg CD	94.72

PhotoDeluxe

Adobe

Make your photos simply amazing

$81.20
CDW 64743

Caere

Caere OmniForm Filler	173.47
Caere OmniPage Direct V2.0	57.70
Caere OmniPage Pro V6.0	459.02
Caere OmniPage Pro V6.0 upg	131.47

Casady & Greene

Conflict Catcher 3	58.54
Conflict Catcher 3 comp upg	34.91
Conflict Catcher 3 vers upg	34.68

Claris

Apple® Internet Connection Kit V1.1	45.17
Claris Emailer V1.1	41.79
Claris FileMaker Pro V3.0	179.14
Claris FileMaker Pro V3.0 upg	91.95
Claris Home Page	92.17
ClarisDraw V1.0	179.98
ClarisImpact V2.0	79.75
ClarisOrganizer V1.0v2 w/CLICKBOOK	44.53
ClarisWorks V4.0 CPU bundle	63.48
ClarisWorks V4.0 vers/comp upg	64.28
ClarisWorks V4.0 w/Internet	117.31

Connectix

PowerMac PowerPack/RAM & Speed Doubler	74.28
QuickCards V1.1 CD	31.79
RAM Doubler V2.0	56.22
Speed Doubler V1.1	55.45
VideoPhone (software only)	55.34

Corel

Corel CD Creator	154.42
Corel Stock Photo Library 1	879.10
Corel Stock Photo Library 2	868.05
Corel Stock Photo Library 3	881.30
Corel WordPerfect 3.5 1, CD	152.64
Corel WordPerfect 3.5.1 upg CD	79.51
CorelDRAW 6 Suite, CD	363.18
CorelDRAW 6 Suite upg CD	136.48
CA Cricket Graph III V1.53	92.00

SiteMill V1.0

Adobe

Web site management made easy

$176.36
CDW 64987

Dantz Retrospect Remote V3.0	136.09
Dataviz MacLink+/PC Connection	115.25
Datawatch Virex V5.6	61.34
Deneba Canvas V3.5 + CD	251.83

Edutainment

A.D.A.M. The Inside Story CD	35.97
Berkeley After Dark V3.2	32.62
Berkeley You Don't Know Jack	32.68
Broderbund MYST CD	49.04
Bungie Marathon 2: Durandal	42.39
Bungie Marathon CD	37.04
Davidson The Perfect Resume	38.79
Davidson WarCraft Orcs & Humans CD	31.14
Davidson Your Personal Trainer for SAT CD	34.80
Maxis SimCity 2000	33.42
Maxis SimCity Classic	19.12
ScruTiny in the Great Round	36.50
Virgin 7th Guest CD	31.17

Fractal Design

Dabbler V2.0	39.40
Detailer, CD	268.84
Painter V4.0	262.33
Painter V4.0 upg	122.16
Poser V1.0	89.28
Sketcher V1.0	39.36

FWB

CD-ROM ToolKit™ V2.0	49.88
Hard Disk ToolKit™ Personal V1.7.6	49.28
Hard Disk ToolKit™ V1.8	117.28
RAID ToolKit™	293.21
Farallon Timbuktu Pro V1.0	126.18

Insignia

MacTransfer for Windows 95 PCs	45.46
SoftWindows 95 CD	319.17
SoftWindows 95 upg CD	139.27
SoftWindows for Performa	113.86
SoftWindows V3.0 CD	287.05
SoftWindows V3.0 CD w/CPU purchase	183.20
SoftWindows V3.0 upg	67.02

Intuit

QuickBooks Pro V4.0	182.13
QuickBooks V4.0	111.19
Quicken Deluxe V6.0 CD	59.99
Quicken V6.0	44.53

Macromedia

Director Multimedia Studio V2.0 CD	693.40
Director Multimedia Studio V2.0 upg CD	458.73
Director V5.0 CD	817.78
Director V5.0 upg CD	366.91
Extreme 3D CD	444.60
Extreme 3D comp upg CD	181.69
Fontographer V4.1	314.38
FreeHand Graphics Studio V2.0 CD	405.63
FreeHand Graphics Studio V2.0 upg CD	276.06
FreeHand V5.5 CD	378.89
FreeHand V5.5 vers upg V4.0 or earlier CD	137.60
FreeHand V5.5 vers upg V5.0 to V5.5 CD	74.97
SoundEdit 16 V2.0 CD	264.62
SoundEdit 16 V2.0 plus DECK II CD	339.60
xRes V2.0 CD	446.04
xRes V2.0 comp upg CD	186.34

MetaTools

Bryce V2.0 CD	179.00
Convolver V1.0 CD	129.00
Kai's Power Goo CD	43.29
Kai's Power Tools 3 CD	129.00
Power Photos I CD	129.00
Power Photos II CD	129.00
Power Photos III CD	129.00
Power Photos IV CD	129.00
Vector Effects V1.0	129.00

SYMANTEC. SAM V4.5

Maximum Internet virus protection

$64.17
CDW 75075

Metrowerks

CodeWarrior Gold 9	301.16
Discover Programming for Macintosh	59.59
Discover Programming with Java	73.83

Microsoft

Arcade V1.0	28.95
Bookshelf 96 CD	44.95
Cinemania 1996 CD	29.20
Encarta 1996 CD	44.94
Excel V5.0	296.94
Excel V5.0 upg	298.44
Flight Simulator V4.0	41.68
Office V4.2.1	449.03
Office V4.2.1 CD	449.31
Office V4.2.1 vers upg, CD	265.72
Office V4.2.1 vers upg	265.86
PowerPoint V4.0	296.94
PowerPoint V4.0 upg	114.98
Project V4.0	421.73
Project V4.0 upg	134.11
Visual FoxPro V3.0 CD	442.61
Visual FoxPro V3.0 upg CD	265.72
Wine Guide CD	29.20
Word V6.0.1	298.44
Word V6.0.1 vers upg	114.98
Works V4.0	45.13

NOW Software

Now Contact V3.6 CD	59.97
Now Contact/Up to Date V3.6 bundle CD	62.36
Now Startup Manager V7.0	65.76
Now Up-to-Date Web Publisher V1.0 CD	252.45
Now Utilities V6.5, CD	79.79

PRO CD

Select Phone 1996 Deluxe 97	123.78
Select Phone 1996 WIN/MAC CD	84.28

Quark

QuarkXPress V3.32 CD	661.23

Strata

Media Paint V1.1	403.97
Studio Pro BLITZ V1.75	816.26
Vision 3D V4.0	228.61

Symantec

ACT! V1.0 for Newton	92.07
ACT! V2.5	148.18
Norton Utilities V3.2	94.27
SAM AntiVirus V4.0	64.17
Suitcase V3.0	65.43
Symantec Cafe	89.68

NASDAQ

BUY WITH CONFIDENCE
CDW® IS A NASDAQ TRADED COMPANY
TICKER SYMBOL CDWC
D & B rated 5A1
Duns 10-762-7952

Credit card charges are not submitted until time of shipment. For your protection, we ship only to your credit card's verified billing address. Freight is calculated as the carrier's actual freight charge plus insurance and packaging material. The cost of insurance is 0.35% (0.0035) of the order total. Packaging materials will not exceed $4.00 for single package shipments or $8.00 for multi-package shipments. 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.

CDW® TELEPHONE HOURS

Sales
Monday-Friday 7am-9pm CST
Saturday 9am-5pm CST

Tech Support for Customers
Monday-Friday 8am-9pm CST
Saturday 9am-5pm CST

If you find a better price, call CDW® before you buy

Fax: 847-465-6800
Sales: 800-291-4239 (4CDW)

©1996 CDW® Computer Centers, Inc.

MU1846
MacUser
12/96

CDW® Computer Centers, Inc. • 1020 E. Lake Cook Road • Buffalo Grove, IL 60089

YOUR #1 MACINTOSH COMMUNICATIONS RESOURCE!

CDW CIRCLE OF SERVICE

MONITORS

NEC

M500 15" flat square w/speakers 478.81
XV15+ 15" flat square 473.13
XV17+ 17" flat square 799.84
XE21 21" flat square 1682.67
XP17 17" flat square 1048.30
XP21 21" flat square 1943.57

MAGNAVOX

CM2080 14" .29mm 249.56
CM1215 15" .28mm 341.37
CM4018 17" .28mm 599.50
20CM64 20" .31mm 835.96

SONY

15sx 15" Trinitron 395.63
15sfII 15" Trinitron 469.90
17sfII 17" Trinitron 775.83
17sell 17" Trinitron 976.41
20sfII 20" Trinitron 1635.53
Multiscan TC 20" Trinitron 3234.48

ViewSonic®

15GA 15" PerfectSound monitor 448.91
17GA 17" PerfectSound monitor 595.51
GT770 17" Graphics Series .25mm 674.31
PT770 17" Graphics Series .25mm 779.30
GT800 20" Professional Series .30mm 1309.67
PT810 21" Professional Series .30mm 1632.17

radius

PressView 17SR 17" 1986.26
PressView 21SR 21" 3179.55
PrecisionView 21 21" 2313.31

GRAPHICS/VIDEO BOARDS

ATI

Xclaim GA 2MB PCI 236.16
Xclaim GA 4MB PCI 329.64

matrox

MGA Millennium 4MB PCI graphics accelerator 379.00
MGA Millenium 8MB PCI graphics accelerator 639.00
MGA Millenium 4MB WRAM upgrade 171.11

radius

Thunder 30/1600 ..... 1037.28
Thunder 30/1152 ..... 797.18
ThunderColor 30/1600 ..... 1986.97
ThunderColor 30/1152 ..... 1584.32
ThunderPower 30/1920 ..... 1729.37

MODEMS

Global Village

PowerPort Platinum PC Card 325.29
PowerPort Platinum Pro PC Card 487.16

TELEPORT FAX/MODEMS

TelePort Platinum V.34 ..... 194.73
TelePort Platinum V.34 Internet Edition 198.17
TelePort Platinum V.34 Comm Slot Edition 198.17

Megahertz

28.8K cellular-capableCruiseCard with XJACK 231.95

MOTOROLA

Montana 28.8K cellular PC Card 228.56
Mariner 28.8K/LAN cellular PC Card 419.50
ModemSURFR 129.06
BitSURFR Pro ISDN terminal adapter 346.18

PRACTICAL PERIPHERALS

14.4 external mini-tower w/fax 79.05
28.8 V.34 external mini-tower w/fax 139.95
MacClass PCMCIA 14.4 ..... 149.69
MacClass PCMCIA 28.8 ..... 217.94

US Robotics

Mac&Fax Sportster 14.4 ..... 76.61
Sportster 28.8 V.34 ..... 169.29
Sportster Voice 193.68
Courier V.Everything 276.51
Courier I-modem 479.32

STORAGE SYSTEMS

CD-ROM DRIVES

Hi-Val 4X SounTastic CD-ROM Kit 167.53
Hi-Val 8X SounTastic CD-ROM Kit 289.73
MicroNet 4X CD-ROM Kit with 5 titles 283.10
MicroNet 4X CD-ROM Kit with 10 titles 356.57
MicroNet 4X CD-ROM Kit with 12 titles 355.66
NEC MultiSpin 6XE 335.65
Panasonic 4X Portable for PowerBooks 399.00

FWB

HammerCD 2X CD-ROM recorder 595.72
HammerCD 4X CD-ROM recorder 1349.92

iomega

Zip drive 100MB SCSI external 199.95
100MB Zip disk 19.95
Jaz Drive 1GB SCSI-2 external 499.95
1GB Jaz disk 124.00

MicroNet

Advantage 1GB drive featuring "Jaz" external 527.76
Advantage 1GB "Jaz" disk 114.00

STORAGE SYSTEMS

SyQuest

EZFlyer 230MB external 291.47
EZFlyer 230MB cartridge 29.18

MEDIA

Fuji 100MB Zip Disk 19.00
Fuji 100MB Zip Disk 2 pack 34.00
Fuji 100MB Zip Disk 5 pack 79.00
3M 63 minute (550MB) CD Recordable 8.00
3M 74 minute (650MB) CD Recordable 9.13
88MB SyQuest cartridge, 5yr 45.08
200MB SyQuest cartridge, 5yr 62.93
270MB SyQuest cartridge, 5yr 51.18

Need more disk space? CDW also carries IBM, Maxtor, Micropolis and Seagate SCSI hard drives. Call for details

INPUT DEVICES

AGFA

SnapScan 367.37
Arcus II with full version Adobe Photoshop 1995.00
StudioStar w/Adobe PhotoShop LE 803.24
StudioScan IIsi 694.13

ALPS

Portable GlidePoint 39.82
Desktop GlidePoint 69.84
GlidePoint Keypad 111.83
GlidePoint Keyboard 105.88

ADESSO

PowerMouse 19.45
Soft Touch Plus extended keyboard 47.00
Tru-Form extended keyboard 77.39
Tru-Form extended keyboard w/pointer 86.81

Connectix

VideoPhone w/Quick Cam 137.04
QuickCam (grayscale) digital video camera 98.11
Color QuickCam digital video camera 222.89

EPSON

Action Scanning System II 376.41
Action Scanning System II 376.41
ES-1000C color flatbed scanner 572.37

Kodak

DC20 24-bit digital camera 299.00
DCS0 24-bit digital camera w/Zoom lens 899.00

Logitech

Cordless Mouse Man 69.56
TrackMan Marble 85.23
TrackMan Live! 116.54

Microtek

ScanMaker E3 ..... 373.64
ScanMaker E6 ..... 556.25
ScanMaker E6 Pro 839.98
ScanMaker III w/trans adapter 1989.22

Nikon

Super CoolScan film scanner 1943.58
LS-20 Super CoolScan II 1165.32
AX-110 Scantouch flatbed scanner 479.79
AX-1200 Scantouch flatbed scanner 976.23

Polaroid

SprintScan 35ES film scanner 1498.00
SprintScan 35LE film scanner 781.41
SprintScan 35+ film scanner 1995.86

Relisys

Scorpio Infinity 351.54
Taurus Infinity 526.61

UMAX

Vista-S6E with full PhotoShop 556.14
Vista-S12 with PhotoShop LE 579.69
Vista-S12 with full PhotoShop 759.05
PowerLook II 1877.48

VISIONEER

PaperPort VX 274.94
SCSI Adapter for PaperPort VX 62.93

PRINTERS

EPSON

Stylus Color II 279.00
Stylus Color Pro 379.00
Stylus Pro XL 1799.00

HEWLETT PACKARD

HP DeskJet 870Cse Printer 499.00
HP DeskWriter 340 Portable Inkjet Printer 293.84
HP DeskWriter 680C Printer 282.90
HP DeskWriter 1600CM Printer 1962.07
HP LaserJet 5MP Printer 953.39

Simple Technology memory upgrades

Power Mac 9500 8500 7600 7500 8MB 71.46
Power Mac 9500 8500 7600 7500 16MB 128.06
Power Mac 8100 7100 6100 8MB 71.46
Power Mac 8100 7100 6100 16MB 128.63
Power Mac 8100 7100 6100 32MB 269.68
LaserJet 4M Plus 4MB 34.31
LaserJet 4M Plus 8MB 65.74
LaserJet 4M Plus 16MB 137.78

VisionTek memory upgrades

Power Mac 8500 7500 7600 7200 256K cache 71.89
Power Mac 8600 7500 7600 7200 512K cache 109.60
PowerBook 5300 190 8MB 147.60
PowerBook 5300 190 16MB 225.31
PowerBook 5300 190 24MB 317.80
PowerBook 5300 190 32MB 429.93

If you don't see it, CALL! CDW carries memory upgrades for all your needs

---

Hayes ACCURA 336 V.34 for Macintosh®

The fastest low-cost Hayes modem

▼ Data: V.34 (33.6K bps) ▼ 115,200 bps throughput with data compression ▼ Fax: 14.4K bps send and receive ▼ V.42/MNP 2-4 error correction ▼ V.42bis/MNP 5 data compression ▼ Class 2 fax support ▼ Includes MacComCenter™ integrated data and fax communications software ▼ 5-year performance warranty

ACCURA 336 V.34 ..... **$149.35** CDW 74824

OPTIMA 288 V.34 ..... $20 rebate* ..... **$216.48*** CDW 70663

** After $20 mail-in manufacturer rebate. Offer valid through 1/31/97.*

PRACTICAL PERIPHERALS MacClass 336 V.34 MiniTower II

High-speed, high-performance communications for Macintosh®

✔ 33.6K bps data (V.34 and V.FC) ✔ 14.4K send/receive fax ✔ V.42 error control, V.42bis data compression ✔ Includes Macintosh serial cable and software ✔ Lifetime limited warranty, 7 days a week technical support

CALL!

** $20 mail-in manufacturer rebate. Offer valid through 1/31/97.*

TelePort Platinum Internet Edition

28.8K bps faxmodem

The best choice for maximum performance and Internet connectivity

▲ 28.8K bps data (V.34), the only Macintosh faxmodem with Speed Enhancers for data throughput up to 115.2K bps on standard Centris AV, Quadra, and Power Macintosh computers ▲ 14.4K bps fax send and receive ▲ Flash ROM upgradable to upcoming 33.6K bps standard ▲ Includes NETCOMplete Internet access solution from NETCOM, Netscape Navigator Web browser and e-mail software, plus award-winning GlobalFax V2.5 software ▲ 5-year warranty

NETCOM

$198.17 CDW 70921

TelePort Internet Edition 33.6K bps faxmodem

NEW!

▲ 33.6K bps data transfer ▲ Includes NETCOMplete Internet access and Netscape Navigator web browser and e-mail software ▲ On-screen status lets you monitor modem operations and data throughput rates conveniently, in any application ▲ Call sensing– receive fax and voice calls automatically on the same line as your answering machine ▲ Complete address book for management of phone, fax, e-mail, data and street address ▲ GlobalFax software

CALL!

800-291-4239
www.cdw.com

COMPUTER DISCOUNT WAREHOUSE™

©1996 CDW Computer Centers, Inc. MU1846 MacUser 12/96

MacUser

50 Beale Street, 12th Floor
San Francisco, CA 94105
Phone (415) 547-8600
Fax (415) 547-8803

National

John Blake, Group Publisher (415) 547-8929; (617) 393-3075
William P. Howard, Group Associate Publisher (415) 547-8959
Cheri L. McKeithan, Group National Sales Manager (415) 547-8652
Jen Weiss, Ad Coordinator (415) 547-8726

Mid-Atlantic/Southeast (AL, DC, DE, FL, GA, MD, NC, Metro NY, NJ, PA, SC, VA, WV)

Melinda Martin, District Sales Representative
Mystic Center, 10 President's Landing
Medford, MA 02155; (617) 393-3692
James Loza, Account Executive (415) 547-8677
Andrea Villani, Sales Assistant (617) 393-3068

Northeast (CT, MA, ME, NH, upstate NY, RI, VT, Canada, except Alberta and British Columbia)

Sharon Kiernan, District Sales Representative
Mystic Center, 10 President's Landing
Medford, MA 02155; (617) 393-3060
Heather McKee, Account Executive (415) 547-8640
Andrea Villani, Sales Assistant (617) 393-3068

Midwest (AR, IA, IL, IN, KS, KY, LA, MI, MN, MO, MS, ND, NE, NM, OH, OK, SD, TN, TX, WI)

Tom Hernandez, District Sales Manager
150 North Wacker Drive, Suite 2500
Chicago, IL 60606; (312) 214-7343
Chris Lindberg, Account Executive (415) 547-8622
Karen Rosenthal, Sales Assistant (312) 214-7348

Northwest CA (San Mateo and north, AK, CO, HI, ID, MT, OR, WA, WY, Canada; Alberta, British Columbia)

Laura Goodwin, District Sales Representative
50 Beale Street, 12th Floor
San Francisco, CA 94105; (415) 547-8657
David A. Griffis, Account Executive (415) 547-8658
Ryan Saurer, Sales Assistant (415) 547-8634

Bay Area CA (South Bay, NV)

Christine Perry, District Sales Representative
50 Beale Street, 12th Floor
San Francisco, CA 94105; (415) 547-8630
John Scott, Account Executive (415) 547-8631
Ryan Saurer, Sales Assistant (415) 547-8634

Southwest CA (So Cal, AZ, UT)

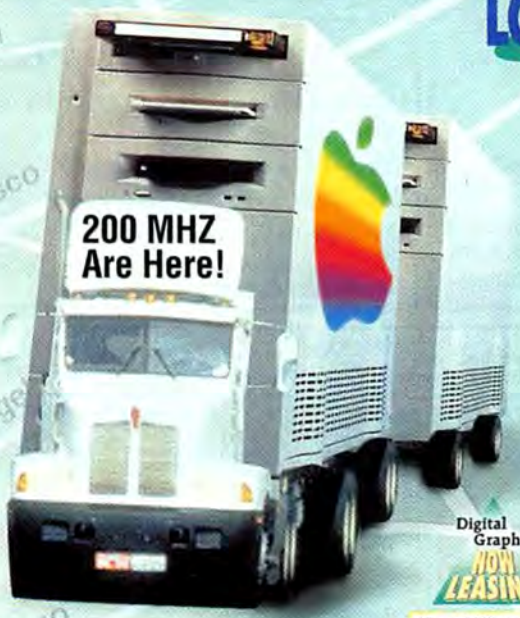
Dan Hudson, District Sales Representative
11766 Wilshire Blvd., Suite 1550
Los Angeles, CA 90025; (310) 268-1376
Lisa Armendariz, Sales Assistant (310) 268-1375

Advertiser Index

RS#	ADVERTISER	PHONE NUMBER	PAGE
15	AEC Software	800-450-1983	12
83	American Power Conversion	888-BUY-APCC ext. 8007	48
*	Apple Computer, Inc.	800-364-0766 ext. 1025	40
*	Apple Computer, Inc.	800-950-5382 ext. 784	46-47
*	Apple Computer, Inc.	800-950-5382 ext. 784	49
*	Apple Computer, Inc.	800-950-5382 ext. 784	106-107
*	Apple Software, Claris	800-950-5382 ext. 784	159
148	APS Technologies	800-235-3707	174-175
*	AT&T WorldNet Service	1-800-WORLDNET ext. 115	99-101
20	ATI Technologies	905-882-2600	37
21	ATI Technologies	905-882-2600	39
76	Bare Bones Software	617-676-0650	111
115	Berkeley Systems	800-344-5541	161
158	Big Island Communications	800-788-7751	143
*	Binuscan	800-881-2352	9
19	Bottom Line Distribution	800-990-5689	202
9	Canon USA	800-OK-CANON	81
25	Casady-Greene Inc.	800-359-4920	113
120	ClubMac	800-258-2622	60-69
119	ClubMac	800-258-2622	178-179
136	Computer Discount Warehouse	800-291-4CDW	193-195
62	Connectix	800-950-5880 ext. 101	55
64	Connectix	800-950-5880 ext. 101	57
77	Corel Corporation	613-728-0826 ext. 3080 doc #1008	125
50	CRA Systems	800-375-9000	184-185
28	Dantz Development	1-800-95 BACKUP	17
163,164	Dataviz, Inc.	800-270-0030	54
125	Deneba Software Inc.	800-7-DENEBA	15
19	DGR Technologies	800-990-5689	202
33	Digital Graphix	800-680-9062	199-201
90	EarthLink Network	800-395-8425	59
73	Engineered Software	910-299-4843	6
*	Epson America	800-GO-EPSON	18-19
*	Epson America	800-GO-EPSON	32
*	Epson America	800-GO-EPSON	148
*	Farallon Computing	800-463-1988	22
71	FWB Software	415-463-3500	119
10	Graphsoft	410-290-5114	141
43	Integrated Micro Solutions	888-IMS-8282	7
128	Investment Intelligence Systems Corp.	800-494-WINGZ	35
80	Kingston Technology	800-588-5427	10-11
11	Linotype-Hell	800-842-9721	122
23	LLB Company, Inc.	800-848-8967	164-165
108	Mac Bargains	800-407-7404	180-183
146	MAC Xtra	800-553-4230	191
147	MacConnection	800-986-2313	186-187
18	MacMall	800-217-9498	166-173
19	MacProducts, USA	800-990-5689	202
155	MacWarehouse	800-434-3039	120-121
157	MacWarehouse	800-344-9320	131-138
156	MacWarehouse	800-344-9320	188-189
135	MacZone	800-436-8000	176-177
94	Matrox Graphics Systems	800-660-1873	20
22	Maxell Corporation of America	1-888-2-MAXELL	52-53
*	NetBuyer	www.netbuyer.com	127
7	Nikon Storage Division	888-88-NIKON	56
82	Now Software	800-544-2599	31
112	NYTEK LLC	800-484-5343 code 3211	151
69	Olympus Image Systems	800-347-4027	43
130	Orange Micro	714-779-2772	144
131	Orange Micro	714-779-2772	155
79	Panasonic	800-742-8086	103
*	Portrait Display Labs	800-858-7744	45
24	Power Computing	800-405-7693	Cover 2-4, 1
24	Power Computing	800-405-7693	Cover 5-8
75	ProDirect	800-555-1256	190
5	Quark, Inc.	800-788-7835 ext. 3007	94-95
67	Specular International	888-334-7386	146
30	Syquest	800-245-2275	2-3
124	Tektronix	800-835-6100	117
13	VocalTec Inc.	800-441-4376	51
27	Wizardworks	612-559-5140	156
126	XANTÉ Corporation	800-926-8839	145
3	ZDNet	http://www.zdnet.com	152
*	Ziff-Davis Benchmark Operation	http://www.zdnet.com.zdbop	8
*	Ziff-Davis Reprints	800-825-4237	202

*Denotes no reader service number.

Roll Over Your Competition with a New 200MHz PowerMac, UMAX or PowerComputing System



LOW Prices **We will beat any price on over 5,000 products!!!**

Start with one of these systems and we will custom configure to meet your specifications.

Basic System	Cash	Lease
PowerMac 7200/120 16MB/1.2GB/8xCD	$2119	$56
PowerMac 7600/132 16MB/1.2GB/8xCD	$2679	$71
PowerMac 8500/180 16MB/2GB/8xCD	$4132	$109
PowerMac 9500/180MP 32MB/2GB/8xCD	$5125	$136
PowerMac 9500/200 32MB/2GB/8xCD	$4500	$119
UMAX S900L-180 16MB/2GB/8xCD	$3530	$93
UMAX S900L-200 32MB/2GB/8xCD	$3795	$99
Power Tower Pro 225 16MB/2GB/8xCD	$4695	$125
Power Tower Pro 200 16MB/2GB/8xCD	$4225	$125
Power Tower Pro 180 16MB/2GB/8xCD	$3995	$109

Digital GraphiX NOW LEASING

Need Financing? We Can Help!

Digital Graphix will Custom Configure Any Apple, UMAX or PowerComputing System

SyQuest DAT Optical Floppy HardDrive

Go Custom

9500/200 MHz Hi Performance Workstation

- PowerMac 9500/200 604e
- 6 PCI slots, E-Net, 512K L2
- Internal 8x CD ROM
- Internal Jaz 1GB with cartridge
- 80MB RAM
- 4GB Fast/Wide hard drive
- Adaptec Fast/Wide SCSI controller
- Extended keyboard
- Sony 20SFII Trinitron Monitor
- IMS Twin Turbo 8MB Video Card

Whole System

base system starting at **only $3,899**

Per Month **$239**

8500/180 MHz Mac & Dos Workstation

- PowerMac 8500/180 604e
- 3 PCI slots, E-Net, 256K L2
- 24-bit composite and S-Video IO
- Internal 8x CD ROM
- Pentium 100mhz PC card with 16MB RAM with DOS/Windows
- 64MB RAM
- 2GB SCSI hard drive
- Extended keyboard
- Sony 20SFII Trinitron Monitor
- ATI Xclaim 4MB Video Card

Whole System

base system starting at **only $3,599**

Per Month **$219**

UMAX S900L/200 MHz Hi-End Workstation

- UMAX S900L/200 604e
- 6 PCI slots, E-Net, 512K L2
- Internal 8x CD ROM
- IMS Twin Turbo 4MB
- 64MB RAM
- 4GB SCSI Fast/Wide hard drive
- Adaptec Fast/Wide SCSI controller
- Extended keyboard
- Sony 20SFII Trinitron Monitor

Whole System

base system starting at **only $3,599**

Per Month **$209**

Order 800-680-9062

2 MorePages of Great Deals

$0 Down 100% Business Financing NO Payments for 90days

FREE!
Omni Page Professional v5.5
with lease
$450 Value

Ultimate Designers Special

PowerMac 8500/150 Starting at $2499

Per Month $199

- PowerMac 8500/150
- Internal CD ROM
- 64MB RAM
- 2GB internal hard drive
- Extended keyboard
- Sony 20SF II Trinitron monitor
- ATI Xclaim PCI Graphics Card 4MB
- Microtek Scanmaker 3E
- SyQuest 200 Drive with 2 cartridges
- Okidata 610e/ps 600dpi Laser Printer
- 12x12 Graphics Tablet

FREE VALUE ADDED SERVICES

Most Popular Configuration

Why Lease?

Digital GraphiX Digital Leasing

- $0 Down 100% Business Financing No Payments for 90 days. You can lease hardware, software and extended warranties.
- Converts a large cash purchase into low monthly payments.
- Leasing allows your business to pay for equipment as it generates income, not before.
- Computer equipment depreciates rapidly, so don't spend your hard earned capital, it's the most important asset your company has.

Why Lease or Buy from Digital GraphiX?

FREE VALUE ADDED SERVICES

We Provide the best value added service in the industry:

- We are system experts. **WE ARE NOT ORDER TAKERS. We offer the best service, price and selection.**
- We cater to marketing and advertising professionals, printing shops, service bureaus, multimedia, digital imaging, and CAD/CAM professionals. Our Business is knowing your mac system needs.
- Free technical support from certified engineers.
- All products and systems are tested prior to shipping.
- Fastest 24hr-72hr response to all RMA issues.
- We only sell the finest quality **NEW** equipment. **NO REFURBISHED** products!

Go Custom

New

Graphix Systems

Perfect for: Graphic Designers, Printers, Service Bureaus, advertising agencies, and marketing departments

New $0 down NEW BUSINESS Financing Available

FREE!

Quark
With Every Graphix System Lease
$650 Value

7600/132 Entry Level System

Per Month $199

- PowerMac 7600/132
- Internal CD ROM
- 40MB RAM
- 1.2GB hard drive
- Extended keyboard
- Viewsonic 17EA AV Monitor
- VRAM Upgrade
- ScanMaker II E6 color Scanner
- Okidata 600e/ps Laser Printer
- 6x8 Graphics Tablet
- SyQuest 200 Drive/w 2 cartridges

Systems Starting at $2399

8500/180 Mid Range DTP System

Per Month $399

- PowerMac 8500/180
- Internal CD ROM
- 80MB RAM
- 4GB internal hard drive
- Extended keyboard
- Sony 20SFII monitor
- ATI XClaim 4MB PCI Video Card
- Agfa Studio Scan IIsi/w Trans
- Sony 8GB DAT tape drive
- SyQuest 200 Drive/w 2 cartridges
- GCC 608 600dpi, 11x17 Printer
- 12x12 Graphics Tablet

Systems Starting at $3599

9500/200 Hi End Super Station

Per Month $499

- PowerPC 9500/200MHZ
- Internal CD ROM
- 144MB RAM
- 4GB internal hard drive
- Radius PrecisionView 21 Trinitron Monitor
- IMS Twin Turbo 8MB PCI Video Card
- Yamaha 4x/4x CDR with Toast Software
- SyQuest 200 Drive with 2 carts
- Microtek ScanMaker III with Transparency
- GCC XL 1208 1200dpi, 11x17 Printer, E-Net
- 12x18 Graphics Tablet

FREE VALUE ADDED SERVICES

Systems Starting at $3899

Digital & Multimedia Systems

Perfect for: Video Editing, Video Production, Digital Imaging, Multimedia and Hi-End Graphic Professionals

FREE!

Adobe Premiere
With Every Digital System Lease
$485 Value

7600/132 Starter System

Per Month $279

- PowerPC 7600/132MHZ
- Internal CD ROM
- 40MB RAM
- 1.2GB hard drive
- Extended keyboard
- VRAM Upgrade
- ViewSonic 17EA AV Monitor
- TrueVision Bravado 1000 PCI Digital Card
- 4GB SCSI-3 Fast&Wide disk array
- FWB Jackhammer SCSI-3 controller
- Sony 8GB DAT tape drive

Systems Starting at $2399

LOW Prices

8500/180 Mid Range Power System

Per Month $459

- PowerPC 8500/180MHZ
- Internal CD ROM
- 80MB RAM
- 2GB hard drive
- Extended keyboard
- Sony 20SF II Monitor
- ATI XClaim 4MB PCI Video Card
- TrueVision Targa 1000 PCI Digital Card
- 8GB SCSI-3 Fast&Wide disk array
- FWB Jackhammer SCSI-3 controller
- Sony 8GB DAT tape drive

Systems Starting at $3599

9500/200 Digital Video Workstation

Per Month $539

- PowerPC 9500/200MHZ
- Internal CD ROM
- 144MB RAM
- 4GB internal hard drive
- Radius PrecisionView 21 Monitor
- ATI XClaim 4MB PCI Video Card
- TrueVision Targa 2000 PCI Digital Card
- 8GB SCSI-3 Fast&Wide disk array
- Yamaha 4x/4x CDR with Toast Software
- FWB Jackhammer SCSI-3 controller
- Exabyte 8505 16GB DAT tape drive

Systems Starting at $3899

Photo Systems

Perfect for: Photographers and Marketing Professionals

FREE!

Microsoft Office
With Every Photo System Lease
$439 Value

8500/180 Entry Level

Per Month $239

- PowerMac 8500/180MHZ
- Internal CD ROM
- 80MB RAM
- 2GB hard drive
- Extended keyboard
- Sony 17SFII Trinitron monitor
- Polaroid Sprintscan 35mm
- Kodak DC40 digital camera
- SyQuest 200 Drive/w 2 cartridges

Systems Starting at $3599

9500/200 Hi-End Photo Station

Per Month $369

- PowerPC 9500/200
- Internal CD ROM
- 144MB RAM
- 4GB hard drive
- Extended keyboard
- ATI XClaim 4MB PCI Video Card
- Sony 20SFII Monitor
- Yamaha 4x/2x CDR w/toast & director
- Kodak DC50 digital camera
- Polaroid Sprintscan 35mm

Systems Starting at $3899

Call For Custom Configurations

PowerMac System Specials

Every Digital GraphiX system is completely assembled and tested before shipping—all ready to run.

CPU/Extended Key/Mouse	Monitor/Card	Cash	Lease	
9500/200/40mb/2.0GB/CD	Sony 20"/VRAM upgrade	$6399	$179	SALE
9500/200/80mb/2.0GB/CD	Sony 20" /ATI Xclaim	$6899	$199	
8500/180/16mb/1.2GB/CD	Sony 17SFII/VRAM upgrade	$5139	$149	SALE
8500/120/32mb/2.0GB/CD	ViewSonic 17EA/ATI Xclaim	$3999	$123	
7600/132/24mb/1.2GB/CD	Sony 17SFII/VRAM upgrade	$3779	$119	SALE
7600/132/80mb/1.2GB/CD	Sony 20SFII/ATI Xclaim	$5199	$149	
7200/120/16mb/1.2GB/CD	ViewSonic 17EA/VRAM upgrade	$2999	$91	
7200/120/8mb/1.2GB/CD	Sony 15SX1 monitor	$2639	$82	

Complete line of 5,000 Mac items in Stock! If we don't have it, nobody has it!

AT&T Capital Corporation

Best Service, Price and Selection

Monitors

NEC 15" XV15+	$459
Sony 15SX1	$399
ViewSonic 17EA AV	$669
RasterOps MC 21	$1879
Sony 17SF II SALE	**$739**
Sony 20SF II	$1599
Radius PressView 17SR	$1979
Radius 21 PrecisionView	$2329

ATI XClaim 4MB PCI Video Card — Video

Only $319!

ATI XClaim 4MB SALE	**$319**
IMS Twin Turbo 4MB	$529
IMS Twin Turbo 8MB	$979
MGA Millenium 8MB	$629
Number Nine Image 128 4MB	$649
Number Nine Image 128 8MB	$889
Radius ThunderColor 30/1152 (PCI)	$1569
Radius ThunderColor 30/1600 (PCI)	$1985

Laser Printers

- 600 dpi camera ready output
- 8.5" x 11" print size
- 250 sheet capacity

HP 5MP, 8.5x11	$999
Okidata 600e/ps, 8.5x11 SALE	**$739**
Epson Stylus Color Pro XL, 11x17	$1729
Epson Stylus Color Pro, 8.5x11	$369
GCC XL 608, 600dpi, 11x17	$2339
GCC XL 808, 800dpi, 11x17	$2989
GCC XL 1208, 1200dpi, 11x17	$4169

Hard Drives

Hewlett Packard 2GB Internal — $339 Low Price

Quantum / Hewlett Packard	Internal	External
Quantum 1.2GB	$219	$279
HP 2GB or IBM 2GB SALE	**$339**	**$399**
Quantum 3GB	$489	$549
Quantum 4GB	$869	$929
Seagate		
Seagate 4GB Barracuda 4	$1149	$1209
Seagate 9GB	$1989	$2089

Scanners

- 36-bit color
- 1200 dpi
- Built in Gamma Correction

Free Transparency

Agfa Studio Scan IIsi	$659
Agfa Arcus II/Transparency	$1889
ScanMaker II E6	$569
Microtek Scanmaker III SALE	**$1879**
Microtek Scanmaker E3	$369
Umax Vista S12 Pro	$849

Tape Drives

Sony 8GB SALE	**$969**
ExaByte 8205	$1479
ExaByte 8505	$2109

Includes external drive 25/50 cable, active terminator, and NovaMac backup SW.

Memory

Size	DIMMS	72pin SIMMS
4MB	N/A	$30
8MB	$56	$56
16MB	$98	$98
32MB SALE	**$198**	**$198**
64MB	$419	NA

Lifetime Warranty

Software Specials

Adobe Photoshop v3.0.5 CD	$539
Adobe Pagemaker v6.0 CD	$539
Adobe illustrator V6.0 CD & 3.5	$369
Omni Page Professional v5.5 CD	$149
MicroSoft Office v4.2.1 CD SALE	**$329**
Quark Express V3.32 CD	$629
Macromedia Freehand v5.5 CD	$339

Optical & CDR Drives

Includes External drive, case, 25/50 cable, 50/50 cable, active terminator, and FWB Hard Disk ToolKit

Jaz 1GB with 1 cartridge	$449
Sony 650 with 1 cartridge	$499
Olympus 1.3GB with 1 cartridge SALE	**$999**
Sony 2.6GB with 1 cartridge	**$1799**
JVC 4x/2xCDR with Toast	$689
Yamaha 4x/4xCDR with Toast & Director	$1099

Optical Cartridges

128 MB $8.99 (10+)

74 MINUTE CD ROM RECORDABLE MEDIA $75.99 BOX OF 10

OEM 128MB SALE	**$8.99**
OEM 230MB	$11.99
OEM 600/650MB	$21
OEM 1.2/1.3GB	$39

SyQuest & ZIP Drives

Includes 25/50 cable, active terminator, FWB Hard Disk ToolKit

ZIP 100 External/with cart	$189
EZ 135 External/with cart	$199
200MB External/with 2 carts FREE	**$479**

SyQuest Cartridges

FREE Two 200MB Cartridges with Syquest 200MB Drive Purchase!!!

270MB	$56
200MB SALE	**$61**
88MB	$41
44MB	$38

200MB $61

Digital GraphiX

Your Value Added Macintosh Source

20695 S. Western Ave Suite 132
Torrance, CA 90501

intel inside — PC Systems also available

800-680-9062

800-680-9062 SALES. USA & CANADA
310-783-1525 FAX
310-783-1515 INTERNATIONAL

Order from 5:30am - 6:00pm M-F , 10:00am - 2:00pm Sat

Prices subject to change without notice. Not responsible for typographical errors. Call for an RMA number before returning equipment.

CIRCLE 33 ON READER SERVICE CARD

Your Ram Headquarters, please call for current pricing 800-990-5691

Optical/Removable

Syquest EZ135 $123.00

EZ135 Removable Drive 123
EZFlyer 230/135MB 289
SyQuest SyJet 1.3GB 389
Optima DisKovery 2.6GB MO 2499
Optima DisKovery CDR 929
Mitshubishi 640MB Optical 599
Fujitsu 640MB Optical.....599
Nomai 270/540MB Removable .289.99
100% compatible w/SyQuest 270 media!

Monitors

Magnavox 14" Monochrome 139
Magnavox 15" Color 349
NEC M500 15".....489
Magnavox 17" Color 629
Panasonic S17 17" 649
Viewsonic 17EA w/Speakers.....659
Apple 1705 17" 759
Sony SFII 17" 799
Portrait Display Labs 17".26mm 879
Apple 20" Refurb 90day Warranty ...1379
RasterOps Mc 20 1379
Sony SFII 20" 1749
Mitsubishi Diamond Pro 21TX 1699
Mitsubishi MegaView 29" 2649

Systems

Umax S900L/225Mhz.....4395
Umax J700L/150Mhz.....2899
Umax C600/160 - 200Mhz.....from 1695
Umax S900L/180Mhz Dual 4569
Umax S900L/200Mhz.....3899
Umax C500/140Mhz .....from 1495
Daystar Systems.....Call
Performa 6400/200 16/2.4/8xCD . 2699
Apple 8500/132 16/1.2/CD.....2699
Apple 9500/200 32/2.0/8xCD 4579
Apple 9500/180 Dual 32/2.0/8xCD .5449
Apple 8500/180 32/2.0/8xCD 4199

Call for Newest Models & latest pricing!

Monthly Specials

BEST PRICE

Iomega Zip Drive/Jaz 129*/469
Kodak DC40/50 Digital Camera ...539/899
Calcomp 6x9 Graphics Tablet 209
Wacom 6x9 Graphics Tablet 299
IBM UltraStar 2.16GB SCSI-2.....389
FWB Nubus JackHammer 149
VST 230 Optical for PB5300/190 369
DGR 105-Key Extended Keyboard 49
Apple Pentium DOS Card 100Mhz 999

Optical 230MB $15

44mb Cart from.....34
88mb Cart from.....39
200mb Cart from.....49
270mb Cart from.....54
540MB Cart from 49
EZ135 Disk from 20

230 Disks from 15
128mb Optical from.....13
230mb Optical from.....15
256k Optical from.....59
1.3gb Optical from.....69
CD Recordable Media 8

16 MB DIMM $99

Lifetime Warranty

8MB DIMM/SIMM 55
16MB DIMM/SIMM 99
32MB DIMM/SIMM 199
64MB DIMM.....399

30 pin SIMMs

1/2/4/16MB SIMM 14/35/39/175

PowerBook 5300/190

16/24/32/48MB ...169/259/299/399

POWERBOOK 500 SERIES

16/32MB Module.....179/299

PCI 1Mb VRAM Dimm 49
256K Cache 61/71/8100.....69
256K Cache Dimm 119
512K Cache Dimm 169
Newer 167Mhz 603E for PB5xx 669

GRAPHICS CARDS

MacPicasso 320 Nubus 24-bit 359
ATI Xclaim VR 2MB PCI 259
ATI Xclaim VR 4MB PCI 339
ATI Xclaim VR TV Tuner.....95
IMS 128M8 8MB PCI.....799
Radius Thunder 30/1152 789
Radius Thunder Power 30/1920 1744

Networking/Modems

Farallon Etherwave Transceiver.....99
Focus 10BaseT Ethernet Nubus 79
Asante MacConi Ethernet.....from 89
AsanteFAST 10/100BaseT PCI.....199
10BaseT Transceiver 29
Dayna PCMCIA Card 10BaseT 149
Focus Mini Hub w/4 RJ45 Ports.....89
Asante 10BaseT 8Port Hub 149
Asante 10/100BaseT 12Port Hub .1549

Supra Express 33.6 v.34 139
GV PowerPort Plat. PC 275*
GV Teleport Platinum 164*
NetLink PCMCIA 28.8 v.34..179
US Robotics Sportster 33.6.....166
Sportster 33.6 w/Voice 199
SAGEM ISDN PCI/Nubus Card 549
SAGEM ISDN Geoport Adapter 389
GV Powerport Mercury PB 5xx.....169

Scanners/Hard Drives

Vista S6E w/ PhotoDeluxe 399
Vista S12 w/ Full Photoshop.....869
Microtek ScanMaker Internet 589
Microtek ScanMaker E3.....369
Agfa StudioStar 600x1200 Optical ...995
Agfa SnapScan 24-bit 399
Visioneer PaperPort Vx.....279
Agfa DuoScan **Now Available**..4899
Epson ES-1000c.....619
Epson ES-1200c.....949

Quantum Fireball 540MB 149
IBM UltraStar 2.16GB External 489
Seagate ST15150N 4.2GB Raw 999
Quantum Atlas 4.3GB SCSI-3 Raw....999
Micropolis 4221WAV 2.0GB Raw.....679
Micropolis 3243WAV 4.3GB Raw....1049
VST 540 Expansion Bay 5300/190..499
DUAL Drive Case 129
3.5" Drive case (Single) 59
Anubis HD Utility Software W/drive 19

Over 6,000 Products for your Mac.

VISA MasterCard DISCOVER

BOTTOM LINE DISTRIBUTION

1-800-990-5691

http://www.blol.com/macuser/ 512-892-4070

Shipping: $5, 5 lbs., 2 Days **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. Subject to a restocking fee. Original shipping is non-refundable. Apple brand products are not returnable for refund. Bottom Line Distribution cannot be responsible for errors in typography or photography. **Customer Service:** 512-892-4090. **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:** 4544 S. Lamar Blvd., #100, Austin, TX 78745 **Fax:** 512-892-4455. * Prices reflect end user rebate.

CIRCLE **19** ON READER SERVICE CARD

A Great Review is Worth Repeating

Almost nothing influences buyers in the computer market as much as a great product review, particularly one in MacUser. That's because computer product buyers rely on these reviews to help them make informed purchase decisions. They know that our labs, writers and editors can be trusted to be thorough, fair and impartial in their testing and reporting. For a computer product marketer a great review is almost priceless.

Its Value Increases With Use

Reprints of your review are an invaluable selling tool for your product and an important image builder for your company. An objective, third party product evaluation will be read, and trusted, by far more people than any regular product literature, direct mail, press release or sales letter. Think of all the ways you can take advantage of reprints:

- Use them in sales proposals
- Hand them out at trade shows
- Send them to your mailing list
- Provide them to distributors
- Add them to a press release or a mailing to your stockholders.

REPRINTS REPRINTS REPRINTS REPRINTS REPRINTS REPRINTS REPRINTS REPRINTS REPRINTS REPRINTS REPRINTS REPRINTS

And, if you customize your reprint— with a special cover, highlighting, an ad, sales office listings, etc.— the value increases even more.

Get the most value from your MacUser review. Call Ziff-Davis Reprints today at

800-825-4237.

MacUser

LaserMerge® Electronic Paper®

Easily Replaces:
Peirce Print Tools
WaterMarker
Toner Tuner
ClickBook
CardShop
Bar Code Pro
Print Logger
& many others...

New! version 2.0

Installs in English, French, German, and Spanish

LaserMerge

This is the button you push

With one utility, replace... $800 worth of software & flash print 10 times faster!

Create new paper sizes, any bar code, pamphlets, booklets, color and gray-level watermarks, serial numbers, and your own multi-up layouts. Control toner level, ink jet density, printer resolution, front-to-back printing, and print logging. Sign your letters & faxes electronically. Import EPS & PICT images. Make use of PS Level 2 forms, store images at the printer's disk or memory, and reduce network traffic. From any application, create your own letterheads, business cards, name plates, invoices, forms, badges, envelopes, greeting cards, certificates. Each layer can be colorized, clipped, moved, rotated, scaled & copied to your design. Use 38 text commands to incorporate page numbers, job name, printer name, user name, page count, and copy count into the print... you can even design your own questions, get answers, and then incorporate them into the printed output. Build impositions for precision layouts. Exquisite 2-color 342 page manual with over 2,000 pictures describing 42 examples of using LaserMerge. Includes over 100 Avery, Paper Direct, and other templates to get you started quickly...

...and so much more than we can possibly describe in this advertisement!

For 101 ways to use LaserMerge,
Call (800) 648-6840
or visit www.mindgate.com

Competitive Upgrade
from ANY Print Utility for **$40**
30-day money-back guarantee

List Price: Base unit $95
Networked $15-$25/unit
Worldwide: (615) 937-6800
Fax Facts: (615) 937-INFO (4636)
Fax Orders: (615) 937-6801

LaserMerge is a print extension that sits between any application and any printer driver...
It uses Electronic Paper Templates that you design as a recipe for how to control any application's output...

System 7 required! Works with ANY printer. LaserMerge's miracles require only 32K of memory. QuickDraw GX is NOT required!

VISA

MindGate® Technologies, Inc.
164 Oliver Smith Road
Flintville, TN 37335-5335

MindGate, LaserMerge, Electronic Paper and their logos are registered trademarks of MindGate Technologies, Inc. All other trademarks belong to their respective owners.

CIRCLE 171 ON READER SERVICE CARD

	PREMIER	CLASSIFIED
HARDWARE	203	212
SOFTWARE	208	226
SERVICES	208	228

AD SALES INFORMATION
One Park Avenue, Third Floor NY, NY 10016
(212) 503-5115 • (800) 825-4ADS

ACCOUNT REPRESENTATIVES:
Alexandra D'Anna, 212-503-5863, Southwest
Massimo Bufalini, 212-503-5941, Midwest
Annuradha Kumar, 212-503-3802, Northwest/East Coast

Student-Teacher-School Discounts!!

ArchiCADD 5	$495	Final Draft 3.0	$125	Now Utilities 6.5	$59
AutoCAD R12	$189	Fontographer 4.1	$159	OmniPage Pro 6	$249
Claris Works 4.0	$99	Japan.Language	$125	Quickeyes 3.01	$84
Coda Finale 3.7	$249	Kai's Power Tools	$78	Ram Doubler 2.0	$54
Code Warrior 9	$128	KPT Bryce 2.0	$78	SAM 4.0	$59
Conflict Catcher	$59	Live Picture 2.5	$468	SoftWindows 3.0	$228
DeclI/SounEdit	$249	Mathematica	$145	Studio Pro 1.75	$429
FileMaker Pro 3	$129	MiniTab Rel. 11	$249	The Black Box	$75

SOFTWARE PLUS
Software Plus Academic Inc.
377 Route 17 South #116
Hasbrouck Heights, NJ 07604
Tel 201-288-7441 Fax 201-288-7442

Orders (800)261-8524 Call for Adobe & Microsoft Products!!

Graphics Plus
"Memory for the masses"

Size	72 pin Simm	168 pin Dimm
4mb	$29	n/a
8mb	$49	$59
16mb	$99	$109
32mb	$199	$209
64mb	N/A	$399

1-800-393-9667

All Memory products come with a manufacturers lifetime warranty and 24 hour replacement policy.
Call for low prices on cache and Powerbook modules.
Prices subject to change without notice. Please call for current pricing.

Power Computing
Umax
SuperMac
Any Mac OS Compatible
2 k refresh
60 ns
Performa
Quadra
Power Mac
LC

jazQub $449

IceQub

Micro Hut
Telephone (800) 966-0188 . Fax (714) 630-6816
World Wide Web http://www.microhut.com
Information product@microhut.com

CIRCLE 172 ON READER SERVICE CARD

PERIPHERAL ENHANCEMENTS CORPORATION

WORLDWIDE MEMORY MANUFACTURERS

800/640-0733

Founded in 1986, Peripheral Enhancements Corporation, (formerly Peripheral Outlet, Inc.) is a leading worldwide manufacturer of computer memory upgrades. Our ten-year relationship with our customers is one built on mutual trust and respect. You have no time for problems; that's why our salespeople don't make promises unless they can deliver. Top-quality memory, delivered on time, as agreed and at affordable prices, are the cornerstones upon which Peripheral builds its relationships.

Unsurpassed Technical Support. The Peripheral Enhancements Corporation tech support team stays abreast of the changing memory business, offering reliable, informed answers to your questions. Our easy-to-follow instructions are available with each shipment. Technical assistance calls are toll free!

Lifetime Warranty. Peripheral stands behind every product we sell. We test each and every module prior to shipping. If a problem ever arises with a part, however, send it back for a prompt repair or replacement, often performed within 24 hours of our receiving the part from you.

100% Reliability. Our buyers source top-quality components worldwide and build modules with quality unsurpassed in the industry. Every memory module sold meets or exceeds all original equipment manufacturers specifications.

Aggressive Pricing. Peripheral sells millions of dollars in upgrades every week. Our consistent buying in large quantities assures you a competitive price, every time you order. Order by 6:00 PM CST for same day shipping!* Overnight delivery from $8.00

*some restrictions apply

www.peripheral.com

PERIPHERAL ENHANCEMENTS CORPORATION
327 East 14th, PO Box 2329 Ada, Oklahoma 74821-2329
405/332-6581 FAX 405/436-2245 sales@peripheral.com
HOURS: Monday-Thursday 6AM-7PM, Friday 6AM-6PM CST

CIRCLE 173 ON READER SERVICE CARD

PREMIER

Computer Pros
Your Macintosh Source.

Ask for Our Latest Low Prices!

1-800-329-4MAC (4622)
International Orders (305) 825 9574
E-Mail: mailman@synaptix-inc.com Web address: http://www.synaptix-inc.com

POWER MACINTOSH
7200 120MHz 16/1.2GB/8x/L2...$2099
7200 120MHz 16/1.2GB/8x/L2DOS.....$2499
7600 120MHz 16/1.2GB/8xCD/L2.....$2699
7600 132MHz 16/1.2GB/8xCD/L2.....$2899
8500 132MHz 16/1.2GB/4xCD/L2.....$2979
8500 150MHz 16/2GB/4xCD/L2.....$3379
8500 180MHz 32/2GB/8xCD/L2.....$4199
9500 132MHz 16/1GIG/4xCD/ATI.....$3699
9500150MHz16/2GB/4xCD/L2/ATI.....$3959
950MP/180MHz 16/2GB/8xCD/L2.....CALL
9500 200MHz 32/2GB/8xCD/L2.....CALL
ALL APPLE WORKGROUP SERVERS.....CALL

POWER BOOK
190CS/66 8/500/DUAL-SCAN....$1099
5300CS 8/500/DUAL-SCAN..$1999
5300C/100 8/500/ACTIVE.....$2399
5300C/100 16/750/ACTIVE...$2899
5300CE/117 32/1.1GB/ACTIVE.....$4199

APPLE MONITORS
Apple MultiScan 14" Display.....$319
Apple MultiScan 15" Display.....$399
Apple MultiScan 1705 Display.....$759
Apple MultiScan 1710 Display.....$909
Apple MultiScan 1710AV Display.$1045
Apple Vision 20" MultiScan.....$1929

PERIPHERALS
Apple QuickTake 150.....$589
Apple 600e 4xCD-ROM.....$269
Apple Design Power Speakers.....$139
Newton Message Pad 130.....$769
PENT DOS CARD P-100.....$1049

KEY BOARD
Apple Extended Keyboard.....$149
Apple Design Keyboard.....$75
MACally Extended Keyboard.....$72

SIMMS/DIMMS
4MB $45/75
8MB $65/85
16MB $105/125
32MB $235/255

STORAGE
1.1GB HD (Seagate) .....$ 279
2.1GB HD (Seagate) $629
4.3GB HD (Seagate) $1059
Syquest 200MB External.....$399
Syquest 270MB External.....$419
Iomega ZIP Drive.....$199
Iomega Jaz Drive.....$499
1.3GB Optical Drive.....$1739
2.6GB Optical Drive.....$2059

PRINTERS
Apple StyleWriter 1500/2500.....$279/359
Apple Color StyleWriter 2200.....$399
Apple LaserWriter 4/600PS.....$779
Apple LaserWriter12/640PS.....$1599
Apple LaserWriter 16/600 PS.....$2199
Apple ColorLaserWriter12/600 PS.....$6399
GCC Elite XL 608.....$2279
GCC Elite XL 808.....$2979
GCC Elite XL 1208.....$3979
Star SJ144 Color (For MAC).....$95

PERFORMAS
5320CD 16/1.2GB/4xCD/15" Monitor/kb/mouse/28.8/software.....$2069
6320CD 16/1.2GB/4xCD/15" Monitor/kb/mouse/28.8/software.....$2169
6400/180 16/1.2GB/8xCD/ 28.8...$2299
6400/200 16/1.2GB/8xCD/ 28.8...CALL

SCANNERS
Apple ColorOne 1200/30.....CALL
Apple ColorOne 600/27.....$589
UMAX Vista S-8 w/photo LE.....$799
UMAX Vista S-12 w/Trans.Adap..$1229
UMAX PowerLook2 w/Trans.Adap/Software.....$2259
Trans.Adapter for S-6/S-8.....$399
UMAX COMPUTERS.....CALL

*Govt/Education PO'S Welcome *Prices reflect a 3% cash discount. *Prices subject to change. * Call for current prices

CIRCLE 174 ON READER SERVICE CARD

---

if you were thinking of expanding your storage or adding a CD-ROM, you might want to give us a call.

We specialize in expansion housing, from one 3-1/2" portable, or one 5-1/4" "Mac" ZFP all the way up to eighteen 5-1/4"HH.

CALL US FOR A PORTFOLIO TO ORDER 800-75-WETEX
OUTSIDE CALIFORNIA 93839

WETEX INTERNATIONAL (USA) CORP.
624 S. Hambledon Ave., City of Industry, CA 91744
Tel: 818-854-6600, Fax: 818-854-6611
SEE US AT COMDEX FALL '96 BOOTH M185 LOOK US UP AT http://www.wetex.com

CIRCLE 175 ON READER SERVICE CARD

BookEndz™ PowerBook™ Docking Stations

Models for 5300/190, 520/540, & 100 series

- Convert your PB to a complete desktop system
- Dock/undock in seconds
- Low cost
- Eliminates cable confusion
- Supports all ports
- Assembles in minutes
- Adds only 3" to rear of PB when docked

- *Free* NoteBook Enhancements Catalog
- Foreign telephone adaptors
- Monitor stands
- PocketNet 16' retractable modem cords

Orders: 800-682-4987

Pilot Technologies, Inc., 9703 Valley View Road, Minneapolis MN
Tel: (612) 828-6002 Fax: (612) 828-6806
URL http://www.pilot-tech.com/ Email Address: pilottech@aol.com

CIRCLE 176 ON READER SERVICE CARD

VST Technologies Announces . . .

VST zip™ 100 Drive

VST Technologies is proud to announce the new **VST ZIP100 Drive** for PowerBook 190 and 5300. Finally, you can have the convenience and storage space of an Iomega® 100MB ZIP drive right in the expansion bay of your PowerBook. Each disk stores as much as 70 diskettes. Take it on the road. Take it in the air. Take it . . . **EVERYWHERE!**

Available First Quarter 1997

VST TECHNOLOGIES Incorporated

VST Technologies, Inc.
125 Nagog Park
Acton, Massachusetts 01720
(508) 263-9700 • Fax (508) 263-9876
http://www.vsttech.com

iomega.

CIRCLE 177 ON READER SERVICE CARD

PREMIER

Insanely fast and affordable too.

SONNETMAC™ DESKTOP 200

- 200MHz 604e Power PC Motorola® Max Motherboard
- Mac OS 7.5.3 with 90-Day Motorola Technical Support
- 16 MB Fast EDO RAM (160 MB Max)
- 1 GB Hard Drive
- 10X CD-ROM Drive
- 256K Level 2 Cache
- Accelerated ATI Graphics with 2MB VRAM (4MB Max)
- 3 PCI 7" Expansion Slots
- 5 Drive Bays
- Extended Keyboard and Mouse
- CD-quality 16-bit Sound
- Add Fast Ethernet PCI 10BaseT/100BaseTX $99
- Add 15", 17", or 21" Monitor

$2595

SONNETMAC TOWER 200

- 200MHz 604e Power PC Motorola Max Motherboard
- Mac OS 7.5.3 with 90-Day Motorola Technical Support
- 32 MB Fast EDO RAM (160 MB Max)
- 2 GB Hard Drive
- 10X CD-ROM Drive
- 256K Level 2 Cache
- Accelerated ATI Graphics with 4MB VRAM
- 5 PCI 7" Expansion Slots
- 7 Drive Bays
- Extended Keyboard and Mouse
- CD-quality 16-bit Sound
- Fast Ethernet PCI 10BaseT/100BaseTX Card
- Add 15", 17", or 21" Monitor

$2995

Accelerate Your Mac IIci, IIsi, IIvx LC/LC II, ClrClassic to 68040 Speed

Sonnet Presto™ 040 80/40 MHz accelerators increase Mac IIci, IIvx, IIsi, Performa 600 performance up to 600%. Run an LC/LC II, Color Classic 5x as fast with the Presto 040 LC 50/25 MHz card. System 7.5.3 compatible. Use PDS slot.

	w/FPU
Presto 040 LC, LC II, Color Clsc.	$199 $299
Presto 040 Mac IIci, IIvx, IIsi*	$299 $349
Presto IIci, IIsi w/128K cache	— $399

*Adapter req'd $49

Give New Life to Older Macs!!!

Give your older Mac more muscle. All Sonnet Allegros™ come equipped with a fast 68030. Some models also have FPUs, cache and/or additional SIMM slots.

33MHz SE	4x30-pin SIMM slots	$179
33MHz Mac II	Supports RAM Doubler	$99
33MHz Mac IIx	Plugs into CPU socket	$99
33MHz LC II	Incl. FPU & 16K cache	$149
33MHz Color Classic	Incl. FPU & 16K cache	$149
NuBus Adapter 660AV/IIsi		$99/$149

Fastest Quadra Ever! Plug in a 100/50 MHz 68040 Board

Double speed with full compatibility. Works in Q/C 610, 650, 660AV, 700, 900. 80/40MHz unit for Centris 610.

80/40 MHz....$199 w/FPU $299
100/50 MHz w/FPU.....$399

Add Math Coprocessor to 68040 Macs

25MHz/33 MHz Quadras.....$149*/$199*
PowerBook 520/540..... $299

Power Mac Cache/FPU

PM 5260, 5400, 6400 256K Cache $99
PM 6100-8500 256K$59-69 512K$119
Power FPU software runs 68K FPU applications on Power PC FPU $75

PCI 10BaseT/100BaseTX Ethernet

$99

MasterCard

SONNET™ SONNET TECHNOLOGIES, INC.
18004 Sky Park Circle, Irvine, California 92614
714-261-2800 Fax 261-2461 sales@sonnettech.com

800-786-6260
http://www.sonnettech.com

VISA

VISA and MasterCard no surcharge. Government, corporate, and education P.O. welcome. One year limited warranty on all products. All returns require an authorization and are subject to a restocking fee. ©1996 Sonnet Technologies, Inc. Sonnet, the Sonnet Logo, Allegro, Presto, and SonnetMac are trademarks of Sonnet Technologies, Inc.

PREMIER

Ask About DayStar Genesis to 800 MHz

Multiple Processors Speed After Effects and Photoshop - Call For Details

Video Editing Stations

Authorized Value Added Reseller

Configuration Examples:

VideoVision PCI	Power Mac 7600-132-80-1000-8xCD	$10995
VideoVision PCI	Power Mac 9500-200-96-2000-8xCD	12155
VideoVision PCI	Power Mac 9500-180MP-96-2000-8xCD	13835

Above With 8 GB Array, 17" Monitor, Radius Edit, After Effects, Pipeline VTR

We Ship Media 100 QX and QXC By FedExpress Anywhere in The USA

Media 100QX PCI	Power Mac 9500-200-96-2000-8xCD	12155
Media 100QXC PCI	DayStar Genesis-360-96-2000-8xCD	15485

Above With 8 GB Wide Array, 17" Monitor, Ext Keyboard, Adobe Premiere

Targa2000 PCI	Power Mac 7600-132-80-1000-8xCD	10995
Targa2000 PCI	Power Mac 9500-200-96-2000-8xCD	12155
Targa2000 PCI	Power Mac 9500-180MP-96-2000-8xCD	13835

Above With 8 GB Wide Array, 17" Monitor, Ext Keyboard, Adobe Premiere

Targa2000 RTX	Power Mac 7600-132-80-1000-8xCD	18925
Targa2000 RTX	Power Mac 9500-200-96-2000-8xCD	19995
Targa2000 RTX	Power Mac 9500-180MP-96-2000-8xCD	21725

Above With 8 GB Wide Array, 17" Monitor, Ext Keyboard, Scitex SphereOUS

Video Disk Arrays

Rack Mountable RAID Storage For Macintosh & NT

High Performance 19" Rack Mountable RAID Arrays
Hot Swappable Fans and Load Sharing Power Supplies

16 GB Wide RAIDrack	Dual SCSI Card+RAID Software	$9795
32 GB Wide RAIDrack	Dual SCSI Card+RAID Software	14995
64 GB Wide RAIDrack	Dual SCSI Card+RAID Software	29495
RAIDrack to 128 GB	• Ask About UltraSCSI	

Cost Effective Solutions

Wide SCSI-2 & -3 PCI Disk Arrays For Macintosh

UltraSCSI-3 Wide-40 is Here

4 GB Wide-40 UltraSCSI	w/2940UW+RAID Software	$1995
8 GB Wide-20 Disk Array	w/2940UW+RAID Software	2995
16 GB Wide-20 Disk Array	MW ★★★★★	5745
18 GB Wide-40 UltraSCSI	w/2940UW+RAID Software	6195

Call For Details

SSA

Easy to Install Centralized Serial Storage Systems For Digital Video

SSA Network Loops Allow Multiple PCI Macintosh Computers to be Connected so That They Can Safely Share Files With up to 80 MB/sec Total Bandwidth

8 GB - 2 Station Bundle	- 2 Desktop Cabinets	$6995
32 GB - 2 Station Bundle	- 4 Desktop Cabinets	16800
64 GB - 2 Station Bundle	- 8 Desktop Cabinets	30060

Systems Include Two PCI SSA Host Adapters, Two Users Licenses for ImageNET Management Software, 3 SSA Cables 2.5 Meters Each, and Remus Light Striping Software. Expandable to More Than 1100 GB. Cables and Host Adapters Available.

Add-on: 8 GB @ $3295 • 32 GB @ $13180 • 64 GB @ $26360

CDR

Built Around The New CDD-2000 Third Generation Philips CD-R Drive

Easy! Buy!

2* x 4* Philips CD-R System For Macintosh

With Astarte Toast Pro v3.0

External CD-R System	Includes Toast Pro v3.0	$745
External CD-R + JAZ Drive	With a JAZ Drive	1095

The JAZ Drive Employs Embedded Servo Technology Making it a Good Source Disk For Writing CD s. JAZ Cartridges Excellent For Transporting Large Files

Premium CD-R 74 Blank Discs	10 Pack - Each	9.90
Premium CD-R 74 Blank Discs	100 Pack - Each	7.99

ProMax Custom Configures New or Existing Power Macintosh Computers For Digital Video and Pre-Press

Now DayStar Genesis 360 to 800

Power Sweepstakes

- 7600-132-32-1000-8xCD
- 8500-180-64-2000-8xCD
- 9500-200-128-2000-8xCD
- 9500-180MP-128-2000-8xCD

AV Optimized Disk Arrays
16, 32, 64 MB Memory - DRAM
ATI 4 MB Video Display Cards
Radius ThunderColor Cards
17, 20, and 21" RGB Monitors
13 and 19" Studio Monitors
Radius VVS PCI
Truevision Targa2000 + Pro + RTX
Data Translations Media 100qx + qxc
PipeLine Pro VTR Control

Call us About Configuring Existing Power Macintosh Computers

Adobe Premiere
Adobe Photoshop
Adobe After Effects
Adobe After Effects Production
Boris Effects
Scitex SphereOUS Software
Slingshot Editing Software
Internal Audio & Scratch Disks
ATTO SiliconExpress MC SCSI
PowerDomain 2940UW SCSI
Remus Light - RAID-0,-1
Remus Full - RAID-0,-1,-4,-5
Matched Impedance SCSI Cables
Active SCSI Terminators

Systems Configured to Your Exact Needs

Ask About Our New Overnight Cross-Ship Service and Platinum Support Plans

Video Editing Bundles

Bundles Contain:
8 GB Wide Disk Array and a Video Editing Solution

VideoVision PCI	Includes 8 GB Array, Edit 2.0, After Effects, VTR	$6520
Media 100QX PCI	Includes 8 GB Array and Adobe Premiere	6520
Targa2000 PCI	Includes 8 GB Array and Adobe Premiere	6520

DLT Backup System

30 GB Quantum DLT Backup System With Retrospect Software and Blank Tape - 15 to 30 GB - up to 105 MB/minute $3395

DLT-30 Blank Tape Cartridges - 15 to 30 GB of Storage Space $64.00

DLT Cleaning Tape $62.00

For More Information Visit Our Web Page: http://www.scsidisk.com

Call 1-800-977-6629 • 6 to 6 M-F • 10 to 2 Sat • Credit Cards Accepted

We Ship by Federal Express All Over The World and Offer Expert Technical Assistance and Support

proMAX ProMax Technology

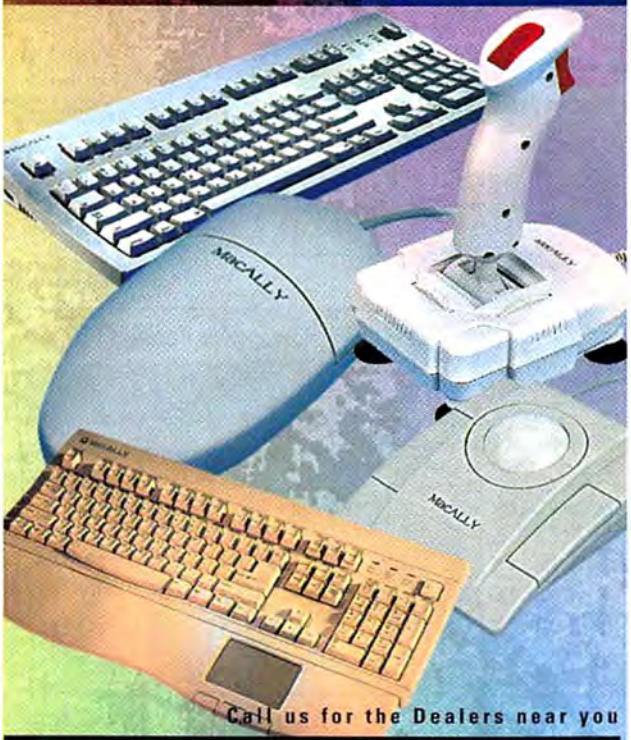
A Company Operated by ProMax Systems, Inc.

16 Technology Drive - #106 • Irvine, California 92618
TEL: 714-727-3917 • SALES: 1-800-977-6629 • FAX 714-727-3546

Prices subject to change without notice. Delivery subject to availability. Trade names and are the property of their respective owners.

CIRCLE 178 ON READER SERVICE CARD

MacALLY™ Peripherals



Call us for the Dealers near you

Please call today: 1•800•644•1132

For more product information, please visit http://www.macally.com

CIRCLE 179 ON READER SERVICE CARD

Up to 4 Users Can Access Multiple PC, Macintosh, and Sun Computers from a Central Location!

Multiplatform

Supports any combination of PC, Macintosh, and Sun computers. Use any platform's peripherals to access any type of computer in the system.

Multiuser

Up to 4 users can access different computers simultaneously!

Multimedia

Every user has full multimedia capabilities; support for keyboard, mouse, video, microphone, speakers, and serial port available.

AUTOBOOT COMMANDER 4XP™

Inc. 500

Cybex Computer Products Corporation
4912 Research Drive Huntsville AL 35805 USA
1-800-932-9239 (205) 430-4030 fax
http://www.cybex.com

CYBEX Computer Products Corporation

Cybex, Commander, AutoBoot and 4xP are trademarks of Cybex Computer Products Corporation. Sun is a trademark of Sun Microsystems. PC and Macintosh are registered trademarks of their respective holders.The Inc. 500 logo is a registered trademark of Goldhirsch Group.

Dealer Program Available

Made In the USA

CIRCLE 180 ON READER SERVICE CARD

CALL THE MAC EXPERTS!

Providing complete Macintosh solutions for graphics, pre-press, and video professionals

MacUser Labs Says:

"A PowerMax Power Play" "Not only do the PowerMax monitors display good-looking images, but (they) are affordably priced!" *and* "Nice price, nice image quality, nice controls – nice monitor!"

PowerMax Trinitron™ monitors are designed specifically for the rigorous demands of the Macintosh. They ship complete with Mac-ready cables and adapters, a three year warranty, and our satisfaction guarantee: if the monitor is not just right, we'll replace it for you!

PowerMax Trinitron™ Monitors

Model PM14T 25 mm dot pitch- up to 1024x768 .....$319
Model PM15T 25 mm dot pitch- up to 1280x1024 .....$419
Model PM17T 25 mm dot pitch- up to 1280x1024 .....$749
Model PM17TE+ 25 mm dot pitch- up to 1600x1280 ...$989
Model PM20T 30 mm dot pitch- up to 1600x1280...$1649

Wacom Tablets

ArtPad II 4x5 w/erasing Ultra Pen.....$145
ArtZ II 6x8 w/erasing Ultra Pen.....$319
ArtZ II 6x8 w/erasing Ultra Pen & Painter 4 .....$615
ArtZ II 12x12 w/erasing Ultra Pen.....$439
ArtZ II 12x12 w/erasing Ultra Pen & Painter 4 .....$745
ArtZ II 12x18 w/erasing Ultra Pen.....$729

We carry all Wacom Accessories, Pens and Tablets! You won't find anyone who knows more about Wacom!

Scanners

Umax Vista S6E Soho Mac Scanner.....$349
Microtek ScanMaker 3E 24 bit w/Color it.....$379
Umax Vista S6E Scanner w/Full PhotoShop $569
Umax Vista S12 Scanner w/Full PhotoShop $769
Agfa Arcus II Flatbad w/Photoshop & trans. Adapt. $1899

Our experts stay up-to-date on the latest reviews *and* experiences of our thousands of scanner customers! Call for a personal evaluation today!

•Adobe •Agfa •Atto •Canon •DayStar •DEC •Epson •Fargo •GCC •Global Village •Hewlett Packard •Iomega •Kingston •Kodak •LaCie •Mag •Magnavox •Microtek •Mitsubishi •NEC •Nikon •Optima •PowerComputing •QMS •Quantum •Radius •Samsung •Seagate •Seiko •StreamLogic •Sony •SyQuest •Tektronix •TrueVision •Umax • US Robotics •Visioneer •Xante

Deluxe Graphic Artist's Workstation

PowerMac 8500/150 with 48 Mb Ram, 2 Gig Drive, internal CD, Ext. Keyboard, 17" PowerMax Trinitron Monitor, Zip Drive, Adobe Illustrator, Vector Effects, Quark Xpress. Illustrator Training CD. Only $5449, or just $195 per month!

Introductory Video Editing System

PowerMac 7600/132 with 32 Mb Ram, 2 Gig AV Drive, 8X CD Rom, Keyboard, 17" PowerMax Trinitron Monitor, MiroMotion Video Card, Adobe Premiere LE, Adobe After Effects, Kais Power Goo, Norton Utilities. Only $5449, or just $195 per month!

Save hundreds of dollars on these specially priced bundles! Or call for your own custom configuration, often with same day delivery!

PowerMax External Hard Drives

540 Meg External Only $199!

We specialize in customizing complete array systems!

PowerMax External 540 Mb Drive.....$199
PowerMax External 1.2 Gig Drive.....$339
PowerMax External 2.0 Gig Drive.....$449
PowerMax External 4.0 Gig Drive.....$949

We also stock hundreds of factory refurbished Apple CPUs! Call for pricing and availability on these limited time offers!

Why Buy From PowerMax?

- Over 90% of our orders ship within 24 hours. We stock every major brand of Mac product from Adobe to Zoom!
- We speak plain English- no technotalk or high pressure sales tactics!
- We offer flexible terms, and are experts on easy leasing!
- We consult with you, we want to make sure what you buy is what you need.
- Unlike most catalog outlets who try to keep prices low by limiting service options- we are a dealer who actually offers more expertise and service than most local full-priced dealers! We keep prices low through aggressive purchases, high volume and years of experience!
- All we ask is that you call a couple of the other guys first- then call us. You'll really appreciate our difference!

Home Office Bundle

Performa 6400/180 with 16 Mb Ram, 1.2 Gig Drive, 8X CD Rom, Keyboard, 15" PowerMax Trinitron Monitor, 28.8 Global Village modem, Microsoft Office, MYOB, Color StyleWriter 2500. Only $3479, or just $135 per month!

Desktop Publishing Workstation

PowerComputing 604/120 with 32 Mb Ram, 1 Gig Drive, 4X CD Rom, Keyboard, 4 Mb Vram, Zip Drive, 17" PowerMax Trinitron Monitor, Quark Xpress, Xpress Training CD. Only $3388 or just $129 per month!

PowerComputing

Configurable Mac Systems

Where will you find anyone else who can consult, recommend, customize and promptly deliver CPU systems from Apple, PowerComputing, Umax and DayStar? No one stocks Mac products the way we do!

Pre-Configured and Customizable Apple Systems

PowerMac 7200/75, Performa 5215, 6200, 6300 .$Call!
PowerComputing Power 100 100MHz 3 Nubus....$Call!
PowerMac 5260 16/800/CD w/14" All in one $1479
Performa 6400/180 16/1.6 GIG/CD $2349
PowerMac 8500/120 16 Ram/2 Gig/CD- Refurb...$2399
Performa 6400/200 16/2.4 Gig/CD.....$2649
PowerMac 7200/120 16/1.2 w/Pentium/8X CD....$2849

Bare Bones Macs- Have Them Configured Your Way!

PowerMac 7200/120 8 Ram/4X CD w/cache.....$1749
PowerMac 7500/100 16 Ram/4X CD $1888
PowerMac 7600/120 16 Ram/4X CD $2288
PowerMac 7600/132 16 Ram/8X CD $2599
PowerMac 8500/132 16 Ram/4X CD $2449
PowerMac 9500/132 16 Ram/4X CD $2749
PowerMac 8500/150 16 Ram/4X CD $2798
PowerMac 8500/150 16 Ram/8X CD $3298
PowerMac 9500/150 0 Ram/4X CD.....$3088
PowerMac 8500/180 32 Ram/8X CD $3999
PowerMac 9500/200 32 Ram/8X CD $4197
PowerMac 9500/180MP 32/2000/8X CD .....$Call!
PowerMac 9500/180MP 32/2000/8X CD .....$Call!

Motorola Starmax Compatibles

Too new to list! Call for the latest information!....$Call!

Umax SuperMac Compatibles- New Low Prices!

SuperMac S900D/150 604-150 16/CD $2949
SuperMac S900L/150 604-150 16/2000/CD.....$3449
SuperMac S900L/180 604-180 32/2000/CD.....$3749
SuperMac S900L/200 604-200 32/2000/CD.....$3949
SuperMac S900L 604-180DP (2 604e/32 Ram)...$4599

DayStar Digital

Genesis MP360+ 0/0 2-180 MHz 604e.....$5199
Genesis MP600 4-150 MHz 32/2000.....$Call!

POWER MAX
Knowledge is Power

800-613-2063

Call today for your free PowerMax Catalog!
Local line: (503) 624-1827 • Fax (503) 624-1635
HTTP://WWW.Illuminatus.Com/PowerMax • E-Mail: PowerMax@Illuminatus.com

Prices subject to change without notice. Prices reflect cash discount.

We accept educational and corporate purchase orders, and are experts in financing for virtually any size business!

DISCOVER NOVUS VISA MasterCard FedEx

PREMIER

Network Mac OS with Windows 95

NEW! PC MACLAN for Windows 95 is the only peer-to-peer networking software for sharing printers, files, drives, and other resources between Mac OS and Windows 95 PCs. Macs share files from any Win95 PC through Chooser. Win95 PCs mount local Macintosh drives through Network Neighborhood. Supports most LAN software; numerous applications; Ethernet, TokenRing, and LocalTalk.

- The only cross-platform, peer-to-peer solution for Win95 and Mac PCs
- 32-bit AppleShare client and server technology
- Works independently or complements existing LANs
- Supports the Win95 "Chooser" utility Network Neighborhood
- Print to any Apple or PostScript printer
- Share local, hard, floppy and CD-ROM drives between PCs and Macs
- Share files and volumes using long file name formats
- Back-up Win95 files and drives from a Mac

Order now
Miramar Systems
800-862-2526
Call for competitive upgrades

Come Visit Our Booth (#637) at Seybold San Francisco

email: sales@miramarsys.com.
www.miramarsys.com

CIRCLE 181 ON READER SERVICE CARD

Hang Ten With X Ten

The Power To Use Your Macintosh In New Ways

X Ten will let you display graphical UNIX applications on your Mac desktop

1. Fastest X Server on the Macintosh Market
2. X11R6 Compliant
3. 24-Bit Color Support
4. Web Browser Configuration
5. Local Window Managers: OpenLook & Motif
6. 100 Local X Clients Included
7. Includes A Font Server
8. Includes XDM Manager
9. X Imaging Extension (XIE)
10. PEX Graphics Support

MW EDITORS' CHOICE
MW ★★★★

Competitive Upgrades Available. Available on CD-Rom only.
Uses 20 to 40 MB of hard disk space. 16 MB of Ram Recommended

For more information, or to order call **1-888-BUY-XTEN**
Internet: sales@tenon.com http://www.tenon.com

TENON INTERSYSTEMS
Tenon Intersystems
1123 Chapala Street, Santa Barbara, CA 93101
Tel: 805-963-6983 • Fax: 805-962-8202

©1996 Tenon Intersystems. All trademarks are the property of their respective owners.

CIRCLE 183 ON READER SERVICE CARD

Bar Code Solutions

Videx data collection equipment is designed for work on the go. Cast-metal cases protect the products and allow them to work reliably in harsh environments.

Videx Products...Built Tough...Built to Last!

Videx
1105 N.E. Circle Blvd., Corvallis, OR 97330
503-758-0521 • Fax 503-752-5285

Videx DataWand, TurboWand, DataWand and TurboWand are trademarks of Videx, Inc. ©1996

CIRCLE 182 ON READER SERVICE CARD

Practica Musica™

VERSION 3 MW ★★★★

"The best music education program for the Mac" (*MacUser*) is now available in Solo, Family, and Site editions. (retail $99, $140, and $450). The most complete music training package for both beginners and advanced students.

Songworks™

Not only prints your song, but helps you write it! Suggests tune and harmony ideas, plays, prints melody, chord symbols, lyics-with or without MIDI. $125

ARS NOVA • (206) 889-0927 • (800) 445-4866 • FAX (206) 889-0359 • www.ars-nova.com

CIRCLE 184 ON READER SERVICE CARD

CONNECT Windows® & Windows® 95 to APPLETALK

INSTANT PC TO Mac NETWORKING

- Share Files and Printers between PCs and Macs in both directions.
- Includes award-winning Miramar PC MACLAN software.
- Plug-and-play solution, available for LocalTalk or Ethernet.

PCTalk Personal MACLAN Kit $299

Apexx TECHNOLOGY INC.
1-800-767-4858
http://www.apexxtech.com

CIRCLE 182 ON READER SERVICE CARD

Full Color Business Cards & More

Direct From Your Computer Files, from NoNEG PRESS

Real Offset Printing • Super Premium Card Stock • Professional Look and Feel
FREE File Trapping • 2540 dpi. & 200 line-screen • SATISFACTION GUARANTEED

No. of Different Sets	750 CARD SETS SHIPPED WITHIN 5 Days	10 Days
1-2	$99	$69
3-4	$89	$59
5-6	$79	$49
7+	$69	$39

FREE Samples & Info, Call **1-800-369-5706**
Internet: http://www.business-card.com

CIRCLE 185 ON READER SERVICE CARD

Ask about FREE SOFTWARE* when you order

United CD ROM®

CALL US NOW FOR A FREE CATALOG!

Over 8,000 Titles in Stock Daily!

1•800•864•8334

1•800•UNITED4

FREE SOFTWARE with every purchase!*

Call 1-800-864-8334 for hot prices on your favorite games reviewed in this month's issue of Mac User.

INTRO TO GREEK & ROMAN MYTHOLOGY: Designed to introduce children & students to mythology with 40 entertaining interactive activities, a glossary & an encyclopedia.

RAINFOREST: Find out what life is like deep in the rainforest for rare & endangered species such as the beautiful ocelot and the gentle tapir.

Top Products!

Mythology 53787 $38

Rainforest 53780 $27

Arch Publishing

WARCRAFT II *by Davidson*

Continue the struggle for Azeroth with powerful new allies, terrifying creatures, & ingenious weaponry.

50940 $44

A-10 CUBA GUANTANAMO BAY *by Parsoft*

Guerilla forces have taken control of Cuba & the A-10 Warthogs must suppress the enemies of freedom.

46544 $29

101 DALMATIONS STORYBOOK: Kids can sing along with their favorite dalmations, play intriguing new learning games, & explore hundreds of surprise animations. Hours of fun and learning!

TOY STORY ACTIVITY CENTER: Kids will laugh & learn to infinity and beyond with eight out-of-this-world activities featuring their favorite Toy Story characters.

HUNCHBACK ANIMATED STORYBOOK: Kids will enter the world of medieval Paris & actually become part of the action as Quasimodo dares to attend the Festival of Fools.

Your Pick

Dalmations 52652

Toy Story 52653

Hunchback 52648

Only $35

Disney

3D LANDSCAPE *by Books That Work*

Whether you're a beginner or an experienced landscaper, you can easily create accurate detailed plans to bring your dreams to life.

44481 $49

EXERCISE BREAK: A pop-up utility initiates spontaneous at-your-computer workouts to prevent health problems associated with computer use.

THE HERBALIST: David Hoffman's comprehensive text on herbal medicine includes info on basic principles of herbalism, human systems, & medical details on 100 herbs.

TRADITIONAL CHINESE MEDICINE: Comprehensive text on Chinese traditional medicine. Comparisons of modern Western medicine and science to traditional Chinese medicine.

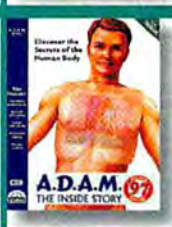
Great Ideas

Exercise 54007 $22

Herbalist 54018 $27

Medicine 54649 $27

Hopkins Technology



ADAM THE INSIDE STORY 97 *by A.D.A.M.*

Same great info with all new features – your online doctor answers all of your health questions or connect to the A.D.A.M. Medical Directory.

53100 $32

THE FABLE FACTORY: Children can choose to listen to a classic fable or they can express their creativity by customizing a scene & playing it back.

WORD PLAY: THE FARM OR WORD PLAY: THE HOUSE Artist Harold Feist has created beautiful graphics & animation while multimedia clues captivate children as they learn language skills. Developed to cater to a variety of language proficiency levels enabling children to begin at the level of word recognition & advance to developing spelling skills.

Your Choice

Fable Factory 53155

Word Play Farm 53150

Word Play House 53140

Only $14

Innotech

COMMAND & CONQUER *by Virgin*

In the battle for control of the world's most valuable resources, only 2 superpowers remain, & you must decide where your loyalty rests.

53325 $43

INSIDE THE GRE: Raises your scores with coverage of the computer adaptive & paper-and-pencil tests, over 1,700 questions & 4 full practice tests.

INSIDE THE SAT & ACT '97: The stress-free way to raise your scores. It's packed with features to help you find the right college & get in!

COLLEGE ADVISOR '97: Features 1,200 college profiles, 75,000 student surveys, complete admissions & finacial aid information, Internet access & an on-line scholarship search.

Inside the GRE 46844 $29

Inside the SAT & ACT '97 53103 $26

College Advisor '97 53105 $17

Princeton Review

MULTIPLICATION WORLD TOUR

Adventures in geography & culture with the mastery of math basics. Rewards success & give kids more chance to practice.

53571 $28

DINOSAURS ACROSS AMERICA

Guided by an engaging dinosaur characters, children ages 7 to 9 learn about all 50 of the United States.

53569 $20

Panasonic Interactive

* While supplies last. Shipping charges apply to free offers.

** Orders received as late as 9:30 PM (CST) for 2nd day air. Call for other deadline times.

Special offers, item availability and prices may vary according to format and are subject to change without notice. Not responsible for inadvertent errors. All prices in U.S. dollars.

ALL MAJOR CREDIT CARDS ACCEPTED

CODE U12

ORDER AS LATE AS 10:00PM! SAME DAY SHIPPING**

Special Holiday Hours: M-F 8am–Midnight; Sat 8am–5pm; Sun 11am–6pm. Nov.1st–Dec.31st

CONTACT US!

CompuServe: 76043,1605

America On-Line: UNITEDCD

BBS 1-217-352-9654

Fax back 1-217-352-8123

Fax orders 1-217-352-9749

Int'l orders 1-217-352-8737

VISIT OUR WEBSITE AT

http://www.unitedcdrom.com

CIRCLE 186 ON READER SERVICE CARD

PREMIER

Affordable *PostScript* Solution for Macintosh!!

New Image Alchemy PS for Macintosh

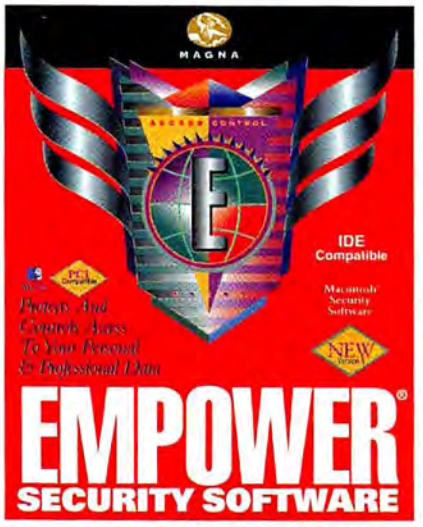
PostScript, Encapsulated PostScript, and Adobe Acrobat's PDF image files can ***now*** be converted to over 75+ supported formats, ***affordably!***

Other features include:

- ✔ **JPEG compression**
- ✔ **Image viewing**
- ✔ **Scripting**
- ✔ **Batch conversions**
- ✔ **Scaling with no size limitations**
- ✔ **Color management**
- ✔ **Palette options**
- ✔ **Specify DPI**

and more.....

You can reach Handmade Software, Inc. directly at:
Tel +1 510 252 0101 • Fax +1 510 252 0909 • sales@handmadesw.com • www.handmadesw.com



WHEN IT COMES TO SECURITY, YOU EITHER GET FULL PROTECTION OR YOU DON'T!

INTRODUCING EMPOWER & EMPOWER PROFESSIONAL VERSION 5 WITH MAXIMUM PROTECTION & FLEXIBILITY

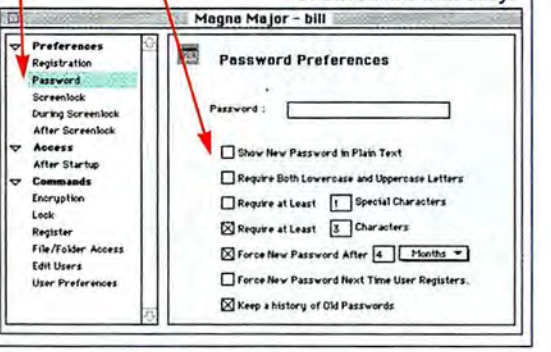
NEW! VERSION 5

PCI & IDE Compatible

A worldwide standard for large multinational corporations

SIMPLICITY & EASE OF USE

1. Select your preference
2. Satisfy your needs
3. Save... *it's that easy!*



With *EMPOWER*, you get around the clock protection for your valuable personal and professional data. *EMPOWER PROFESSIONAL* provides the same safe, convenient, transparent security as well as added flexibility and access control.

Order today or visit your local reseller.
(Request a Special Order)

Available: Both U.S. & Worldwide, Ed Paks, and Site Licenses

© 1996 Magna. All rights reserved. Empower is a registered trademark of Magna.

MAGNA

Call 1-800-80MAGNA X113

International: (408) 879-7900
sales@magna1.com
http://www.magna1.com

CIRCLE 187 ON READER SERVICE CARD

Worlds Smallest
40% Smaller 4"X 1"X 8"
New!
Ultra-Portable Multi I/O Disk Drives-Power Supply Inside
Web page: http://www.libertyinc.com

30 Series
- New 4.3, 2.1,&1 Gig
- Jaz Removable.1G,
- SyQuest 270/230MB & 1.3Gig
- Fujitsu. Optical 230/640MB
- Nomi/MCD 540MB Cart. Drive
- SCSI-2 & SCSI-2 Wide
- Built in power supply
- High impact 75 G Shock

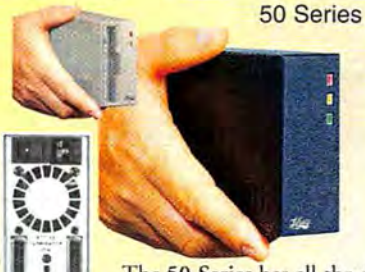
Liberty drives are not for everybody. If you are not price sensitive and need sub-sized hardware then read on. The JAZ drive & power supply, as an example, is 97 cubic inches, the Liberty is 36 cubic inches. That is 37% or approximately 1/3 the size of what most people consider a small drive. That is Liberty's whole story, Liberty just repeats it for every storage device on the market. We might add that some Liberty drives have battery, UPS capability, and work on the COMBINED SCSI , PCMCIA Card & Parallel ports.

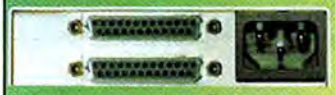
JAZ
SCSI 2 Wide Optional

Multi I/O: 15MB/sec PCMCIA Card
SCSI 2, SCSI 2 wide, Parallel port, & Printer pass through (all units)
- SCSI 2 only both ports(25 or 50pin)
- SCSI 2 wide both ports
- PCMCIA both ports
- SCSI 2 & Parallel
- Parallel & Printer pass through
- Parallel & PCMCIA

Possible Combinations
More combinations on 50 Series and 70 Series

Removables
50 Series





70 Series
9.0 Gig 8 ms

$99

- 4-6-8 CD-ROM (PCMCIA)
- 2x4 or 4x4 CD Recorder
- 1.3 - 2.6 - 4.6 Gig MO

15MB/sec PCMCIA Type II Card

- 4-16 Gig DAT

Smart Fan Climate Control

The 50 Series has all the drives of the 30 Series but provides for battery & UPS options.

ph: (408) 983-1127
fax: (408) 243-2885
http://www.libertyinc.com
120 Saratoga Ave. #82, Santa Clara, CA 95051

Liberty Systems

TOTAL INTERNET $15.95* MONTHLY

The lowest flat monthly national Internet rate
Macintosh™ and Windows™ 3.x/95 compatibility
No per minute charges
Unlimited tech support 24 hours a day
Internet access available in most U.S. cities
UNLIMITED! UNCENSORED!

FULLY GRAPHIC! FREE Netscape™

http://www.idt.net/
MU1296

SAVE UP TO 99% MONTHLY WITH IDT

Monthly Usage	Compuserve™	AOL™	AT&T™	IDT
1.5 Hours per day	$73.70	$93.70	$19.95	$15.95
3 Hours per day	$161.45	$226.45	$19.95	$15.95
All day	$1,389.95	$2,084.95	$19.95**	$15.95*

IDT Internet
TO SIGN UP/GET INFORMATION CALL ANYTIME:
1-800-792-8438

For Web Page Design and Domain Designation call (201) 928-1000 x4640
For 56K or T1 please call (800) 573-9438

With IDT phone service ($19.95 without) **With AT&T phone service ($24.95 without). IDT phone rates are up to 50% below AT&T. Pricing as of July 1996. IDT is a trademark of IDT Corp. All other trademarks are the property of their respective owners.

Bar Coding

For PC's and Macintosh
- Bar Code Readers
- Portable Readers
- Radio Frequency Readers
- PostScript Bar Code Fonts

■ DIRECT FROM MANUFACTURER
■ 30 DAY $ BACK GUARANTEE
■ FREE "800" TECH SUPPORT
■ IMMEDIATE SHIPPING

800-345-4220

WORTHINGTON DATA SOLUTIONS

CIRCLE 221 ON READER SERVICE CARD

BAR CODE PRO™

0 12345 67890 5

Create EPS graphics for your desktop publishing application. Call for free demo disk and information you'll need to make an intelligent purchase for Mac or Windows.

SYNEX

800.619.0299
718.499.6293
Or fax
718.768.3997

CIRCLE 223 ON READER SERVICE CARD

GRIFFIN TECHNOLOGY

MONITOR SOLUTIONS

http://www.nashville.net/~griffin

- **MAC SYNC ADAPTER** sync on green circuitry allows almost all SuperMac, Radius, RasterOps, E-Machines and most other monitors to be used with PowerMac, PCI cards, and AV models.
- **MAC RES ADAPTER** universal resolution adapter selects the proper resolution for your monitor and allows on-the-fly resolution switching.
- **MAC II SERIES** allows all multisync monitors, including Apple Multiple Scan 14 and 15 models to be used with the IIci, IIsi & Mac II built in video.
- **MAC TO VGA** universal Mac to PC adapter connects any PC monitor to your Mac.

Dealer and quantity pricing available.

Tel 615/255-0990 • Fax 615/255-8040 • Grifcom@aol.com

MICRO EXCHANGE™

Since 1985

The World's Source for Renewed Computers!

800-284-9296

Visit us on the web at
http://www.mmanet.com/microexc

NOTEBOOKS

PowerBook 140, 4/40	$249
PowerBook 145, 8/80	$349
PowerBook 160, 8/120	$419
PowerBook 165, 12/160	$499
PowerBook 520C, 20/240	$1,299

PRINTERS

StyleWriter (SPECIAL)	$99
ImageWriter II	$139
StyleWriter II	$169
LaserWriter IINT	$349

Holiday Special!

PowerBook 165...$549

12MB RAM, 160MB Hard Drive, 14.4 Fax Modem & Carrying Case

We Buy New & Used Macintosh Equipment!
(also AST, Compaq, Dell, IBM & Packard Bell)
Fax your list to (972) 488-3248

DESKTOPS

Mac LC, 6/40	$139
Mac LCII, 8/40	$199
Mac IICI, 4/80	$199
Centris 610, 12/230	$429
Quadra 610, 12/230	$499
PowerMac 6100/60, 16/250	$699
PowerMac 7100/66, 16/250	$899
14" Color Monitors	from $199

Call for a list of products from Apple, AST, Compaq, Dell, IBM & Packard Bell

BUY • SELL • RENT • SERVICE • SYSTEMS • PARTS • PERIPHERALS

All items are represented as used and/or reconditioned & come with a 90-day warranty unless otherwise noted (extended warranties available). Items/prices subject to availability & change without notice. Tax/shipping not included. Not responsible for typographical errors. Systems do not include monitors or keyboards unless otherwise noted. Logos, brands, & trade names are reg. trademarks of their respective companies. Visa/Mastercard & COD accepted. Government, Education & Corporate Purchase orders welcome. © 1996 Micro Exchange Corp., 582 Passaic Ave., Nutley, NJ 07110 (201) 284-1200. MU1296

CIRCLE 222 ON READER SERVICE CARD

BUY • SELL • TRADE MEMORY

WE CAN **BEAT** ANY PRINTED PRICE IN THIS MAGAZINE
WE CAN PAY HIGHER THAN ANY ONE FOR **YOUR** OLD or BROKEN MEMORY

Life Time Warranty on All Parts

1•800•4•MEMORY

MEMORYBUY@AOL.COM

CIRCLE 224 ON READER SERVICE CARD

PowerPC Processor Upgrade Cards

PowerTools is the leader in processorupgrade technology,from a single 604 based processor cards to the Quad 604e version, endusers can now chose the perfect performance level for their needs at the right price. Compatible with Apple, PowerComputing, Radius & UMAX PowerMacs, the PowerSource series processor cards are the best value in superior performance.

604/150 - Dual 604/300.....$499 / 999
604e/200 - Dual 604e/400.....$1299 / 1799
(7500, 7600, 8500, 9500, PowerComputing & Umax Clones)
prices include trade in allowance for 604 (120 or 132) card.

604/150 (NUBUS).....$999
604e/200 (NUBUS).....$1,499
(6100, 7100, 8100, Radius & PowerComputing)

Quad 604/600 (PCI).....$3,999
Quad 604e/800 (PCI).....$5,299
(7200, 7500, 7600, 8500, 9500, PowerComputing & UMAX)

The Ultra 7600
with the PowerSource 200/ 32Mb/ 1.2G/ CD.....$3599.00
with the PowerSource Dual 400/ 32Mb/ 1.2Gb/ CD...$4199.00

The Ultra 8500
with the PowerSource 200/ 32Mb/ 2G/ CD.....$4099.00
with the PowerSource Dual 400/ 32Mb/ 2Gb/ CD.....$4699.00

The Ultra 9500
with the PowerSource 200/ 32Mb/ 2G/ CD.....$4499.00
with the PowerSource Dual 400/ 32Mb/ 2Gb/ CD.....$5099.00

800-891-4307
Tel: 512-891-0646
Fax: 512-476-6399
http://www.pwrtools.com
Email: Sales@pwrtools.com

*Prices are subject to change without notification, please call for current prices.
Distribution & Dealer Inquries welcomed

POWERtools

CIRCLE 225 ON READER SERVICE CARD

www.MEMORY.NET

JP MICRO PRODUCTS
JP MICRO
DIMMS
8MB 16MB 32MB 64MB 128MB
SIMMS
4MB 8MB 16MB 32MB 64MB
CACHE
256K 512K 1MB SIMM & DIMM
VRAM
256K 512K 1MB MAC & PC
CALL FOR POWERBOOK MEMORY!
ALSO LASER & LAPTOP MEMORY.
CALL FOR THE BEST PRODUCTS
AND PRICES.GUARANTEED!
800-610-6227
2727 E.CHAPOT NY #A
SANTA ANA, CA 92704
VOICE: 714-751-8461
FAX: 714-751-8428
LIFETIME WARRANTY

CIRCLE 226 ON READER SERVICE CARD

RAM CHEAP!
THE FINEST QUALITY WITH
•LIFETIME WARRANTY•
PowerComputing
YOUR MAC ANSWER FOR...
7200•7600•8500•9500
MONITORS • SOFTWARE
MODEMS • PRINTERS
ALL STORAGE DEVICES
FIBER CANYON
1.800.844.8356
http:\\www. myhomepage.net\~fibercanyon

CIRCLE 227 ON READER SERVICE CARD

MEMORY

SIMMS
72pin • 60ns • 2k
4 MB.....$22
8 MB.....$39
16 MB.....$79
32 MB.....$179

DIMMS
168pin • 60ns • 2k
8 MB.....$49
16 MB.....$89
32 MB.....$179
64 MB.....$339

SIMM 30pin 2k/70/60ns
1MB.....$15
2MB.....$25
4MB.....$35
16MB.....$155

POWERBOOK RAM
500/5300/190/2300
4 MB.....$49
8 MB.....$99
16 MB.....$169
32 MB.....$289
48 MB.....$689

L2 CACHE
256k - 61/71/81..$55
256k - 72/75/85....$75
512k - 72/75/85...$125
VRAM
1MB DIMM 72/75/85 $39
256k SIMM 61/71/81 $15
512k SIMM 61/71/81 $25

30 DAY MONEY BACK GUARANTEE
60/70ns SPEED CHIPS
2K REFRESH RATE
WE BUY MEMORY, CALL US LAST!
SAME DAY SHIPPING BY 5 PM EST

WE WILL BEAT ANY PRICE!
SOURCE 1
COMPUTING
CALL/LOGIN FOR LATEST PRICING!
(800) 900-4599
Voice 954/725-9777 • Fax 954/725-9977
http://www.sourcecomp.com
VISA MasterCard FedEx Federal Express

GOVERNMENT & EDUCATIONAL INSTITUTION NET POs WELCOME!
NO CREDIT CARD SURCHARGES
PRICES SUBJECT TO CHANGE W/OUT NOTICE

LIFETIME WARRANTY

CIRCLE 228 ON READER SERVICE CARD

FACTORY DIRECT PRICES
NEW MAC Enhancements!
PocketPro 25S
2.5" SCSI Case
Only 29.95
wAC-DC Adapter 54.95
PowerBook HDI
Adapters/Cables
From 13.95
Video Adapters
VGA To MAC
From 8.95
PowerMac Video Adapter 28.95

Cable Adapters	From	1.95
Mac Cables	From	2.95
SIMMS	From	4.95
Mac Lithium Battery		7.95
Network PhoneTalk Kits		9.95
Switchboxes	From	12.95
ADB Mouse (Enhanced)		18.95
PwrMAC Accellerators		29.95

Call/Fax For COMPLETE LIST
SCHOOL P.O.'s WELCOME - VISA/MC
MC PRICE BREAKERS
ORDERS 800-874-6117 EXT 18
Info 360.837.3042 Fax 360.837.2057

CIRCLE 229 ON READER SERVICE CARD

SAVE BIG!
MAC MEMORY
LIFETIME GUARANTEE
EDO Memory Available
DMS
Data Memory Systems, Inc.
24 Keewaydin Drive
Salem, NH 03079
Tel: 603-898-7750
Fax: 603-898-6585
Web Page: www.datamem.com/datamem
MEMORY EXPANSION MADE SIMMple
Open 'Til 10pm
SIMMs - DIMMs - VRAM - CACHE - CPUs - FPUs PowerBook Memory
University, Government & Corporate P.O.s w/ Approved Credit
1-800-662-7466

CIRCLE 230 ON READER SERVICE CARD

MEMORY

BEST PRICES!

VISA/MC/AMEX No Surcharge

MAC Solutions

DIMMS		PwrBook 500/5300		Storage Specials	
8mb	$ 48	8mb	$ 79	Iomega Zip	$189
16mb	$ 78	16mb	$ 145	Iomega Jaz	$450
32mb	$ 170	24mb	$ 210	IBM 540 mb	$145
64mb	$ 340	32mb	$ 270	Quantum 2 gig	$390

72 Pin SIMMS		30 Pin SIMMS		Cache/VRAM		
4mb	$ 19	1mb	$ 9	61/71/81	256k	$ 50
8mb	$ 39	2mb	$ 18	72/85	256k	$ 70
16mb	$ 78	4mb	$ 30	72/85	512k	$120
32mb	$ 160	16mb	$ 99	1 mb VRAM		$ 40

WE BUY USED MACS AND MEMORY! (800)80-WE-BUY

1416 Wilshire, Santa Monica, CA 90403
TEL: (310) 394-0001 FAX: (310) 394-7744
visit our web site! http://www.macsolutions.com
University and School P.O.'s welcome

MAC Solutions

(888)873-3RAM

TRADE-INS WELCOME. WE BUY MACS & MEMORY. CALL FOR A QUOTE.

CIRCLE 231 ON READER SERVICE CARD

Design, Print and Apply CD Labels for $79.95

1 DESIGN your own artwork *On Your Computer* with easy-to-use NEATO Templates.

2 PRINT on *Any Laser Printer* using NEATO pressure sensitive die-cut labels.

3 APPLY labels using the NEATO Label Device... *PERFECTLY EVERY TIME!*

KIT INCLUDES • **Label Design Templates (PC & Mac)** • **The Amazing Neato Labeler** • **Instruction Guide**

800-984-9800

MicroPatent® 250 Dodge Ave.• East Haven, CT 06512
203-466-5170 • Fax 203-466-5178
In Europe: +44 (0)990 561571 • Fax +44 (0)181 932 0480
See us at: **http://www.neato.com**

CIRCLE 232 ON READER SERVICE CARD

MacUSA

Since 1983

1(800)-809-0880

Voice: 818-704-8923
Fax: 818-704-9858

Software Blowout!

Microsoft Office V4.2	~~$500~~ *$195*
Word/Excel/Powerpoint	$99Ea
Adobe Photoshop 3.0	*$275*
Adobe Illustrator 6.0	*$250*
Adobe Pagemaker 6.0	$275
Adobe Premier 4.2	$275
Adobe After Effects	$495
Macromedia Director	$400
Macromedia Freehand	$350
Macromedia Studio	$750
Claris Filemaker Pro	$79
Claris Works	$49
Fractal Designs Painter 4.0	$250
Kai's Power Tools	CALL

All other Microsoft and Adobe products available at discount prices!

Prices valid while supplies last. Call us today!

Power Macs Blowout

7600 . . . . . CALL
7200 . . . . . CALL
8500 . . . . . CALL
9500 . . . . . CALL
Workgroup Servers . . CALL

Performa Bundles

CALL !

Powerbooks

5300 . . . . . CALL

Call for New Powerbooks!

Scanners

Apple, H.P., Epson, Umax, Microtek, Agfa

Apple Parts Available

Contact us via the Internet!
macusa@earthlink.net
http://www.macusa.com
Dealer and International Orders Welcome.
Prices Reflect Cash Discount and are Subject to Change.
We'll Beat Any Price!
Visa /MC/AmEx/Discover Welcome.
23751 Roscoe Blvd, Canoga Park, California, 91304 U.S.A.

CIRCLE 234 ON READER SERVICE CARD

PowerMac Speed Bumps Here Now!

7200/120	8/1.2GB/CD	$1679
7200/120	16/1.2GB/CD	$1839
7600/120	16/1.2GB/CD	$2299
7600/120	64/2.2GB/CD	$2799
8500/132	16/1.2GB/CD	$2999
8500/150	16/2GB/CD	$3899
9500/150	16/2GB/CD	**$4399
9500/150	64/4GB/CD	**$4999

** INCLUDES 2MB ATI VIDEO CARD.
CALL FOR CUSTOM CONFIGS, PBOOKS & PC COMPATABLES

Performa 6320	$2299
Performa 6300	$1649
Performa 5260	$1499

OWC 120-210 MHZ. AfterBurner604 POWER MAC ACCELERATOR

Now you can accelerate your 7200/75/76/85/9500 PCI PowerMac from 120 up to 210 Mhz! Unlike other accelerators, once installed, the speed of the OWC AfterBurner604 can be easily adjusted without removing the processor card! NEW! $59.95

Up To 210 Mhz.!

OtherWorldComputing

On the Web at http://www.macsales.com

Serving the Mac Universe Since 1988

No Credit Card Surcharge! VISA

800-275-4576

ORDER TOLL FREE TODAY

OWC Fed Ex Order Today Launch Tomorrow

SIMMS 72 PIN

4mb	70ns	$35
8mb	60ns/70ns	$59
16mb	60ns/70ns	$115
32mb	60ns/70ns	$239

Call for 1/2/4mb 30 pin SIMMS

DIMMS 60ns

8mb	$75
16mb	$129
32mb	$239
64mb	$479

WOW

VRAM

PMac 7200, 7500, 7600, 8500	1mb $59
PMac 9500	2mb ATI $159

CACHE

PMac 72/75/ 7600, 8500	256k $99
	512k $159
PMac 6100, 7100, 8100	256k $59

BUY MEMORY NOW!

OWC HARD DRIVES

CAPACITY		INTERNAL	EXTERNAL
Quantum 540MB		$149	$199
Quantum 850MB	Mac/Usa	$179	$229
Quantum 1280MB		$269	$319
Quantum 2.2GB 8.5MS		$489	$539
Quantum 4.3GB 8.6MS		$799	$849
Other Quantum Hard Drives		$CALL	
Seagate and Micropolis Drives		$CALL	

Call for IDE internals for PowerBook & Performas

30-Day Money Back Guarantee on All Hard Drives. SYSTEM 7.1 INSTALLED & 30MB OF SOFTWARE. EXTERNAL VERSION HAVE PLATINUM CASE W/ DUAL SCSI PORTS, PUSH-BUTTON SCSI ID & 40WATT POWER.

OWC Rocket Accelerator 84Mhz for PMac 6100s, 7100/66, Performa 61xx $49.95

Other World Computing
224 West Judd Street
Woodstock, IL 60098
International: (815) 338-8685
Fax: (815) 338-4332

Prices and specifications subject to change w/o notice. 15% restocking fee on returned merchandise unless otherwise noted

CIRCLE 233 ON READER SERVICE CARD

Global Graphics
The most complete source for digital imaging & video editing systems

We build Desktop Digital Video & Image Editing Systems using only the Finest Components from Companies Like: Media 100 - Apple Macropolis - Adobe - Atto TruVision - Avadis - Microtek And Many More...
Complete Systems Starting at $3,249! (PM7500, Targa, Jazz Drive & Monitor)
Call Today for Free Consulting
toll free 800/713-4436
phone/fax 941/548-9137
GGI@COCONET.COM

CIRCLE 235 ON READER SERVICE CARD

Powerbook Memory Specialists!
MEMORY
Powerbook Memory Specialists!
Guaranteed Lowest Prices • Life Time Warranty
• 30 Pin SIMMS
• 1MB—16MB
• 72 Pin SIMMS
• 1MB—64MB
• 168 Pin DIMM
• 4MB—128 MB
• Memory for All PowerBooks
• Memory for All Printers
Eritech International Inc.
800-808-6242
We accept P.O.'s from government, schools & qualified firms.
818-244-6242 818-500-7699
http://www.eritech.com
VRAM, DIMM, CACHE
Printers
HEWLETT PACKARD
Best Prices!

CIRCLE 237 ON READER SERVICE CARD

SAVE on RECONDITIONED MACS AND PERIPHERALS
• We're Mac specialists.
• High-quality, reliable reconditioned equipment.
• Exclusive 6-month warranty.
• Compare and save.
• Buy with confidence.
1-800-281-3661
Faxback: 615-860-0109 (24-hrs)
E-mail: DataTecRem@aol.com
Visit our Web Site:
http://www.datatech-rmkt.com
DataTech Remarketing, Inc.
471 Myatt Dr., Madison, TN 37115
615-860-4422 • Fax 615-860-0200

CIRCLE 236 ON READER SERVICE CARD

systems

Apple	BUY	LEASE*
7200/120/601 16/1.2G/CD	$2165	$ 93
7600/120/604 16/1.2G/CD	$2575	$ 99
8500/120/604 16/1.0G/CD	$2782	$101
8500/132/604 16/1.2G/CD	$3023	$116
8500/150/604 16/2.0G/CD	$3315	$127
9500/120/604 16/1.0G/CD	$2996	$115
9500/132/604 16/1.0G/CD	$3649	$139
9500/150/604 16/2.0G/CD	$4295	$163
UMAX	**BUY**	**LEASE***
J700L/150-604e 16/2.1G/CD	$2899	$111
S900D/150-604e 16/0/CD	$2899	$111
S900L/150-604e 16/2.0G/CD	$3599	$138
S900L/180-604e 32/2.1G/CD	$3860	$148
S900L/200-604e 32/2.1G/CD	$4160	$159
S900L/180-2/604e 32/2.1G/CD	$4460	$170

scanners

Afga StudioScan 400dpi flatbed	$ 697
Afga Arcus II 600dpi flatbed	$1999
Microtek Scanmaker E3 flatbed	$ 378
Microtek Scanmaker E6 Pro flatbed	$ 558
Microtek Scanmaker III flatbed	$1910

check out these specials!
AR COMPUTING
1-800-832-8802
M-S 8-7 pm CST
Call or visit our web site for more products
VISA & Mastercard
NO SURCHARGE FOR CREDIT CARDS

memory

6ons	SIMM 72pin	DIMM 168pin	POWERBOOK	30-PIN
4 mb	$ 26	$ ----	$ ----	$ 30
8 mb	$ 49	$ 59	$ 92	
16 mb	$ 79	$ 85	$ 161	
32 mb	$165	$169	$ 295	
64 mb	$call	$339	$ ----	

storage

iomega		
JAZ	Ext.	$479
	Int.	$379
Zip	Ext.	$187

memory lifetime warranty!
two day air shipping $3 on memory
two day air shipping $5 on modems & software

modems

U.S. Robotics Sportster	
33.6 w/voice	$166
	$190
Best Data (Data & Fax)	
28.8 w/voice	$124
	$144
Supra (33.6)	
Express	$129
FaxModem	$195

monitors

NEC	
M500	$ 499
M700	$ 799
XV15+	$ 489
XV17+	$ 819
XP17Pro	$1099
XP21	$2049
Sony	
15SXI	$ 409
15SFI	$ 449
15SFII	$ 479
17SFII	$ 799
17SEII	$1099
20SFII	$1699

software

Photoshop v3.0.5	$544
Illustrator v5.5	$373
QuarkXpress v3.32	$648
Director v5.0	$897
Premiere v4.2	$509
SoundEdit 16 v2.0	$399

ALL ITEMS ARE NEW! • 30-DAY COMPATIBILITY GUARANTEE • PRICES SUBJECT TO CHANGE • ORDER ON-LINE!!!
*36-MO. BUSINESS LEASE
http://www.io.com/arcomp
OVERNIGHT SHIPPING AVAILABLE

CIRCLE 238 ON READER SERVICE CARD

OUR GOAL IS TO BEAT OUR COMPETITOR'S PRICES
CALL US LAST FOR A SPECIAL DISCOUNT!
M E M O R Y
30 PINS
1MB 2MB 4MB
72 PINS
4MB 8MB 16MB 32MB 64MB
168 PIN DIMMS
4MB 8MB 16MB 32MB 64MB 128MB
VIDEO RAM
256K SIMMs/DIMMs
512K SIMMs/DIMMs
CACHE CARD
256K SIMMs 1&2MB DIMMS
512K SIMMs
POWERBOOK MEMROY
ALL SERIES AVAILABLE
PRINTER MEMORY
MAJOR BRANDS AVAILBALE
LIFETIME WARRANTY ON MEMORIES
ACCELERATORS
DAYSTAR, SONNET, NEWER
1-800-427-2021
HBR ENTERPRISES
11628 SANTA MONICA BLVD. #201 LA. CA. 90025
M-F 7:30AM - 6PM SAT 10AM - 3PM
FAX 1-310-826-2573
INTERNATION. 1-310-826-3363
TERMS: VISA, MC., AMX., DISCOVER, PRE-PAID, C.O.D & APPROVED P.O.s
http://www.dnm.com/hbr/
RETURN ITEMS ARE SUBJECT TO APPROVAL AND RESTOCK. FEE. PRICES SUBJECT TO CHANGE

KING COMPUTER PRODUCT
MAC MEMORY SPECIALIST
We WILL Beat Any Price
30 PINS
Plus • SE • SE30 Classic/II/Color • LC • LC2 • Per200/400-430 Q/700/900/950 • MAC II-IIX-IICX-IIS-IICI-IIFX-IIVX-IIVI
1MB—$10, 2MB—$19, 4MB—$29, 16MB—$119
72 PINS
QUADRA 605-660AV/Q800-840AV • LCII/LCIII-ALL • PERFORMA/450-578/630-638CD/PER-5200-6300CD • POWERMAC-6100/7100/8100ALL
4MB—$25, 8MB—$49, 16MB—$95, 32MB—$185
168 PIN—DIMMS
POWERMAC / 9500, 8500, 7500, 7200
8MB—$50, 16MB—$95, 32MB—$195, 64MB—$395
POWERBOOK

PB 5300/190		PB-500		PB DUO	
8MB—$89	40MB—$327	4MB—$79	24MB—$209	4MB—$80	14MB—$200
16MB—$149	48MB—$388	8MB—$89	32MB—$269	8MB—$130	20MB—$250
24MB—$209	52MB—$452	16MB—$149		12MB—$180	28MB—$340
32MB—$269					

VRAM 256K—$13, 512K—$20
For More Producuts Please Call
1MB P72/75/85—$45
2MB P/9500—$110
CACHE 256K/512K Cache Card—$72/82
1MB Cache Card—$329
256K/512K Cache DIMM—$63/139
1MB Cache DIMM—$259
Call Toll Free 888-477-KING (5464) Call Toll Free
Int'l—call 714-979-6156 714-979-6157
http:\\www.kingcomputers.com
We Accept all Corp., Educational & Gov't P.O.'s
All Products Guaranteed
All prices and product availability are subject to change.

CIRCLE 239 ON READER SERVICE CARD

LOW RATES
BUSINESS LEASING AVAILABLE

Bell Memory

DIMMS 64BIT•168PIN
8MB ..... $89 #M1628
16MB ..... $119 #M1625
32MB ..... $209 #M1622
64MB ..... $399 #M1619

SIMMS 32BIT•72PIN 60NS
8MB ..... $89 #M1598
16MB ..... $119 #M1595
32MB ..... $209 #M1604

PowerBook Memory
5300 & 190
8MB #M1387 $119
16MB #M1390 $199
32MB #M1393 $299

DAYSTAR DIGITAL
New ITEM! 2-180MHz Processors on One Card
NPOWR 360+ $1359 #A4413
for PPC 7500,7600,8500,9500,UMAX Clones
100MHz PowerPro 601 ... $1159 #A4500
Quadra Series, C610, C650 (610 needs an adapter)
100MHz Turbo 601 ..... $1139 #A4509
IICi, IISi, IIVx, IIVi and Performa 600

Polaroid

SprintScan/ES $1469 #S8547
SprintScan+ $1869 #S8550
SprintScan/LE $709 #S8555

PINNACLE MICRO
THE OPTICAL STORAGE COMPANY
$999 RCD 4x4 #E7258 4 Speed Read & Write
Tahoe 640 ..... $699 #E7257
Vertex 2.6GB ..... $1436 #E7253
RCD 5040 ..... $829 #E7248

Nikon ELECTRONIC IMAGING
SuperCoolScan ..... $1899 #S8503
CoolScan II ..... $1159 #S8500

INTEGRATED MICRO SOLUTIONS

TwinTurbo128M
4MB VRAM ..... $399 #V9240
8MB VRAM ..... $749 #V9238

Adaptive Solutions.
POWERSHOP
PowerShop PCI $1797 #V9244
Fast Photoshop Accelerator for PCI Mac's

GLOBAL VILLAGE COMMUNICATION
PowerPort PC Cards
PlatinumPro28.810Base-T .. $479 #F8147
PowerPort Platinum 28.8 .... $319 #F8150
TelePort Platinum Internet . $195 #M8121
TelePort Plat.Comm Slot ..... $195 #M8122

MacMarket
1-800-905-3034
Fax: 818-708-6399

9500 Dual Processor 180MHz 604e
(With Daystar's npower 2-180MHz Processor)
32MB RAM/2GB HD/8xCD . $4,757 #A1708

9500 150MHz
16MB RAM/ 2GB Hard Drive CD/ATI Video Board
CALL #A1662

8500 180MHz

32MB RAM/ 2GB Hard Drive 8xCD/L2 Cache
$4195 #A1688

7600 132MHz
16MB RAM 1.2GB Hard Drive 8xCD/L2 Cache
$2749 #A1684

7200 120MHz

16MB RAM/ 1.2GB Hard Drive 8xCD/L2 Cache
$2149 #A1651

Apple® Powerbooks®: Call for configuration & price

UMAX® SUPERmac
S900L DP
2-604e 180MHz Proc. #A1637 .. $4,269
S900L
1-604e 200MHz Proc. #A1639 $3,649
S900L
1-604e 180MHz Proc. #A1641 $3,469
J700L
150MHz,16MB RAM/2GB HD/8xCD. #A1633 $2,759

MONITORS		PRINTERS	
MultipleScan 14"	$299 #M6570	Laser 16/600PS	$2139 #P3250
Multiple Scan 15"	$399 #M6558	Laser 12/640	$1,499 #P3248
Multiple Scan 1705	$699 #M6638	Laser 4/600PS	$729 #P3256
Vision 1710	$899 #M6500	Color SW. 1500	$289 #P3369
Vision 1710AV	$949 #M6567	Color SW. 2500	$389 #P3367
Multiple Scan 20"	$1699 #M6564	StyleWriter 1200	$199 #P3265

The Latest Software Titles SALE

Microsoft Word V6.01	$278 #S1300	Adobe PageMaker V6.0	$519 #S1027
Microsoft Excel V5.0	$278 #S1302	Adobe Illustrator 6.0	$343 #S1014
Microsoft Office V4.2.1	$420 #S1306	MacroMedia Freehand V5.5	$355 #S1272
Adobe Photoshop V3.0.5	$515 #S1020	Director MultiMedia Studio	$836 #S1284

AGFA Agfa
Arcus II 600x1200 dpi
w/Photoshop and Transparency $1789 #S8482
SnapScan ..... $349 #S8492
Studio Scan IISi .... $619 #S8477
StudioStar LE ..... $779 #S8493

TARGA 2000 TRUEVISION® Video Editing
Targa 2000 ..... $3768 #V9200
Targa 1000 ..... $2535 #V9204

Monitors

PCI Cards radius

ThunderColor 30/1600	$1899 #V9102	PressView 21SR	$3049 #M6609
Thunder 30/1600	$989 #V9108	PrecisionView 21	$2229 #M6614
ThunderPower 1920	$1649 #V9197	PressView 17SR	$1899 #M6600
VideoVision Studio	$3549 #V9199	MultiView 21	$1429 #M6611

Mac Market
Call Today for Your
CATALOG

RASTEROPS®
SuperScan Mc801HR

$1899 #M6521
SuperScan 17"(.26) ..... $919 #M6504
SuperScan 20" .... $1359 #M6525
SuperScan 21" ..... $1699 #M6702

EPSON Printers
StylusColor ProXL $1699
12" x 18" 720 dpi Color #P3291
StylusColor Pro InkJet ..... $379 #P3288

UMAX®

Powerlook 2000	CALL	#S8559
Powerlook II Full	$1869	#S8520
Powerlook II LE	$1749	#S8522
Vista S6E PhotoDeluxe	$294	#S8439
Vista S6E Photoshop	$529	#S8431
Vista S12 Photoshop LE	$679	#S8564
Vista S12 Photoshop Full	$759	#S8565

Newer TECHNOLOGY

MAXpowr
with 604e Processors
Designed for 7500, 7600, 85, & 9500 PowerMacs
200MHz .. $919 #A4418
180MHz .. $757 #A4416

DIMMS 64BIT 60ns
8MB ... $78 #M1448
16MB . $118 #M1451
32MB . $229 #M1454
64MB . $429 #M1457

NUpowr
167MHz PB500 Upgrades•PowerPC
CPU Only ..... $619 #A4560
w/8MB RAM ..... $849 #A4564
117MHz 8MB RAM ..... $525 #A4544

HEWLETT PACKARD

680c	600X300	$299	#P3465
5MP	600dpi	$939	#P3232
4MV	600dpi	$2649	#P3235
DeskJet 1600CM		$1939	#P3410

SONY

15 SF2.... $459 #M6438
17 SF2.... $759 #M5580
20 SF2.. $1649 #M6574

International Call: 818•708•6388
Customer Service & Technical Support Call: 818•708•6388
Fax: 818•708•6399

MacMarket is Located at:
6924 CANBY AVE UNIT #104
RESEDA CA. 91335
M-F 8AM-6PM (Pacific)

All Prices reflect a Cash Discount. Any other method is 2% higher. Prices are subject to change without notice. All Returns are subject to restocking fee, must be in original package, condition & needs an RMA#. No Refunds on Labor or Freight Charges. We accept Visa, Mastercard, Discover & American Express. P.O.s accepted from U.S. Gov't, Schools & Corporations. Not responsible for typographical errors.

DATA MICRO COMPUTER INC.

800•345•1234
TEL (310) 398•3300 • FAX (310) 391•2488
DEALERS & INTERNATIONAL SALES WELCOME!
Govt. Univers.'s & Corp. P.O.'s welcome

QMS · LaserMaster · TOSHIBA · GCC · SUPERMAC · HEWLETT PACKARD · UMAX radius · IBM

POWERMAC		POWERBOOKS		PERFORMAS	
6100/66 8/500/CD	1149	5300CE 32/1Gig	CALL	575 5/250 CD/14"	949
6100/DOS 16/500CD	1349	5300C 16/750	CALL	578 8/320CD/14"	995
7100/80 8/700/CD	1469	5300C 8/500	CALL	580LC 8/800/14"	895
7200/90 8/500/CD	1695	5300CS 16/750	CALL	631 8/500CD/14"	1095
7200/120 16/1G/CD	1995	5300CS 8/500	1840	638 TV/8/350/15"	1149
7500/100 16/500CD	1749	5300 Mono 8/500	1155	6116 8/700CD/14"	1395
7600/120 16/1G/CD	2495	190CS 8/500	1295	5200 8/800CD/14"	1395
8100/80 8/250/CD	1469	190 8/500	1280	5320 16/1GCD/15"	1895
8100/110 16/2G/CD	2585	540C 4/320	2295	6205 8/1G CD/15"	1395
8500/132 16/1G/CD	2495	520C 4/160	1345	6290 8/1G CD/15"	1549
8500/150 16/2G/CD	2895	520C 4/240	1445	6300 16/1GCD/15"	1675
9500/132 16/1G/CD	2795	520 4/240	895	6320 16/1GCD/15"	1995
9500/150 16/2G/CD	3595	GLOBAL 1.44 PCMC	99	6400/180 16/1G	2195
9500/200 32/2G/CD	CALL	Call for memory		6400/200 16/2G	2395
		Platinum pro	495.		

APPLE		RADIUS		SONY		APPLE PRINTERS	
Apple 14"	249	SuperMatch 17"	595	SuperMatch 17"	595	StyleWriter 1200	139
Apple 15"	339	Precision Color 17	735	Precision Color 17	735	StyleWriter 1500	229
Apple 17"	695	Intellicolor 20	1299	Intellicolor 20	1299	StyleWriter 2400	249
Apple 20"	1595	Precision Color 21	1495	Precision Color 21	1495	StyleWriter 2500	319
15" Gray Scale	295	SuperMatch 21TXL	1595	SuperMatch 21TXL	1595	Laser Select 300	469
15" Pivot/Gray Scale	299	Precision View	1995	Precision View	1995	Laser 360	1395
20" Gray 20GS	695	Sony 17 SF II	795.	Sony 17 SF II	795.	Laser 4/600	775
21" Gray 21GS	777	Sony 20 SE II	1875.	Sony 20 SE II	1875.	Laser 12/640	1495

CIRCLE 243 ON READER SERVICE CARD

RECORD CDs

Now Only $599
2X write/4X read CD-R

NEW!
AUDIO • VIDEO • DATA
AVD
CD RECORDERS
(4X CD-R $999)

THEN LABEL YOUR CDs
• Software for Mac or PC
• 100 Gold & white labels
• Alignment Device
Only $79

JAZ/CD-R DUO
EXTREME
$1199

We used our two Extremes to burn over 100 CDs... We couldn't have finished our project on time without the Extremes"
- Greg Lebsock, McDonnell Douglas

"...I am absolutely floored! An amazing piece of hardware" - John Mennixon, Maxtech

New Price JAZ
1GB Removable HD
Includes 1 Cartridge $449

OPTICAL

128MB	$11.99
230MB	$15.99
650MB	$29.99
1.3GB	$39.99
2.6GB	$69.99

SYQUEST JAZ & ZIP

44MB	$33
88MB	$37
200MB	$55
105MB	$35
270MB	$52
JAZ 1GB	$95
ZIP 100MB	$15.99

SOFTWARE

CD-DA Mac software for writing "Red-Book" Audio CDs	$449
CD-COPY Mac software for bit by bit copying of CDs	$199
M-PACK MPEG Encoding software for Mac	$399
TOAST 3.0 The #1 CD Writing SW for Mac, Improved	$299
AUDIOMEDIA III Mac PCI Audio I/O card	$699
MASTERLIST Mac software for writing Pre Audio CDs	$499

MEMORY TOO!
Great Prices on Top Brand Memory
8 MB - 64 MB CALL

MACROMEDIA DIRECTOR 5
#1 Multimedia Authoring Tool
$499

MEDIASTORE
See us at http://www.mediastore.com
800•555•5551
NEVER UNDERSOLD!
ph. 714-974-5551 • fx. 714-279-1690
VISA · MasterCard · AMERICAN EXPRESS
Prices subject to change

CIRCLE 244 ON READER SERVICE CARD

CALL US FOR ALL OF YOUR Computer needs!

COMPUTER REVELATIONS

Over 20,000 products Available !
PowerMacs, Printers, Monitors, Scanners, *all peripherals*, Hardware & Software !

Selling Reliability, Quality and Affordability with every system for over 10 years !

COMPAQ · HEWLETT PACKARD · Tektronix · FUJITSU · Microsoft · radius

Call For Latest Pricing !
1 800 275-9924
in NY 516 737-0800
331E DANTE COURT HOLBROOK NY 11741 FAX 516 737-0923

NEW & USED BOUGHT & SOLD
Ask about our EXTENDED WARRANTY
ALL APPLE PARTS & ACCESSORIES IN STOCK
Rentals / Service available in NYC area

See us for your Digital Video needs
Targa 2000, Media 100, Video Vision and more !

CIRCLE 242 ON READER SERVICE CARD

(800) 673-6227

POWER ON
COMPUTER SERVICES

Monitors
17" Hi-res. Trinitron (R) 399.00
17" Std.-res. Trinitron (R) 359.00
Apple 15" Multi-Scan (R) 290.00

CPUs
Mac II 4/160 (U) 99.00
Mac IIcx 4/160 (U) 145.00
Performa 6116 8/700/CD (R) .799.00
Performa 6205 8/1000/CD (R) .1069.00
Call for the lowest PowerPC prices!

Printers
LaserWriter 320 w/Toner (N) ...599.00
StyleWriter 1200 (R) 169.00

Other Specials
Int. 160 MB Hard Drives (N) 65.00
1.44 FDHD, Auto-Inject (NEW) .89.00
4x CD-ROM Drives (N) 99.00
Keyboard Liquidations! Call for pricing!

(916) 652-1880 • (916) 652-1881 FAX
AOL: poweronwww@aol.com
http://www.poweron-line.com

CIRCLE 246 ON READER SERVICE CARD

The easiest way to record your own CDs!

Recordable, Finally Affordable!

4X4X CD-R
4X Write/4X Read
$899
WITH TOAST OR INCAT SOFTWARE

2X4X CD-R
2X Write/4X Read
$599
WITH TOAST OR INCAT SOFTWARE
Limited Time Get a SCSI Controller Card FREE!

74min CD-R Blank Media
$6.99
IN STOCK

NEC 4X SCSI CD-ROM $84
NEC 8X SCSI CD-ROM $229
PIONEER 10X SCSI CD-ROM $249

MICROSYNERGY
A Subsidiary of Innovative Diversified Technologies, Inc.

Price & Availability may change without prior notice
1-888-877-6777 ask for extension 301
(714) 727-3092 • FAX (714) 727-3565

CIRCLE 249 ON READER SERVICE CARD

WE ARE THE KING OF MAC !!!

TRY OUR NEW INTERNET SITE! http://www.Compu-America.com

PowerBooks
5300CE 32/1.2 $CALL
5300C 16/750 $CALL
5300C 8/500 $CALL
5300CS 16/750 $CALL
5300CS 8/500 $CALL
190CS 12/500 $CALL

We are OPEN Saturday!
SALES CALLS (310) 445-1777
FAX NOW (310) 472-7248

COMPU AMERICA
"The Computer Specialist"

Come see our huge showroom!
10435 Santa Monica Blvd, LA CA 90025

1-800-533-9005

Performa
6400/200 16/1.6/CD $2299
6400/180 16/1.6/CD $2099
6300/100 16/1G/CD $1299*
6320 16/1G/CD $1999
5200 8/800/CD $1299
6200 8/1GIG/CD $1099*
580 8/500 $999

9500/200MHZ

- 200MHz CPU
- Upgradeable CPU
- Tower Case
- Upgradeable 604
- 7 PCI slots, Tower!
- Built in EtherNet
- 4X CD-ROM

32/2GIG/8XCD $CALL

DUO 2300C

603E 100MHZ, 4.8LBS
9.5" ACTIVE MATRIX COLOR SCREEN
20/1.1GIG/FAX/MDM $2299
8/750 $1699
DUO DOCK II PLUS $499

8500/180MHZ

- 150MHz PPC CPU
- Video In and Out
- VideoShop Software
- Built in Video Capture
- Supports 24bit Color
- 3 PCI Slots
- 256K Cache

32/2GIG/8XCD $3999

8500/150MHZ

- 150MHz PPC CPU
- Video In and Out
- VideoShop Software
- Built in Video Capture
- Supports 24bit Color
- 3 PCI Slots
- 256K Cache

16/2GIG/4XCD $2899

7600/132MHZ

- 132MHz PPC CPU
- Audio/Visual Capable
- Built in Video Capture
- VideoShop Software
- Supports 24bit Color
- 3 PCI Slots
- 256K Cache Built In

16/1.2G/4XCD $2629

7600/120MHZ

- 120MHz PPC CPU
- Audio/Visual Capable
- Built in Video Capture
- VideoShop Software
- Supports 24bit Color
- 3 PCI Slots
- 256K Cache Built In

16/1.2G/4XCD $2299

9500/150MHZ

- 150MHz PPC CPU
- Full Tower Case
- 512K CACHE
- Supports 24bit Color
- 8 PCI Slots

SUPER LOW PRICE!
16/2GIG/4XCD $3499

9500/132MHZ

- 132MHz PPC CPU
- Full Tower Case
- 512K CACHE
- Supports 24bit Color
- 8 PCI Slots

16/1GIG/4XCD $2799
16/1GIG/8XCD $2949*

9500/120MHZ

- 120MHz PPC CPU
- Full Tower Case
- 512K CACHE
- Supports 24bit Color
- 8 PCI Slots

16/1GIG/CD $2199
16/1GIG/CD $2099*

8500/132MHZ

- 132MHz PPC CPU
- Full Tower Case
- 512K CACHE
- Supports 24bit Color
- 8 PCI Slots
- Upgradeable CPU

16/1.2GIG/4XCD $2549

8500/120MHZ

- 120MHz PPC CPU
- Audio/Visual Capable
- Built in Video Capture
- Supports 24bit Color
- 3 PCI Slots

16/1GIG/4XCD $2199*
16/2GIG/4XCD $2399*

7200/120MHZ

- 120MHz PowerPC
- 256K CACHE Included
- Built in Video Card
- 3 PCI Slots
- Desktop Case
- System 7.5

8/1G/4XCD $1799
16/1G/4XCD/CACHE2 $1899

PowerBooks DUO

200 4/240 $799
210 12/240/FAX $1399
230C 4/500 $1399
230C 12/320/FAX $1899
230C 8/750 $1595
230C 20/1.3G/FAX $2399

PowerBooks

150 4/240 $599
150 8/240 $669
190CS 8/500 $1399
520 4/240 $799
520 8/240 $849

UMAX S900D 604/150

- 16MB 6-PCI W/8X CDROM & KEYBOARD, IMS TWIN TURBO 4M
- WARRANTY ONE YEAR ON SITE
- 2GIG FAST HD
- 604/150MHZ
- CAN ADD 2ND CPU
- CACHE: 512K

$3599

UMAX S900L 604/150

- 16MB 6-PCI W/8X CDROM & KEYBOARD, NO VIDEO
- WARRANTY ONE YEAR ON SITE
- NO HARD DISK
- 604/150MHZ
- CAN ADD 2ND CPU
- CACHE: 512K

$2849

UMAX SCANNERS

PaperPort $229
Vista S6c $399
Vista S6 Pro $599
Vista S12e $749
Vista S12 Pro $849
Powerlook II $2849

EPSON

ACTION SCAN II $499
ES-1000C $799
ES-1200LE $999
ES-1200PRO $1099

NEC

21XP 21" $1949
21XE 21" $1749
17XV+ 17" $769
15XV+ 15" $499
M500 15" $549
M700 17" $879

VIEWSONIC

15GA $469
17GA $729
GT770 $729
PT770 $799
GT800 $1529
PT810 $1649

Monitors

Sony 15SFX / 17SFX 399/729
Sony 17HSX / Artiss 949/1099
NEC 3FG / 4Fx 899/1199
Apple MultiScan 14" 399/549
Apple 15" 549/799*
Apple 17HR 17" 849
Apple 17" 17 AM w/ mike 849
Apple 20" 1499

Apple Printers

StyleWriter Pro 1200 ..... $159*
StyleWriter 2400 ..... $199*
StyleWriter 2500 ..... $329
StyleWriter 2500C $329
LW Writer 360 ..... $299
LW Writer 4/600PS $599
LW 12/640 PS $1529
LW 12/600 PS Cx $1519

GCC Printers

GCC ELITE XL 808 $2599
GCC ELITE XL 616 $2349
GCC ELITE XL 608 $2099
GCC ELITE XL 1208 $3099

MEMORY BLOWOUT!

8 MEG DIMM $69
16 MEG DIMM $129
32 MEG DIMM $249
64 MEG DIMM $399

All prices are cash discounted. Prices subject to change without notice. Not responsible for typos. Government, Universities, and Fortune 1000 company P.O.'s are welcome.

CIRCLE 245 ON READER SERVICE CARD

CALL NOW
INTERNATIONAL ORDERS

MacMail

800-MAC -6844
www.macmail.com

LLAME AHORA
SE HABLA ESPAÑOL

• SONY • DAYSTAR • EPSON • SYQUEST • UMAX • RADIUS

• FARALLON • SUPRA • NEC • MITSUBISH

SUPERMAC • CANON • APPLE • KODAK

• IOMEGA • ASANTE • HEWLETT PACKARD • MICROTECK

MACS

PMAC7200/120•16/1.2G/CD$1998
PMAC7600/120•16/1.2G/CD$2655
PMAC8500/132•16/1.2G/CD$2850
PMAC8500/150•16/2G/CD $3255
PMAC8500/180•32/2G/CD $4395
PMAC9500/150•32/2G/CD $3960
PMAC9500/200•32/2G/CD $4789
Custom Configurations . .CALL

MEMORY

08MB DIMM $59
16MB DIMM $109
32MB DIMM $222
64MB DIMM $450
INT/EXT. HD .....CALL

P.BOOKS & PERIPHERALS .Call
L.PRINTERS . .CALL

PERFORMAS

6300/100 8/1G/CD Bndl . .$1598
6320/120 16/1G/CD Bndl .$2098

PRINTERS

Apple SW 1500 .....$269
Apple SW 2200 .....$274
Apple SW 2500 .....$369
AppleLW 4/600 .....$765
AppleLW 12/640 .....$1540
AppleLW 16/600 .....$2259

MONITORS

Apple Multiscan 14" $279
Apple MultiScan 15" $379
Apple Multiscan 1705 .....$740
Apple Vision 1710 .....$935
Apple AV 1710 .....$1045
Apple Multiscan 20" $1829
Sony 20" SF2 .....$1695
ArtMedia 17" $745
Rasterops 20" $1398

•Leasing Plans
•FEDEX•UPS•Etc...
•Prices may change
•Price represent cash discounts

MacMail
www.MacMail.com
800-622-6844
Int'l: 305-639-9646

800-MAC-6844

VISA MASTERCARD AMERICAN EXPRESS COD

CIRCLE 241 ON READER SERVICE CARD

HAWKE
BUSINESS SYSTEMS
A Division of the CPS Service Group
Flemington, NJ 08822
Fax - (908) 782-7027
(800) 875-2610
EMail - MacHawke@AOL.Com

Specialists in Mature Macintosh Computers and Peripherals

Buy - Sell - Trade - Repair

We Sell Fully Refurbished Systems From the Mac Plus to Quadra 950 With a Six Month Warranty

We Buy Working and Non Working Macintosh Equipment

We Trade your Older Equipment for Newer Models in One Transaction

We Fix Older Macs & Sell Service Parts for Do-It-Yourself Repairs

Please Call, Fax or E mail for Additional Information and Current Price Sheet

CIRCLE 247 ON READER SERVICE CARD

OPEN FOR BUSINESS!

FIND THE LOWEST PRICES ON MAC HARDWARE!

We research hundreds of vendors and thousands of products to show you where to buy at the lowest price around. Save hours and dollars using our service, and you don't pay unless you decide it's worth it! You've got nothing to lose, so call

888-MAC-BUYS

Major credit cards accepted.
INFOPHONE INTERNATIONAL, INC.

800-352-3420

385 Van Ness Ave. #110 • Torrance, CA 90501

FWB CDR $549

JAZ Dr. $549

The Lowest Business Finance Rate Available

Free Photoshop 3.0.5 w/Lease & No Payments for 90 Days

- PowerPC 9500/200MHZ or PowerTower 225MHz 272MB/ 2.2GB/ 8X CD /512K L-2 Cache
- IMS 128 1600x1200 w/8MB & Radius PrecisionView 21" Color Display, TI MicroLaserPro 8 printer
- Agfa Arcus II w/ Transpancy 36-bit Color Scanner w/ PhotoShop 3.0.5 & Calibration Software
- Combo Drive - JAZ, 1.2GB H/D, SQ270MB, 650MB M.O. w/ UPS Battery Back-up **$379/ Month**

Hard Drive, SyQ & CDR Devices

(Minus $39 for Internal Drive)	Ext.	Turbo
Hp / IBM 1.0/1.2GB	$289	$309
HP 2.0GB	**$389**	**$409**
Quantum 2.1GB Fireball	**$449**	**$489**
Quantum 3.2GB Fireball	**$549**	**$589**
Quantum 4.3GB Atlas	**$879**	**$939**
Seagate 4.3GB - Barracuda IV	**$1059**	**$1149**
Seagate 9.0GB Elite	**$1919**	**$1979**
SONY 650MB M.O. Drive	**$699**	**$749**
SyQuest 270/200MB Ext. Drive	$299/329	+$25
SONY DAT -5000 5GB-16GB Dr.	**$889**	**$999**
SONY CDR 2X/2X w/Toast	$589	$649
JVC CDR 4X/2X w/Toast	$689	$749
Yahama CDR 4X/2X w/Toast	$899	$949
Yahama CDR 4X/4X w/Toast	$1199	$1279

Jaz/Zip & DiskArrays	Ext.	Turbo
IOMega Zip ext. Dr. w/Cart.	$139*	$165*
Jaz ext. Dr. w/ Cart.	**$449/$469**	**+$25**
Jaz + CDR ext. Dr w/SW	**$1099**	**$1149**
2GB F&W DiskArray	$1249	$1299
4GB F&W DiskArray	$1979	$2039
8GB F&W DiskArray	$2589	$2649
16GB F&W DiskArray	$5349	$5399
REMUS DiskArray	$212	$239

Software Specials

Adobe Photoshop 3.0.5	**$199 / $99***
Adobe Illustrator 5.5/6.0	$199/$249
Caere OmniPage Direct/Pro.	$39/$99
DOS Mounter '95	**$49/$29**
Dantz Retrospect II 3.0	**$99**
HSC Live Picture 2.0	**$249**
Kai's Power Tools 2.1	$39
Microsoft Office 4.2.1	**$249**
Claris FileMaker Pro	**$99**
Adobe Premiere 1.0.1/4.2	**$149/$479**

SyQuest

270MB	$54
200MB	**$62/$54**
EZ 135	$19
88MB	$41/35
44MB	$38/32

$199

Viking Memory

	30 pin	72 pin	168 pin
4MB	$35	$35	-
8MB	**$69**	**$59**	**$59**
16MB	$129	$99	$109
32MB	-	**$199**	**$189**
64MB	-	-	$389

Photoshop3.0.5

Illustrator

Scanners

Model	Price
Epson 1000C/1200C	**$589/$939**
Agfa Studio/ Arcus II	$689/$1889
ScanMaker E3/E6	**$364/$549**
Microtek Transparency	**$249**
Umax S6/PowerLook	$489/$2089
Dextra 1200+/SP	$299/$349
Nikon Coolscan II/Super	**$1149/$1889**

Optical

DSC 128MB	**$9.99**
DSC 230MB	$14
DSC 650MB	**$34**
DSC 1.2GB	$44
Sony 1.3GB	**$69**

System Bundle

Model w/17" color mon. XKB	Price
PowerTower Pro 225MHZ	**$5599**
PM9500/200Mhz 32/2/CD	$5599
PM9500/180 MP 32/2/CD	$6299
PM8500/180Mhz32/2/CD	$4899
PM7600/132Mhz 16/1/CD	**$3399**
DayStar MP300/2x200MHZ	**$7499**

Iomega

1.0GB Jaz	$105
100MB Zip	**$12***

ZIP Cart. $12*

128MB $10

JAZ $105

LivePic. $249

Image Solutions

Fax: 310-782-5974 E-Mail: imagesol@aol.com
http://www.imagesolution.com
Order from 6 to 9 weekday & 9 to 9 weekend

CIRCLE 250 ON READER SERVICE CARD

200MHz PROCESSOR UPGRADE $1095

iCN

INNOVATIVE COMPUTER & NETWORKING INC.

DUO2300 UPGRADE KIT

From Duo 200 to Duo 2300 (PPC 603e, 100Mhz)

$895

POWERMACS

9500

200MHz	32/2GB/8x-CD	$4490
180MHz MP	32/2GB/8x-CD	$5190
150MHz	32/2G/CD	$3559
132MHz	16/1G/CD/ATI*	$2359
120MHz	16/1G/CD/ATI*	$2190

8500

180MHz	32/2GB/8x-CD	$3990
150MHz	16/2G/CD	$2799
120MHz/132MHz	16/1G/CD	$2290/2399

7600

132MHz	16/1.2GB/8x-CD	$2590
120MHz	16/1.2GB/CD	$2195

7500

100MHz	16/1.2GB/CD*	$1695

7200

120MHz	16/1.2GB/CD/L2 Cache	$1799
120MHz	16/1.2GB/8x-CD	$2099
120MHz	16/1.2GB/8x-CD/DOS Compatible	$2399

8100, 7100, 6100 CALL

PRE-OWNED POWERBOOKS

140	4/40	$349
145	8/40/Modem	$399
160	8/80/Modem	$595
165	12/120/Modem	$699

POWERBOOKS

5300c	16/750	CALL
5300c	8/500	CALL
5300cs	16/750	CALL
520-520c	Available	CALL
540-540c	Available	CALL

APPLE PARTS

4x-CD-ROM 600e QUAD-SPEED	$139
9500 LOGIC BOARD	$895
8500 LOGIC BOARD	$759
150/132/120MHz 604 PROCESSORS	$999-599-399
Q840AV LOGIC BOARD	$495
Q800 LOGIC BOARD	$455
1.44 Floppy Drive	$125

PERFORMAS

LC580 8/800/14" Built-in/KB	$989
6300/100 8/1GB/CD/14"/28.8 Mod/KB	$1599
6320/120 16/1GB/CD/TV/V/15"/28.8 Mod/KB	$2190
6400/180 16/1.6GB/8x-CD/L2 Cache/28.8 Mod/KB	$2099
6400/200 16/2.4GB/8x-CD/L2 Cache/28.8 Mod/KB	$2399

7200/120 MHz 16/1.2GB/CD L2 Cache **$1799**

8500/150 MHz 16/2GB/CD Video in-out **$2799**

7600/120 MHz 16/1.2GB/CD Video in **$2290**

PowerBook Duo2300c 8/750/Modem **$1590**

DuoDock+ **$495**

BUNDLE 9500/150 MHz 16/2GB/CD Apple 17" Monitor **$3990**

UPGRADES

WITH ORIGINAL APPLE LOGIC BOARD & PARTS

Quadra 950, 900 to **Workgroup Server 9150/120** $1750

PowerMac 8100s to **8500/120/132/150** $1300-1550-1980

Quadra 840AV, 800 to **8500/120/132/150** $1690-2090-2290

120/132MHz 604 Processor (8500 & 9500) to **150 MHz 604 Processor** $895-795

PowerMac 7200/75-90MHz to **7200/120** $550-450

PowerMac 7200 to **7600/120/132** $1390-1590

PowerMac 7500 to **7600/120/132** $495-695

PowerMac 7100 to **7200/120** $795

Quadra, Performa 630 to **6200/75-6300/100** $495-795

Powermac 8100/80, 8150/80 to **8100/100-110** $890-1190

Centris/Quadra 610, 660 to **6100** & Q650 to **7100** CALL

iCN On-Line
http://www.icni.com
E-mail: icn@icni.com

QUADRAS

Q950	16/0*	$899
Q840AV	0/0*	$879
Q800	8/0*	$790
Q650	8/0*	$750
Q660AV	8/0*	$649

LOWEST PRICES ON
WORKGROUP/NETWORK SERVERS
6150, 7250, 8550, 9550, 500 & 700

ASK ABOUT OUR
BUSINESS LEASING

(310) 445-6600
FAX: (310) 445-6611
FAX TOLL FREE FROM JAPAN: 00-31-114211
2045-B S. Barrington Ave, LA, CA 90025

MONITORS

APPLE 14" Multi	$255
APPLE 15" Multi	$349
APPLE 1705	$679
APPLE 1710Vision	$859
APPLE 1710AV	$939
APPLE 20" Multi	$1699
SONY, NEC & RADIUS	CALL

PRINTERS

APPLE LW 4/600	$729
APPLE LaserWriter 12/640	$1489
APPLE LW 16/600	$2089
APPLE Color 12/600	$5190
APPLE SW 2500	$375
APPLE SW 2400	$295
GCC 600 600dpi/10ppm/Ethernet	$1190
EPSON & GCC	CALL

HEWLETT PACKARD

LASER JET 5MCOLOR	$6999
LASER JET 4MV	$2699
LASER JET 4MPLUS	$1599
LASER JET 5MP	$949

Prices Subject to Change Without Notice • Call for Latest Prices
All Prices reflect 3% Cash Discount • * : Refurbished

BIG MAC

1-800-761-1999

POWERMAC'S

Add 1GB Internal JAZZ	$495
9500/200M 32/2GB/CD	4550
9500/180MP 32/2GB/8xCD	5299
8500/180MP 32/2GB/8xCD	4195
9500/150 16/2GB/CD	3699
9500/150 144/2GB/CD/JAZZ	5199
9500/132 16/1GB/CD	2699
9500/120 16/1GB/CD	2550
8500/150 16/2GB/CD	3090
8500/150 48/2GB/CD	3695
8500/150 144/4GB/CD/JAZZ	5655
8500/132 80/2GB/CD	3995
8500/132 16/1GB/CD	2699
8500/120 16/1GB/CD	2599
7600/132 16/1GB/8xCD	2795
7600/120 16/1GB/CD	2399
7600/120 32/2GB/CD	2830
7200/120 16/1GB/CD	1878

POWERMACS

5300CE	32/1.2GB	4095
5300C	8/500	2450
5300C	16/750	3099
5300CS	8/500	1899
190CS	8/500	1495
520	8/240	775
150	8/240	695

PERFORMA

6400/200	16/1.2GB/8xCD	2630
6400/180	16/1.6GB/8xCD	2280
6320/120	16/1GB/CD/TV/V	2375
5200	8/800/CD	1275

1831 Pontius Ave., Los Angeles, CA 90025
Tel: (310) 235-1780 • Fax: (310) 235-1790
Toll Free: (800) 761-1999

CIRCLE 251 ON READER SERVICE CARD

MACBASE® USA (800) 951-1230

1941 Freeman #B Signal Hill, CA 90804 . *Since 1988*

University, Schools, Gov't, & Fortune 1000 P.Os Accepted

FAX (310)498-0032
International (310)498-1230
HOURS: Mon-Fri 8:00-6:00

Prices are C.O.D. and subject to change without notice. P.O.S are subject to credit approvals.

Power Macintosh

7200/90	16/500/CD	$1459
7200/120	8/1.2GB/CD	$1899
7200/120	16/1.2GB/CD/L2	$1989
7200/120	24/1GB/8xCD/PC	$2599
7500/100	16/1GB/CD	CALL
7600/120	16/1.2GB/CD	$2299
7600/132	16/1.2GB/8xCD	$2759
8500/132	16/1.2GB/CD	$2559
8500/150	16/2GB/CD	$2959
8500/150	16/1.2GB/8xCD	$3379
8500/180	16/2GB/8xCD/L2	$4179
9500/132	16/1GB/CD/VI	$2748
9500/150	16/2GB/CD/VI	$3649
9500/200	32/2GB/8xCD	$4299
9500/180MP	32/2GB/8xCD	$5399

PowerBook

520 8/240 w/CASE	$798
190cs 8MB/500HD	CALL
5300c 16/750	CALL
5300ce 32/1.2GB	CALL
Duo 2300c 8/750	$1599
Duo 2300c 20/1GB/M	$2349
Duo Dock II Plus	$498

Performa

P580CD/631CD	$999/$1099
638CD/6290CD	$1198/$1599
5200CD/6200CD REF	$1299/$1599
6320CD 16/1.2GB/CD	$2298
6400CD/180MHZ	$2179
6400CD/200MHZ	$2579

Call Us For Current Pricing

MEMORY

8MB / 16MB DIMM	$59/$89
32MB / 64MB DIMM	$199/$359
256 / 512 K CACHE	$79/$129
1MB V-RAM	$49
4MB / 8MB SIMM	$34/$59
16MB / 32MB SIMM	$89/$195
4MB / 8MB(PB5300&190)	$79/$99
16/32MB(PB5300&190	$179/$289
Apple 15"/ 1705	$359/$669
Apple MultiScan 20" Ref	$1199

All memory modules are new w/ lifetime warranty

FedEx

Now On World Wide Web
http://www.MacBase.com

CIRCLE 248 ON READER SERVICE CARD

PUSH, PULL OR DRAG IT SALE!

GET A *$400 MINIMUM TRADE-IN* ON YOUR 20MHZ '030 COLOR MAC SYSTEM OR *$400 MINIMUM TRADE-IN* ON YOUR POWERBOOK!

*DESKTOP TRADE-INS: working units only, '030 processor@20Mhz or faster, minimum configuration 4/80, keyboard, mouse & color monitor

*POWERBOOK TRADE-INS: working units only, minimum 4/80 configuration, with floppy

We Specialize in Parts

HTTP://www.shrevesystems.com

special

special

special

PowerMac 6100/60

- factory refurbished
- 60MHz PowerPC™ 601
- 8MB RAM
- 250MB hard drive
- 2X Apple CD500i
- AppleDesign Extended Keyboard
- 14" Performa Plus Display
- Global Village Bronze Faxmodem

$1399.00
- $400 TRADE-IN
YOUR COST $999

PowerMac 5200/75LC

- factory refurbished
- 75MHz PowerPC™ 603
- 8MB RAM
- 500MB hard drive
- 4X Apple CD600i
- AppleDesign Extended Keyboard
- 14" Apple Display
- Global Village Bronze Faxmodem
- Built-in speakers

$1399.00
- $400 TRADE-IN
YOUR COST $999

Performa 6200/75

- factory refurbished
- 75MHz PowerPC™ 603
- 8MB RAM
- 1GB hard drive
- 4X Apple CD600i
- AppleDesign Extended Keyboard
- 15" Apple MultiScan Display
- Global Village Bronze Faxmodem

$1499.00
- $400 TRADE-IN
YOUR COST $1099

Performa 6300/100

- factory refurbished
- 100MHz PowerPC™ 603e
- 16MB RAM
- 1.2GB hard drive
- 4X Apple CD600i
- AppleDesign Extended Keyboard
- 15" Apple Multiscan Display
- Global Village Bronze Faxmodem

$1799.00
- $400 TRADE-IN
YOUR COST $1399

special

PowerBook 520

- factory refurbished
- 25MHz MC68LC040
- 4MB RAM
- 240MB hard drive
- 4-bit gray, passive matrix
- maximum RAM: 36MB
- 16-bit stereo sound output

$949.00
- $400 TRADE-IN
YOUR COST $549

"PUSH, PULL OR DRAG IT" SPECIALS INCLUDE:

- ClarisWorks™ 3.0 CD-ROM
- Claris Amazing Animation™ CD-ROM
- Avid VideoShop™ 3.0 CD-ROM
- Sierra Club: The Blue Whale CD-ROM

Plus 15 more!

A $2000 VALUE

LOOK!

$2499

NEW One-Year Warranty

Power Macintosh 9500/120 16/1GB/CD

DIGITAL AUDIO RECORDING

$79

Pro AudioSpectrum™ 16

For Macintosh LC series, Quadra 605, 630 series. From MediaVision, the Pro AudioSpectrum 16™ is the state-of-the-art in audio enhancement for your Macintosh LC, LCII, LCIII, or Quadra 605. This audio adapter delivers 16-bit stereo digital audio recording and playback to 44.1KHz, has built-in MIDI in and out ports, and a 4-channel software controllable input mixer. System 7.0 or later required

Quadra 950 8/0

- 5 Nubus slots
- 1MB VRAM
- 16 SIMM sockets

$1299 new

$199

800/840AV/8100 POWER SUPPLIES GENUINE APPLE

$499

Duo 230 4/80

UP TO 11x17

- TRANSPARENCIES
- COLORSYNC™
- 360 DPI

$699

Apple Color Printer #M9500 NEW

$199

Hewlett-Packard DeskWriter REFURBISHED

NEW

1.44 FLOPPY DRIVES $129

New and Old Style

$799

PowerBook 150 8/240 NEW

$49

Avid VideoShop 3.0 CD-ROM

$149

Mountain. 7-DISC CD-ROM MINICHANGER NEW

$99

*with trade-in

TRADE IN YOUR WORKING STYLEWRITER OR STYLEWRITER II FOR THIS INCREDIBLE PRICE! $249 WITHOUT TRADE-IN

Color StyleWriter Pro REFURBISHED

$69

Bernoulli 90Pro Transportable REFURBISHED

Personal NTR Upgrade

- PostScript Level II
- Risc Processor
- easily installs in your Personal NT!

$99

We Stock Parts and Systems for Apple II!

E-MACHINES

$129

NEW

DOUBLECOLOR SX

- ACCELERATED 8-BIT COLOR
- HARDWARE PAN AND ZOOM
- SWITCHABLE RESOLUTIONS

$39

ADB Mouse II

SHREVE Systems

Our 16th Year In Business!

SCHOOL AND GOVERNMENT PO'S ACCEPTED

1•800•227•3971

• ALL CREDIT CARDS STRICTLY VERIFIED •

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

Macintosh CPUs

LC550 4/160	$599.
LC580 8/800/4XCD NEW	$1249.
Performa 635 4/250/CD	$799.
Performa 637 8/250/CD	$849.
Performa 6116 8/700/CD	$1099.
Performa 6200 8/1GB/CD	$1049.
Centris 650 4/0	$649.
Quadra 660av 4/0	$599.
Quadra 840av 0/0	$999.
Quadra 800 8/0	$899.
Quadra 950 8/500 NEW	$1499.
PowerMac 7500/100 16/1.2GB/CD	$1849.
PowerMac 7500/100 16/1.2GB/CD NEW	$2199.
PowerMac 9500/120 16/1GB/CD NEW	$2499.
PowerMac 9500/132 16/2GB/CD	$2999.
WGS 9150/120 16/2GB NEW	$2999.

Logic Board Upgrades

Personal NT to NTR printer upgrade	exch. $99
LaserWriter IIST/NTX to IIf	exch. $399 NT/299 NTX
Mac II or IIx to IIfx	exch. $299
Centris 610 to Quadra 660av	exch. $199
Quadra 660av to PowerMac 6100/60	exch. $599
Quadra 800/840av to PowerMac 8100/80	exch. $999
Quadra 800 to Quadra 840av	exch. $299
Quadra 650 to PowerMac 7100/66	exch. $799
LC550 to LC575	exch. $499
IIvx or IIci to Centris 650	exch. $299
Performa 630 to PowerMac 6200	exch. $699
Performa 630 to PowerMac 6300	exch. $999

6100 NuBus Adapters!

Hurry! Quantities Limited!

6100 NuBus Adapter	$299.
Quadra 610 Nubus Adapter	$99.

Apple OneScanner	$279.
Apple Color OneScanner	$479.
UMAX UC840 Scanner NEW	$499.
HDI External 1.44 for PowerBooks	$149.
IIsi NuBus Adapter	$99.
Bernoulli 90PRO external	$69.

Video Cards

Apple 8-bit Card	$149.
E-Machines DoubleColor SX 8-bit NEW	$129.
RasterOps 24MX	$199.
SuperMac PDQ 8•24	$349.
7100/8100 series AV Card	$499.
6100 series AV Card with adapter	$549.
PowerMac HPV VRAM Card	$299.

Monitors

Apple 14" A/V NEW	$549.
Apple 14" MultiScan NEW	$329.
Apple 14" MultiScan REFURBISHED	$279.
Apple 15" Trinitron	$249.
Apple 15" MultiScan	$329.
Apple 15" MultiScan NEW	$399.
Radius PrecisionColor Display/20	$1199.
*Hewlett-Packard 17" with card	$649.
*Hewlett-Packard 20" with card	$899.

Printers

Apple StyleWriter 1200	$159.
Apple Personal LaserWriter LS	$299.
Apple Personal LaserWriter 300	$299.
Apple Personal LaserWriter 320	$449.
Apple LaserWriter Select 300 NEW	$379.
Apple Personal LaserWriter NTR	$599.
Apple LaserWriter IIST	$699.
Apple LaserWriter IINTX	$899.
Apple LaserWriter Pro 630	$1199.
Apple LaserWriter Pro 630 NEW	$1499.
Apple Color Printer NEW	$699.
Apple Color StyleWriter Pro	$249.
HP DeskWriter 310 NEW	$199.
Hewlett-Packard DeskWriter	$199.
Hewlett-Packard DeskWriter C	$249.
Hewlett-Packard DeskWriter 550c	$249.

Laser toner cartridges sold separately

PowerBooks

PowerBook 170 4/80	$799.
PowerBook 520C 4/240	$1499.
PowerBook 160 4/80	$699.
PowerBook 150 4/240 NEW	$699.

Logic Boards

Quadra 840AV	$499.
Quadra 800	$449.
Quadra 900	$449.
Quadra 950	$549.
Quadra 660AV	$399.
Centris 650	$249.

Products are refurbished unless indicated as "new". Prices reflect a 2% cash discount and are subject to change without notice. Returns subject to a 15% restocking fee.

MAC PROFESSIONAL INC.

800.244.4622

FAX 818.719.9115

LOCAL & INTERNATIONAL ORDERS 818.719.9200
8430 VARIEL AVE. #105, WOODLAND HILLS, CA 91367

ALL PRODUCTS CARRY MANUFACTURER'S FULL WARRANTY. ALL PRICES ARE CASH/DISCOUNTED & SUBJECT TO CHANGE. WE ACCEPT VISA/MC/AMEX. NO TAX OUTSIDE CA. CONSULTANT, DEALER & INTERNATIONAL SALES WELCOME.

• GOV'T, FORTUNE 1000 & SCHOOL P.O.'S. WELCOME • LEASING AVAILABLE •
• WE GUARANTEE BEST AVAILABILITY, PRICE, SERVICE, DELIVERY & SUPPORT •
• WE SPECIALIZE IN CUSTOM MADE CONFIGURATIONS SINCE 1988 •

POWER MACS

7200/120	16/1.2-CD	2099
7200/120	32/2000-CD	2389
7600/132	16/1.2-CD	2695
7600/132	48/2000-CD	3095
8500/132	16/1000-CD	2795
8500/150	16/2000-CD	3295
8500/180	32/2000-CD	4195
9500/180 MP	32/2000-CD	5255
9500/200	64/4000-CD	4395

PERFORMAS

2140/180	16/1.6-CD	2195
6400/200	16/2.4-CD	2540
6320/120	16/1.2-CD	1895
6300/100	8/1000-CD	1599
5260/100	16/800-CD	1495

SUPER MAC

S900D	16-CD	CALL
S900L	16/2000-CD	CALL

MONITORS

APPLE 15/1710/AV	389/899/999
SONY 15SF / 17SF	399/777
SONY 17SE II / 20SF II	999/1695
RASTEROPS MC 17	888
RASTEROPS 21HR	1995
NEC XV17	775
NEC M500 HOT!	655
NEC M700	935
RADIUS PRESS VIEW 21SR	3099
RADIUS PRECI VIEW 21	2275
VIEW SONIC MONITORS	CALL

SPECIAL!

POWER BOOK 520 4/240
FREE: • PRINTER • MODEM • CARRYING CASE $995

POWER BOOKS

COMPLETE LINE CALL

DIGITAL VIDEO

MEDIA 100 QX 3950 QX/component CALL

TARGA 2000	3150
TARGA 2000 PRO	3785
RADIUS VIDEO VISION 2.0	3450

DIGITAL CAMERA

KODAK DC 50	939
POLAROID PDC 2000	CALL
AGFA ACTION CAM	7150
AGFA STUDIO CAM	8350
KODAK DCS 420C	8995

FACTORY REFURBISHED

STYLEWRITER 1200	125
STYLEWRITER 2400	219
SUPER MAC 17T	555
SUPER MAC 21TXL	1175

DRIVES

IOMEGA ZIP DRIVE BEST BUY!	175
IOMEGA JAZ DRIVE	479
EZ DRIVE	119
YAMAHA 4X CDR W/TOAST	999
PINNACLE VERTEX 2.6	1495

SCANNERS

AGFA ARCUS II	1799
AGFA STUDIO STAR	875
UMAX S6E / S12	379/799
UMAX POWER LOOK II	2095
UMAX MIRAGE 11X17	5750
NIKON SUPER COOL SCAN	1895
LINOTYPE HELL SAPHIR	2888
LINOTYPE OPAL	6999
MICROTEK SCANMAKER III WITH PAINTER & LIVE PICTURE	1875
POLAROID SPRINT SCAN 45	7995
POLAROID SPRINT SCAN 35	1469
NIKON LS-4500AF	7895
NIKON LS-3510AF	4495
NIKON LS-20 35MM	1195

PRINTERS

STYLEWRITER 1200	175
STYLEWRITER 2400	265
STYLEWRITER 2200	288
STYLEWRITER 2500	355
LASER 4/600/12/640	755/1499
APPLE COLOR LASER 12/600	5275
EPSON STYLUS 500	389
PERSONAL LASER 320	555
HP 5MP LOWEST PRICES!	979
HP 5M	1699
EPSON STYLUS PRO XL	1695
GCC ELITE 600 w/ ETHERNET	1125
GCC ELITE XL 608	2099
GCC ELITE XL 808 (800 dpi)	2795
GCC ELITE 1208	3655
GCC ELITE 1208 supersize	4825
GCC 616 16 ppm 11x17	2495

• CALL FOR LATEST PRICING • BUSINESS & PERSONAL LEASING SPECIALIST •

CIRCLE 254 ON READER SERVICE CARD

UNITED COMPUTER EXCHANGE

"A Global Network for buyers and sellers of used Macintosh equipment"

ATTENTION TRY OUR "Used Mac Price Index"

BUYERS & SELLERS WEB PAGE

Available on 24hr-FaxInfoline (770) 995-0569

International (770) 612-1205

http://www.uce.com WEB Home PAGE

800-755-3033

CIRCLE 256 ON READER SERVICE CARD

Apple II & Macintosh

COMPUTERS • PARTS
EXCHANGE REPAIRS

Specialists in used & reconditioned systems, monitors, printers & parts. Call for a free catalog.

WE BUY MACS!

Offices: 617-778-4600 Fax: 617-778-4848

1-800-274-5343

Pre-Owned Electronics

125 MIDDLESEX TPKE, BEDFORD, MA 01730

CIRCLE 257 ON READER SERVICE CARD

Power Macintosh

7200/120	16/1.2/CD	1899
7200/120	PC/8/1.2/CD	2369
7200/120	16/1.2/8XCD	2099
7200/120	16/8.1.2/CD/DOS	2399
7500/100	16/1GB/CD	1899
7600/120	16/1.2/CD	2399
7600/132	16/1.2/8XCD	2749
8500/120	16/1.2/CD	2499
8500/120	16/1.2/CD	2179*
8500/132	16/1.2/CD	2525
8500/150	16/2GB/CD	2969
8500/150	16/1.2/8XCD	3259
8500/180	32/2GB/8XCD	4099
9500/132	16/1GB/CD	2798
9500/132	16/1GB/CD	2389*
9500/150	16/2GB/CD	3589
9500/180MP	32/2/8XCD	5199
9500/200	32/2GB/8XCD	4579

PowerBook

190CS	8/500	1279
5300CS	8/500	1839
5300CS	16/750	2289
5300C	8/500	2289
5300C	16/750	2699
5300CE	32/1.1GB	3899
Duo 2300C	8/500	1599
Duo 2300C	20/1.1/MDM	2369
DUO DOCK II+		499

MAC TO GO

ORDER NOW AND SAVE

1-800-946-6221

Customer Service: 310.444.1122 Facsimile: 310.444.1130

PwrBk 5300 8/500/New 1449 | PwrBk DUO 2300C 20/1GB/MDM 2379* | PwrBk 5300CE 32/1.1GB 3899 | Apple 15" Mntr/Refurb 289

PwrMac 7500/100 16/1GB/CD 1789* | WrkGrp 9150 16/2GB/CD 2799 | PwrMac 9500/120 16/1GB/CD 2299 | AGFA Arcus II Scanner 1759

Apple Printers

StyleWrtr 1500		269
StyleWrtr 2500		348
LsrWrtr 300/320	429/539	
LsrWrtr 12/640 PS		1525
LsrWrtr 16/600		2088
LsrWrtr 12/600Kit		5289

Apple Mntrs

MltpleScan 14"	245*
MltpleScan 15"	349
MltpleScan 1705	699
MltpleScan 1710	888
MltpleScan 1710av	929
MltpleScan 20"	Call

Prices are cash/cashier check. *** Represents Refurbished products. Govt/Schools/Fortune 500 P.O.'s Welcome. Prices change w/o notice.

Performa

6116CD/6200CD		989*/1289
6205CD/6220CD		Call/1099*
6290CD	8/1.2/CD/14"	1699
6300CD	8/1.2/CD/14"	1599
6320CD	16/1.6/Mpeg	2099
6400/ 180 or 200		2249/2599

All *REFURBS* Lowest Prices

WorkGroup Srvrs

6150/66	16/1.2GB/Intrnt	2099
7250/120	16/1.2GB/CD	2333
7250/120	16/1.2GB/Intrnt	2729
7250/120	16/1GB/CD/AS	3049
8550/132	24/2GB/Intrnt	4646
8550/132	24/2GB/CD/AS	4999
8550/132	24/2GB/CD/DAT	5319
8550/132	24/2GB/DAT/AS	5999
500/132	32/CD/BASE	6990
500/150	32/2GB/DAT/CD	8689
700/150	48/4GB/DAT/CD	12129

HEWLETT PACKARD

LsrJet 5MP/5M	969/1729
Lsrjet 4MV/5SIMX	2689/3729
COLOR LSR 5M	6899
ScanJet 4P/4C	489/819

SONY

15sx/15sfII	379/448
17sf2/17sell	719/939
20sfII/GDM-2000ct	1589/3099

CIRCLE 255 ON READER SERVICE CARD

VL PROMAC, INC.

800-829-4857

PowerMac

7600/132	16/1GB/CD 8X	$2835
8500/132	16/1.2GB/CD 4X	2729
8500/150	16/2GB/CD4X	3173
9500/150	32/2GB/CD 4X	3784
8500/180	32/2GB/CD 8X	4229
9500/200	32/2GB/CD 8X	4540
PERFORMA 6400	16/1.6GB/CD 8X/28.8	2120

Monitor

14"/15"	$279/389
17"/1705	$665
17"/1710/1710AV	$848/999
20"	$1,799

Printer

Laser 4/600	$745
StyleWriter 1500	$239
StyleWriter 2500	$359
Umax Vista 512	$699

International 305-593-9221
Fax 305-593-8921

VISA MasterCard

SE habla Espanol

CIRCLE 258 ON READER SERVICE CARD

LATEST Mac S·A·L·E INTERNATIONAL SPECIALS

* COMPLETE USED SYSTEM SPECIALS *

Lowest Prices Ever!!

Mac IIsi 5/80
Complete Color System
W/Apple Color Monitor & Kbd
►$399.00◄

Mac IIci 4/80
Complete Color System
W/Apple Color Monitor & Kbd
►$429.00◄

Mac LC 4/80
Complete Color System
W/Apple Color Monitor & Kbd
►$349.00◄

Upgrade Specials Available

*USED/*REFURBISHED* Desktop CPU's

Mac Plus	No Kbd or Mouse	$99.00
Mac SE (800K)	2/80	$199.00
Mac II	4/40	$129.00
Mac II CX	4/80	$179.00
Mac IIX	4/80	$179.00
Mac IIFX	4/80	$299.00
Mac LC	4/40	$169.00
Mac LC II	4/80	$199.00
Mac LC III	4/120	$249.00
Mac IISI	5/80	$229.00
Mac IICI	4/80	$249.00
Mac IIVX	5/80/CD	$449.00
Mac Portable	1/40	$249.00
Centris 650	8/500/CD	$599.00
LC 630	8/500/CD/DOS	$899.00
Quadra 650	8/500/CD	$699.00
Quadra 700	4/230	$549.00
Quadra 800	8/500/CD	$849.00
Quadra 950	8/500	$999.00
Performa 200	4/80	$349.00
Performa 400	4/80	$199.00
Performa 410	4/80	$199.00
Performa 475	4/160	$499.00
Performa 600	5/80/CD	$449.00

(Performa's Are CPU Only)

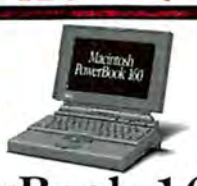
Printers

LaserWriter IINT	$499.00
ImageWriter II	$199.00
Laser Select 300	$299.00
*Personal Laser 320	$449.00
LaserWriter 4/600	$549.00
LaserWriter Pro 630	$999.00
LaserWriter Pro 810	$1499.00

* NEW *

Apple 14" RGB Display	$379.00
Apple 16" RGB Display	$729.00
Powerbook Ext. 1.4MB Floppy Drive	$75.00
Sejin Ext. II Keyboard	$55.00
Apple Hi-Density Floppy Disks (10 Pack)	$5.00

Used



PowerBook 160
4/120
68030 25MHz, Gray Scale
►$499.00◄

PowerBook 165
4/160
68030 33MHz, Gray Scale
►$549.00◄

•Add 8MB Ram & 14.4 Modem
For Only - $100.00

Apple InkJet Printers

New

StyleWriter 1200
with Ink Cartridge & Cable
►$159.00◄

Color StyleWriter 1500
with Ink Cartridge & Cable
►$249.00◄

* USED *

Color StyleWriter 2200
►$159.00◄

Color StyleWriter 2400
►$159.00◄

*USED/*REFURBISHED* PowerBooks

PB 170	4/80	$529.00
PB 180	4/80	$699.00
PB 180C	4/120	$999.00
Duo 210	4/80	$349.00
Duo 230	4/80	$399.00
Duo 280	4/240	$699.00
Duo 280C	4/320	$999.00
Duo Dock		$249.00
Duo Dock II		$379.00
Duo Floppy Adapter		$59.00
Duo Battery Recharger		$35.00
PB Battery Recharger		$35.00
PB Int. Fax/Data Mdm		$25.00
PB 14.4 Express Mdm		$79.00

Monitors

Apple 13" RGB Display	$225.00
Apple 14" Color Display	$299.00
*Apple 14" MultiScan	$225.00
Apple 14" AV Display	$325.00
Apple 16" RGB Display	$649.00
Apple 17" MultiScan	$799.00
Apple 1710 AV Display	$799.00
Apple 20" MultiScan	$1399.00
*Performa Plus Display	$250.00
Apple Two Page Mono	$479.00

Accessories

Mac IISI NuBus Adapter	$39.00
Apple OneScanner	$249.00
Apple Ext. 1.4MB Floppy	$85.00
Apple PowerCD Drive	$59.00
Apple Ext. II Keyboard	$75.00
Absolute Battery with Recharger Combo (140-180C)	$69.00

* NEW *

•Apple CD-300i Plus•
2X Speed Tray Loading Int. CD-Rom Drive
ONLY - $59.00

•Personal LaserWriter•
NTR Logic Board
With Trade-In ONLY $79.00

We Now Feature A Huge Inventory Of Parts For All Apple Product And Also Offer Extended Warranties
Visit Our Web Site At: www.getnet.com/macsale Or E-Mail Us At: macsale@getnet.com

Limited Quantities/Prices subject to change
Prices represent a Discount - off Full Price
Returns at discretion of Mgmt/15% Restocking fee

1-800-729-7031

1150 W. Alameda Dr, Suite 1 & 2
Tempe, AZ 85282
(602) 858-0900 / Fax: (602) 858-0811

WE WANT TO BUY YOUR NEW/USED MAC EQUIPMENT

MICRO OUTLET

800 • 801 • 4MAC

Micro Outlet Phone: 310-533-0496 Fax: 310-533-0501 Business Hours: Monday-Friday 7:00 am to 7:00 pm pst, Saturday 8:00 am to 2:00 pm pst

2785 Pacific Coast Highway #178 Torrance, CA • 90505

36 MONTH LEASE RATES (FMV)

$3000	$5000	$7000	$10000	$12000	$15000
$108	$165	$231	$314	$377	$471

3 YEAR EXTENDED WARRANTY

$351 to $700	$701 to $1200	$1201 to $2000	$2001 to $3000	$3001 to $4000	$4001 to $5000
$79.95	$139.95	$169.95	$199.95	$229.95	$259.95

PowerMacs — Lease

9500/200	32/2GB/8XCD	$ 4599	154
9500/150	16/2GB/4XCD	3699	124
9500/132	16/2GB/4XCD	3075	103
8500/180	32/2GB/8XCD	4299	144
8500/150	16/1.2GB/8XCD	3299	110
8500/132	16/1.2GB/4XCD	2575	95
8500/120	16/1GB/4XCD	2450	88
7600/132	16/1.2GB/8XCD	2699	97
7600/120	16/1.2GB/4XCD	2449	88
7500/100	16/500MB/4XCD	1849	66
7500/100	16/1GB/4XCD	1949	70
7200/120	16/1.2GB/4XCD	1949	70
7200/120	16/1.2GB/8XCD	2125	77
7200/120	8/1.2GB/4XCD/DOS	2345	84

Work Group Servers

7250/120	16/1.2GB/4XCD/A.S.	$ 2999	100
7250/120	16/1.2GB/4XCD/I.S.	2630	94
8550/132	24/2GB/4XCD/A.S.	4975	166
8550/132	24/2GB/4XCD/Datt/A.S.	5999	200
8550/132	24/2GB/4XCD/I.S.	4599	154
500/132	32/2GB/CD/Datt/UNIX	9499	318
700/150	48/4GB/CD/Datt/UNIX	12995	416
700/150	32/1GB/CD/UNIX	10249	328

UMAX / Supermac

S900D/150	16/0/CD/KEY	$ 2775	100
S900L/150	16/2GB/6.7CD/KEY/VCard	3439	115
J700L/150	16/2GB/6.7CD/KEY/VCard	2775	100
S900L/180	32/2GB/8.0CD/KEY/VCard	4275	143
S900L/200	32/2GB/8.0CD/KEY/VCard	3985	133

PowerBooks

190CS	4/500	$ CALL	
190CS	8/500	CALL	
5300CS	8/500	CALL	
5300CS	16/750	CALL	
5300C	8/500	CALL	
5300C	16/750	CALL	
5300CE	32/1GB	CALL	
DUO2300C	8/750	1595	57
DUO2300C	20/1GB/Mod	2195	79

Performas

6300/100	16/1.2GB/4XCD	1895	68
6320/120	16/1.2GB/4XCD	1999	72
6400/180	16/1.2GB/8XCD	2149	77
6400/200	16/1.2GB/8XCD	2499	90

CPU Memory

4MB	Simms 72 Pin	$ 29
8MB	Simms 72 Pin	49
16MB	Simms 72 Pin	89
32MB	Simms 72 Pin	199
8MB	Dimms	59
16MB	Dimms	99
32MB	Dimms	189
64MB	Dimms	375
8MB	Powerbook 5300/190	89
16MB	Powerbook 5300/190	155
32MB	Powerbook 5300/190	289
48MB	Powerbook 5300/190	415
1MB	VRAM	40
256K	L2 CACHE	89
512K	L2 CACHE	139

CD Roms

Apple	600E Quad Speed	$ 159
Apple	600I Quad Speed	149
Apple	600I or 300I Mounting Kit	25
Seven Bay CD ROM Tower		1399

CD Rom Recorders — Int / Ext

Phillips	CDD-200 CDR	$ 999/1069
Pinnacle	RCD1000 2X w/Toast & 2 CD's	650
Sony	CDR 2x w/Toast	999/1069
Yamaha	100E CDR 4X w/Toast	1149/1249

Monitors

Apple	Multiscan 15"	$ 349
Apple	Multiscan 1705 17"	699
Apple	Multiscan 1710 17"	865
Apple	Multiscan 1710AV 17"	895
Apple	Multiscan 20"	1779
Hitachi	Superscan MC 17S 17"	739
Hitachi	Superscan MC 17"	875
Hitachi	Superscan MC 20"	1375
Hitachi	Superscan MC 21"	1775
Hitachi	Superscan MC 21" HR	1975
Mitsubishi	Diamond Pro 17TX	759
Mitsubishi	Diamond Pro 21TX	1775
NEC	XV15+ 15"	469
NEC	XV17+ 17"	799
NEC	XE21 21"	1675
NEC	XP21 21"	1989
Radius	Precisionview 21"	2265
Radius	Pressview 21" HR	3115
Sony	CPD15SX 15"	425
Sony	CPD15SF2 15"	469
Sony	CPD17SF2 17"	799
Sony	CPD17SE2T 17"	999
Sony	GDM20SF2 20"	1649
Sony	GDM20SE2T 20"	1875
Viewsonic	17GA (AV) 17"	699

Printers

Apple	StyleWriter 1200	$ 145
Apple	StyleWriter 1500	219
Apple	Color StyleWtr 2200	289
Apple	StyleWriter 2500	345
Apple	LaserWriter Select 320	449
Apple	LaserWriter 4/600 PS	725
Apple	LaserWriter 12/640	1499
Apple	LW 12/600PS/Color	5895
Epson	Stylus Color 500	269
Epson	Stylus Pro	359
Epson	Stylus Pro XL (11X17)	1715
HP	DeskJet 1600CM (11x17)	1925
HP	LaserJet 5MP	999
HP	LaserJet 5SIMX (11x17)	3779
HP	LaserJet 5M (Color PS L2)	6975
HP	LaserJet 4MV (11x17)	2765

Scanners

AGFA	Arcus II	$ 1745
AGFA	StudioScan IIsi	675
AGFA	StudioStar	949
AGFA	Duo Scan	4925
Epson	ES-1200C LE	925
Epson	ES-1200C Mac Pro	1090
Microtek	Scanmaker E3	359
Microtek	Scanmaker E6 Pro Mac	825
Umax	VistaS6E Mac Delux	375
Umax	VistaS6E Pro Mac	595
Umax	VistaS12 Mac	759
Umax	VistaS12 Mac Deluxe	825
Umax	Powerlook II	2175
Umax	Page Office	225
Visioneer	Paperport VX	279
Visioneer	Paperport	149

Message Pads

Apple	Newton Message Pad 130	$ 799

DOS Cards

Apple	Pentium 100Mhz	$ 1049
Apple	Pentium 100Mhz (Pull)	799
Apple	586 100Mhz	699
Apple	6100 Series w/8MB's	199

Modems

Apple	GeoPort Telecom Kit	$ 118
Global Village	Teleport Platinum 28.8	189
Global Village	PowerPort PC Card	325
Global Village	Platinum Pro PC Card	469
Megahertz	Cruise Card 28.8	289
Megahertz	Cruise Card 28.8-Cellular	289
Supra	Express Modem 33.6	139
Supra	Fax Modem 33.6	190
Supra	Sonic Modem 33.6 V.34	265
U.S. Robotics	Sportster 28.8 PC Card	279
U.S. Robotics	Sportster 28.8 w/ Voicemail	199

Digital Cameras

Apple	Quicktake 150	$ 589
Kodak	DC-20	295
Kodak	DC-50	899

Software / Miscellaneous

Conectix	Quick Cam	$ 79
Conectix	Color Quick Cam	199
Atto	Fast&Wide SCSI/PCI	CALL
FWB	Fast&Wide SCSI/PCI	CALL
Adobe	Illustrator 6.0	329
Adobe	Photoshop 3.0.5	399
Adobe	Pagemaker 6.0	399
Apple	Design Keyboard	75
Radius	Extended Keyboard	49

Optical Drives / Multifunctional

Fujitsu	Dynamo 230 Ext.	$ 489
Olympus	PowerMO 230 Ext.	485
Olympus	1300 MO 1.3GB Ext.	939
Pinnacle	Vertex 2.6GB Ext.	1339
Syq 200/2GB HD/4GB Datt Multifunct.		1799

Hard Drives

Internal

Quantum	All Models	$ CALL
Seagate	All Models	CALL

External

Quantum	All Models	$ CALL
Seagate	All Models	CALL
Iomega	Zip Drive	179
Iomega	Jaz Drive	469
Syquest	EZ-135 Drive	125
Syquest	EZ-Flyer 230MB Drive	285

Video Display Cards

TrueVision	Targa 2000	$ 3899
TrueVision	Targa 2000 (Pro)	4299
ATI	Exclaim 2mb Videocard	269
ATI	Exclaim 4mb Videocard	379
IMS	Twin Turbo 4mb V-card	515
IMS	Twin Turbo 8mb V-card	920
Number 9	Imagine 128 4mb V-card	625
Number 9	Imagine 128 8mb V-card	999

LCD Projection Panel

In Focus Sys.	Powerview 820	$ 3269
In Focus Sys.	Wireless Remote	149
In Focus Sys.	Cable Wizzard Lite	35
In Focus Sys.	Laser Pointer	95

LEASING SPECIALISTS

FAST APPROVAL, 100% TAX DEDUCTABLE

LOW RATES, NO ADVANCE PAYMENTS

Due to publication time advertising prices may vary. All prices includes cash discounts. Not responsible for typographical errors. Shipping and service fees are non-refundable. No sales tax outside of CA. All returns subject to 15% restocking charge. All returns must have an authorization number (R.M.A.)

Email: Microutit.@aol.com

Visit us on the World Wide Web at: HTTP://WWW.microoutlet.com

C.O.D. / P.O.

CIRCLE 260 ON READER SERVICE CARD

MacByte

CALL FOR OUR BACK TO SCHOOL SPECIALS

BUY • SELL • TRADE

CASH FOR MACS

NEW & USED MACS WITH WARRANTIES

FEDEX OVERNIGHT SHIPPING

Visa/MasterCard/Amex/Discover Diners Club/COD

Local Area On-Site Consulting

800-432-2983

4215 Glencoe Ave., #150

Marina del Rey, CA 90292

FAX: 310-448-4494

E-MAIL: MacByteCo@aol.com

CIRCLE 261 ON READER SERVICE CARD

MediaGuide

BUY / SELL / TRADE

We guarantee the BEST prices!

Mac Plus 0/0.....$59	SE 4/20.....$149
SE/30 4/80.....$329	Classic 4/80..$229
Mac II 4/40/Video...$99	LC 2/0.....$99
IIcx 8/80/Video.....$199	IIsi 1/0.....$119
IIci 4/80.....$239	IIfx 8/160....$429
Quadra 650 8/250.....$699	
Quadra 840AV 16/230/CD $999	
PB Duo 230 12/120/14.4.....$649	
PB 160 8/80/14.4.....$699	
Apple 13" RGB...$229	16" RGB...$499
Imagewriter II....$149	Laserwriter....$149
800K floppy...$25	New 1.44 floppy..$119

Parts, Accessories, Other CPUs — Call!

Photoshop 3..$225	Pagemaker 6..$225
Office 4.2.1...$149	ClarisWorks 3...$39
FileMakerPro 2.1..$49	OmniPage 5...$89

30- and 72-pin SIMMs: BEST PRICES!

TOLL FREE (888)466-2271 M-F 9-6 MST

e-mail: MGSales@MediaGuide.com • Fax (303) 715-1419

CIRCLE 262 ON READER SERVICE CARD

TO ORDER CALL

(800)505-8991

11026 Ventura Blvd

Studio City , CA 91604

Tel(818)505-8991Fax(818)505-8992

MAC CITY COMPUTERS

web-www.maccity.com/bestprice

New products one year warranty

WE GUARANTEE QUALITY AND BEST PRICES. SINCE 1987

NO TAX OUTSIDE CALIFORNIA

ALL PRICES REFLECT C.O.D CASH DISCOUNT

Prices are subject to change w/o notice

9500/200	8500/132	9500/120	7600/132	7200/120
32/2GB 8XCD $4299	16/1.2G CD 2549	16/1GB CD 2V $2349	16/1.2G CD 2699	8/1.2G 8xCD 2099
9500/150	**8500/150**	**7500/100**	**7600/120**	**7200/120PC**
128/2G CD 4299	64/2G CD 3199	16/1GB CD 2V $1799	16/1.2G CD 2349	2295
64/2GB CD 3749	128/2GCD 3599	Limited Quantity	**7500/100***	**WGS 9150**
16/2GB CD 3499	16/1G CD 2829		1699	16/2G CD 2699
9500/132*	**8500/9500/180**			**8100/100CALL**
16-1GCDV 2399	CALL			

PERFORMA 6400/200 16/2GCD 2449 6400/180 16/1GCD 2099

6320 16/1.2G CD,14",Key,fax 1979

6300 8/1G CD,14",Key,fax 1549

6300 16/1G CD,key,28.8 1279*

6290 16/1G CD,14",key,28.8 1199*

6200* 08/1G CD fax,15",key 1399*

6116* 8/700 cd,key 999*

Powerbook 520 4/250 $749

LIFE TIME MEMORY

64MB 389 POWERMAC & PERFORMA 16MB 99

32MB 189 9500/8500/7600?500 7200/8100/7100/6100 08MB 69

150/190/190cs 8-500

5300CS 16-500 /8-500

5300C 16-500 /8-500

5300CE 32-1G

NEW LOW PRICES

P.B 150 $599 $749

Style 2400C $249

Style 2500 359

Style 1500 259

Style 1200* 119

LW 4/600 749

HP 5MP $949

Apple/SONY

20SFII 1599

17SFII 739

15SFII 389

1710AV 929

15"Mul 379

15"Mul* 279

Radius 20"E* $1099

Microtek AGFA UMAX S12 LE $709

CIRCLE 263 ON READER SERVICE CARD

Computer Discounters

WE WILL SAVE YOU MONEY - THE TOTAL HARDWARE SOURCE!! NEW, REFURBISHED and DEMO EQUIPMENT IN STOCK. MAC PRINTERS, COMPUTERS & POWERBOOKS IN STOCK NAME BRAND PENTIUM SYSTEMS from $899 to $1995

WANT TO BUY - USED MAC HARDWARE

Mac II series/Quadras	CALL
Logic Boards/PowerSupplies,etc	CALL
Powerbooks	CALL
PowerMac Series	CALL
HP 17"/21" UltraSVGA.28NI	$499/$1099
Memory/DAT/HD/Optical	CALL
HP Color Laserjet	$2795
Lexmark OPTRA R/Rx/Lx 1200 DPI	$995/CALL
Laserwriters	CALL
1GB SCSI 9ms HD	$259
SONY Multisync SVGA 20" GDM2036	$995
HP Scanjet 3C 30-Bit Flatbed 2400DPI	$685
MEMORY 4/8/16/32MB 72 pin	$65/149/249/525
MEMORY 30 pin 1/4MB	$18/75
Monitors 14" - 17"- 20"	CALL

Printers	Computers	Monitors
HP Series 2, 3, 4	AST Premium	Sony
Tektronix	IBM Valuepoint	NEC
Canon	Hewlett Packard	Mitsubishi
Okidata	Compaq 486	Compaq
Lexmark/IBM	Misc. 4/5/386	14"/17"/20" SVGA

Scanners/Plotters	Notebooks
Hewlett Packard	IBM Thinkpad
ScanJet 2P/2C/2CX	NEC
Draft Pro/Draft Master	Toshiba
Design Jet	Compaq
7475A/7550A/7550B	Macintosh

Postscript, Jet Direct, Memory and Optional Accessories available IN STOCK!

NEW STORE LOCATION:

8383 Leesburg Pike, Vienna, VA 22180

10543 Ewing Road, Beltsville, MD 20705

Tel: (301) 595-0500 Fax: (301) 595-5112

CIRCLE 264 ON READER SERVICE CARD

MacGlobal
SYSTEMS AND PERIPHERALS *SALES AND SERVICE

Performas		Powerbooks	
410/466/476	Call	160/165/170/180	Call
550 5/10/CD	$799	150 4/240	$550
580 5/500	$850	520 4/240	$750
631 8/500	$650	520C 4/240	$1,100
6200 8/gig	$1,100	540C 4/320	$1,650

Power Macs		Quadras	
7200 8/500	Call	630 4/250	Call
7500 16/500	Call	650/800/840/950	Call
8500 16/500	Call		

Printer		Monitors	
StyLW 1200	$185	14" App. Color+	$235.00
Laser 300	$285	15" App. Multi	$275.00
Laser 320	$450	17" 1705	$685.00
Laser 4-600	Call	20" GS	$550

We Buy! TOP DOLLAR paid for used memory, hard drives and CPUs!

Call us!
Phone: 1-800-722-8864
Fax: [408] 997-1400

MacGlobal

CIRCLE 265 ON READER SERVICE CARD

MacNet
The Macintosh Authority
we beat any price advertised in this magazine!

Power Macs

7200/120 16/500MB/8xCD	$1,889.00
7600/132 16/1.2GB/8XCD	$2,699.00
8500/120 16/2GB/CD	$2,899.00
8500/180 32/2GB/8XCD	$4,099.00
9500/120 16/2GB/CD	$3,499.00
9500/200 32/2GB/8XCD	$4,469.00
7250/120 16/1.2GB/CD/Server	$2,399.00

Performas

5320/CD 16/1.2GB/CD28.8/Mt.15"	$1,999.00
6320/120 16/1.2GB/CD/28.8Modem	$1,699.00
6400/180 16/1.6GB/8XCD/28.8Modem	$2,199.00

Monitors/Printers

15" Multiscan Display	$379.00
1710 Multiscan Display	$879.00
Color StyleWriter 2500	$339.00
LaserWriter 12/640	$1,439.00
LaserWriter 4/600	$739.00

1-800-404-9976

CIRCLE 266 ON READER SERVICE CARD

LA's LEADING COMPUTER STORE!
LA COMPUTER CENTER
CALL (800) 689-3933
UNIVERSITY, SCHOOLS, GOV'T & FORTUNE 1000 P.O.'S ACCEPTED!
Call for Quantity Pricing!
INTERNATIONAL ORDERS WELCOME CALL PH. (310) 479-0999
Customer Service (310) 473-2535 FAX (310) 312-9041

POWERMACS

9500/150 16/2GB/CD w/2MB ATI $3499
KEYBOARD & MONITOR SOLD SEPARATELY

8500/150 16/2GB/CD w/2MB VRAM $2899
8500/132 64/2GB/CD $3099
KEYBOARD & MONITOR SOLD SEPARATELY

8500/200 32/2GB/8xCD $CALL

9500/200 32/2GB/8xCD $CALL

NuBus Adapter for Quadra 610 $49

6100/66	16/500/CD/DOS	$1399
7100/80	8/700/CD	$CALL
8100/100	8/700	$CALL
8100/100AV	16/1GB/CD	$CALL
8100/110	16/2GB/CD	$CALL
7200/120	8/1.2GB/CD	$1799
7200/120/P100	16/1.2GB/CD	$2399
7500/100	16/500/CD	$1699/1599*
7500/100	16/1GB/CD	$1849/1699*
7600/120	16/1.2GB/CD	$2299
7600/132	16/1.2GB/8xCD	$2679
8500/120	16/1GB/CD	$2199*
8500/120	16/2GB/CD	$2499*
8500/132	16/1.2GB/CD	$2549
8500/150	16/2GB/CD	$2899
8500/180	32/2GB/8xCD	$3999
9500/120	16/1GB/CD	$2299/2099*
9500/132	16/1GB/CD	$2449*
9500/132	16/2GB/CD	$2499*
9500/150	16/2GB/CD	$3499

PERFORMAS

Performa 6320CD 16/1.2GB/CD/TV CPU, KEYBOARD, MOUSE & 15" MONITOR $1995
6300 8/1.2GB/CD/14.4KBPS/14" $1549

Performa 6400CD
180MHz! $2099 16/1.6GB/8xCD/28.8Kbps No Cache, No Monitor
200MHz! $2449 16/2.4GB/8xCD/28.8Kbps 256K L2 cache, No Monitor

5200/75	8/800/CD Built-In 15"	$1299
580/33	8/5004xCD	$999
6200/75	8/500/CD No Mon	$979
6200/75	8/1GB/CD No Mon	$1099
6300/120	16/1.2GB/CD/15"	$1899

APPLE MONITORS

AppleVision 1710AV $949

14" MultiScan	$279
14" AV	$279
15" MultiScan	$399/299*
1705 17" MultiScan	$649
1710 MultiScan	$849
20" MultiScan	$1699

WorkGroup Servers

7250/120	16/1.2GB/CD	$2599
7250/120	16/1.2GB/CD/AS	$3299
8150/110	16/1G/CD/DAT/AS	$3999
8550/132	24/2GB/CD/AS	$5599
8550/132	24/2GB/CD/INT	$5149
8550/132	24/2GB/CD/DAT	$5995
8550/132	24/2G/CD/DAT/AS	$6295

POWERBOOKS

Duo2300C 8/750 $1699 20/1GB/Modem $2399
DuoDock II Plus $529

5300CE	32/1GB	$4099
5300C	16/750	$CALL
5300C	8/500	$2499
5300CS	16/750	$CALL
5300CS	8/500	$CALL
5300 Grayscale	8/500	$CALL
540C	4/320	$1999*
540C	12/320/MOD	$2599*
520C	4/240	$1199*
520C	12/240/MOD	$1699*
520	12/320/MOD	$1199
520	8/240	$799
190CS	8/500	$1399
190	8/500	$949
180C	4/160/MOD	$1899*
150	8/250	$669
DUO2300C	8/750	$1699
DUO2300C	20/1.1GB/MOD	$2399
DUO250	4/200	$599*
DUO250	12/200/MOD	$999*
DUO280C	4/320	$1399
DUO280C	12/320/MOD	$1799
DUO280	12/240/MOD	$1299*

PRINTERS

LaserWriter 4/600	$749
LaserWriter Select 300	$429
LaserWriter Select 320	$549
LaserWriter Select 610	$CALL
LaserWriter 16/600/PS	$2099
COLOR LW 12/600/PS	$5399
Portable StyleWriter	$239*
StyleWriter 2500/1500	$369/259
StyleWriter 2400	$279
StyleWriter 2200	$299
Star Color Printer XJ144MC	$99
HP LaserJet 5MP	$949
HP LaserJet 4MPlus	$1599

GE 4 YEAR ON SITE WARRANTY!
DHI Product Plus 3 Year 5 Year
NEW OR REFURBISHED PRODUCTS ELIGIBLE FOR COVERAGE INCLUDES FREE SURGE PROTECTOR
FedEx NEXT DAY AND SAME DAY SHIPPING AVAILABLE, WE SHIP WORLDWIDE!
OPEN MON-SAT. VISIT OUR SHOWROOM!
12002 PICO BLVD. WEST LOS ANGELES, CA 90064
Visit Us At Our NEW Web Site http://www.LACC.com
24Hrs A Day -- On-Line Catalog & Ordering
E-Mail us at: lacc@directnet.com
* Reflects Refurbished Units. Prices Subject To Change Without Notice. CALL FOR LATEST PRICE. ALL PRICES REFLECT A 3% CASH DISCOUNT. Credit Cards Will Be Verified For Fraudulent Use.

CIRCLE 266 ON READER SERVICE CARD

THE BEST PLACE ON THE WEB TO SHOP FOR ANYTHING COMPUTER RELATED

http://www.zdnet.com/marketplace

ZD Marketplace™ ON THE WEB

1-800-334-KIWI
Factory Refurbished Macs

Performa 631 8/500 CD w/15" Multiscan	Call
Performa 640 DOS 12/500 CD w/15" Multiscan	$1299
Performa 6116 8/700 CD w/15" Multiscan	Call
Performa 6200 8/1 Gig CD w/15" Multiscan	Call
Performa 6220 16/1 Gig CD TV w/15" Multiscan	$1499
Performa 6300 16/1.2 Gig CD 28.8 w/15" Multi	$1599
Performa 5200 and 5215	Call
PowerMac 7200, 7500, 8500, 9500	Call
Powerbook 150 and 520	Call
Stylewriter 1200	$149
Color Stylewriter 2400	$189
Apple 15" Multiscan Display	$315

Refurbished products have a 90 day warranty
Visa/Mastercard/AmEx No Surcharge.

Trade-Ins Wanted
PowerMac, Performa, Quadra, LC series

Better Business Bureau Member. Over 7 years in MacUser.
Kiwi Computers, PO Box 67381, L.A., CA 90067
Toll Free (800) 334-5494 Fax (310) 286-9667
International (310) 553-4507
E-mail: Kiwi Comp@AOL.COM
Hours: Mon-Fri 8am-5pm, Sat 9am-2pm PST
Returns are subject to a 15% restocking fee.
Prices subject to change w/o notice. Quantities may be limited.

CIRCLE 267 ON READER SERVICE CARD

Apple LMAX Infinity Micro Seagate radius DAYSTAR
HEWLETT PACKARD
One stop shopping for all your software & hardware needs!
1•800•589•1234

POWERMACS

6100/66 8/500CD	1095.
6100/66 8/500/DOS	1295.
7100/80 8/700 CD	1295.
8100/100 8/700	1845.
8100/100 16/1G/CD	2195.
8100/100AV 16/1G/C	2195.
8100/110 16/2G/CD	2595.
7200/120 8/1G/4CD	1645.
7200/120 16/1.2/4CD	1845.
7500/100 16/1G/CD	1795.
7600/120 16/1G/CD	2375.
7600/132 16/1.2/CD	2695
8500/120 16/1G/CD	2295.
8500/132 16/1G/CD	2495.
8500/150 16/2G/4CD	2895
8500/180 32/2G/CD	4195.
9500/120 16/1G/CD	2495.
9500/132 16/1G/CD	2495.
9500/150 32/2G/CD	3545.
9500/200 32/2G/CD	4495.
9500/180MP 32/2Gcd	5295.

SCANNERS

ES-1200C Pro	1095.
PowerLook II	1995.
Agfa Arcus II	1795.
StudioScan IISi	745.

POWERBOOKS

5300CE 32/1GIG	3895.
Duo 280c 12/500M	1775.
5300C 8/500	2345.
5300CS 16/750	2349.
5300CS 8/500	1895.
5300 8/500	CALL
150 4/240	595.
150 8/240	675.
520 4/240	795.
520C 4/240	1195.
540C 4/320	1995.

PERFORMA

6400/180 16/1.2/CD	2095.
6400/200 16/1.2/CD	2445.
6300 16/1G/CD/15"	1645.
6320 16/1G/CD	1895.
6220TV 16/1G/CD	1195.
6200 8/1GIG/CD	1245.
6116 8/700/CD/14"	1245.
5215 8/1G/CD	1395.
5260 16/800/CD	1495.
580 8/800/CD	995.
640 Dos 12/500/CD	1295.
636 8/250/CD	795.

MONITORS

Apple 14" Multiscan	5249.
Apple 14"AudioVision	265.
Apple 15" Mutiscan/r	285.
Apple 1705/1710	695./885.
Apple 20" Multiscan	1395.
PrecisionColor 17	645.
SuperMac 20TXL 20"	1095.
Radius Color Pivot 15	345.
PressView 17 SR	CALL
Intellicolor 20e	1195.
SuperMatch21TXL	1195.
PressView 17SR	1695.
Sony 15SFII/17SFII	385/785
Sony 17se2/20sf2	995/1575

VIDEO CARDS

Thunder30-1152	795.
Thunder30-1600	1145.
Thunder Clr./30-1152	1399.
Thunder Clr./30-1600	1645.
VideoVsn Studio 2.51	1395.
Targa 2000Pci	3295.
# 9 Imagine 128	689.
IMS Twin Turbo 128	525.

PRINTERS

StyleWriter 1200	139.
StyleWriter 1500	249.
StyleWriter 2500	349.
StyleWriter 2200	269.
StyleWriter 2400	199.
Laser Select 300	445.
Personal Laser 320	545.
Laserwriter 4/600	695.
Laserwriter 360	1395
Laserwriter 16/600	2085
LaserW. 12/600PS	

GCC TECHNOLOGIES

Elite 600 Ether.	1085.
XL606 600 dpi	CALL
XL808 800dpi	2645.
XL616 600dpi	2445.
XL1208 1200	3645.

SPECIALS

PENTIUM100MHZ	795.
Nubus Card I/ c.610	49.
Iomega Jazz $ 465.	

•Lease or Buy•
•Prices Subject to change without notice•

"Custom Configuration Specialists"
2289 Westwood Bl. LA, CA. 90064 tel 310•470•9426 fax 310•470•4956

CIRCLE 268 ON READER SERVICE CARD

SHOPPERS MARKET

"The Intelligent Choice"

1-800-607-2325
VISA, MASTERCARD, AMEX, DISCOVER ACCEPTED.
SALES (310) 842-3700
FAX (310) 842-8130
10475 Washington Blvd., Culver City, CA 90232

SUPERMAC S900L DP 180 32/2 pin CD CALL
POWERMAC 9500/180 MP 32/2 pin CD CALL
PERFORMA 580 8/500 $799

PERFORMA

580	8/500	799
580	8/500 CD	999
5215	8/1 GBCD	*1299
5300	8/1 GBCD	1599
6200	8/1 GB CD	*999
6220	16/1 GB TV	*1199
6290	8/1.2 GB CD28.8F	1099
6300	16/1.2 GB CD28.8	1149
6320	16/1.2 GIG CD TV	1899
6400/180	16/1.6 CD	1949
6400/200	16/2.0 CD	2299

POWERBOOKS

5300CE/117	32/1GIG	CALL
5300C/100	16/750	CALL
5300CS/100	8/500	CALL
5300/100	8/500	1395
DUO 2300C	20/1GIG/M	2499
190CS	8/500	1199
150	8/240	695
520/520C/540C		CALL
NEW POWERBOOK 1400		CALL

PowerComputing

PWBASE 180	16/1.2 CD	1429
PWBASE 200	16/1.2 CD	1699
PWBASE 240	16/1.2 CD	2099
PC 604/132	16/1GB CD	1899
PC 604/150	16/1GB CD	2099
PT 604/166	16/1GB CD	2899
PT 604/180	16/1GB CD	3299
PT PRO 180	16/2GB CD	4299
PT PRO 200	16/2GB CD	4599
PT PRO 225	16/2GB CD	5099

VIDEO CARDS

THUNDER IV GX 1600	999
VIDEOVISION STUDIO 2.51	1099
TARGA 2000 PCI	3099
TARGA 2000 PRO PCI	4499
#9 IMAGINE 128 8 MB	849
TWIN TURBO 128 8 MB	799
MEDIA 100	CALL

SOFTWARE

ADOBE PHOTOSHOP	275
ADOBE ILLUSTRATOR	275
ADOBE PAGEMAKER	295

POWERMAC 9500/132 16/2GB CD *$2299
POWERMAC 8500/180 32/2GB CD $3899
PERFORMA 6300 16/1.2 GB CD *$1189
CUSTOM CONFIGURATION AVAILABLE
GLOBAL VILLAGE POWERPORT MERCURY 19.2 F/M PB 500'S $149
GLOBAL VILLAGE POWERPORT GOLD 14.4 F/M PCMCIA $79
RADIUS MULTIVIEW 21 $1399
*REMANUFACTURED PRODUCT WITH WARRANTY

POWERMAC

7200-75/90		CALL
7200/120	16/1.2GB8XCD	1999
7500/100	16/1GB CD	*1699
7600/120	16/1.2GB CD	*1999
7600/132	16/1.2GB CD	2599
8500/120	16/1GB CD	*2099
8500/132	16/1.2GB CD	2349
8500/150	16/2GB CD	2799
8500/180	64/4GB CD	4549
9500/120	16/1GB CD	1999
9500/132	16/1GB CD	2399
9500/150	16/2GB CD	3099
9500/180 MP		CALL
9500/200	32/2GB CD	CALL
6100/66	8/500 CD	CALL
7100/80	8/700 CD	CALL
7100/80 AV	16/700 CD	CALL
8100/100	16/1GB CD	CALL
8100/100AV	16/1G/CD	CALL
8100/110	16/2 GB CD	CALL

UMAX COMPUTER PRODUCTS

J700 150	16/2 GBCD	2899
S900L150	16/2 GB CD	3599
S900L180	32/2 GB CD	3899
S900LDP180	32/2 GB CD	4595
S900L200	32/2 GB CD	4199

PRINTERS

STYLEWRITER 1200	*129
STYLEWRITER 2400	*195
LASER 4/600	729
LASER SELECT 360	1299
APPLE 12-640	1449
APPLE 12/600 COLOR	5799

MONITORS

APPLE 14"/15"	*249/349
APPLE 1710/1710AV	849/949
APPLE 20" MULITSCAN	1699
SONY 17 SFII/SE2	749/879
SUPERMAC 21 TXL	*1189
RADIUS PRESSVIEW 21T	*1999
PIVOT 17" .26	979
NEC XV15/XV17+	499/779

WE MATCH ! WE BEAT ! WE DEAL !
ALL PRICES ARE CASH DISCOUNTED AND ARE SUBJECT TO CHANGE WITHOUT NOTICE.

CIRCLE 280 ON READER SERVICE CARD

CORPart™ CORPORATE Logo Clip Art Library

Only $74.95 FREE SHIPPING

HBO · BURGER KING · COMPUSA THE COMPUTER SUPERSTORE · NIKE · APC AMERICAN POWER CONVERSION · Baskin 31 Robbins · macy's · Coca-Cola · HEWLETT PACKARD · Apple Computer · Macworld · MacUSER NEWS

- Over 1100 Corporate Logos
- Logos From All Business Categories
- Hi-Res Illustrator Format
- Ideal for Laser Printers & Plotters
- Great For Signs, Ads, Flyers Yellow Pages, Video Media
- Fully Editable & Resizeable
- High Resolution At Any Size
- Cross Platform Compatible

Grafik Solutionz inc.®
The Leader In Grafik Innovationz

1·800·670·2245

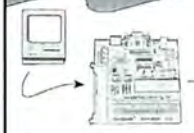
VISA · MasterCard · American Express Card · DISCOVER · CHECK · MONEY ORDER

22545 Hatteras St. Woodland Hls., CA 91367

All logos on this page are trademarks & logos of their respective owners and copyrigh holders.

CIRCLE 271 ON READER SERVICE CARD

Micro Control



Home
Business
Lab/Class
Security
Robotics

- Control Lights, Motors, Relays, etc. with your Mac
- Easy to Use
- Complete with Hardware and Software
- Accessories Available

MicroVention
800 / 359 - 0996
http://www.microvention.com
E-mail:info@microvention.com

CIRCLE 269 ON READER SERVICE CARD

Mouse Pads

Custom Printed
- Your Logo Design
- Fast Turnaround
- Guaranteed Quality

Plastic
Cloth
Wrist Supports

MicroStore™
800-962-8885
FAX: 507-665-2604
LE SUEUR, MN 56058

CIRCLE 270 ON READER SERVICE CARD

Student - Teacher - School Discounts!!

LATEST VERSIONS & FULL PACKAGES

$429

Strata Studio Pro 2.0

$249

Free Video

Infini-D 3.5

$119

KPT Bryce 2.0

$169

Freehand 5.5

Place any order and receive a chance to win $100 Software Source Gift Certificate

$589

Director 5.0

$699

Authorware 3.5

$229

SoftWindows 3.0

$319

Free Video

Minicad 6.01

$219

Fractal Painter 4.0

$75

The Black Box 2.0b

$129

Filemaker Pro 3.0

CALL

CorelDRAW Suite 6.0

$179

Canvas 5.0

$285

Wacom ArtZ II 6x8

Alias Sketch! 2.0.2 ..... $229	Empower Pro $110	KPT Vector Effects 1.0 ..... $85	Presenter Professional 3.1.5..... $895
ArchiCad 5.0 Student $475	Encore 4.1.1 ..... $249	Kai's Power Goo 1.0 ..... $49	Quickeys 3.5 ..... $85
Astound 2.0 ..... $99	EndNote Plus 2.1 ..... $165	Kai's Power Tools 3.0.2 ..... $85	Ram Doubler 2.0 ..... $55
Autocad R12 w/Ame $199	FastTrack Schedule 4.0 ..... $129	Kidpix Studio $39	Ray Dream Studio 4.1 ..... $219
Boris Effects 2.0 ..... $125	Final Draft 4.0 ..... $125	Killer Transitions $189	SPSS 6.1 Student $99
CD-ROM Toolkit 2.01a $49	Fontographer 4.1.2 ..... $149	Kodak DC 40 Digital Cam $649	Sculpt 3D 4.1 ..... $219
ChemOffice Pro 3.5 ..... $299	Form Z 2.8 ..... CALL	LightWave 3D 5.0 ..... $799	SigmaPlot 5.0 ..... $199
Claris HomePage 1.0 ..... $79	Fractal Detailer 1.0 ..... $199	Lightning Draw Gx 1.0 ..... $99	SoftWindows 95 ..... $269
ClarisWorks 4.0 ..... $89	Fractal Expression 1.0 ..... $199	Live Picture 2.5 ..... $469	SoundEdit 16+ Deck II $269
Cliff Notes Studyware Sat I $39	Fractal Poser 1.0 ..... $99	Logomotion 2.0 ..... $69	Studio VisionPro 3.0.3 ..... CALL
Coda Finale 3.7 ..... $249	FreeHand Graphic Studio 2.0..$429	M.Y.O.B 6.0 ..... $49	Stylist 1.0 ..... $85
Codewarrior 10 Pro $129	German Power Translator $99	Mac Acad Tutorial Videos..$35	SuperCard 2.5 MegaStudio $249
Collage 2.0.1 ..... $69	Grolier 1997 Mpc Encyclop....$59	MathType 3.1 ..... $99	System 7.5.3 Software $85
Color It! 3.0 ..... $39	Hard Disk Toolkit 2.0 ..... $109	Mathematica 3.0 Student...$169	TelePort Platinum 28.8 ..... $199
ColorDrive 1.5 ..... $99	HyperCard 2.3.1 ..... $89	Matlab Student..... $99	Texturescape 2.0 ..... $79
Conflict Catcher 3 1.0 ..... $59	IdeaFisher Pro 6.0 ..... $75	MediaPaint 1.1.1 ..... $199	TransJammer Vol 1 or 2 ..... $59
CyberPress 1.0 ..... $129	Infini-D 3.5 Production Studio.$379	MediaTool Kit 2.0 ..... $399	Umax Vista-S12 Scanner Pro....$869
CyberSound FX $85	Infinite Fx $65	MeshPaint 3D 1.5 ..... $375	Vellum 3D 3.0 ..... $495
Datadesk 5.0 ..... $369	Inspiration 4.1 ..... $89	Mouseman $69	Virex 5.6.5 ..... $49
Debabelizer Toolbox 1.6.5..$219	Intellihance 2.0.1 ..... $85	Nisus Writer 4.1 w/Lang Key$149	VirusScan 2.0 ..... $45
DeltaGraph Pro 4.0 ..... $89	Japanese Language Kit 1.2 ..$129	Now Bundle 3.6 ..... $69	Vision 3.0.3 ..... CALL
Director Multi Studio 2.0..... $899	Jmp 3.1.5 ..... $329	Now Utilities 6.5 ..... $55	Wacom Art Z II 12x12 ..... $399
DrawingSlate II 12x12 ..... $215	KPT Final Effects 3.0 ..... $349	OmniPage Pro 6.0 ..... $349	Wacom ArtPad II 4x5 Dabbler..$149

**SAME DAY SHIPPING ON MOST ITEMS.
**ADOBE, SYMANTEC & MICROSOFT PRODUCTS AVAILABLE TO QUALIFIED STUDENTS, TEACHERS & SCHOOLS.
**SCHOOL PURCHASE ORDERS WELCOME.
**NO SURCHARGE ON CREDIT CARDS.
**IBM & MAC PRODUCTS AVAILABLE.

*Prices and availability subject to change.
*Call for details on $100 Gift Certificate giveaway
*Free Video offer ends 12/31/96

Visit our Web Site!!
http://iasww.com/source.html

CALL FOR FREE CATALOG!!
(800) 289-3275
INCLUDES COMPLETE PRICE LIST & FREE PRODUCT INF..

WE WILL BEAT ANY ADVERTISED PRICE!!

#1 In Education!

1-800-289-3275

The SOFTWARE Source

1750 Brielle Ave, A-2
Ocean NJ 07712
Phone (908) 695-2100
FAX (908) 695-9371
E-MAIL:
SFTSWS@AOL.COM

Creating precision bar codes is as easy as using a font!

PRINTBAR™ BAR CODE FONTS

- Compatible with virtually any Macintosh application.
- Choose from: UPC/EAN/ISBN • Code 39 • Code 128 NEW! • Interleaved 2 of 5 • POSTNET/FIM.
- Many bar code sizes in each font package.
- Money back guarantee on all products.

"This is the best product of its kind, and it's reasonably priced too."
—MacUser review ★★★★½

EXTRA BONUS FREE POSTNET & FIM with any PrintBar Font Purchase

Visit our Web Site at: www.bearrock.com

4140 Mother Lode Dr., Ste. 100, Shingle Springs, CA 95682
PH: 916 672-0244 • FAX 916 672-1103
E-Mail us at: info@bearrock.com

Scanning bar codes is even easier!

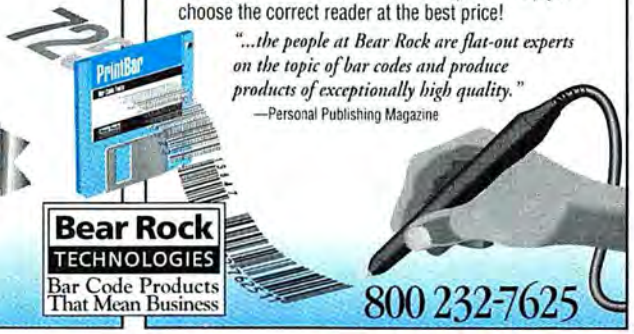
BAR CODE READERS AS LOW AS $199!

- Instant or remote data entry from bar codes! Scan information into any software application with a wand, CCD, laser gun, badge slot or magstripe reader.
- Don't waste your money on the wrong kind of bar code reader for your situation.
- Our experienced customer service reps can help you choose the correct reader at the best price!

"...the people at Bear Rock are flat-out experts on the topic of bar codes and produce products of exceptionally high quality."
—Personal Publishing Magazine

Bear Rock TECHNOLOGIES
Bar Code Products That Mean Business

800 232-7625



DATA RECOVERY IN HOURS.

- Over 10 years of experience with clients worldwide (e.g., Apple, NASA, & FedEx).
- We've recovered more than half-a-million megabytes of Mac data alone.
- You only pay if there's a recovery.
- One-Day turnaround is available.
- Call 24-hours a day.

LAZARUS DATA RECOVERY
Working at the speed of business.
800-341-DATA
415-495-5555 • FAX 415-495-5553 • RESTRICTIONS MAY APPLY
381 Clementina Street • San Francisco, California 94103

CIRCLE 275 ON READER SERVICE CARD

Computer Insurance

Sure It's Insured?

Our Computerowners(sm) Policy insures your computers against theft, fire, accidental damage, natural disasters even power surge! Annual premiums start at $49 for up to $2,000 of equipment. Call now for information or coverage!
1-800-SAFEWARE

1-800-800-1492
Available in the US and Ontario.

SAFEWARE,
The Insurance Agency Inc.
5760 N. High St., PO Box 656
Columbus, OH 43085-3978

CIRCLE 273 ON READER SERVICE CARD

DATA RECOVERY: 800 440-1904

Seven good reasons to choose DriveSavers:

1. We're the most trusted and respected data recovery specialists
2. 24-hr, onsite and weekend service available
3. Proprietary techniques so advanced we retrieve data others might simply abandon
4. Certified to maintain most drive warranties
5. Over 11 years of data recovery experience
6. Featured by CNN, NextStep, C-Net, and *Forbes*
7. All storage devices; DOS, Win95, WinNT OS/2, Mac OS, UNIX, Sun, SGI, Novell

DRIVESAVERS DATA RECOVERY
WE CAN SAVE IT!

Call when you need us, or visit DriveSavers at: www.drivesavers.com
400 REL MARIN KEYS BL, NOVATO, CA 94949, VOICE: 415-382-2000, FAX: 415-883-0780

CIRCLE 274 ON READER SERVICE CARD

MAC REPAIR & UPGRADE

800-622-7977

24 HOUR SERVICE TURNAROUND
LONGER WARRANTY
FREE DIAGNOSTICS
COMPETITIVE PRICE

- Specialize in component repairs
  -Power Mac
  -Power Book
  -Logic boards
- Advance Exchanges

Phone: 408-720-9899
Fax.: 408-720-9459
720 East Evelyn Ave.
Sunnyvale, CA 94086
http://www.dttservice.com

DT&T MACINTOSH SERVICES, INC.

CIRCLE 277 ON READER SERVICE CARD

SO, YOUR HARD DRIVE SPLIT AND TOOK ALL THE DATA WITH IT?

PROFESSIONAL DATA RECOVERY SERVICES.

HARD DRIVES, FLOPPY DRIVES, SYQUEST, EZ-135, ZIP, JAZ, OPTICAL AND BERNOULLI.
ONE-DAY SERVICE AVAILABLE.
COMPETITIVE RATES.

TOTAL RECALL
THE DATA RECOVERY COMPANY
800-743-0594
2462 WAYNOKA ROAD COLO SPRINGS, CO 80915 • 719-380-1616 • 719-380-7022 • http://www.recallusa.com

CIRCLE 276 ON READER SERVICE CARD

HOT & HEAVY

The World's Biggest Int'l Adult Web Site

- Over 25000 Erotic Gif's and JPEG's
- Latest Collection of Sexy Videoclips
- Private E-Mail and Steamy Forums
- Free Matchmaker Dating Base

NEW **Huge Free Sex Mall** of Hot, Steamy CDs, Magazines, Videos and Toys www.hh.nl

www.hotmale.com
Hot Guys Photos
Exciting Gay Videoclips to download
Int'l free cruising area
Private Newsgroups and E-Mail
Exciting and Rare Videos & Toys
Gay Int'l Guide
Int'l Gays and Bi: get on line on the Web

IMPACT

Three-quarters of MacUser subscribers look at these ads!

Advertise Here, Where Mac Business Buyers Buy Direct! Call 800-825-4237 Today!

Source: 1994 MacUser Marketplace Subscriber Study

BUSINESSCARD

MacUser MARKETPLACE

MacUser's BusinessCard section is a forum for innovative, hard-to-find and low-cost MAC products and services. Ads are listed by product category and include Reader Service numbers to allow fast, easy response.

RATES:
1 issue–$535, 6 issues–$505, 12 issues–$485.
Multiple-ad per issue rates also available.
Prepayment must accompany each insertion.
AMEX/VISA/MC welcomed.

AD FORMAT:
MacUser will typeset each BusinessCard ad. Advertisers should furnish typewritten copy. Ads include: 1) Headline (1 line, initial caps=30 characters max, all caps=25 characters max), 2) Descriptive copy (5 lines, 225 characters max), 3) Company name (same specifications as headline), and 4) Address and telephone number
(2 lines, 40 characters per line). No logos, artwork or camera-ready ads. Publisher reserves the right to edit supplied copy to meet section specifications.

DEADLINES:
MacUser is published 12 times a year.
The BusinessCard closing is approximately two months prior to issue date.
Please send copy and payment to:
MacUser BusinessCard, One Park Avenue, 3rd Floor, New York, NY 10016,
ATTN: Alexandra D'Anna
For more information, call Alexandra D'Anna at: **800-825-4237** *or* **212-503-5863, FAX: 212-503-5860.**

HARDWARE: CD-ROM

CD-ROM PRODUCTION SERVICES!
- All formats: Mac, ISO, Hybrid, Mixed Mode
- Premastering, beta testing, or archiving
- Mass Replication available, any quantity
- Personal, Knowledgable Service for 10 Years!
- Certified Apple Developer•low prices/fast delivery

Northeastern Digital Recording
2 Hidden Meadow Ln Southboro MA 01772
508-481-9322 fx:508-624-6437 CDNDR@aol.com

CIRCLE 363 ON READER SERVICE CARD

COMPUTER SYSTEMS

Refurbished 17" & 20" Color Monitors...
Hewlett Packard 98789A 17" RGB Color .25 dot pitch. Supports 832x624 Pixel display. Used...$349.
Sony GDM 1932 20" RGB Color, .30 dot pitch. Supports 1024x768. 90 day Warranty.....$599.
MC/Visa/Amex

DFI Computing
181 Salem Street, Malden, MA 02148
1-800-390-7020

CIRCLE 364 ON READER SERVICE CARD

PERIPHERALS

HEWLETT- PACKARD DEMO PRINTERS
All Macintosh/Apple Compatible
Laser Printers, DeskWriter Inkjet Printers,
PaintWriter Color Printers
Pen Plotters, DesignJet Inkjet Plotters
http://www.dasher.com/specials/macindex.html

TED DASHER & ASSOCIATES
E-mail sales@dasher.com
(800) 638-4833 Fax (205) 591-1108

CIRCLE 365 ON READER SERVICE CARD

POWER BOOK PRODUCTS

Solar Power For Portables
Recharge or run your PowerBook or Newton w/a KIS Solar System for use w/PowerBook 1xx, 5xx, 5300 & 190 or Newtons! Compute w/out worrying about battery life! Call today to qualify for one of our Special Discounts! http://wildwestweb.com

Keep It Simple Systems
32 S. Ewing, Ste. 330, Helena, MT 59601
(800) 327-6882 ext 24 Fax: (406) 449-8946

BusinessCard – Cost-Effective Sales!
BusinessCard is the most cost-effective way to shake hands with the business buyers who will boost your sales.

BusinessCard
Call your representative today!
800-825-4237.

SOFTWARE: BUSINESS

Credit Authorization Software
Save hundreds, if not thousands of dollars. Automatically authorizes and deposits all credit card sales — individually or in batches. Integrate with your sales system with AppleEvents, AppleScript & import/export.

Tellan Software, Inc.
3286 Knightswood Way, San Jose, CA 95148
(800) 483-5526 or (408) 274-1110

CIRCLE 369 ON READER SERVICE CARD

AutoMenus Pro
Menu enhancement Control Panel that makes menu navigation (especially those pesky hierarchical menus) much easier. What makes AutoMenus Pro so useful is that the menus stay down without the need to hold the mouse down.

Night Light Software
305 Orange Ave, Mtn View, CA 94043
http://www.nlsoftware.com

CIRCLE 370 ON READER SERVICE CARD

EDUCATION

Quality Educational Software
* "Bring the world of education into your home."
* Apple II and Mac Software
* Look for us on ExpressNet on AOL
* Receive quick responses by email

Home Educational Software
Phone: 805 388-2722
Email: homedsoft@aol.com

RELIGION

BIBLE ON DISK or CD-ROM
Full Featured. Fast & Friendly Bible study software. As the leader in Bible study software since 1981 we have continued to listen to our customers & provide them with the tools they need. Call for a FREE catalog. **http://www.brs-inc.com/bible**

BIBLE RESEARCH SYSTEMS
2013 Wells Branch Pkwy #304, Austin, TX 78728
(800) 423-1228 (512) 251-7541

SERVICES: COMPUTER INSURANCE

Insures Your Macs
The COMPUTEROWNERS™ insurance policy repairs or replaces hardware, media and purchased software. Rates as low as $49 a year covers theft, accidents, fire, power surge and more! Call for immediate coverage or info: 1-800-800-1492.

Safeware, The Insurance Agency Inc.
2929 N. High St., PO Box 02211, Columbus, Ohio 43202 1-800-SAFEWARE

CIRCLE 373 ON READER SERVICE CARD

DIGITAL OUTPUT

WHOLESALE COLOR PRINTING
Printing brokers & resellers need to know us! 5000 8.5x11 process color sheets printed one side from your disk on 80# Gloss $495 (color proof & film incl.) HIGH QUALITY DIGITAL DRUM SCANS $24ea. Free Catalogs! http://www.lewiscolor.com

LEWIS COLOR LITHOGRAPHERS
30 Joe Kennedy Blvd. Statesboro GA 30458
912-681-6824, Fax 681-8817, 800-346-0371

CIRCLE 375 ON READER SERVICE CARD

DISK DUPLICATION

Edgewater Diskette, Inc. (EDI)
Diskette Duplication - no job too large or too small.
Custom Packaging & Mailing programs.
National Coverage. Competitive pricing.
Call for Quotation or Information.

Edgewater Diskette Inc.
800-767-6851 318-965-9613

CIRCLE 376 ON READER SERVICE CARD

DISKETTE & CD ROM DUPLICATION
Data duplication services for Industry. Duplicate diskettes or CD Roms, all formats with turnkey solutions. Call to qualify for your FREE DDI Online diskette.

DATA DELIVERY INC. (DDI)
(800) 430-3487

CIRCLE 377 ON READER SERVICE CARD

TRAINING

VIDEO TRAINING FOR MACS
Clearly explained, easy-to-follow lessons. Covers Mac OS, ClarisWorks word processor and spreadsheet, file management, much more! 400 minutes training on 4 tapes only $89.95. 30-day money back guarantee. Visa/Mastercard.

Scribblers Media, Inc.
1775 N. State St., Girard, OH 44420
800.860.2324 (24 hrs) • www.scribblers.com

CIRCLE 378 ON READER SERVICE CARD

Rent MacAcademy Videos by Mail
Video's the easy way to learn! All major Mac programs available: over 85 different titles, each 2 hours long. A two week rental including S&H, costs less than a dollar a day. Return postage is prepaid. Get a free catalog. Ask about our CD-ROM rentals.

CareerTAPES® Enterprises
PO Box 309 Center Harbor, NH 03226
(603) 253-7470

CIRCLE 379 ON READER SERVICE CARD

ANDY IHNATKO

Object Lessons

ISN'T *ANYONE* INTERESTED in selling software any more? Is it even possible to make a profit with a package featuring manuals, disks, the whole schmear? Where's that paperback of *The Abyss* I bought on the last night of my trip? Where are all the dense, megalithic do-it-all applications scheduled to ship Sometime Next Year? Have such beasts turned into obsolete antiques, bloated out of all proportion? Maybe I left it in the seat pocket of the plane? I *know* I didn't leave it back in the hotel!

As you might guess from the above, I've just returned from a trip to yet another Industry Conference, and although my misplacing a long-out-of-print Orson Scott Card novel is indeed a mighty blow, it certainly doesn't overshadow my concern about the State of the Software Industry. I mean, in the good old way-hey-heydays, you could throw a credit card up in the air, and when it left your fingers T-shirts promoting a new spreadsheet would be printed, betas would be released at the top of the card's arc, marketing managers borne aloft on gilded wings would snatch the card and process your order just after its apogee, the company would have its first IPO in the middle of the card's return earthward, and it would then go completely out of business by the time the card returned to your hand.

From the looks of things today, though, a software company would sooner be seen wearing white after Labor Day than come out with an actual software package. No kidding — it's almost impossible to find a major software package that isn't being converted to either Java or OpenDoc Live Objects or even being metamorphosed completely into an API instead. There's a straightforward reason for this shift, of course. All these new developments in "component software" are just a logical solution to the longest-standing maxim in the software industry: End users are trouble.

The component technology that has received the most attention from the trendy newsweeklies is, of course, the Web. "This business of buying and installing software on your home computer is out, out, out," they write. "In the year 2000, all program components and data will be on a software company's Web server, requiring users only to install a generic browser program that runs those components remotely!" (These articles always end by claiming that this will leave us more time for riding in our personal atomic heligyros, of course.)

It's an intriguing possibility, to be sure, but one that's doomed to failure for the following reason: From the point of view of software publishers, it's an immense hassle to have hundreds of thousands of users demanding help to get their software installed and working properly. But if all the publishers converted to this Web scheme, they'd find themselves in an even worse situation — that of having their financial well-being tied to their ability to keep their own software up and running. I mean, if they knew anything about *that*, they'd be end users instead of publishers. So don't count on Web-based solutions gaining any sort of significant foothold.

Here in Mac-land, of course, the future is painted in terms of OpenDoc *containers* that exploit Live Object components. Apple is certainly pushing the technology, moving its entire Internet infrastructure to OpenDoc and stressing OpenDoc's importance to System 8. And here, software publishers seem to have hit upon a winner: Live Objects are physical things they can actually ship far, far away from corporate headquarters while still being able to pass the buck when the Live Objects fail. "After all," the publishers will say, "they're just *components*. You want to talk to the folks who sold you the container application."

A Fatal Flaw

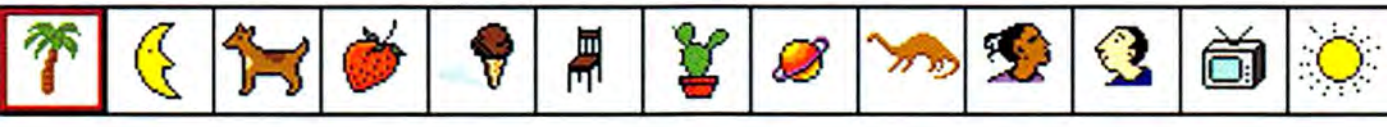
And here's the fatal flaw in the whole scheme: For OpenDoc to be that wonderful underground railroad carrying developers far, far away from blame and responsibility, the Industry is going to need one phenomenal patsy. One incredibly dim and star-crossed company to write that one major container app to which all the other Live Object developers can innocently forward every last incoming bug report. And where are you going to find such a company, now that Atari is no longer making personal computers?

Finally, we have the ubiquitous application-programming interface. An API is a formalized definition of all the features, hooks, and subroutines supported by a major piece of software and is licensed to other developers who then go into business writing extensions to that software. It's a cutting-edge concept and sure to become the defining technology for component software, because it allows software companies to create a salable product out of nothing more than a vague description of the sort of major software release they'd *like* to write someday. It also means that I can finally make some money from *Clavin*, the mail-handling program I designed years ago but never actually got around to coding. Why, with the addition of the suffix *API* and some judicious photocopying . . . .

ILLUSTRATION / BOB ECKSTEIN

File Edit Toolbox Goodies

This Is Where...



Introducing PowerBase from Power Computing.
180, 200, 240MHz MacOS systems starting at just $1,495.

Meet PowerBase. A machine that will enable your kids to learn in a fun way. A machine that begs to be in a classroom. A machine powerful enough to handle a 120MB Photoshop™ file as easily as it handles a file in Kid Pix™. PowerBase systems can edit real video as easily as they surf the internet, play the latest in hot new 3D games and balance your checkbook.

Mac OS

PowerBase is not only the perfect system for your children to learn on - it might also be the same system they'll write their first term paper with.

MacWeek

Complete PowerBase systems use high speed 180, 200 and 240MHz 603e PowerPC upgradeable CPU's and feature accelerated 2D/3D video, an 8X CD-ROM, lot's of RAM, plenty of hard drive space, great monitor options and $1,200 in bundled software.

PowerBase is the easy choice over an underpowered Performa.

Also, because you order direct from the manufacturer, you'll save money and get the exact Mac you want, customized to your personal needs.

So give us a call and we'll help you configure the system of your dreams.

MacUser ZD LABS

PowerComputing

To order, contact a Power Computing Consultant at 1-800-405-7693

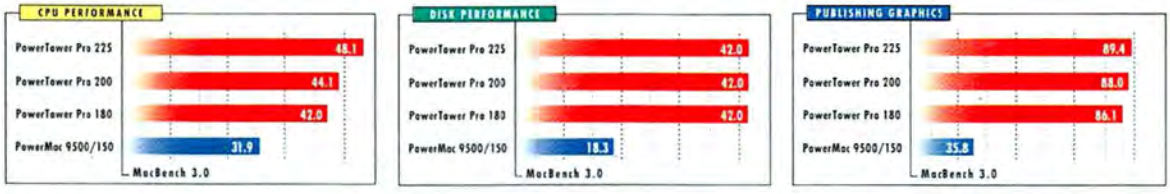
Apple, Performa, Macintosh and Mac are registered trademarks, and the Mac OS logo is a trademark of Apple Computer, Inc. PowerBase are registered trademarks of Power Computing Corporation. All other brand and/or product names are the property of their respective holders. Prices and specifications are valid in the U.S. only and are subject to change without notice. PowerBase systems feature a 30-day money back guarantee and extended on-site service packages are available.

File Edit Toolbox Goodies
2:42 PM
Your
Children
Will Learn.
PowerComputing
PowerComputing

WE STOPPED COMPARING OURSELVES TO APPLE 75MHz AGO.

INTRODUCING THE POWERTOWER™ PRO 225 MHz

SIX PCI SLOTS. INTERLEAVED MEMORY. DUAL FAST SCSI. 8X CD-ROM.



Five Mice from MacUser. Five Diamonds from Macweek. Considering it's the fastest desktop system on the planet, as well as the fastest and most expandable MacOS system ever, it's no wonder PowerTower Pro is receiving this kind of attention. PowerTower Pro features the new PowerPC 604e processor and a 1 MB Level 2 Cache. A 7200 RPM AV capable hard drive. Dual (fast 10MB/sec) SCSI. 8 DIMM Slots. Dual Processor Capability. Nine Drive Bays. And an 8MB IMS Twin Turbo graphics accelerator. So call now to custom configure this must-have system and order directly from the factory.

"IF YOU REQUIRE MAXIMUM PERFORMANCE, NO CURRENT APPLE SYSTEM CAN TOUCH THE POWERTOWERS."
— MacWEEK Magazine ♦♦♦♦♦

MacUser ZD LABS

CPU UPGRADABLE

PowerComputing

CUSTOM CONFIGURE ONE NOW: 800-405-7693