

LAB TEST / 19 Personal Printers That Won't Bust Your Budget

MacUser

MAY 1994 / \$2.95

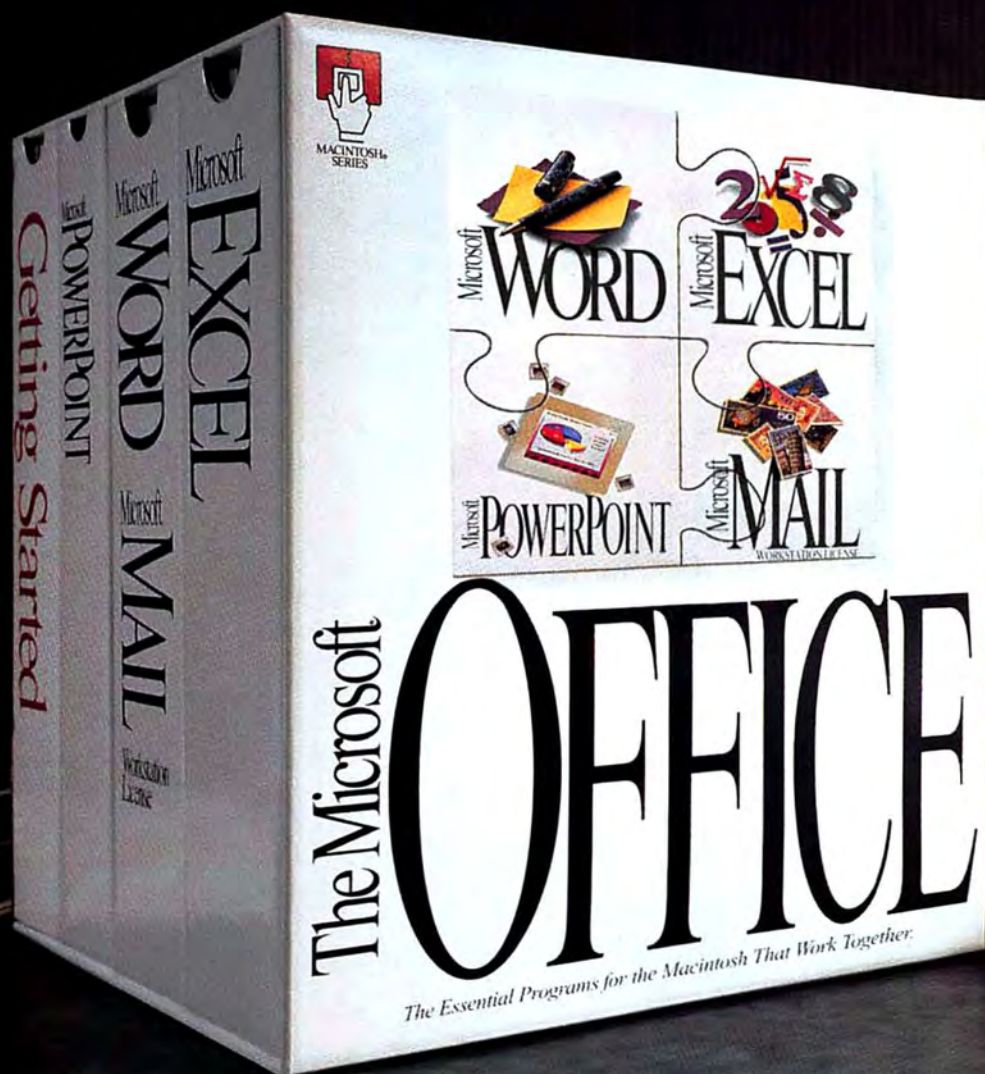
***FASTEST
EVER!***

PowerPC Macs

- ▶ ***Five Times Faster***
- ▶ ***Works with Windows***
- ▶ ***Outperforms Pentium***



**SOMETIMES THE BEST DESIGNS
IMITATE NATURE.**



The towering pines, the rain, the light, the delicate leaves. One extraordinary arrangement of pure simplicity. At Microsoft we're so inspired by the concept of everything working as one, we've put that idea at the core of The Microsoft® Office for Macintosh®.

That's what sets us apart.

Not only are our programs so elementally similar in style and smarts that learning one is a lot like learning them all, but they actually

Object Linking and Embedding connects your information between programs. Organically.



link information together interactively. You don't just paste objects like data, text, graphics or pictures anymore. You embed them. Into one unified working environment.

Making a change to that chart in your monthly sales report is easy as a double click of the mouse. Bingo. You're in your spreadsheet. Modify the figures and close the program.

You're immediately back to your work in the word processor and everything has been automatically updated. Just like that.

And soon, Visual Editing will let you make those changes even faster. Because programs in The Microsoft Office® will literally work within each other. Completely.

Never again leap between your programs to add charts, pictures, facts, figures or anything else. You can concentrate on what it is you're doing, not how to do it.

Our software will also share powerful programming tools that let you easily create custom solutions for a whole range of everyday business tasks. Automate things like sales reports and order tracking. And skip the monotony of reinventing your own ideas.

So if you want programs that bring all your work together, with more great things on the way, look for Microsoft. It's a natural.

Microsoft®
Making it easier

A vertical photograph of a dense forest. Tall, dark tree trunks are silhouetted against a bright, hazy sky where sunlight is filtering through the canopy, creating a dappled light effect. The overall tone is dark and moody, with the text overlaid in the center.

**EVERYTHING HERE IS DESIGNED
TO WORK TOGETHER PERFECTLY.**



MacUser Contents

MAY 1994 / VOLUME 10 NUMBER 5

37 / Newton: New and improved?



NEW ON THE MENU

Newton Slimmer and smarter. / **QuickTime 2.0** TV quality. / **Face to Face** Collaborative computing. / **PowerPC** The first proof of power. / **Premiere 4.0** Whizzy new effects. / **Radius** Monitors of the future. / **Plus** Macintosh price index. / 37

COLUMNS

Maggie Canon The Power Macs are here. / 21

Andy Ihnatko Get rich quick. / 23

Michael Swaine Let's go for the big spin. / 29

John C. Dvorak Get ready for Windows. / 230

Letters / 11

Product Index / 193

Advertiser Index / 196

Marketplace / 200



On the cover /
The most powerful
Macs Apple has
ever released.

Cover photo /
GIAMPIERO
BENVENUTI



40 / Monitor of the future.

REVIEWS & QUICK CLICKS

4D First ACI US' new entry-level, fully relational database program is easy to set up and use. / 45

Passport Producer Pro This powerful tool for synchronizing video and audio devices now includes controls for setting up interactive presentations. / 48

LANsurveyor This network-troubleshooting program combines the best features of polling, monitoring, and inventory programs under one easy-to-navigate graphical front end. / 50

DayMaker Organizer 3.0 More than just a to-do list, the latest version of this veteran personal information manager links your contacts to your calendar and more. / 52

At Ease and **At Ease for Workgroups** Cheap and easy Finder alternatives let homes and schools — or any other shared-Mac environment — manage file access. / 53

Ready,Set,Go! 6.0 The most recent update adds enhanced trapping controls to its typographic and color-sep controls, making it a solid choice for page-layout designers. / 54

Citizen Notebook Printer II Pint-sized portable printer features color output but won't win any awards for speed. / 58

E-Machines EtherDock Duo owners will appreciate not only the EtherDock's 10BASE-T Ethernet support but also the extras the product provides, including two serial ports, a SCSI port, sound-in and -out connectors, and 8-bit color-video support for many large-screen monitors. / 62

CrossTalk for Macintosh Offering a more comprehensive set of protocols and emulators than its three main competitors, this new entry to Mac telecom deserves a look. / 64

CheckWriter Pro 6.0 You don't have to be a CPA to use this personal-finance program. / 69

SimCity 2000 As mayor of a revamped futuristic city, you face new challenges designed to thwart even the most politically astute. / 69



Thinkin' Things Six learning activities make thinkin' fun for 4-to-8-year-olds — and entertain the child in all of us. / 69

SITcomm On-line communicating is a snap with this telecom program — just click and connect. / 70

CDU (Connectix Desktop Utilities) This collection features keyboard shortcuts, security setups, and file synchronization. / 73



COVER STORY

Power Macs: Full Speed Ahead

MacUser Labs APPLE'S NEW PowerPC-based Macs not only set the standard for performance but they also compete in the real world in terms of price and compatibility. For this special report, MacUser

Labs put the three Power Macs through a battery of tests. Here are the results. BY HENRY BORTMAN, CHERYL ENGLAND, AND STEPHAN SOMOGYI / 76

Upgrades: From Mac to Power Mac

JOIN THE POWERPC PARTY without buying a brand-new Mac. Logic-board and processor upgrades from Apple and third parties give you the speed and functionality of true Power Macs at a significantly lower cost. Here's what's available now and in the future. BY HENRY BORTMAN / 93

Software: The Power and the Promise

NEW SYSTEM SOFTWARE will take you only part of the way toward the warp-speed experience of a Power Mac. You'll also need new "native" versions of your applications — reworked to take full advantage of the high-powered PowerPC 601 processor. Here's a rundown of when your favorite apps are expected to go native. BY HENRY BORTMAN / 96



HANDS ON

DESKTOP PUBLISHING / 125

Graphics How-To You can create on-the-fly illustrations by twiddling with your symbol-font collections. / 126

BRIDGES / 131

Mac to PC Soon-to-be-released technologies, including better Windows compatibility and PCI expansion slots, should make the Power Mac the best cross-platform machine you can buy. / 133

MOBILE OFFICE / 141

PowerBook Tips How to fix a corrupted System file, tame the AC adapter, and silence your startup sound. / 143



141 / Return of the acoustic coupler.

Mobile Mac Plan ahead, get your system disks in order, and avoid those troublesome travel emergencies. / 145

POWER TOOLS / 151

Techniques Get ready for communicating at 28.8 kilobits per second with the new V.fast modem protocol. / 151

Tip Sheet For experts and novices. / 157

Help Folder Andy and Bob answer all of your questions. / 161

FEATURES

MacUser Labs Choosing the Right Server

MATCHING SERVER SOFTWARE to your needs is not as straightforward as buying software for your Mac. You need to pick a product that is compatible with your network and includes the features you're looking for. Here's where we can help. BY JULIE BAHER AND SHELLY BRISBIN / 102

MacUser Labs A Printer on Every Desk

GOOD-QUALITY, FAST PRINTING and a price almost anyone can afford. Those are hallmarks of the best of the 19 personal printers we tested. Isn't it time you put a printer on your desk? BY TONY BOJORQUEZ AND RIK MYSLEWSKI / 112



112 / Nineteen printers priced at less than \$1,500.

After Dark

THE ULTIMATE SCREEN SAVER

Over 30 incredible displays to prevent phosphor burn-in. Includes Flying Toasters, screen munchin' worms, and dazzling tropical fish. Plus Screen-locking password protection, company logo and message display, and SystemIQ™ activity monitor.

more After Dark

An all-new collection of more than 25 add-on displays. Features contest winners Mowin' Man, Tunnel and GraphStat. There's also Lunatic Fringe the shoot'em up space game, Boris the Cat, and many more! (Requires After Dark)

BERKELEY
SYSTEMS

Available from resellers
everywhere including



800-436-8000

Source Code: 2342P

MacUser

How to Reach Us

Subscription problems? Call 800-627-2247.

THE EDITORS of *MacUser* want to hear from you. Send questions, tips, complaints, or compliments to *MacUser*, 950 Tower Lane, 18th Floor, Foster City, CA 94404. Send electronic mail to MCI Mailbox 584-5561, CIS 72511,422, or ZiffNet/Mac (see below). *MacUser's* general number is 415-378-5600. We are unable to look up stories from past issues, recommend products, or diagnose your Mac problems by phone. Call Apple toll-free at 800-538-9696, ext. 500, for information on user groups in your area. BY SUBMITTING A TIP to *MacUser*, either directly or through ZiffNet/Mac, 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

IF YOU WANT TO SUBSCRIBE to *MacUser*, have a question regarding a subscription, or wish to request that your name be excluded from mailing lists, call 800-627-2247 (U.S. and Canada only) or 303-447-9330 (all other countries) or fax 303-443-5080 (international subscribers only) or write to *MacUser*, P.O. Box 56986, Boulder, CO 80322-6986. New subscriptions and address changes 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. *MacUser* (ISSN 0884-0997) is published monthly by Ziff-Davis Publishing Company, L.P., One Park Avenue, New York, NY 10016. Editorial Offices: 950 Tower Lane, 18th Floor, Foster City, CA 94404. Telephone: 415-378-5600. 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 \$2.95 (Canada, \$3.95). Canadian GST registration #R-123669673. 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. Second-class postage paid at New York, NY 10016, and at other mailing offices.

ZiffNet/Mac: MacUser On-Line

FOLLOW THESE EASY STEPS to join ZiffNet/Mac: Call 800-635-6225 (voice) to find your local access number. Dial the local access number with your modem. When connected, press Return. At the following prompts, type in the responses printed in **bold**: Host Name: CIS. User ID: **177000,5200**. Password: **Z*MAC**. Agreement Number: **Z12D9014**. CompuServe users can simply type in GO ZMAC at any ! prompt.

MacUser on CD-ROM

MACUSER IS AVAILABLE on Computer Select, a CD-ROM published by Computer Library. For subscription information, 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'S 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 Doris Ashman, Ad Department, *MacUser*, 950 Tower Lane, 18th Floor, Foster City, CA 94404. Include copies of relevant correspondence.

Permissions and Reprints

MATERIAL IN THIS PUBLICATION may not be reproduced in any form without permission. Send permission requests to Chantal Lavelanet and reprint requests to Carol Peters at Ziff-Davis Publishing Company, L.P., One Park Avenue, New York, NY 10016.

Product Announcements and Updates

SEND PRESS RELEASES to Kristin Mellone, *MacUser*, 950 Tower Lane, 18th Floor, Foster City, CA 94404.

Plug-&-Play Pen Computing Blows 'em Away At MacWorld

NOW AVAILABLE FROM YOUR COMPUTER RETAILER OR DIRECTLY FROM US

MacHandwriter® NAMED A *MUST* AT MACWORLD

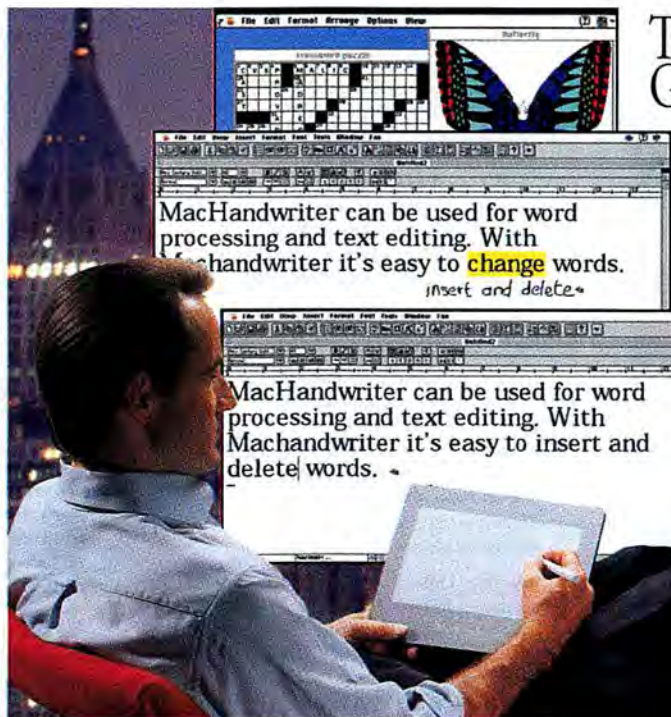
MacHandwriter — the all-in-one input device for entering graphics, text and commands — was named by *MacWeek* as one of MacWorld's "must see" products. More than a mere tablet, MacHandwriter is the perfect keyboard complement. *MacWeek's* Henry Nott wrote in his 1/31/94 front-page article, " ... we were comfortable using the pen as a mouse substitute ... "

THE ULTIMATE EDITING TOOL

Sure, you type very fast. But you spend at least 80% of your document-creation time editing. Imagine highlighting, moving text, changing words here and there, spellchecking, pointing and clicking — all from one device, all while leaning back in your most comfortable, creative position! This is why pen computing has been so interesting to so many people for so long.

THE ULTIMATE PHYSICAL THERAPIST

Tired of hurting, sitting in a rigid, cramped position using the mouse? Are you really getting paid enough to suffer? 56% of all OSHA reported injuries are RSI, or Repetitive Stress Illnesses. The recommended physical therapy for wrist and tendon problems is making a fist. Kind of like you'd do holding a pen. MacHandwriter is a very healthy complement to your Macintosh keyboard.



THE ULTIMATE GRAPHICS AND EDITING TOOL

Michelangelo didn't create his Sistine Chapel masterpiece with a ball pen hammer. Why constrain your own creativity with a mouse?

MacHandwriter lets you easily draw or trace and works perfectly with your existing graphics software. And it reads your writing!

GET THE RECOGNITION YOU DESERVE

COMPANIES OFFERING CIC RECOGNITION TECHNOLOGY:

Apple/Japan	NEC
AT&T	Samsung
Dauphin	Seiko Epson
Fujitsu	Symbol Technolgy.
IBM	Toshiba
MicroSlate	and others

"It integrates gracefully with Windows applications, and its handwriting recognition is the best we've ever seen."
March 1994, PC COMPUTING

COMPATIBLE & INTUITIVELY EASY TO USE

MacHandwriter will make you an instant believer in pen computing. Push the button on the side of the pen, and

any letter you write will be treated as a command hot-key. You know: Command-Q quits your application; command-S saves it, etc? No more command-key this, command-key that and then switching over to your mouse! Release the button and use the same editing gestures you use on hardcopy, and watch your document accept them in real time. The perfect complement to your keyboard, MacHandwriter lets you ...

PLUG & PLAY

Pop MacHandwriter out of the box, let the software install itself, plug it into your keyboard's ADB port and wham! Within minutes your Macintosh has pen computing.



complement to your keyboard, we're willing to bet you never use your mouse, again. In your whole life!

MacHandwriter INCLUDES ...


... our number-one ranked Handwriter Recognition System® — the PenMac™ state-of-the-art operating environment — a cordless electronic pen and an ultra-thin/ultra-light tablet with a ten-foot cord for connection to your Mac's ADB port. It also comes with 30 crossword puzzles (and a way to order more), and our no-nonsense return privilege.

NOW AVAILABLE FROM YOUR COMPUTER DEALER OR BY CALLING US

MacHandwriter®

THE CREATIVITY TOOL

Call 800-888-9242 ext 5025
415-802-7888 from outside the U.S.
Or FAX 415-802-7777

 Communication Intelligence Corporation
A NASDAQ N. M. listed company

**Make Up
Your Mind.
Again, Again,
And Again.**



**Introducing
Fractal Design PainterX2.**



Arrange multiple floating items with PainterX2,[™] our expert extension to



Fractal Design Painter[®] 2.0 for Macintosh[®] and Windows.[™]

Building on the endless supply of tools and textures in Painter, our award-winning natural-media[™] paint application, PainterX2 allows any number of floating bitmap objects to be "live" at the same time. Paint into, around or under them, or save your file with items still floating for repositioning and

The Painter 2.0 Companion now available.

modification later. PainterX2 gives you the freedom to explore.

Get your hands on PainterX2, and make up your mind—again, and again, and again.

Just call **800-647-7443, ext. 200.**



**FRAC-
TAL
DESIGN**
CORPORATION



MacUser
★★★★
Publish
★★★★

© 1993 Fractal Design Corporation. All rights reserved. Fractal Design Painter is a registered trademark, and X2 and natural-media are trademarks of Fractal Design Corporation. All other trademarks are the property of their respective holders.
Illustration: Glenn Minski, Seattle MD, Seattle, WA

CIRCLE 24 ON READER SERVICE CARD

MacUser

Publisher
Janet Ryan

Editor-in-Chief
Maggie Canon

Editorial

Editor **James S. Bradbury**
Managing Editor **Nancy Groth**
Technical Director **Henry Bortman**
Executive Editor **Rik Myslewski**
Senior Editors **Cheryl England, Mark Frost, Susan Janus, Pamela Pliffner, Victoria von Biel**
Technical Editor **John Rizzo**
Technology Editor **Stephan Somogyi**
Associate Managing Editor **Claire H. Breen**
Chief Copy Editor **Eva Langfeldt**
Associate Editors **Shelly Brisbin, Karen J. Ohlson, Nancy Peterson, Jim Shatz-Akin**
Senior Copy Editors **Rhoda Simmons, Leslie Steere**
Copy Editor **Clifford Colby**
Assistant Editors **Darryl Chan, Jason Snell**
Editorial Assistant **Kristin Mellone**
Research Assistant **Patty Ames**
Contributing Editors **David Biedny, Don Crabb, Bruce Fraser, Andy Ihnatko, Ted Landau, Bob LeVitus, Tom Petaccia, Michael Swaine, Gregory Wasson**
Contributing Anti-Editor **John C. Dvorak**
Assistant to the Editor-in-Chief **Teresa Campbell**

MacUser Labs

Labs Director **Jeffrey S. Pittelkau**
Associate Labs Director **Mark Bieler**
Project Leaders **Tony A. Bojorquez, Jeffrey K. Milstead, Sean Saftred**
Lab Technician **Roman Victor Loyola**
Lab Administrator **James Galbraith**

2D Labs

Director **Robert W. Kane**
Test Manager, MacUser/MacWEEK **Paul R. Freedman**

Design

Art & Design Director **Lisa Orsini**
Senior Associate Art Director **Diane Dempsey**
Associate Technical Art Director **Peter Alan Gould**
Art Production Manager **Jan McKenzie Rogers**
Technical Illustrator **Mark W. Sweeney**

Advertising/Sales

Advertising Coordinator **Elizabeth McGinnis**

Production

Production Director **Carlos Lugo**
Production Manager **Dennis Fitzgerald**
Assistant Production Manager **Monique Rizzo**

Marketing

Director of Marketing **Jeff Bruce**
Marketing Manager **Laurel Skillman**
Events Manager **Stacy Hollingsworth**
Marketing Coordinator **Renee Bula**
Marketing Assistant **Erin Gaffaney**
Marketing Administrator **Cristi Leer**

Operations

Business Manager **Cynthia Mason**
Assistant to the Publisher **Susan Logan**
Assistant to the National Sales Director **Diane Powers**
Assistant Account Representative **Doris Ashman**

On-Line: ZiffNet/Mac

Executive Editor, On-Line Services **Ben Templin**
Project Leader **Shafath (Shaf) Syed**
Associate Editor **Mark Simmons**

Ziff-Davis Publishing Company

Chairman and CEO **Eric Hippeau**
President **J. Scott Briggs**
President, Ziff-Davis Domestic Publications Group **Ronni Sonnenberg**
Executive Vice President, Centralized Operations Group **Mike Edelhart**
Executive Vice President, International **J. B. Holston III**
Group Vice President, Controlled Circulation Publications **Claude P. Sheer**
Group Vice President, Paid Circulation Publications **Jeff Ballowe**
Senior Vice President, Circulation **Baird Davis**
Senior Vice President, Marketing **Paul H. Chook**
Senior Vice President **Rachel Greenfield**
Vice President, Central Advertising Sales **Bob Bader**
Vice President, Circulation Services **James F. Ramaley**
Vice President, Controller **Howard Skolnik**
Vice President, Creative Services **Herbert Stern**
Vice President, Europe **Frank Kelcz**
Vice President, Human Resources **Rayna Brown**
Vice President/Managing Director, Magazine Networks **Joseph Gillespie**
Vice President, Marketing Services **Ann Pollak Adelman**
Vice President, New Projects and Strategic Planning **Robert Ziff**
Vice President, Operations **Dirk Ziff**
Vice President, Production **Roger Herrmann**
Vice President, Research **Rolf M. Wulfsberg**
Vice President, Technology **Bill Machrone**
Vice President, Assistant to the Chairman **Tom McGrade**
Vice President **Jim Stafford**
Vice President **Don Byrnes**
Chief Information Officer **Wellington Y. Chiu**
General Manager **Bruce W. Bourne**
Executive Director, Information Systems **Owen Weekley**
Executive Director, Marketing Services **Jim Manning**
Director of Licensing **Jean Lamensdorf**
Director of Planning **Gary A. Gustafson**
Production Director **Walter J. Terlecki**
Director of Corporate Marketing **Susan Delman**
Editorial Director **Lewis D'Vorkin**
Co-directors, 2D Benchmark Operation **Bill Catchings, Mark L. Van Name**
Director, Direct Marketing Programs **Alicia Marie Ivans**
Director of Public Relations **Gregory Jarboe**

Ziff Communications Company

Chairman Emeritus **William B. Ziff, Jr.**
Chairman and CEO **Eric Hippeau**
Senior Vice President and Chief Financial Officer **Bruce R. Barnes**
Senior Vice President **Steven C. Feinman**
Vice President, General Counsel and Secretary **J. Malcolm Morris**
Vice President, Business Manager **T. L. Thompson**
Vice President, Chief Information Officer **Thor Olson**
Controller and Treasurer **Timothy J. Mitchell**



The
Audit
Bureau



Entire contents © 1994 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.

Printed in the USA

In Memory of **John J. Anderson** 1956 – 1989
and **Derek van Alstyne** 1967 – 1989

"FirstClass Goes Beyond The Capabilities Of Most Mail Systems"

BYTE Magazine
09/93



FirstClass®

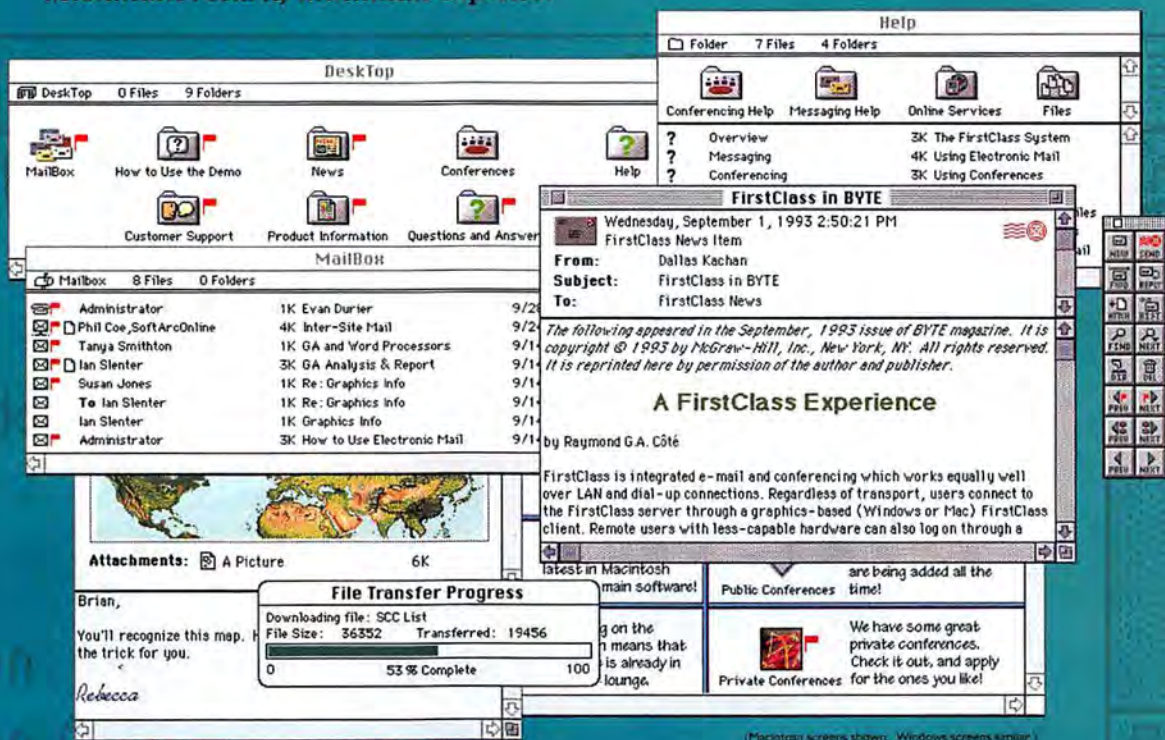
Says BYTE, "FirstClass blends conferencing and mail together under a remarkably clean interface that goes far beyond the capabilities of most mail systems ... a regrettably rare example of a useful piece of software."

FirstClass features **e-mail, workgroup communication** and **remote access**... all in the same application. Use FirstClass for internal mail, group discussion or even as a public access tech support solution!
Maximum return, minimum expense!

E-mail

Conferencing

Remote Access



What's remarkable about FirstClass? What other communication software lets your PC and Mac users share your ethernet network without a file server... or dial in via modem with the same client software they normally use? Add to this our integrated group communication, comprehensive security features, simple installation and robust server performance!



	FirstClass	Lotus Notes	QuickMail	MS Mail
Workgroup Discussion Areas?	Y	Y	One	-
Cross-Platform Chatting?	Y	Optional	-	-
Fully Customizable Interface?	Y	Y	-	-
Restrict Any Feature?	Y	Y	-	-
File Attachments?	Unlimited	40	16	Unlimited
Autoforward & Reply?	Y	-	Optional	-
Full Message History?	Y	Y	Pseudo	-
BBS Functions?	Y	-	-	-
Modems Per Server?	Up to 22	8	1	1
Internet Usenet Gateway?	Optional	Optional	-	-
10 Users	\$690	Minimum \$4950	\$599	\$695

- Macintosh and Windows support on the same network, with the same server, or via modem
- Easily accommodates more than a hundred simultaneous sessions, 20 of which may be modem connections without third-party communications software
- Connectivity via network or modem to other FirstClass servers or other manufacturers' mail systems
- Remote or local administration via the normal FirstClass client
- Messages with multiple fonts, styles and colors & unlimited file attachments
- Simultaneous multiple uploads & downloads
- Optional gateways to the Internet with full Usenet newsgroup sending & receiving
- Fax gateway for individual or broadcast faxing and more!

FREE DEMO PACKAGE AVAILABLE UPON REQUEST

SoftArc Inc.
Global-Area Communications

1902 Ridge Road, #325, West Seneca, New York, USA, 14224
Fax: 416-754-1856 Internet: sales@softarc.com FirstClass: 416-609-2250

Phone: 416-299-4723

FirstClass® 1993-1994 SoftArc Inc. All rights reserved. FirstClass is a registered trademark of SoftArc Inc. Notes is a registered trademark of Lotus Development Corporation. QuickMail is a registered trademark of CE Software Limited. MS or Microsoft Mail is a trademark of Microsoft Corporation. Macintosh is a registered trademark of Apple Computer. Prices above are suggested retail. FirstClass was reviewed in the 09/93 issue of BYTE.

CIRCLE 64 ON READER SERVICE CARD

Semi-pro.



HP SCANJET II CX

If you're a sophisticated scanner user, you shouldn't have to settle for a semi-sophisticated scanner. Not when the 1600 dpi EPSON 800C Pro/Mac has so much more to offer. More versatile controls. More powerful software. Better connections. Stronger support. More flexible options. All of which makes this the one scanner that will actually live up to your

*One-year warranty, extendable to two years with return of registration card, at no charge. EPSON, HP, Macintosh, Adobe Photoshop, and Kai's Power Tools are trademarks or registered trademarks of Seiko EPSON, Corp.; Hewlett Packard Co., Apple Computer, Inc., Adobe Systems and HSC Software respectively. All other trademarks are the property of their owners. ©1993 EPSON America, Inc., 20770 Madrona Ave., Torrance, CA 90503. For dealer referral or warranty details, call 800-BUY-EPSON (800-289-3776). In Canada, call (800) GO-EPSON. For Latin America, 305-265-0092.

Pro.



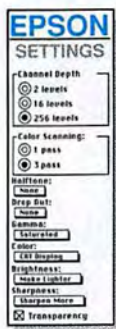
The 800C Pro/Mac is solidly backed by EPSON's one-year warranty extendable to two years.* HP's warranty is one year.

The 800C Pro/Mac package includes the powerful full version of Adobe Photoshop, plus the highly acclaimed Kai's Power Tools. HP offers a limited version of Photoshop.



Color Scanning:
☐ 1 pass
☒ 3 pass

The 800C Pro/Mac gives you the flexibility of 1- or 3-pass scanning for optimal results with any image. The ScanJet II CX is strictly a 1-pass scanner.



Only EPSON has color and gamma correction settings built right into the scanner hardware.

The 800C Pro/Mac comes with both SCSI and bidirectional parallel interfaces so you can connect it to a PC and a Mac simultaneously. The ScanJet II CX connects to one computer.



EPSON's transparency unit and document feeder are powerful options that work across every scanner in our line. HP's scanner options aren't that flexible.



THE EPSON CONNECTION

If you need technical assistance, you can call the pros at the EPSON Connection, our toll-free help line.

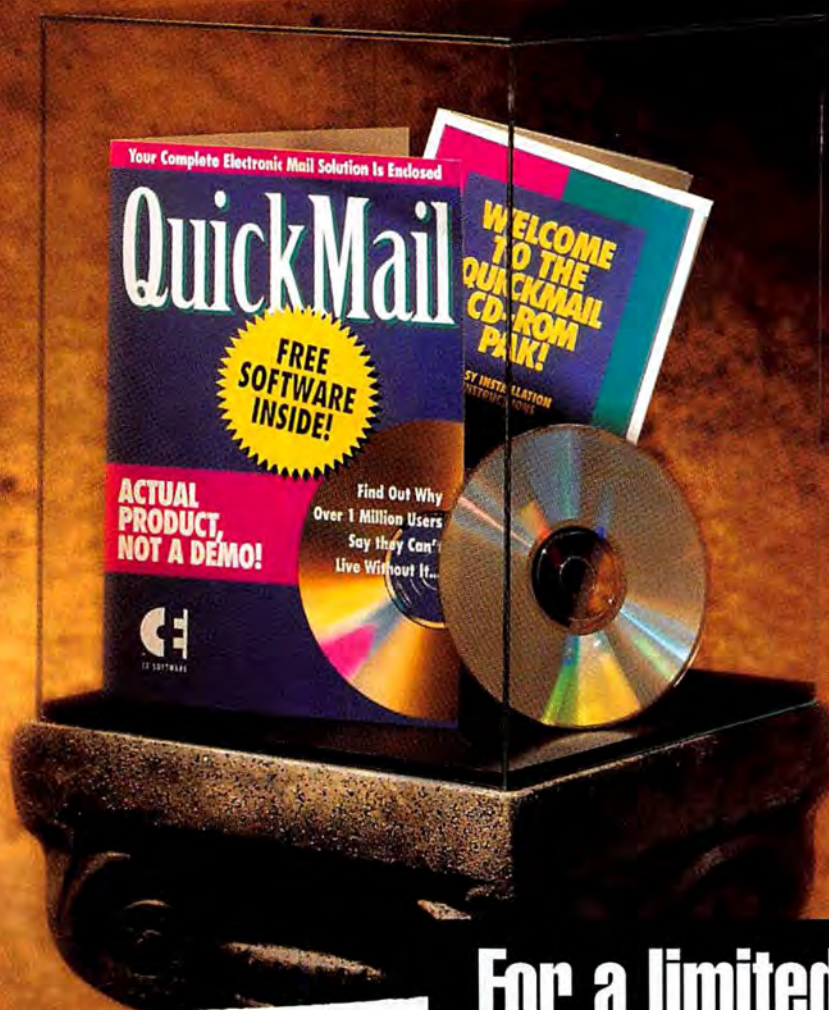


EPSON 800C Pro FOR MAC

exacting professional standards. For our free booklet on scanning, or more information on the 800C Pro/Mac or our other scanners for Macintosh and PCs, call the EPSON Connection at 1-800-BUY-EPSON (800-289-3776). And get the scanner that's in a league of its own.

EPSON®

More than 1 million people find QuickMail invaluable.



For a limited time, you'll find it priceless.

Call for your **FREE QuickMail™ CD-ROM Pak.**

Nearly 50% of all Macintosh users and a growing number of Windows and DOS users already rely on QuickMail to improve communication, interaction, and productivity throughout their organizations. With this QuickMail CD-ROM Pak*, we've included everything you'll need to find out why.

In every unit of QuickMail you receive:

- Easy-to-install QuickMail Server and Administration Software, perfect whether you have 10 or 10,000 users.
- Clients for Macintosh, Windows and DOS platforms, all with the same look and feel.
- QM Forms application to automate workflow.
- QM Remote for sending and receiving messages while on the road.
- QuickConference for communicating in "real-time" on screen.
- Bridges and Gateways for AppleLink, CompuServe, MCI Mail and more, for sending messages around the world.

1-800-5CESOFT DEPT. CE 319

Call now for your **FREE QuickMail CD-ROM Pak.**

Discover why over 1 million people throughout the world have selected QuickMail as their E-mail solution. Just give us a call, and we'll send you a QuickMail CD-ROM PAK FREE today. And save this phone number because we're confident you'll be calling us to order QuickMail for your entire organization.

**You could win a FREE QuickMail site license
for your organization. So call today!**



LETTERS

Our New Look

I PICKED UP my mail yesterday and thought that some other Mac magazine had come by mistake. But it was no mistake. The February '94 issue of *MacUser* was almost a miracle. What a beeyutiful change! And not only beeyutiful but also practical. The page headings are a great time-saver, and every editorial page looks cleaner and is more pleasant to the eye. Congratulations!

Allen Jamieson
Sacramento, CA

DUE TO SOME grievous error, I apparently received the Windows version of *MacUser* last month. Please correct.

Joe Zeff
via ZiffNet/Mac

CHANGES TO the "old familiar" are seldom welcome. You've really done it this time with the new look. I like it!

Frank Heaton
Everett, WA

I AM A LOYAL, longtime *MacUser* reader who believes the editorial content in your magazine is the best in the industry. But quality content won't do much good if reading your magazine becomes a chore. In the spirit of wanting *MacUser* to succeed, I suggest that you bring back the old format or try again.

Scott Chandler
via the Internet

Write to Letters

c/o *MacUser*

950 Tower Lane
18th Floor
Foster City, CA 94404

To send your letter electronically via MCI Mail, CompuServe, or ZiffNet/Mac (our on-line service), see "How to Reach Us," on page 4. All letters become the property of *MacUser*, and we reserve the right to edit any letters we print. Please include a return address and a daytime phone number.

BRAVO! *MACUSER'S* great new look is just what was needed. I enjoyed the extra news pages and all the extra reviews. I was even impressed that John Dvorak wrote a complimentary column about the Mac. Good job!

Dave Keiser
via ZiffNet/Mac

I DON'T KNOW HOW to tell you this, but here goes:

The articles look like advertisements.
The reviews look like advertisements.
The features look like advertisements.

Even John Dvorak's column looks like an advertisement! (Although I'm not sure what he's selling.)

Bill Moore
via ZiffNet/Mac

I LIKE THE MAGAZINE'S new look. It's fresh, open, and modern. I do have one small suggestion, though, that I think would improve readability. Please, on pages containing both editorial and advertising content, use a bar to separate the two.

Mark Hunn
via the Internet

/ Thanks for the input. As you can see, we have reimplemented lines between editorial and advertisements, starting in the March issue. You'll be seeing more tweaks to our new look in the future. / PP

Scant Scanners

WE'VE BEEN STAVING OFF the purchase of a scanner for more than a year, waiting for a definitive test report on the subject, so I turned immediately to "Low-Cost Color Scanners" (February '94, page 129). Cripes, was I disappointed!

The article doesn't mention either of the Hewlett-Packard scanners, which, because of their quality and price, have a major presence in this market niche. And the article is sandwiched between ads for the Relisys RELI 2400DPI and Agfa StudioScan scanners, neither of which is mentioned, much less tested.

Like many of your business-oriented professional readers, I am looking for comprehensive, definitive reviews that *fully* survey each field of equipment. So I urge you to take



OPEN FOLDER

Proving that the Mac still has the power to surprise even the most jaded users, Nick Chaimov, of Milwaukie, Oregon, noticed this Balloon Help bonus: "When I put the pointer over my QuickTime extension, a balloon pops up that says 'Time n. A nonspatial continuum in which events occur in apparently irreversible succession from the past through the present to the future.' What does this mean? And what does it have to do with my QuickTime extension?" Well, Nick, it means that mousing around with Balloon Help is a waste of time.

This quirk of QuarkXPress surprised Kristina Juneau, of Manotick, Ontario, Canada: "When trying to select text behind a picture box, I held down Shift, Option, and Command and then pressed Delete. To my surprise, a little Martian fellow came walking out in full color, accompanied by sound effects, and proceeded to blast away my line." Maybe the Quark programmers were thinking about PageMaker-developing Aldusians at the time.

Engineers are a precise bunch, it's true. When referring to the power consumption of the Hewlett-Packard 4MP and 4ML, we used the phrase *watts per hour* (February '94, page 51). Electrical engineer William B. Abbott beamed us this correction via ZiffNet/Mac: "The electrical unit watt means the rate at which electrical energy is being used, that is, one volt-ampere per second. Because the rate of time is built in, *watts per hour* is improper." Thanks, Bill, but fellow reader Patrick Chapman sent us his definition of a watt via the Internet: one joule per second. Watts the difference between an ampere and a joule? A newton?

A special note to Thierry Willemsens, of Brussels, Belgium, who sent us an unlabeled disk, a printout of desktop icons, and four color photographs of an Atari Megafire: Huh?

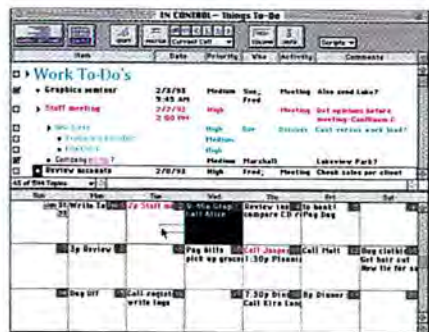
Relax, you're IN CONTROL.



**"Best
Organizational
Tool" — MacUser**

**IN CONTROL™ is the only
To-Do List Manager that can organize
and print all your activities . . .**

- as outlines
- as prioritized lists
- and as calendars!



Only IN CONTROL combines an outliner and
calendar to get you organized fast.

Use IN CONTROL to:

- Organize all your activities quickly.**
Powerful outliner re-arranges your activities easily
Auto Enter and Pop-up menus speed data entry
- Categorize information the way you want.**
Unlimited columns handle any size project
Drag and drop to rearrange your plans quickly
- Prioritize important activities.**
Match and Sort just the activities you want
Automatic Reminders make sure nothing slips by
Scripts automate sorting and other common actions
- Schedule effortlessly.**
Instantly turn your lists into calendars
Drag listed events to the calendar days you want
- Accomplish more than ever before!**
Checkboxes record and archive done items
Creates pages for Day-Timers and other planners
Link documents, share files, and much more!

★★★★/2
— MacUser

★★★★
— Macworld

◆◆◆◆
— MacWEEK

ATTAIN
Attain Corporation
48 Grove Street
Somerville, MA 02144 USA
© 1993 Attain Corporation. All products
are trademarks of their respective holders.

Available from your favorite
software dealer.
800-925-5615
or call 617-776-1110 or fax 617-776-1626

FROM THE ORIGINAL
CREATORS OF FILEMAKER®
CIRCLE 60 ON READER SERVICE CARD

LETTERS

a fuller editorial swing at this important subject.

Edward B. Stott, President
Air New England, Vineyard Haven, MA

/ It's a matter of too many scanners, too little time. The Agfa StudioScan, the Relisys RELI 2400DPI, and the HP ScanJet IIcx all were announced after we completed our exhaustive testing for the article. Watch for individual reviews of these products. Because we reviewed the HP ScanJet IIc in "Getting the Picture: Color Flatbed Scanners" (May '93, page 106), we didn't include it or other previously reviewed scanners in our story, opting instead to look only at models that had come out since then. We do realize that not everyone has access to our back issues, however, so we'll include relevant information from previous reports in future stories. / MF

I HAVE COME to trust your magazine as an excellent source of hardware reviews. However, the reviews often lack enough information for me to evaluate products that don't receive a "MacUser RECOMMENDS" designation. For example, in "Low-Cost Color Scanners," you show output from only four scanners, in figure 1. Why not show output samples from all the scanners? Often we have only the reviewers' words on which to base our conclusions. More figures showing the results of your tests will help us make more-informed purchase decisions.

Eric D. Dickmann
via ZiffNet/Mac

/ We don't run output samples from all the scanners we test for two major reasons: First, there's never enough space to run samples at a useful size; and second, because the printing process often obliterates subtle differences, it would be virtually impossible to tell many of the samples apart. We include output samples that clearly show distinguishing characteristics. We hope to make samples available on-line so you can judge their quality for yourself — if we can get the file sizes small enough. / MF

Deceleration

AFTER READING MACUSER'S review of 40-megahertz 68040 accelerators (February '94, page 58), I feel our product, the Mobius Speedster AC440f, was incorrectly assessed.

As your article notes, we were unable to supply MacUser with a secondary cache in time for the review. As a result, the Speedster AC440f was the only accelerator card you tested without a secondary cache. According to your article, "on average, a card with a secondary cache increases the Mac's speed

by 30 to 40 percent over a card without one." Yet the accompanying speed chart shows the Speedster AC440f as being 30 percent slower, on average, than the competition, and the summary gives "Smallest speed boost" as our principal con. By the time the article was printed, the secondary cache was shipping, and the Speedster's speed with the cache meets or exceeds that of all competitors' offerings.

Kamran Mohsenin, President
Mobius Technologies, Inc., Emeryville, CA

WordImperfect

IN YOUR FEBRUARY '94 issue (page 54), WordPerfect 3.0 earns the absurd rating of four mice. In its quest to best the feature set of Microsoft Word, WordPerfect has lost sight of what word processing is really about — writing — and the cost to writers is in performance.

On anything other than a 68040 Mac, WordPerfect 3.0 is snail-slow, particularly when you use lots of paragraph styles (if you have a Mac Classic or similar machine, forget it; you may as well go back to your typewriter). Speed is not WordPerfect 3.0's only problem. I've found that a style-rich 120-page document gobbles up an astounding amount of disk space — far more than an identical document created in other word processors.

Because style sheets (more than drawing modules, equation editors, or 3-D buttons) are critical to word processing, WordPerfect 3.0 — a beautiful, feature-packed application — fails as a word processor.

Susan Townsend
via ZiffNet/Mac

Time to Bitch?

IN "PROFESSIONAL PAGE LAYOUT: Time to Switch?" (February '94, page 108), Kathleen Tinkel and Cheryl England chastise Quark for taking "a step backward in version 3.2 by removing the ability to apply master pages via the Document Layout palette. Quark plans to restore this in version 3.3, thanks to user outrage." Actually, those outraged users will have to remain thankful, because version 3.2 *does* have this ability. In the Document Layout palette, select the page icon (or Shift-select a range of them) and then hold down Option and click on the icon of the master page you want to apply. (Quark's manuals are notoriously obtuse,

**WOULD YOU BELIEVE THIS WAS DONE
WITH MACDRAW® PRO?**



**MACDRAW® PRO,
ILLUSTRATOR® AND
FREEHAND™ USERS:
TRADE UP TO A
DREAM MACHINE
FOR ONLY \$149.**

**CANVAS 3.5
IS NOW
SHIPPING.**

Call 1-305-596-5644. Have your MasterCard, VISA, or Amex card number and expiration date ready. Or mail your original program disk to the address below, along with your credit card information or check drawn in US dollars on a US bank. Offer limited to the US and Canada. Offer subject to change or termination without notice.

Poor Claris. Once again, Canvas™ is running circles around MacDraw® Pro. In fact, they are still trying to catch up to Canvas 3 while we've added dozens of new features and enhancements to create Canvas 3.5. Like 3-D extrusions of text and graphics, enveloping of text and graphics, smart lines, fine kerning, fractals, automatic concentric circles and spirals, and a tool loader that allows you to add tools as you work. There's even a versatile pressure-sensitive freehand Bézier pen tool. And Canvas 3.5 has really outdone itself with new improvements including object blends, binding of text to shapes and curves, Beziér text conversions, and macro windows. Which is just the beginning, because Canvas also includes all the great features of 3.0 like custom parallel lines and curves, our unique SmartMouse™, and more. Comparing Canvas to the competition is like comparing a superbike to a tricycle. And only Canvas is self-upgrading, allowing you to add new tools, effects and file translators at will. Last but not least, while MacDraw Pro is idling somewhere back in the Dark Ages, Canvas features seamless file sharing with its recently released Windows version. Add it all up, and it's Canvas. For the gives you the ride

NEITHER WOULD WE.

easy to see that it's time to shift gears to ultimate in value and performance, Canvas of your life. So go ahead and hop on.

CANVAS™ 3.5

THE HIGH PERFORMANCE DRAWING ENVIRONMENT FROM Deneba SOFTWARE

This entire ad was created and color separated in Canvas. For more information about Canvas and Canvas ToolPAKS™, call Avenue, Miami, Florida, 33173. © Deneba Systems, Inc. Canvas™, SmartMouse™, and ToolPAKS™ are trademarks of Deneba Systems, Inc. registered trademark of Adobe Systems, Incorporated. Freehand™ is a trademark of Aldus Corporation.

(305) 596-5644 or fax (305) 273-9069. Deneba Software, 7400 Southwest 87th MacDraw® Pro is a registered trademark of Claris Corporation. Illustrator® is a

CIRCLE 165 ON READER SERVICE CARD



MAC UP
GERMANY 1992



MACWORLD
AUSTRALIA 1992



MACWEEK
DIAMOND AWARD, JAN '93



SYM MAC
1992



MACWORLD
SEPT 1993



MACUSER
MAR '90, MAR '92



MACWORLD
1993



MACWEEK
APRIL '90, JAN '92



MACWEEK
TARGET AWARD, JAN '92



INFOWORLD '91
DEC 1991



MACWORLD
SWITZERLAND 1992



MACUSER
SPAIN 1992

Unbelievable!

You Cut My PayCheck?

Aatrix PayCheck
(retail \$79) has
been cut to \$49
thru May 30th*.

**PayCheck, the
universal payroll
software. Use it alone
or link it to Quicken®,
MYM®, CheckWriter Pro™,
MYOB®, MacMoney®, and
other accounting software!**

PayCheck's new v7.1 instantly calculates your paychecks and automatically exports to your favorite accounting program or Aatrix's CheckWriter Pro™ for personal and small business finances (MW 6/93 Editor's Choice, Home Office Computing's Editor's Pick 1/94, MacUser Finalist 1/94), now with invoicing.

PayCheck will handle payroll for 1-100 employees. It instantly calculates Federal and State taxes, FUTA, SUTA, SDI, SS, Med, Worker's Comp, etc. - up to ten customizable deductions and employer paid contributions. PayCheck calculates 941's, prints W2's and prints paychecks on any style check, using any printer.

It's makes payroll so easy! PayCheck uses a simple to understand command toolbar that even a novice user will understand. In fact we're so sure that you'll love it, we have a 30 day money back policy.

Aatrix Software...a Macintosh payroll developer since 1985. There isn't a payroll situation Aatrix can't handle! For more complex payroll situations consider Aatrix Payroll, Ultimate Payroll and Multi-Co Ultimate Payroll for payroll services.

For any payroll situation:
PayCheck, Payroll or Ultimate Payroll!



Orders and Inquires (800) 426 0854

*\$49 price is guaranteed by calling Aatrix directly

*all trademarks are the property
of their respective manufacturer.

CIRCLE 48 ON READER SERVICE CARD

LETTERS

but this time it really is in there.)

Jim Williams
via the Internet

/ You can still apply styles from the Document Layout palette in QuarkXPress 3.2 but not as easily as in the past (or in 3.3). Dragging one icon over the other was fast, elegant, and transparent. Having to select a page or pages and then press Option and click on a master-page icon is a kludge. / KT

"PROFESSIONAL PAGE LAYOUT: Time to Switch?" brings to mind Apple's lemmings ad for the Mac. Everyone uses either PageMaker or QuarkXPress, so for the last four or five years, almost every review of DTP focuses on PageMaker and QuarkXPress. Or is it that every review is on PageMaker or QuarkXPress so everyone follows along?

Never once in your publication have you given Ready,Set,Go! its just due or had a comprehensive and fair evaluation of final output from the DTP packages. What about one-step separations, type and image control, color fidelity, dot specs and film size, RAM requirements, and speed, for example? PageMaker and QuarkXPress cannot do RGB TIFF separations without add-ons — Ready,Set,Go! can. Features such as tracking tables, font-conflict elimination, rotation in 1-degree increments, word processing, spell checking, and color separation were in Ready,Set,Go! versions ago, but you never mention it. I'll take innovative software that does almost everything imaginable well for a street price of \$290 over one that costs \$589 plus extensions any day.

Dean A. Spahr
Pittsburgh, PA

/ Ready,Set,Go! has some enviable functions, which is why we did include it in the page-layout story and why we review it in this issue. But it isn't equivalent to QuarkXPress and Aldus PageMaker in a real-world comparison. It's not cross-platform, and although it has a wonderful separation facility, it's hard to find an output service that keeps Ready,Set,Go! on hand. Above all, the shipping version we tested crashed too often. Ready,Set,Go! was once my tool of choice, and I have a lingering fondness for it. The current developer understands typography and the graphic arts and, given time and money, should make Ready,Set,Go! a contender again. / KT

We've Been Terminated

THANK YOU FOR your December article "Installing an Internal Hard Drive" (page 197). I concur that the process of installing a

hard drive is generally simple to do in our modular Macs. I would like to add the following, however:

If users perform this task, it may void their Apple limited warranty.

To the best of my knowledge, Apple does not use, and has never used, aluminum-wire SCSI ribbon cables. Our specification requires the wire to be copper with tin plating to prevent corrosion, and I have verified that copper wire is used. I cannot agree with your recommendation to replace the SCSI ribbon cable. Apple's power cables, because they use a heavier-gauge copper wire, are equal in quality to SCSI ribbon cable.

One major consideration that was overlooked in the article is SCSI termination. It is imperative that the SCSI chain be terminated properly at both ends. The last internal SCSI device on the ribbon cable should be terminated, unless the cable itself provides the termination (as with the Quadra 950). With the Centris 650 you show, the hard drive should be terminated. However, your picture of the hard-drive controller board clearly shows that there are no resistor packs installed on this hard drive.

Byran Longmire
Apple Computer, Inc., Cupertino, CA

/ For the record, we did note that this do-it-yourself approach invalidates the warranty. The photograph on page 198 was intended to show how to set SCSI ID, but you raise a valuable point about termination. For more information about hard-drive termination, read "The Hard Truth" (March '94, page 97). / NP

Shareware Solution

SHAREWARE DISTRIBUTION isn't limited to CD-ROMs and on-line services. Have you forgotten about floppy disks? One of your readers, Tony Hauth (Letters, February '94, page 16), asked how he could obtain shareware without a modem, and your answer was that he had to buy a modem or a CD-ROM drive! Not true! The Boston Computer Society and BMUG, two of the sources for shareware CD-ROMs you mentioned, also distribute their shareware on floppy disks.

Amy Rothstein
via the Internet

WHY DO YOU ADVISE your readers to shell out at least \$150 (frequently more) for a CD-ROM drive, when they could do one or more

Don't settle for this computer label...

William D. Smith
Addresses Ltd.
222 Wherever Drive
Sometown, US 01010

When you can have this!



The P-TOUCH PC can turn virtually any computer image into a laminated, adhesive-backed, professional quality label.

Want to create a lasting impression? Nothing could be easier, faster or more efficient than the P-Touch PC Computer Label Maker.

Just plug it into your Macintosh® or Windows™ based PC, and you're all set to create everything from logos to graphics to bar codes to data-base mailing labels. And you can create labels in an unlimited number of styles, 5 label sizes from 1/4" to 1" in a huge selection of colors with up to 7 lines of text on a label in both vertical and horizontal formats.

If you can create it on your screen, you can print it on a P-Touch PC label!



The P-TOUCH PC comes with everything you need.

ICON based application software, printer drivers for Windows™ and Macintosh® operating systems, cables, 50 foot tape cassette, custom fonts, over 250 scalable symbols, sample label formats, AC adaptor, pop-out/pop-in cassettes for easy tape changing, AC adapter, and automatic tape cutter...all for a remarkably affordable price.

P-TOUCH PC
COMPUTER LABEL PRINTER

brother®

We're at your side.

BROTHER INTERNATIONAL CORPORATION • 200 COTTONTAIL LANE, SOMERSET, NJ 08875-6714
AVAILABLE AT: STAPLES • COMPUSA • OFFICEMAX • LECHMERE • NOBODY BEATS THE WIZ
J&R MUSIC WORLD • FRY'S ELECTRONICS • WHOLE EARTH ACCESS • L.A. TRONICS
THE GOOD GUYS! or contact your local computer dealer or supplier

CIRCLE 98 ON READER SERVICE CARD

LETTERS

of the following things instead:

- Ask a friend for the shareware program.
- Join a user group (and make new friends).
- Buy a floppy disk containing the shareware from one of several sources such as Educorp.

As an aside, did you mention that the price of a CD-ROM drive would be more than paying for a 2,400-bps modem and one year of basic on-line fees?

Michael Witman
via the Internet

/ Thanks for the information. But considering the wealth of software and information available on-line, I still think a modem is a good investment. No sales pitch, just advice. / PP

Put Out About Output

I RECOGNIZE THAT JOHN DVORAK is supposed to produce outrageous statements from time to time. That's a considerable portion of what he gets paid for, I imagine. But ridiculous ones? He says, "For anything fancier than text generation, I prefer the Mac. The output is superior to everything else — including that of the best Windows machine" ("The Front-Page Debate," February '94, page 278).

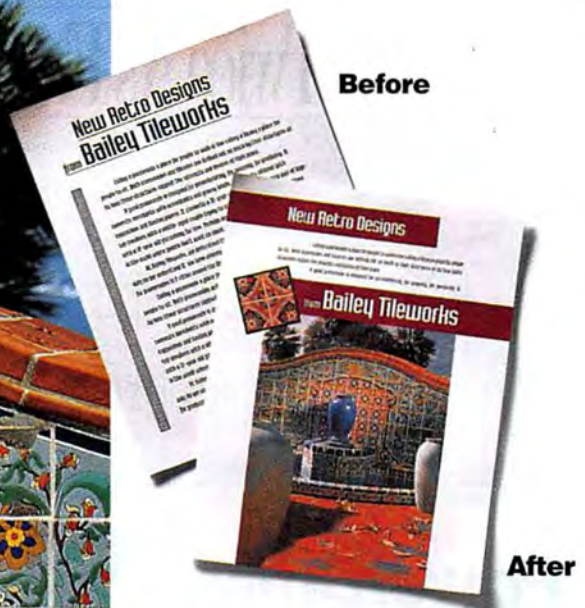
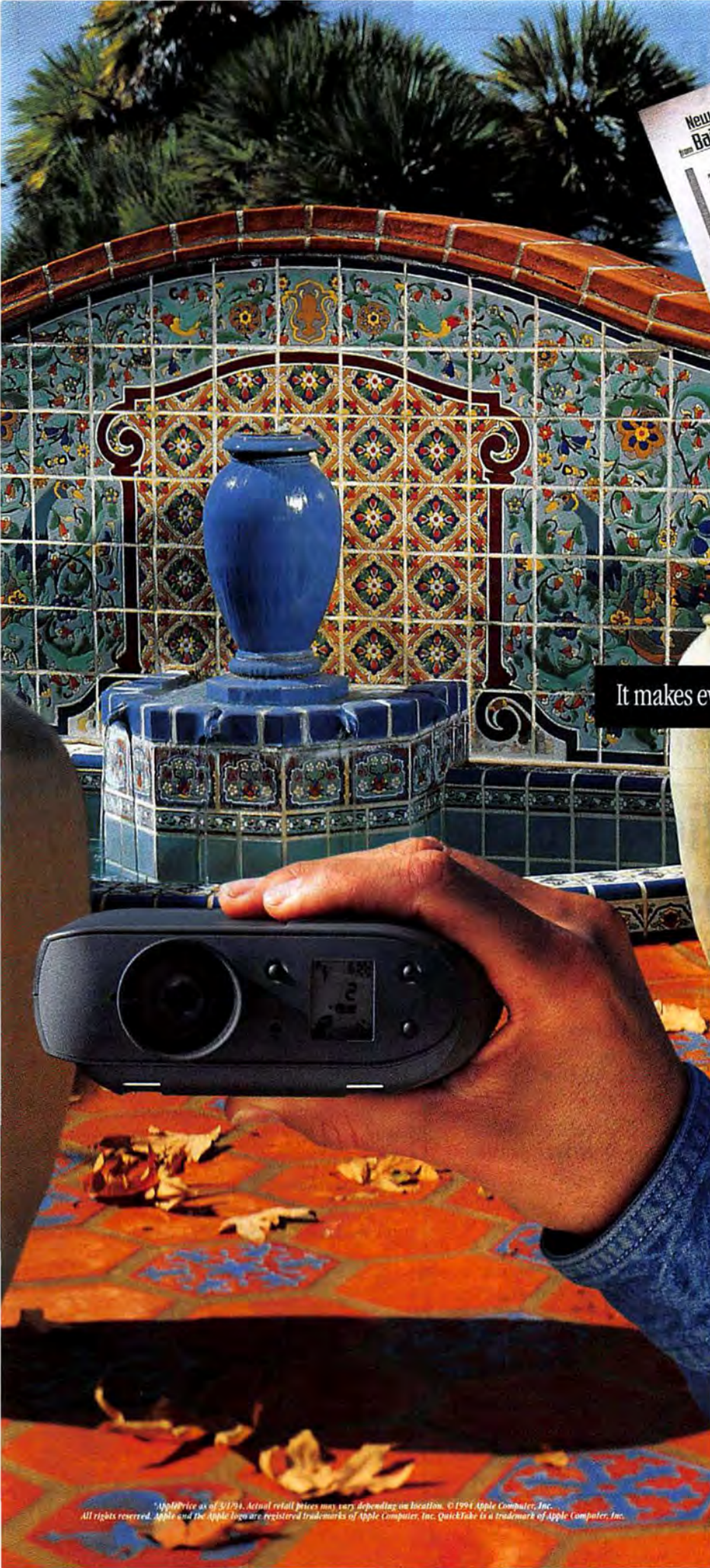
Surely output depends on more than the platform alone. It also depends on user choices and the software, fonts, printer, and paper used. A Macintosh is doomed to produce lousy output if it has lousy fonts and a lousy printer. By the same token, so is a Windows machine. Have I missed something? Is there some tangible blessing that's automatically conferred upon Macintosh output that is not available to Windows/DOS/OS/2/NeXT/UNIX users?

Martin LaBar
Liberty, SC

What Does Restart Do?

TIP SHEET IS ONE of my favorite sections of *MacUser*. I always like to find out something new and potentially useful. The February '94 Tip Sheet (page 193) was really underwhelming, though. Did you actually pay somebody \$25 to tell you that if you select Put Away from the File menu, it puts something away?

OK, then, here's my tip, and I think it should be Tip of the Month: You can select an icon and choose Open from the File menu and — presto! — it opens the document



It makes everything you do look better than before.

Point. Shoot. Plug it into your computer. Apple's new digital camera is the fastest, easiest way to add high-quality photographs to your work. No film. No waiting. Just sharp-looking digital photos that make everything from mailers to memos more memorable.

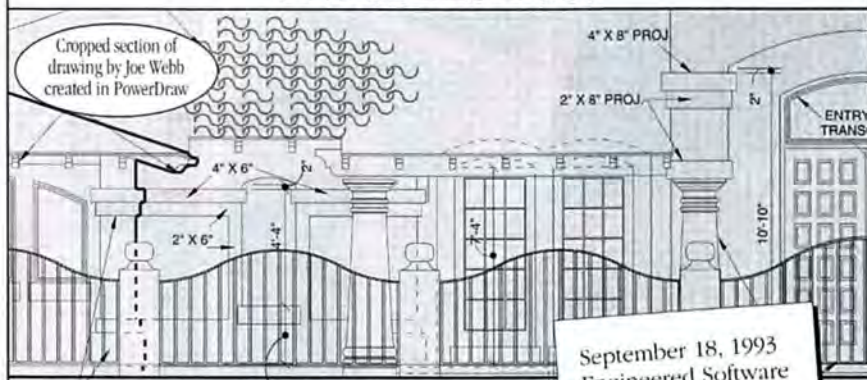
The Apple® QuickTake™ 100 can hold up to 32 standard resolution images. It only weighs a pound. And at \$749*, you can show off your business in living color and still stay in the black. For the authorized Apple reseller nearest you, give us a call at 800-732-3131, ext. 550.

The New Apple QuickTake 100 Digital Camera



*Apple Price as of 3/1/94. Actual retail prices may vary depending on location. © 1994 Apple Computer, Inc. All rights reserved. Apple and the Apple logo are registered trademarks of Apple Computer, Inc. QuickTake is a trademark of Apple Computer, Inc.

Twice As Fast



PowerDraw™
IN 41 COUNTRIES AROUND THE WORLD



September 18, 1993
Engineered Software

After just two days with PowerDraw, I was able to start my first working drawings, and now I'm twice as fast using PowerDraw as hand-drafting.

Sincerely,

JOE WEBB

Joe Webb, Architect

ENGINEERED
SOFTWARE™

CALL 910-299-4843 OR FAX 910-852-2067 • IN CANADA 204-453-8111

CIRCLE 73 ON READER SERVICE CARD

LETTERS

with the application that created it.

Michael Gibbs
via the Internet

Master of Its Domain

I HAVE TO DISAGREE with the four-and-a-half-mouse rating of the Hewlett-Packard LaserJet 4MP printer (February '94, page 51). I think it deserves five mice. How many of your readers are just going to skip to the punch line and read this:

"PROS: Top-notch output. Affordable price. Compact design."

"CONS: Slight paper curling."

That's a major drawback! I felt like I was watching *Seinfeld* and Elaine just scrunched her nose, with Jerry nodding in agreement.

For the record, when I put a LaserJet 4MP on my desk and plugged it in, the printer never strayed or slid from its position and never came unplugged. It does run out of paper every now and then, though.

Jeff Bierly
via ZiffNet/Mac

DOS Doesn't Mean Dunc

IS THERE ANYTHING you can do about your fanatic editorial bias against DOS? In the February '94 issue, you start off with "Windows on *Beavis and Butt-head*?" (Open Folder, page 13) and continue with "you've got to edit your WIN.INI file. Let's stop and look at reality for just a minute" ("That Giant Sucking Sound," page 33).

The real secret to using computers is: Don't limit yourself. Use the right tool for the job. Start by learning the operation of all models — including those dreaded DOS machines — on the market. Macintosh problems are as numerous as DOS ones, you know.

I'm an intelligent computer user, and I don't appreciate being portrayed as a dunce in your magazine because I use DOS.

Christopher Gordon
Ventura, CA

/ So what have you got against *Beavis and Butt-head*, anyway? / PP

CORRECTIONS

In the story "In Search of the Safest Monitor" (February '94, page 92), the Sony CPD-1730 and CPD-1604S 17" monitors should have been listed as using antiglare treatments. Both products also include a one-year warranty on parts and labor.



Now StatView Does Quality Control!

First in a series of modular extensions, QC Tools integrates complete quality control analyses and charts into StatView.

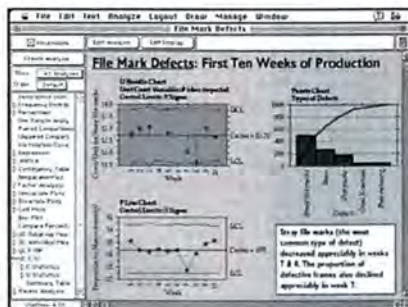
StatView® 4.01 integrates data management, statistical analysis, graphing, drawing, and color presentation into one powerful, elegant program.

StatView is the only Macintosh package which offers all the tools you need to analyze data and present results — in a single application.

NOW WITH QUALITY CONTROL!

QC Tools is the first in a series of seamless drop-in extensions to StatView. QC Tools adds Xbar, R, S, I, MR, CUSUM (with FIR), Capability,

p/np, c/u, and Pareto analysis to the ANOVA, box plots, normality plots, and other analyses that come standard with StatView.



CALL FOR SPECIAL BUNDLE PRICING!

StatView retails for \$595 (U.S.) and QC Tools for \$245 (U.S.). To find out more about our special StatView/QC Tools bundle pricing, call Abacus Concepts at 1-800-666-STAT.

**ABACUS
CONCEPTS**

1918 Bonita Avenue
Berkeley, CA 94704
Tel: 510-540-1949
Fax: 510-540-0260

© 1993-94 Abacus Concepts, Inc. StatView is a registered trademark of Abacus Concepts, Inc. All other brands are property of their respective holders.

CIRCLE 168 ON READER SERVICE CARD

THE TOP RATED COMM SOFTWARE
IS NOW BETTER THAN EVER.



\$149 Estimated Retail Price
\$69*
Competitive Upgrade

Introducing **Smartcom II®** for the **Macintosh®** Version 4 from Hayes—the ideal blend of simplicity and power with all the great, new features you asked for.

New Features! Smartcom now gives you an integrated Communications Editor, AppleEvents and PowerTalk Mailer support, alternate

number dialing, multiple SmartButton sets, and much more. Version 3.4 was a 4 1/2 Mice Winner. Version 4 is even better!

Smartcom Is Simple To Use! Smartcom's simple, easy-to-use interface takes all the hassles out of transferring files, calling on-line services and BBSs, and all your communications needs. Customize your SmartButtons to create a personalized interface for activities you use frequently. Floating keypad windows provide point-and-click access to extended keyboard functions which is great for PowerBooks.™

Smartcom Is Fully Automated! If your modem supports the Hayes® I4 AT Command, Smartcom will

automatically configure and set up your modem. Smartcom also provides an extensive modem support list that lets you select your brand and model for instant support of its capabilities. It even supports the new V.FC 28,800 bit/s modems and Macintosh platforms with speeds up to 230,400 bit/s. Smartcom's Autopilot scripting language is in "plain English" to let you automate dialing, logons, file transfers, or just about any complex or repetitive task quickly. And a Learn option creates Autopilot scripts automatically by having Smartcom record actions for reuse at any time.

***Upgrade Today!** For only \$69, you can upgrade from any competitive software to the superiority of Smartcom II v4.0. **Existing Smartcom users can upgrade for only \$49.** To order, call the Hayes FAX Response system at 800-HAYES-FX and select Document 202. Or, simply call us at 800-25-HAYES. In Canada, call 800-665-1259.

Hayes®
Increasing the Speed
of Business.™

Go Online With Hayes BBS: call 800-874-2937 or 404-446-6336. ©1994 Hayes Microcomputer Products, Inc., P.O. Box 105203, Atlanta, GA 30348. Hayes, the Hayes icon, the Hayes logo, Increasing the Speed of Business and Smartcom II are registered trademarks. Other trademarks are those of their respective companies. Prices are in U.S. dollars.

CIRCLE 61 ON READER SERVICE CARD

Now connects up to 8 LocalTalk printers to an Ethernet network.

© 1991 Asanté Technologies, Inc. Asanté is a trademark of Asanté Technologies. All brand names and products are trademarks or registered trademarks of their respective holders.



Asanté now takes Ethernet all the way to your laser printer.

The proven leader in Macintosh® networking now offers more Ethernet® solutions than ever. Introducing AsantéPrint™, the simplest way to connect up to 8 LocalTalk™ laser printers or other devices directly to a high-speed Ethernet network.

The reliable EtherTalk-to-LocalTalk converter.

AsantéPrint has no switches to set or installation software to load, so it works right out of the box. And, unlike other converters of its kind, AsantéPrint has no necessary power-up sequence. Because of this, it's the only EtherTalk-to-LocalTalk converter that is capable of unattended recovery after a power outage.

AsantéPrint is so simple, it's perfect for small networks. It's also ideal for more sophisticated networks when combined with AsantéPrint management software. This combination offers you management and security features which provide an unparalleled level of control over all your Ethernet and LocalTalk connections.

The security software assigns passwords to any or all of your connected LocalTalk devices, and even allows you to specify passwords for specific LocalTalk classes such as color printers or dial-out modems. So you can protect peripherals from unauthorized or accidental access.

Asanté. All the right connections.

Asanté™ has a reputation for producing compatible, reliable networking products. We offer a full family of best-selling Ethernet and Token Ring® adapter cards for PCs and Macs®. And a full line of intelligent and non-intelligent 10BaseT hubs. Now we're taking Ethernet all the way to your laser printer.

AsantéPrint. The latest innovation in Ethernet solutions from the company with all the right connections.



Source: InfoCorp

ASANTÉ
ALL THE RIGHT CONNECTIONS™

Resellers: Asanté products are available from Ingram Micro, Merisel, Tech Data and Gates/FA.

[Asanté Technologies, 821 Fox Lane, San Jose, CA 95131, 800-662-9686 or 408-435-8388]

CIRCLE 86 ON READER SERVICE CARD



Meet the Power Macs

TO BUY OR NOT TO BUY: THAT IS the question on many Mac users' minds these days. After months

of anticipation, the new Power Macs are finally for real. Now you must decide whether you should purchase one of the new Macs, opt for a Power Mac upgrade, or stick with a 680x0 Mac for now.

To help you with this decision, *MacUser* put the new Power Mac 6100/60, 7100/66, and 8100/80 through an exhaustive battery of tests (our editors are still trying to catch their breath!). We wanted to determine how fast Power Macs perform on a variety of real-life tasks as well as how much raw power they offer compared to their fellow 680x0 Macs and rival 486- and Pentium-based PCs. Here's a brief rundown of what we found.

Our MacBench suite of subsystem-level benchmark tests showed that the Power Macs provide considerably more processing power, particularly on floating-point operations. The Power Mac 6100/60 was twice as fast as the Quadra 840AV on the processor test and the Power Mac 8100/80 was a whopping nine and half times as fast as the Quadra 840AV on the floating-point test.

We also tested a variety of prerelease "native" applications on Power Macs. Although the gains weren't as impressive for business applications, the Power Macs really shone in the publishing and image-processing categories. They were especially impressive in number-crunching and rendering applications, with the Power Mac 6100/60 edging out the Quadra 840AV and the Power Mac 8100/80 running 60 percent faster than the Quadra 840AV running 680x0 applications. In addition, we tested more than 30 third-party 680x0 system extensions to see whether they slowed the Power Macs down. Only a handful caused a serious slowdown (and they should be receiving maintenance

updates soon after the Power Macs ship, to remedy the problem).

But what about your current software investment? Apple spent a lot of time making sure your current software would be able to run under emulation on the Power Macs. Our testing found the emulator to be solid if not snappy. Current 680x0 software will run at speeds that are acceptable for most users.

Of particular interest to people considering jumping the fence from the Intel world, the Power Macs outperformed Pentium as well as 486 PCs when running typical business, publishing, and rendering tasks. And if you need to run Windows, you can purchase any of the Power Macs in a configuration that includes SoftWindows, which allows most DOS and Windows software to run at lower-end-486 speeds.

The number of software applications that have gone native and will be ready at launch is a little disappointing. Microsoft Word, Microsoft Excel, and Adobe Photoshop are a few of the more popular applications that aren't ready yet. Look for them sometime this summer. On the other hand, products such as WordPerfect 3.0, MacroModel, StudioPro, Infini-D, Great Plains Dynamics, PainterX2, DeltaGraph Pro 3, Retrospect Remote, Video-Fusion, and ClarisWorks were expected to be available when the Power Macs shipped. And favorites such as Aldus PageMaker, Adobe Illustrator, FrameMaker, QuarkXPress, and

Kai's Power Tools will be available shortly after the Power Mac rollout. Check out our chart on page 98 for a comprehensive list of vendors' plans.

So, should you buy a Power Mac? That depends on your situation. If you're in charge of a large installation of Macs, you should consider a combination approach. A mix of Power Macs and 680x0 Macs with PowerPC upgrades from Apple and/or Day-

Star Digital hedges your bets and protects your budget.

If you're ready to buy a new computer, you can't go wrong with any of these new Macs. For those of you who are pushing the limits of a high-end Mac and find yourself going on vacation while you wait for images to render, take the plunge and

buy an 8100/80. If you run mainly Microsoft applications, you might want to hold off until the native versions are shipping and then buy a 6100/60 or 7100/66. If you're buying your first computer and plan to use it in your business, you'll find the 6100/60 an excellent buy. If you're buying a Mac for your home, to run Quicken and some education applications, I would recommend a Quadra 605, a Performa, or an LC. You can always upgrade it later if you lust after more power. See "Upgrades: From Mac to Power Mac," page 93, for a rundown on 680x0-upgrade options.

The transition to the Power Macs looks to be a pretty smooth ride. Sure, there'll be some bumps along the way, but as always, we'll be testing the new products and applications and recommending which (and when) to buy. ☐

*The Power Macs
outperformed Pentium
as well as 486 PCs
when running typical
business, publishing,
and rendering tasks.*

A simple demonstration of PhotoFlash software.

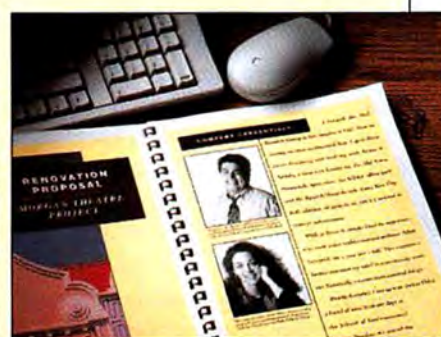
(A complicated demonstration isn't possible.)



1. Find a photo. The PhotoFlash Browsers makes it easy to view and pick a photo — they're all stored here, whether you got them from a CD, scanner or digital camera.



2. Enhance it. Crop, rotate and resize a picture with easy-to-use tools. Dust and scratch removal is automated, too. You can instantly preview adjustments you've made.



3. Place it. With a point and click, PhotoFlash automatically places the picture in your work. You can also record and automate the tasks you do most often.



You used to have to learn a lot — and spend a lot — before you could work with photos on your computer. Now there's PhotoFlash.™ PhotoFlash is easy to use, right out of the box. It helps you organize pictures, enhance them and drop them into your work. It's fast. It's memory efficient. And it's just \$279.* So if you want to make your work look great, get PhotoFlash. You'll get the picture right away.

Introducing PhotoFlash software from Apple. 



No Money Down

NOT SINCE MY WEBELOS DAYS

have I witnessed anything like the throat-tightening pageantry

of the *MacUser* Double-Sawbuck Ceremony commemorating a columnist's (mine, in this case) 20th outing. It's an important ceremony, in that a light sorbet is served with dinner and, on top of that, the columnist receives two important gifts: the traditional saber, sash, and regimental toque of office, which I am now honored to wear at all editorial meetings, and more important, the right to make broad, sweeping pronouncements about Where the Industry Is Going Wrong.

So to accommodate my desire to exercise some newfound power and to show my appreciation for those many readers who've never whacked me in the head with anything in these many months, I present these Five Surefire Easy Ways to Make a Million Dollars in the Software Industry. Or if you've already made the first million clams, ways to easily make the second. And you don't even have to go to a Holiday Inn function room!

Lighten Up. This involves two simple steps. Step 1: Make \$999,980 in the software industry. Step 2: Sell off all those old LPs you've got cluttering your closets. I mean, be honest: Even if your turntable still worked, would you ever want to hear that Journey album again? And that copy of *Hooked on Classics II* — you didn't even know you still *had* that one, did you?

If this doesn't put you over the million-dollar mark, look around the house for any deposit cans or bottles you've been meaning to return.

Think Small. Remember the days when a 400K floppy disk could hold your system software, a word processor, a drawing program, and a pile of documents? Sure, today's apps are much more sophisticated than MacWrite and MacPaint, but as a software

publisher, can you really look me in the eye and tell me you can't write a decent word-processing program that requires less than 4 megabytes of memory and 8 megabytes of disk space? Integrated packages such as ClarisWorks pack a lot of features for the modest system resources they require, but what about the small company that just needs a terribly simple database program for its six Macs and can't afford to pay \$300 a pop? Or a school teaching basic word processing in a 15-Mac lab? Or heck, even absurdly wealthy Mac users who want to have a halfway decent spreadsheet available for use as a scratch pad but who have only 400K of free memory to tuck it into?

There's a big hole in every single software catalog on the planet, and it's smack-dab in the sub-\$100 price category. If my mail and my discussions with other users can be believed, the Mac community is waiting for professionally produced and marketed, lightweight, inexpensive productivity applications to hit the market. Want to make a million bucks (well, OK, possibly less)? Write and publish them.

And what of the guy who's perfectly happy with his LC II, except when he tries to run the latest version of PageMaker or Illustrator? For many people with more-lightweight needs, PageMaker 4.2 and Illustrator 3.2 are still perfectly useful applications that work nice and peppily on older machines. What's more, if you take them on the road in your

PowerBook, they use up a lot less space on the hard disk than do their most recent incarnations while for the most part providing file compatibility. If marketing and maintaining older versions of commercial software is prohibitively expensive, why not allow people to purchase the old stuff on an "as is" basis, at a reduced rate? Call it

a competitive downgrade, and the world will beat the proverbial path to the proverbial portal.

Interzaptive TV. Here's a surefire method for reaping a cash bonanza from the upcoming interactive-TV marketplace. Step 1: Find a person who has invested heavily in an I-TV corporation. Step 2: Ask that person to give you two tens for a five. Step 3: Find another I-TV investor, and repeat steps 1 and 2. The large number of investors in this particular industry and their extreme gullibility ensures this scheme's success.

If you want to succeed in I-TV yourself, provide home consumers with interactive services they really *want* in their homes. The advantages of paying an extra 30 bucks a month for the ability to watch *Suburban Commando* at any time of the day or night are nebulous at best, but tell American consumers that the new red button on their TV remotes will activate electrodes wired into the clothing of any celebrity within the crosshairs of their new I-TV sets, and it's like printing money!

Copy Defection. Statement the First: Software piracy is a serious problem that, in 99.44 percent of all cases, simply should not be tolerated.

Statement the Second, the Reale Pointe:

PROBLEM:

You're about a million bucks short of your retirement goal.

SOLUTION:

Enrich yourself — and the entire Mac community to boot.

In my opinion, a software company that incorporates aggressive copy protection into its wares — protection that might prevent legal use of the software under the spirit of its licensing agreement — will inevitably engender bad faith, disgruntled customers, a loss of sales, and quite possibly an increase in piracy. Space constraints preclude me from telling some of the more lavish tales

I've heard about angst suffered by users and retribution inflicted on publishers because of bad copy protection. Suffice it to say, if you copied an essential, legally bought application onto your PowerBook for a road trip, only to find at your hotel that the app refused to run because it wasn't on its "home" Mac, would you then be inspired to continue to give that app's publisher your business? Or,


like a certain Reader X, would you be inspired to take revenge by distributing as many bootleg copies of the software as your Mac could crank out?

Now obviously, Reader X committed a major no-no there, but let's not leave the publisher blameless; it set itself and its user up for a major fall by incorporating a totally wonked-up copy-protection system. Any scheme that doesn't allow users to follow the "one user" spirit of most licensing agreements just has no place in the '90s. Look to Adobe for a positive example: Most of its products merely check your network to see if there's another copy running that has the same serial number. Totally unobtrusive, and the only people who won't be able to use the product are those who are trying to use it illegally.

Except on certain savagely expensive vertical-market applications, intrusive copy protection is a dinosaur that we'd be well rid of and that should *not* be accepted by legal, God-fearing-or-otherwise Americans as the cost of doing business. If you want to make a pile of dough with your commercial application, it's better to leave the software unprotected and risk loss of revenue than it is to risk crippling your users and making that revenue loss a dead certainty.

Quantum Geek. Steps 1 through 3: Develop a workable theoretical model for practical time travel; solve a myriad of nigh-intractable associated engineering problems; design and construct a working time machine. Step 4: Time-travel back to Seattle, early 1976, and snitch to Bill Gates' mom that he's thinking of dropping out of Harvard. Step 5: With Microsoft out of the picture, move forward to October 1980, purchase the rights to QDOS from Seattle Computer Products, secure a contract from IBM to adapt it to that company's new PC, and make a fortune.

Limited Warranty

No kiddin', folks: I have right here documented evidence (I'm holding up a file folder clearly marked "Documented Evidence") that each and every one of these little gold mines will indeed work — or could work, in theory. What with this month's ceremony and everything, I really didn't have the time to give each gold mine quite the technical shakedown it may have required, so just go in with low expectations, won't you? 



MOVE OVER SAM. VIREX® IS NOW 36 TIMES FASTER!*

The problem with anti-virus software is that it slows down your Macintosh. Every time you start your computer, run a program or insert a disk, you spend way too much time waiting. After all, you spent a lot of money for a FAST Mac, right?

Virex 5.0 solves this problem with new SpeedScan™ technology that enables Virex to scan, detect and eliminate viruses with blinding speed. With SpeedScan, Virex 5.0 does in 10 seconds what SAM†

needs over 6 minutes to do. Yes, seconds, not minutes.

Of course, along with that you get anti-virus software that's the easiest to install, the simplest to use, and the most effective against viruses. And you automatically receive your

first Virex upgrade on disk absolutely FREE.

Ask your retailer for Virex, or call us for more information on our volume purchasing programs. Because once you put Virex to the test, it'll be time for SAM to hit the road.



DATAWATCH 919-549-0711 / FAX 919-549-0065 / BBS: 549-0042 (8.N.I.) / Datawatch & Virex are registered trademarks, & SpeedScan is a trademark, of Datawatch Corp.

*In a head-to-head test conducted on a Macintosh IIx, scanning 79 megabytes of files (1,571 files) on a 230 MB hard drive. Results may vary but, in all tests, Virex was dramatically faster. †SAM is a registered trademark of Symantec Corp.

CIRCLE 3 ON READER SERVICE CARD

Astounding.

Not.



If you want truly astounding presentations, with all the bells, whistles, sights, sounds, and moves that'll knock your socks off, there's only one choice: Astound® by Gold Disk®. Not Persuasion® 3.0.

Astound is the ultimate presentation performer. It effortlessly creates stunning slides, charts, and overheads. It even imports your existing Persuasion files.

But there's more. Magic. Movement. Music.

Just pick an Astound template, fill in the blanks, and real showbiz is yours. Brilliant animation. Dazzling slide transitions. Super sounds. It's that simple.

You can even customize these built-in effects or add new ones. Either way, you'll love the incredible ease of bringing sound, motion, QuickTime® and animation to your desktop, laptop and video presentations.

And with Astound's free runtime you can distribute your presentations all over the place.

Compare Astound against Persuasion 3.0. It makes one wonder why Aldus® even bothered.

Feature	Astound	Persuasion 3.0
Full static presentation capabilities including slides, speaker notes, handouts, and outlines	Yes	Yes
True object-oriented animation controls allow separate entrance and exit for ALL objects on slide	Yes	Not
Timelines for precise control of multimedia events	Yes	Not
Animated pictographs and charts that grow, tumble, and more	Yes	Not
Multimedia effects built into templates	Yes	Not
Main toolbar includes tools for directly adding sound, QuickTime, cell animations, and interactive buttons	Yes	Not
QuickTime and sound editors included	Yes	Not
Can play multiple transitions concurrently	Yes	Not
Suggested retail price	\$199.95	\$495.00

"What sets Astound apart ... is its ability to make multimedia resources as easily accessible as the titles and bullet points in Persuasion and PowerPoint!"

MAC USER MAGAZINE

\$89.95

Special \$89.95 upgrade offer for owners of Persuasion and PowerPoint. Order toll-free **1-800-982-9888.**

Satisfaction guaranteed. If you don't love Astound by Gold Disk, and agree that it makes Persuasion obsolete, return it in 90 days and get your money back. No questions asked. Also available for Windows®. Runtimes available for both Macintosh and Windows. Astound by Gold Disk is available at resellers throughout North America. Competitive upgrade is available through Gold Disk only. Astound and Gold Disk; Aldus and Persuasion; QuickTime; PowerPoint and Windows; are trademarks or registered trademarks of Gold Disk Inc.; Aldus Corporation; Apple Computer Inc.; and Microsoft Corporation, respectively. All other trademarks are the property of their respective owners.

CIRCLE 22 ON READER SERVICE CARD



Code MU-194

For more information, call 1-800-NEC-INFO. Or, for information via fax, 1-800-366-0476, and request document #79640. Thank you. And you. And you.

d you. And you. **And you.** And you. And you. *And you.* And you. And you. *And you.* And you. And you. *And you.* And you. *And you.*



NEC

CIRCLE 116 ON READER SERVICE CARD

IT'S GONE. AND YOU DIDN'T BACK IT UP.

FACE IT. YOU NEED to back up your files. Use Retrospect, the number one Macintosh backup software — backing up over one million Macs, at last count.

Dragging important files to floppy disks is not backing up. If you crash you'll be retyping and trying to recover files for days. And then still searching for what's missing months later. And what if there's a fire, theft, flood, or equipment breakdown?

With Retrospect from Dantz you'll be backing up to the storage device of your choice in seconds — including SyQuest,



dantz

Optical, Bernoulli, floppies, and file servers. And just about any Macintosh tape drive you choose.



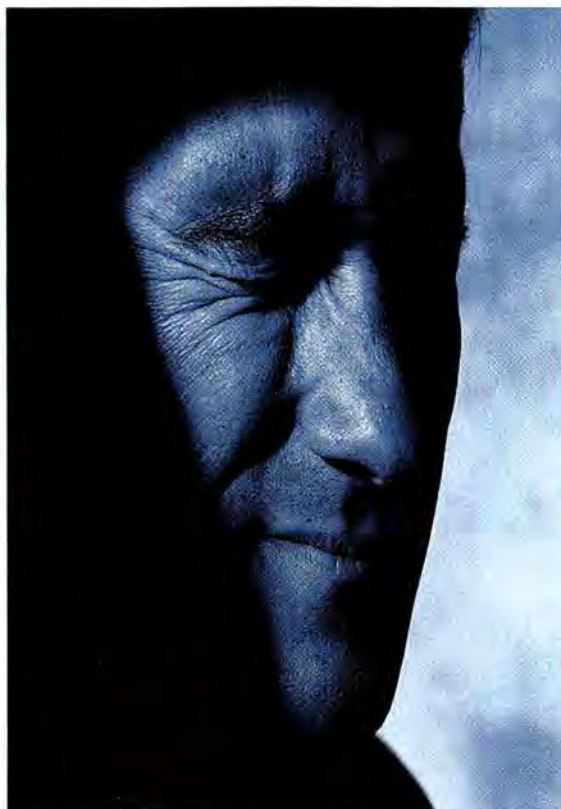
Retrospect packs more power than all the others put together.

AUTOMATIC OPERATION.

Simply point and click to create a script, then schedule it to run days, nights, or weekends.

WORLD CLASS RESTORING. Every preference file, document, application, control panel, extension and font is returned to its exact location. You won't miss a beat.

SECURITY. Retrospect has security covered, with full password protection at every entry point. Even encrypt data passed over the network to prevent snooping.



SPEED. Retrospect's customized drivers and interleaved data flow operate SCSI storage devices 20%-100% faster than any other backup software — guaranteed.



COMPRESSION. Retrospect's built-in Lessr™ compression cuts backups down to size without compromising performance.

NETWORK OPERATION. Back up a network of Macintoshes as easily as you back up one. Just install a Remote INIT (available in Remote 10- or 50-Packs) on each of your networked



Macintoshes and include them in your backup scripts.

TOP INDUSTRY AWARDS. Don't just take our word for it. Listen to what experts say about Retrospect: "Retrospect has no equal." *MacWeek*, Diamond Award. "For backing up and archiving, there's nothing better." *Macworld*. And Retrospect Remote is a *MacUser* 1993 Editor's Choice Award winner.

The price for peace of mind? Well under \$200 — backed by a 30 day money back guarantee. Don't be caught off guard when disaster strikes, call your local dealer today.

Dantz Development Corp., 4 Orinda Way, Building C, Orinda CA 94563 (510)253-3000.



© 1994 Dantz Development Corp. Retrospect and Lessr are trademarks of Dantz Development Corp. Macintosh is a registered trademark, and Power Macintosh is a trademark, of Apple Computer, Inc. used under license.



A Spin-Spin Situation

PRESIDENT CLINTON SOUNDED

like an old Mac commercial as he held the slim pamphlet between

thumb and forefinger to show how uncomplicated the federal budget was. "User friendly," he called it. I half expected a handcart loaded with 27 volumes of the Republican Alternative to be wheeled in. But in truth, the slim volume was just a simplified version of the full budget documentation.

Apple seems to be putting an equally simplistic spin on its introduction of the Power Macintosh. I wonder if that's wise.

Think about it. Apple makes the brave leap to a new processor, announces plans to migrate to a different bus architecture, and rewrites key components of its operating system — an undertaking roughly comparable to writing the U.S. federal budget. And how does it label the fruit of all this labor?

"It's a Macintosh."

Meanwhile, truckloads of appendixes are being unloaded at the back door and the loyal opposition is winding up its spin doctors.

I think it behooves Apple to crank up its own spinsters. As all pool players and politicians know, you use different English for different pockets. ("Senator, I believe your interpretation assumes real dollars. Our proposal is based on fantasy dollars.") Here are some twists Apple can — and I think should — apply to the Power Mac story:

1. It's an entirely new platform. If Apple expects to gain significant market share, and it does, it will have to attract Windows users. "It's a Macintosh" is the last thing Apple should say to those potential converts. If superior technology; greater usability; simpler networking; and, recently, comparable pricing haven't coaxed them out from under the Microsoft blanket, then nothing will.

So let 'em have Windows.

But even Windows users are smart

enough to realize that Windows running on a Mac is a kludge and a crock. Apple has to get across that this new machine is not a Mac but a revolutionary new platform that runs either Windows or the Mac operating system, without preference or prejudice. Apple's machines must be seen as a straight, bump-free upgrade path for Windows users.

That's the only way Apple might conceivably lure anyone out of the Windows seat, but it won't work at all unless SoftWindows is bundled with every Power Mac. Otherwise, to Windows users, it is just a Macintosh.

2. It's a workstation.

That's the message to send to users of workstations, the relatively expensive machines from Sun Microsystems and Silicon Graphics, among others.

Workstation users are people who process video or 2-D or 3-D graphic images or perform math-intensive operations. In other words, they're just the kinds of users who make demanding use of floating-point math. And fast floating-point math is the main advantage the Power Mac's PowerPC processor has over its most serious competitor, the Intel Pentium. If these people would consider replacing their expensive workstations with \$2,000-to-\$4,000 personal computers, the Power Mac ought to be their baby.

Early indications are that they will consider it. In the words of David Smith of Virtus, whose Virtus Walkthrough is a Macintosh-based, math-intensive product, "Our customers wanted us to move to

Silicon Graphics. Now there's no need to."

3. It's a Macintosh. That, of course, is the official line, the story for the party faithful, and it's perfectly true. Or at least there's very little spin on the pitch. Apple programmers have crunched code to make this box walk like a Mac and talk like a Mac. Considering that this protects Mac users' investment in software, peripherals, and training, I'd say that was darned nice of them.


This last one is my favorite spin. Warning: There's some serious torque on this one. Don't move your head as you read it, or you might get dizzy.

4. It's an investment in reverse obsolescence. Do you remember the Mac IIvx brouhaha? How, a few months after releasing the IIvx, Apple made it obsolete

by coming out with a machine that was better and cost less?

The first Power Macs make up for the IIvx. They embody reverse obsolescence. What I mean by that is that they will get faster as time goes on, because Apple will continue rewriting operating-system components for the PowerPC chip and third-party vendors will continue taking their applications native. The former will speed up applications you already own. The latter will mean faster new versions of applications. There's a good chance that some applications will get sped up twice, as their vendors first port to the PowerPC and when they later learn to optimize their code for it.

Result? Your Power Mac gets more useful with time. Reverse obsolescence.

Of course, this claim needs to be corrected for inflation. 

*Sure, Power Macs are
Macs — but that
doesn't mean Apple
would be smart to sell
them only that way.*

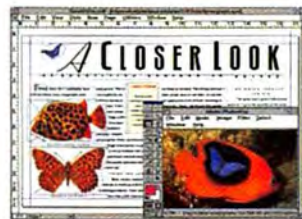


It's time to stop

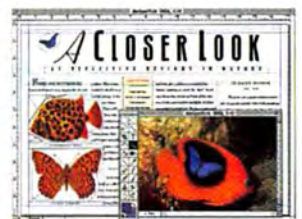


You've reached a crossroads in computer technology. A point where choosing between a PowerPC* or a Pentium™ processor-based PC could be a difficult decision.

The PC is not what it used to be. Everything you want to do on a Macintosh*, you can just as easily do on a PC. And now, all of the most popular Mac applications are available for PCs, including those by Aldus, Microsoft, Adobe, Quark and Broderbund.



This is a document created on an Intel-based PC.



This is a document created on a Macintosh.

With Windows*, they're just as easy to use.
And they run at incredible speeds. To put it in



and ask directions.

perspective, Intel486™ DX2 processor-based PCs outperform the Mac Quadra® 840av, and Pentium processor-based PCs are even faster.

Best of all, you have a choice of over 100 computer vendors who now offer Pentium processor-based PCs.

These PCs give you access to some of the world's most innovative technologies. Like ProShare™ document and video conferencing. Video software using the Indeo™ format. Even future performance upgrades with the OverDrive™ processor technology.

So before you buy another Mac, stop and ask some questions. Find out where Apple is going, especially with the PowerPC. Then ask Intel about the Pentium processor. What you find out might put you on a whole new path.

To learn more about the Pentium processor and other innovative technologies, call 1-800-395-7009, Ext. 111.

intel®

\$399.98

TVator Pro Bundled & Macromedia ACTION!

Make your MAC a powerful multimedia presentation system

TVator PRO is the lightweight, portable converter that connects to your Powerbook, MAC or IBM PC and delivers superior presentations for any occasion. It converts VGA to NTSC signals for flicker-free color output on TVs, projectors, or RGB/VGA monitors. Bundled with Macromedia's ACTION! Antec Incorporated #98770



\$21.98

Two Button Macintosh Mouse

The quality pointing device for your Mac

The Info Products Two Button Macintosh Mouse is a quality replacement for the Apple system mouse that plugs directly into the ADB port. This mouse offers 400 dpi resolution, configurable from the Control Panel. The left button acts as a normal "click button" and the right button as a "click lock button." Info Products #98294



\$398.98

Performantz 270MB External Drive

The extra storage you need

An affordable high-performance, high-quality hard drive with an extra 270MB that could come in handy for huge applications or backup. Features an Quantum mechanism with an 12ms access time. Includes SCSI cable, external terminator, formatting software, and a 30 day money back guarantee. Performantz #97961



\$49.98

6 Outlet Surge Protector w/Fax/Modem/Phone

Save your computer from power surges

Power surges can cause costly damage to your valuable computer and printing equipment, but with the proper protection you can avoid those damages. The 6 Outlet Surge Protector with protection for your Fax/Modem/Phone lets you run your system with the confidence that it won't be threatened by power spikes or harmful blackouts. Hunt Data Products #98625

Up to \$25,000
 Equipment
 Protection
 Warranty



\$29.98

UnderWare

Totally wild and wacky!

- Plays animation **UNDER** your windows and icons
- Screen Saver modules interact with your Macintosh!
- Background customizer livens up your desktop

UnderWare is the hottest desktop diversion product of the year. It's a wacky desktop animator, screen saver, and background customizer that runs animation on your desktop, under your windows and icons! Over 25 animated modules including dinosaurs, dragons, ballerinas, babies, dancing icons, and more! Let the entertaining images run around your screen while they save it from damaging burn-in and liven up your daily routine with a new background. Runs your After Dark modules too! Bit Jugglers #98364

NEW!



\$48.98

Faxscanner

Turn your fax into a scanner

Your fax machine can be converted into a scanner that captures images with up to 200 dpi resolution! Print to any printer or back to your fax machine. Also includes TYPEREADER, which easily converts any printed material scanned or faxed to a PCX or TIFF image file at rates of hundreds of words per second. SVA Software, Inc. #96765 #96766 Faxscanner w/TypeReader 2.01 \$178.98



\$44.98

Square One 2.0

Streamline your desktop!

This power launcher makes it easier to launch, run and switch between programs and files. Its screen palette puts everything you need in one window. Add applications, folders, documents — even QuickKeys. It can handle an unlimited number of files. It's the ultimate desktop organizer and easier to use than the Finder! A simple double-click gets you anything you need. Binary Software #06592

NEW!



\$79.98

Port Juggler

Easily manages all your ports

The Port Juggler allows you to share an expensive peripheral among four Macs or even attach more devices to a single Mac. What makes Port Juggler unique is that it continually monitors the ports and automatically selects the right port each time you use an attached device. Save the time and headache of having to remember which devices are attached to which port. Momentum #97855



\$269.98

Radius LeMans GT

The fastest 24-bit Mac graphics accelerator ever

This incredible new accelerator delivers 24-bit color at resolutions up to 1152x870 and has the best on-screen performance of any interface in its class. It also includes 3MB of ultra high-speed, on-board VRAM for optimum performance when you are working with photorealistic images at high resolution. Definitely for the serious designer who needs speed. Lifetime warranty. Radius #97893



\$98.98

TARGUS Leather Powerbook Case

Luxurious, yet affordable leather

This new case from TARGUS features a 15"x11"x2.5" padded computer section, a separate three-slot accordion file, an accessory pouch and a zippered document pocket to keep you and your equipment running smoothly and efficiently. TARGUS #06610

#06640 Leather PowerBook Case - Burg. \$98.98
 #06640 Leather PowerBook Case - Tan .. \$98.98



\$64.98

At Ease 2.0, Hellcats Over the Pacific & Wealthbuilder 2.0

A great starter bundle

This innovative bundle lets you plan your finances, pilot a fighter jet and safeguard your computer and files from prying eyes. At Ease 2.0 lets you control data and lock your hard drive, Hellcats Over the Pacific lets you fight WWII from your own F6F jet, and WealthBuilder 2.0 is the personal financial planning and investing system. A great start-up kit for your Mac. Apple Computer, Inc. #96748



\$879⁹⁸

**Alias Sketch! Bundled with
Adobe Photoshop 2.5**

#98354

OR

\$758⁹⁸

**Alias Sketch! Bundled with
Adobe Illustrator 5.0**

#98355



Powerful design combinations!

MacWorld "Editor's Choice Award." Sketch! combines powerful modeling, composition, texture mapping, perspective matching, lighting and rendering features into one complete package. Alias Research, Inc.

\$198⁹⁸

ClarisWorks 2.1

Everything you need to get the job done

- Unique frame-based software architecture
- Professional results with a few clicks
- Fast & compact (600K)



ClarisWorks just might be all the Mac software you'll ever need. It combines full-featured word processing, graphics, spreadsheet, charting, database and communications in one, tightly integrated package. It gives you unparalleled flexibility to combine text, data, and graphics any way you want - all on the same page. Getting started with ClarisWorks is a breeze. There are outstanding training materials and sample files right in the box. And, comprehensive online help instantly answers your questions as you work. Whether you manage a growing business, are a corporate manager, or use a notebook computer, you need the affordable software that Claris Works 2.1 delivers. Claris #99733

\$817⁹⁸

Futura II LX

Affordable, 24-bit color card

The affordable way to put 24-bit color graphics on displays up to 21 inches in size. Supports resolutions up to 1152 x 870, letting you work on two pages at once. Allows you to do exacting work with powerful desktop publishing applications. Installs easily in a single NuBus slot. SuperMac #98883

#99160 Futura II SX..... \$458.98

E-MACHINES.



\$34⁹⁸

**3.5" Optical Disk
128MB Mac
Formatted**

Save 30 minutes by not having to format!!

With this Optical Disk you can store up to 128MB on one cartridge that is rewritable, removable, highly reliable, and inexpensive. When you fill up a cartridge with data, you just pop in another one. Your storage capabilities are endless. It conforms to ISO/ANSO standards and provides reliable data storage. Verbatim #06028



**Data Cart 44MB or 88MB
Removeable
Cartridge**

- Exclusive Lifetime Warranty
- Preformatted
- Includes High Speed Device Driver for Maximum Performance
- Includes Comprehensive DriveMASSter Utility Software

Through rigorous testing, DataCart has created the ultimate in removable Winchester cartridge technology in both 44 and 88MB capacity. Utilizing 5 1/4 inch media from IBM, DataCarts are reliable and backed by a Lifetime Warranty. Preformatted with the fully integrated Disk Management Utility, DriveMASSter, the cartridge provides extension partition, RAID 1 disk mirroring for fault tolerance and password protection. One year extended warranty on any SyQuest based removable cartridge subsystem provided by MASSmicrosystems.

#97250 Formatted 44MB Cart..... \$59.98
#97280 Formatted 44MB Cart 5 Pack..... \$279.98
#97281 Formatted 44MB Cart 10 Pack... \$549.98
#97251 Formatted 88MB Cart ... \$94.98
#97282 Formatted 88MB Cart 5 Pack..... \$459.98
#97283 Formatted 88MB Cart 10 Pack... \$929.98



\$74⁹⁸

PenFont

Add your handwriting to your Mac

Imagine personalizing your computer-generated documents! Well wonder no more, because Signature Software will design your personalized font from a handwriting sample, so you can instantly add your personal touch to FAXs, letters, and documents. Included are keyboard characters in your handwriting, your signature, and two symbols you design. A new way to add your personal stamp. Signature Software, Inc. #98084



\$188⁹⁸

**Studio Series
Design Group CD**

5 ClickArt Studio Series Portfolios on 1 CD-ROM!

This outstanding collection of ClickArt Portfolios includes Business Art, Artistry & Borders, Sports & Games, Illustrations, plus Animals & Nature. Features the highest quality full-color EPS images, which also print in detailed grayscale on your B&W printer. Complete with a FREE on-screen browser so you can search by image or subject. T/Maker #14423



\$44⁹⁸

**Slides & Sound/
Kodalux Bundle**

Get your first 24 images on Photo CD FREE!

A new way to create presentations from your pictures using Kodak Photo CD, Audio CD sound, and your imagination. Import pictures from any number of Photo CDs, arrange in any order, add special effects, text, and your favorite music. Includes the Kodalux Photo CD Mailer, a prepaid processing of 1 roll of 24 exposures of 35mm film to Photo CD. InMedia Software, Inc. #96505



\$179⁹⁸

**The Business
Standard**

The All-in-One Business Software

Complete Inventory Control through Order Entry, Invoicing, and Purchase Orders. Track inventory levels, customer orders, P.O.'s and sales histories. Print mailing labels, bar code labels, and interface with bar code labels, and interface with bar code scanners. Password security integrated through with multi-user, multi-location and point of sale features available. Chae #98306



Launch Your Mac into the World of PowerPC

DayStar 80 MHz PowerPro 601
PowerPC Upgrade Card

Apple PowerPC
Upgrade Card

Quadra 700

Relative performance shown for both cards running applications optimized for Macintosh with PowerPC in a Quadra 700.

The Quick and Easy Way to No Compromise Speed

Features	Apple PowerPC Upgrade Card	DayStar PowerPro 601
Average Street Price— 80 MHz 66 MHz	n/a \$699*	\$1999 \$1499
Apple System software	Yes	Yes
Genuine Apple® ROMS	Yes	Yes
RISC processor	PowerPC 601	PowerPC 601
Restart as a 68040 Mac	Yes	Yes
Maximum operating speed— Centris 650 Quadra 700 and 900 Quadra 650, 800 and 950	50 MHz 50 MHz 66 MHz	80 MHz 80 MHz 80 MHz
Memory expansion	0 MB	128 MB†
Maximum System memory— Quadra 700 Centris 650 Quadra 650, 800 Quadra 900, 950	68 MB 136 MB 136 MB 256 MB	196 MB 264 MB 264 MB 384 MB
Cache size available	1 MB	1 MB†
Direct access to 64-bit memory	No	Yes
Upgradable to next generation PowerPC	No	Yes
Graphics utilities included— Native Photoshop filters Photoshop scripting Color management	No No No	Yes Yes Yes

* Speed varies between 40 MHz and 66 MHz depending upon Macintosh model. † Optional. Not required for operation.

DayStar's PowerPC upgrade for the Quadra 650, 700, 800, 900, 950 and Centris 650.

DayStar designed the PowerPro 601 for the graphics professional seeking the maximum in PowerPC performance. You save time and money compared to purchasing a new Power Macintosh system. And, if emulation is too slow, the PowerPro lets you restart as a 68040 based Macintosh.

Developed in cooperation with Apple Computer, the PowerPro 601 has actual PowerPC ROM chips. So, you get the same functionality and compatibility as Apple's own Power Macintosh solutions.

Faster than Apple's upgrade card, the PowerPro 601 also offers up to

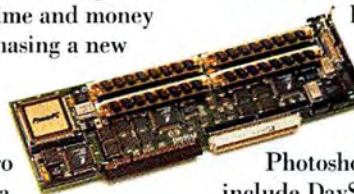
128 MB of additional memory expansion that combines with your motherboard memory.

For Photoshop users, we also include DayStar's revolutionary PhotoMatic scripting utility, and a broad family of filters that run Adobe Photoshop 2.5.1 at full PowerPC speeds! For Quark and

Photoshop users, we also include DayStar's ColorMatch color management solution. That's over \$600 of software, free!

As always, when you buy from DayStar, you will have access to the next generation of PowerPC technology through our cost saving Swap-Up™ programs.

So, don't take the slow road to PowerPC. Call DayStar today.



Adobe
charged

DAYSTAR®
DIGITAL

CALL FOR AN IMMEDIATE FAX BROCHURE! 1-800-984-4511 DOCUMENT #4006

DayStar Digital is a registered trademark of DayStar Digital, Inc. Other brands and product names are trademarks or registered trademarks of their respective holders. Product specifications are subject to change without notice. ©1994 DayStar Digital, Inc., 5556 Atlanta Highway, Flowery Branch, GA 30542 • (404) 967-2077, Fax: (404) 967-3018

CIRCLE 93 ON READER SERVICE CARD

NEW ON THE MENU

PDAS /

APPLE'S NEWTON GROWS UP

The new MessagePad 110 boasts better handwriting recognition and more memory in a redesigned case.

IF YOU WERE AMONG THOSE who felt that Apple's first Newton, the MessagePad, failed to deliver on the promise of its underlying technology, take heart. Apple's new MessagePad 110 fixes some of the worst problems that irritated early adopters and puts the Newton on the right track.

Better handwriting recognition. Writing a few words on an uncustomized 110 returns something akin to English, I found. When this MessagePad misrecognizes a word, it gives you the option of reattempting it letter by letter. A new icon in the Notepad application lets you toggle both letter-by-letter and numbers-only handwriting recognition on or off as you write each word. Better yet, the MessagePad 110 supports deferred handwriting recognition. When you turn off the MessagePad's text recognizer, you aren't consigning the information you enter to an eternal life as unsearchable digital ink.

Beefed-up memory. The 110 has 1 megabyte of memory (the original came with 640K), and 512K of this is available for user data, so you can store much more information in your MessagePad without having to add a RAM-expansion card.

Extended battery life. The 110 uses AA batteries. Compared to the AAA batteries used in the first MessagePad, Apple claims, alkaline AAs will provide battery life that's twice as long and NiCd AAs will give four times the battery life. For those who use rechargeable batteries, a \$99 charger can simultaneously charge four NiCd batteries in the charger and the four NiCds in the MessagePad itself.

Improved ergonomics. The MessagePad 110 is slightly narrower and longer than the original model, so it's more comfortable to hold. The AA batteries add a couple ounces, however. When the 110 is in use, its top-mounted cover flips up and snaps behind the unit.

Lower price. At about \$600, the MessagePad 110 costs around \$100 less than the original, which was retired and was due to return in mid-April as the \$500 MessagePad 100. The 100 will have the old form factor, batteries, and RAM complement but will have the same version 1.2 ROM and version 1.21

For greater flexibility, the MessagePad 110's robust handwriting software lets you defer recognition as well as identify words letter by letter. Neat pen too.

system software as the 110.

Upgrades. The good news for early adopters: Apple will upgrade your original MessagePad to the new ROM and software for \$99. That price includes shipping to and from Apple and some free Newton applications to boot. 800-776-2333 or 408-996-1010. / Henry Bortman



QUICKTIME 2.0: COMING TO A BIGGER SCREEN NEAR YOU

JERKY QUICKTIME MOVIES may go the way of silent films, if Apple meets its goals for the next generation of QuickTime. Slated for early-summer release for 680x0 and PowerPC Macs, QuickTime 2.0 sports improved performance and new capabilities that make QuickTime movies look a lot more like real movies. Improvements include larger movies, music tracks, and support for the MPEG-1 video-compression standard.

Thanks to a new high-speed "data pipe" architecture, QuickTime 2.0 should be exceptionally fast, even on low-end machines. On an LC 475, for example, QuickTime 2.0 promises full-screen playback at 15 frames per second. Speed on Power Macs should be even faster.

Music tracks, which store MIDI data as part of a QuickTime

movie, give QuickTime 2.0 better-quality sound and playback than was possible with previous versions. During playback, QuickTime 2.0 either synthesizes the sound, using the Mac's built-in sound capabilities, or uses Apple's MIDI Manager to drive an external MIDI device.

Anticipating the future, Apple added MPEG-1 playback and improved network support in QuickTime 2.0, laying a cornerstone for the fabled interactive future and for better playback of QuickTime movies over local networks. MPEG playback means your Mac, with the assistance of an MPEG decompression board, will be able to display TV-quality video.

Pricing and distribution details were unavailable at press time. 800-776-2333 or 408-996-1010. / Sean Safreed



PHOTOGRAPHY / TOM UPTON

PRINTERS /

NEW INKJET PRINTS SMART COLOR

Hewlett-Packard ups the ante with 600-dpi DeskWriter models.

STAYING ONE STEP AHEAD of the competition, Hewlett-Packard has announced two new inkjet printers that improve on already highly successful models. The color DeskWriter 560C (\$719) and monochrome DeskWriter 520 (\$365) offer 600-dpi monochrome resolution as well as HP's proven Resolution Enhancement Technology (RET), which sharpens the edges of text and line art.

The **DeskWriter 560C** prints color text and graphics at 300 dpi, but it goes a step further with ColorSmart, a new color-rendering technology designed to improve the look of color graphics. ColorSmart could give the DeskWriter 560C an edge over Apple's new \$629 Color StyleWriter Pro (see New on the Menu, April '94, page 31), a 360-dpi

QuickDraw inkjet printer that offers halftone options. ColorSmart looks at page elements to identify text, graphics, and photos and then automatically applies the appropriate color-rendering and halftone settings for each (applying scatter halftones to photos, for example). You can manually override the settings at any time. The ColorSmart driver is also available for the DeskWriter 550C (whose price has been reduced to \$599) and the DeskWriter C. (To order the driver, call 303-339-7009.)

The **DeskWriter 560C** and **520** use improved cartridges that reduce ink splatter. But unlike Apple's new printer, which uses four discrete ink cartridges, HP's DeskWriter 560C still uses a two-cartridge assembly — one for black and the other for cyan, magenta, and yellow — so every time you run out of one color, you have to replace the entire cartridge. Both printers feature HP's EconoMode, a draft-quality printing mode that conserves ink. Reported printing times are 3 pages per minute (black) and 4 minutes per page (color). A \$249 PostScript Level 2-software option is available for each printer, although ColorSmart does not currently work with PostScript. (The DeskWriter 560C and 520 each come with 35 TrueType fonts.) 800-752-0900 or 408-725-8900. / Pamela Pfiffner



Hewlett-Packard's new DeskWriter 560C inkjet printer gives you sharp color output.



MACUSER/ZMAC UTILITY OF THE MONTH

DRAG-AND-DROP A-GO-GO

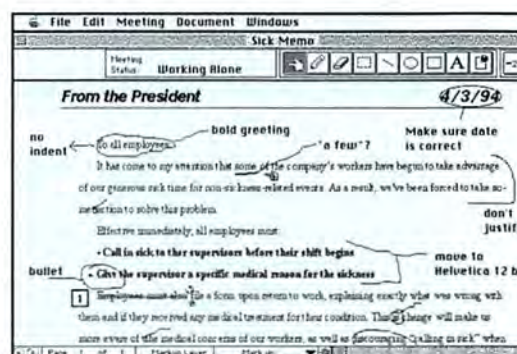
SYSTEM 7'S DRAG-AND-DROP capabilities make moving files and launching applications much easier than before but still require you to open a lot of folders to get to the right spot. This month's ZMac utility, DragonDrop, makes the task less of a drag; when you drag an item onto a folder, a pop-up window shows you the contents of the folder, letting you navigate down through the folder hierarchy until you reach your destination. The pop-up window can display the folder's contents in list or icon view. It's quick, it's economical, and it leaves no window clutter afterward.

DragonDrop was created by John and Sheila Wallace, of Fluent Software, the authors of Now Compress and last month's ZMac utility, WunderBar. The program is available exclusively on ZiffNet/Mac and from the ZiffNet Selections area on AppleLink; ZiffNet/Mac members can download DragonDrop free of connect-time charges until April 25, 1994, by typing GO MACUTIL. After that, they can find the file DRAGDP.SIT in Library 3 of the MacUser Forum (GO MACUSER). AppleLink users should look for DragonDrop in ZiffNet Selections:MacUser Software:Utilities. / Mark Simmons

BUSINESS TOOLS /

CONFERENCE-CALL EDITING

COLLABORATIVE EDITING of paper documents hasn't ever required much overhead — just a pen, legible handwriting, and a conference table. However, if the people dissecting a document aren't in the same room, things can get complicated.



Face to Face includes a freehand drawing tool for marking up text and an annotation tool for making comments.

Face to Face, from Crosswise, attempts to solve the problem of long-distance document editing by allowing a pair of users (connected via network or even by modem at speeds of 2,400 bps or more) to watch one another mark up any electronic document in real time and across platforms.

Priced at \$295 and available for Macs and Windows machines, Face to Face offers such tools as a freehand pen, an on-page text annotator, and a note creator that brings up windows for longer comments. As a result, two users (preferably also talking to one another on a separate phone line) can mark up a document together, agreeing on necessary changes. The Face to Face file is monochrome-only, however, so you can't assign colors to distinguish annotations.

Marking up a document is easy, but you can't edit it — it's an image file akin to those created by fax-modem software. After changes are marked in Face to Face, someone has to manually make them in the original file. You can scroll through Face to Face pages on-screen, but you can't resize the viewing window, which limits your work area on large-screen monitors.

Apple's PowerTalk user directory is supported, but Face to Face currently allows only two users at a time. And the program is not compatible with portable documents such as those created by Adobe Acrobat and No Hands Software's Common Ground, although Crosswise is hinting at future support for those formats. 408-459-9060. / Jason Snell

IS THAT ALL THERE IS?

Speed isn't the only advantage of the PowerPC.

WITH THE LONG-AWAITED INTRODUCTION of the Power Macs, we have Macs with more horsepower than we can shake a stick at. But so what? As many detractors have sniped over the past few months, PowerPC-based Macs just run Mac software faster than 680x0 Macs, provided the software's native. But is that all there is? The answer lies in the interface.

From day 1, the promise of the Mac has been to make computing more accessible and pleasant. The single greatest factor that determines ease of use is the interface, and here's where PowerPC technology will subtly but fundamentally change the way Mac applications behave.

The only native application Apple ships on the hard disks of its new Power Macs is innocuously named Graphing Calculator. Much more than a simple number cruncher, this application points to extremely responsive user interfaces that the PowerPC's power will make possible as developers begin to take advantage of it. Graphing Calculator allows you to graph algebraic equations — exactly the kind of capability you wish you'd had in school. It's an extraordinary piece of software,

not because of its equation-solving abilities but because of the way it presents itself to users.

After entering an equation, you click on the Graph button and almost instantly see the resulting 2-D or 3-D graph — nothing special yet, except that it's a lot faster than with a 680x0 Mac. The kicker comes when you use your mouse to spin a 3-D graph. Graphing Calculator animates the graph and smoothly rotates it around the central axis, recalculating each frame in real time — a feat that underscores the PowerPC 601's floating-point performance. You can zoom in and out and change one variable, which Graphing Calculator updates as it animates. This kind of on-the-fly recalculation just isn't possible on a 680x0 machine.

If you're tired of waiting for an application to recompute a preview or you've ever wished you could manipulate an image and just see how it looks, without the redraw lag, take a peek at Graphing Calculator. It's an indication of what's to come for the Power Mac.



Apple's Graphing Calculator uses the PowerPC's computational oomph to animate complex graphics on the fly.

MULTIMEDIA TOOLS / ADOBE PREMIERE 4.0 GOES HOLLYWOOD

FIRST ADOBE PREMIERE made QuickTime-movie editing accessible to the masses. Now Premiere takes users further into the realms of professional video editing while boasting an interface that makes it easier to use. Due out this June as a PowerPC native application, Premiere 4.0 offers enough enhancements to earn its new version number; foremost among these are improved editing tools and added video specifications.

To make editing easier, Premiere 4.0 includes

new floating palettes such as the Commands palette and the Trimming window, which lets you fine-tune the cut point of edits by showing before-edit and after-edit clips simultaneously. Another time-saver is the ability to make multiple selections in the program's Construction window.

For better accuracy, Premiere 4.0 offers an exact video-editing rate of 29.97 fps (frames per second) throughout the program, as opposed to the previously rounded-off 30 fps. New field-accurate control includes support for full 60-field-per-second animations, which allows for seamless compositing. And you can preview your edits dynamically in the Project Viewer window, which means you no longer have to

wait for Premiere to process all effects; unprocessed effects appear as grease-penciled frames, a metaphor familiar to video professionals.

Batch processing streamlines several functions. Premiere can batch-process entire projects, so you can let filter effects image overnight. You can also set the program to batch-capture a whole set of clips unattended. The new Premiere is also smart about handling high-resolution clips. If you use low-resolution clips for proofs, Premiere 4.0 knows to look for their high-

resolution counterparts for the final edit, saving you capture time.

Whizzy new effects include stop-motion capture from any video source, so you can create time-lapse animations. Photoshop-compatible filters can be varied over time so effects appear animated, and you can preview filters, transparency settings, and motion effects on an NTSC monitor. The new Gradient Wipes feature lets you use any gray-scale image, such as one created in Photoshop, to act as a transition effect, resulting in subtle blends from frame to frame.

Adobe Premiere 4.0 (includes deluxe CD-ROM), \$795; upgrade from Premiere 3.0, \$79; upgrade from previous versions, \$129. 800-833-6687 or 415-961-4400. / Jeffy Milstead and Sean Safreed



Premiere 4.0's Trimming window gives you interactive control over transitions and lets you preview your edits.

WORD OF MOUTH

"GAME CHARACTERS need to be able to do more than travel, acquire, and fight. With higher budgets will come good writing, acting, and direction. Until then, it will be kill or be killed." / Mike Backes, cofounder, Rocket Science Games, on the need for multimillion-dollar budgets in game development, at the MILIA '94 conference, in Cannes, France

COLOR MONITORS /

BIG DISPLAYS USE LITTLE ENERGY

Apple, Nokia monitors feature flexibility.

NEED A MONITOR to go with that new Power Mac? Adaptable displays from Apple and Nokia may fill the bill.

To kick off the next generation of Macs, Apple unveiled its first multiple-resolution monitor. Priced at less than \$2,100, the 20-inch Multiple Scan 20 includes Display Manager software, which lets you move among nine resolutions according to your work requirements. Pixel resolutions range from 1,280 x 1,024 at 75 hertz, for working on detailed graphics, to 640 x 480 at 66.7 hertz, for playing QuickTime movies. For connection to PCs, the display also offers VGA resolutions (a Mac-to-PC adapter ships with the unit).

The Multiple Scan 20 includes Apple ColorSync profiles, for working with color-management systems, and the Energy Saver, software that puts an inactive monitor to sleep, thus lowering power consumption.

Built around a Sony Trinitron tube, the unit sits on a swivel monitor base with a front control panel and accessible ADB ports for attaching a keyboard and a mouse. MPR II and Energy Star compliance and antiglare coating round out the package. 800-776-2333 or 408-996-1010.

Nokia, a Finnish producer of monitors and televisions, is not widely recognized in the U.S., although its technology is used by many major vendors. Nokia's latest U.S. release is the Multigraph 447X, an autosynchronous 17-inch monitor that offers on-screen digital controls previously available only on Nokia's 21-inch models.

A button on the Multigraph 447X's front panel calls up a scrolling list of controls that permit adjustment of color temperature; image tilt, height, and width; red, green, and blue signal intensity; and more than a dozen other parameters. The monitor also meets MPR II standards (and offers optional support for the stricter TCO emissions standard) and comes with a three-year warranty. \$1,150. 415-331-0322. / Jim Shatz-Akin



MONITOR THE FUTURE

THE FUTURE OF MONITORS looks pretty flat, at least if this experimental display from Radius is any indication. The sleek-looking unit combines a slim LCD panel with Radius' pivot technology, which enables it to flip from vertical to horizontal (Radius is implementing technology to eliminate color shift and other LCD-related problems that arise from changing the orientation). For presentations, the unit detaches from its stand so you can hang it on the wall. The monitor, whose current prototype is based on a Sharp screen that has a resolution of 1,024 x 768 dpi and supports 16-bit color, is expected to ship in early 1995. The cost? Estimates range from \$7,000 to \$10,000. 408-434-1010.

/ Pamela Pfiffner



MACINTOSH PRICE INDEX

THE UNITED COMPUTER EXCHANGE index reflects national sales activity for the new and secondary Mac market as of February 10, 1994. Prices (except those for compact models) do not include a monitor or a keyboard. New prices represent the average discount selling price of current models. The United Computer Exchange is a national clearinghouse for buyers and sellers of used micro-computer equipment. For more pricing information on these models and on configurations not listed, call 800-755-3033 or 404-955-0569 or find it on ZiffNet/Mac, in Library 1 of the MacUser Forum (GO ZMC:MACUSER), as UCEIDX.WRD (Microsoft Word format) and UCEIDX.TXT (ASCII text format); on AppleLink, look for it in ZiffNet Selections:MacUser Software:Reference.

Mac Model	New	Used	Mac Model	New	Used	Mac Model	New	Used
Plus (1/20)	•	\$300	Ilfx (8/160)	•	\$1,375	PowerBook 100 (4/20)	•	\$700
SE (1/20)	•	\$400	Ilvx (4/80)	•	\$900	PowerBook 140 (4/40)	•	\$875
SE/30 (5/40)	•	\$700	Centris 610 (4/80)	•	\$1,000	PowerBook 145 (4/40)	•	\$1,050
Classic (2/40)	•	\$475	Centris 650 (8/230)	•	\$1,750	PowerBook 145B (4/80)	\$1,349	\$1,175
Classic II (4/40)	•	\$625	Quadra 605 (4/80)	\$899	\$775	PowerBook 160 (4/80)	•	\$1,450
Color Classic (4/80)	\$999	\$750	Quadra 610 (8/230)	\$1,779	\$1,400	PowerBook 165 (4/80)	\$1,699	\$1,500
LC (2/40)	•	\$375	Quadra 650 (8/230)	\$2,099*	\$1,800	PowerBook 165c (4/80)	•	\$1,475
LC II (4/40)	•	\$475	Quadra 700 (8/230)	•	\$1,450	PowerBook 170 (4/40)	•	\$1,350
LC III (4/80)	\$767	\$625	Quadra 800 (8/230)	\$2,399*	\$2,050	PowerBook 180 (4/80)	\$2,199	\$1,850
II (5/40)	•	\$425	Quadra 660av (8/230)	\$1,899*	\$1,725	PowerBook 180c (4/80)	\$2,549	\$2,100
IIx (5/40)	•	\$600	Quadra 840av (8/230)	\$3,199*	\$2,825	PowerBook Duo 210 (4/80)	•	\$1,075
IIx (5/40)	•	\$775	Quadra 900 (8/230)	•	\$1,875	PowerBook Duo 230 (4/120)	\$1,529	\$1,275
IIcx (5/40)	•	\$550	Quadra 950 (8/230)	\$3,599*	\$3,250	PowerBook Duo 250 (4/200)	\$2,259	\$1,875
IIci (8/80)	•	\$900	Portable (1/40)	•	\$375	PowerBook Duo 270c (4/240)	\$3,097	\$2,700

* = discontinued model

*Reflects Apple's February 8 price reductions.

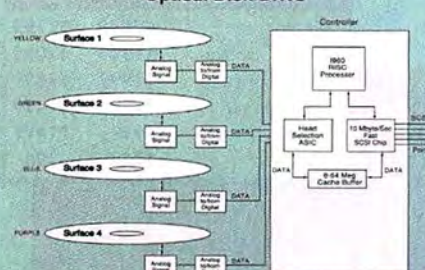
FUTURE STORAGE.

REMOVABLE OPTICAL DISK SYSTEM 8 MB/Sec Data Transfer Rate - 5.2 Gigabyte Capacity

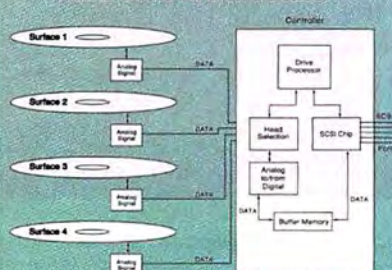
Finally a storage system that can store it all. Introducing Pinnacle's Patent Pending Orray™ technology.

The Pinnacle Orray™ is the world's first optical drive system to utilize multiple heads and multiple disks - similar to hard disk technology. The Orray™ can perform as fast as most hard disk drives, with the added benefit of removable, reliable, inexpensive optical media. Each color-coded media set holds up to 5.2 Gigabytes of data.

Orray Architecture Optical Disk Drive



Hard Disk Architecture



With its multi disk/multi channel architecture, speeds can be achieved to store all types of data... Digital Video, Digital Audio, Graphics/Prepress, Color Imaging, Animations, Databases, Server Applications.

The versatility of the Pinnacle Orray™, with its intelligent RISC processor controller, allows for operation in multiple environments. In *streaming mode* the Orray™ can be used for Digital Video or Digital Audio with a sustained data transfer rate up to 8MB per second. In *transaction mode* the Orray™ can be used as a file server or database

storage system with its advanced intelligent segmented caching controller (up to 64MB of RAM). Multiple transactions can be executed quickly and much faster than traditional hard disk arrays on a network. All settings including operational modes, SCSI addresses, and status indicators are controlled and viewed from a front panel LED for easy access and identification.

The Pinnacle Orray™ is the future of data storage. For more information or to order call:

800.553.7070

PINNACLE MICRO

THE OPTICAL STORAGE COMPANY®

19 TECHNOLOGY • IRVINE, CA 92718, USA • (800) 553-7070 • INT'L (714) 727-3300 • FAX (714) 727-1913

Trademarks: Orray of Pinnacle Micro, Inc. All trademarks and registered marks to their respective owners.

CIRCLE 141 ON READER SERVICE CARD



Orray™



FEATURES

- Patented multi-head/multi-channel
- High sustained data rates
- Multi-parallel RISC processor system with 100 MHz of processing power
- Intelligent FAST SCSI-2 processor
- System appears as a standard SCSI direct access drive
- Flash EPROM for on-site firmware upgrades
- Inexpensive removable optical media sets
- Front panel display and key pad for diagnostics and device settings
- Plug and play for MAC, PC, Sun, HP, Silicon Graphics and others



The Critics' Choice

Don't let our low prices fool you! Mirror displays represent the best combination of performance, features and price that you'll find anywhere. We know this business. We use only the finest components and combine them with intelligence born of experience. As a result, the magazines consistently point to Mirror displays as the best value.

Big-screen Debut

We are always auditioning bright new talent, and are proud to introduce our newest big-screen performers, the 15-inch ProView Color Portrait Display and the ProView 21-inch Color Display.

The Color Portrait Display is the answer to many users' prayers for an inexpensive monitor that will show a full page in brilliant color.

The ProView 21-inch represents the current state-of-the-art in color displays, with 1152 x 870 resolution on a razor-sharp flat-square screen, digital controls, and environmentally-friendly power-

saving features. The ProView 21 actually detects the absence of an operator and puts the monitor in energy-saving sleep mode.

A Cast Of Stars

From our value-priced 14-inch Color to the stunning ProView Trinitron and the amazing ProView 21-inch, we offer six

different color displays to fit any requirement.

Award Winning Quality



16-inch Trinitron
February '94

Call 1-800-643-4143
for your free
catalog!



ProView Color Displays w/Tornado		
21-inch	\$2099	\$2799
20-inch Standard	\$1399	\$2099
20-inch Trinitron	\$1999	\$2699
Color Portrait	\$799	\$1499
16-inch Trinitron	\$999	\$1699
14-inch	\$349	n/a

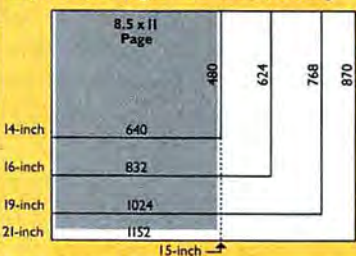
MIRROR DISPLAYS FOCUS ON OUR PERFORMANCE

Screen images Copyright ©1993 Calico Color

What Size Display?

The Workspace Available On Each Mirror Display:

The gray rectangle represents a standard 8.5x11 page. You can see that only 15" and 21" displays will let you see a full page at 100% without scrolling.



Black & White Classics

Nothing beats a black & white display for image sharpness and value. Our monochrome and gray-scale displays (Full-page and Two-page models) are available for most Macintosh models, starting at just \$399.

Matching Boards At Matchless Prices

Mirror displays can be used with the built-in video of newer Macs. Or, you can combine them with one of our precision-engineered video cards like the Mirror Tornado. Tornado delivers dazzling 24-bit color performance for a shockingly low price and optional Photoshop acceleration.

Mirror has been selling displays for the

Mac longer than any other direct marketing company. We use our experience to make sure you save big on your big screen.

Mirror Monochrome Displays w/board		
15-inch Full-page	\$399	\$519
19-inch Two-page	n/a	\$749
19-inch Two-page Grayscale	\$699	n/a
Mirror Tornado		
Tornado Graphics Card		\$ 799
ChargeCard Photoshop Accelerator		\$ 599
Tornado w/ChargeCard		\$1299

Recent Reviews



When Macworld's experts tested a field of 14 color scanners, they concluded that you don't have to pay a lot to get a good scanner, you just have to call Mirror.

The Best Hardware

Mirror's award-winning scanners start with a precision three-pass scanner engine for superb color registration and sharpness. Then we add hardware pre-scan gamma correction for top quality results in much less time.

The Mirror Color Scanners can also scan slides and transparencies. Simply replace the standard cover with the optional



MirrorScan's powerful features make scanning a snap

Transparency Adapter and you are ready to scan transparencies up to 8.5" x 11.7".

The Best Software

Having great hardware doesn't get you much unless you've got great software. Our exclusive MirrorScan software delivers. No other scanning software can

match our features. From full-color previews and interactive gamma controls, to built-in JPEG and Fast-Eddie compression,

user-definable custom selections and support for EPS, TIFF and PICT file formats, MirrorScan makes it easy to get great scans.

Every Mirror scanner includes the Plug-in, application and desk accessory versions of MirrorScan, along with Adobe Photoshop 2.5 and Read-It! Pro 3.0 OCR.



NEW LOW PRICE!
\$749
~~was \$1099~~



Mirror Color Scanners

600 dpi w/Photoshop LE and Read-It!	\$ 749
600 dpi w/Photoshop 2.5.1 and Read-It!	\$ 899
800 dpi w/Photoshop 2.5.1 and Read-It!	\$1099
1200 dpi w/Photoshop 2.5.1 and Read-It!	\$1599
Transparency Adapter for 600/800 models	\$ 599
Transparency Adapter for 1200 model	\$ 699
Mirror CoolScan Slide Scanner	\$1999

THE EXPERTS CALL IT A BARGAIN WE CALL IT THE MIRROR COLOR SCANNER



The Coolest Scanner Of All!

If you need to scan 35mm slides, you'll want the new Mirror Coolscan™ ZFP System. Based on the amazing Coolscan technology from Nikon, this scanner is the first to bring professional quality color scans to your desktop for under \$2000! Its remarkable color sensitivity, patented solid-state light source and 2700 dpi resolution will bring your work to life with stunning scans from slides or negatives.

The Mirror Coolscan is the same size as a standard hard drive and includes

everything you need to start scanning right away.

The Coolscan

application and Photoshop Plug-in module

incorporate sophisticated

image controls for top notch results every time.

Storage Solutions

Since your data is more valuable than any drive you might select, we choose not to compromise quality. Each drive is meticulously assembled, tested, and inspected, using only the fastest mechanisms.



Hard Drives	Internal	External
SyQuest 88c	n/a	\$459
105MB	\$199	\$259
170MB	\$229	\$289
270MB	\$299	\$359
540MB	\$565	\$625
1080MB	\$929	\$989
1800MB	\$1,239	\$1,299
1900MB-Barracuda	\$1,599	\$1,659
2400MB	\$1,749	\$1,809
2400MB-Barracuda	\$1,954	\$1,999

Order Direct Anytime
800-643-4143
Order by Fax at 612-832-5709

MIRROR
The best thing next to your Mac™

5198 West 76th Street, Edina, MN 55439 USA
fax: 612-832-0052 tech support: 800-123-9285



All trademarks are property of their respective holders. All prices subject to change. Prices are for US orders only, call for international pricing.

CIRCLE 118 ON READER SERVICE CARD

WHERE WERE YOU THE LAST TIME NORTON UPDATED THEIR SOFTWARE?

©1993 Central Point Software. Central Point and MacTools are trademarks of Central Point Software. All other products names are trademarks of their respective holders.

WE NOW OFFER
MacTOOLS
FOR YOUR
POWER
MACINTOSH.
(DOES NORTON?
NO. NO THEY DON'T.)



It's been a long time since Norton Utilities really improved its software for the Mac. Too long. Now Central Point Software introduces a newer, faster, smarter Mac utility—new MacTools 3.0. How much smarter is it? It retrieves accidentally trashed files in one step. (With Norton, it takes seventeen.) It continuously checks for disk corruption in the background, so small problems don't become disasters. (Norton doesn't.) MacTools 3.0 also finds and fixes Desktop file damage. (Norton can't.) And unlike Norton, it includes complete anti-virus protection, with network support. But that's just scratching the surface. For a detailed comparison of MacTools 3.0 vs. Norton, call FAXBACK at 1-800-847-8766 and ask for document 97533. For all upgrades, just call 1-800-277-3874. And stop living in the past.

UPGRADE FROM MacTOOLS, NORTON, SAM OR VIREX ONLY \$49.95* 1-800-277-3874

*Upgrade from MacTools, Norton Utilities, SAM or Virex.

Offer good only in U.S. and Canada. Shipping and handling extra.

CENTRAL POINT
CIRCLE 69 ON READER SERVICE CARD

REVIEWS & Quick Clicks

4D First / ACI US reaches out to the entry-level relational-database market with a new, simpler version of 4D.

OUTGROWING FILEMAKER PRO but not ready for a developer-oriented relational-database program such as 4th Dimension or Microsoft FoxPro? Try **MacUser Labs** ACI US' 4D First, an entry-level relational-database program based on the same engine as 4D.

Powerful Yet Approachable

4D First offers impressive capabilities for a low-end database program — more impressive than those of its predecessor, File Force. It's relational, so you can have one data file look up and change information in other data files; it's more programmable than File Force, so you can automate almost any database task; and it's packed with all the tools you need in order to build a custom database application.

To make 4D First more approachable than 4D, ACI US has simplified the user interface (mostly by reducing choices in areas such as dialog boxes, because much is assumed and done for you automatically) and has written easier manuals. It's also pared away some of the more sophisticated programming commands, such as those for tuning performance, handling multiple-window processes, and creating compiled applications. The only things missing are built-in multi-user capabilities and portability to other platforms (ACI US plans to port 4D to Windows, Windows NT, Chicago, and Solaris platforms late this year).

Reviews **Rating Key**

- ★★★★★ Outstanding
- ★★★★ Very Good
- ★★★ Acceptable
- ★★ Poor
- ★ Seriously Flawed
- Dangerous

Click 'n' Create

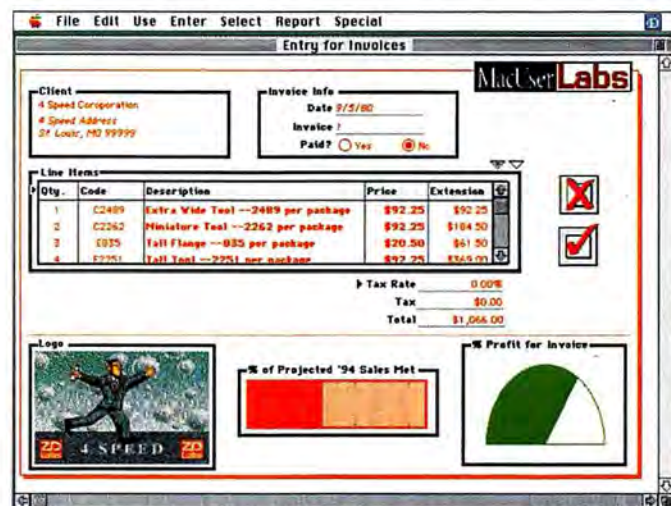
Creating a database in 4D First takes just a few minutes. Using the program's new-file cursor, you simply click in the graphical structure editor to create new files and then double-click on each file to create and edit field definitions. A simple dialog box allows you to define field types and options. Creating relational links between two files is especially easy — just drag between key fields in the files.

You will run into a few quirks, though. Keyboard command equivalents and default buttons often don't perform the actions you expect. For example, when you type Command-P, you get a procedure instead of the Print dialog box. Also, if you press Enter after defining a field, 4D First assumes that you want to define another field. Overall, creating extra fields accidentally is all too easy, and you can't delete fields (or files!) once you've created them.

If you don't want to customize your layouts, you can go straight to 4D First's User environment after defining your files and fields. The program automatically creates Input and Output layouts for you to use in this environment, so you can enter data immediately after defining files and fields. You can also search, sort, execute scripts, and print reports and labels with relative ease. Unfortunately, though, the User environment gives you just one working window — to view records from multiple files, you must create a custom layout.

Highly Customizable

If you venture beyond 4D First's predefined layouts (which aren't especially attractive), you'll find that the layout editor provides plenty of flexibility. A full set of drawing tools, user-interface items (buttons, check boxes, thermometers, and so on), and a variety of field-formatting options let you create highly customized layouts. You can even create layouts that display and let you edit information from another file, a capability missing from the automatically generated layouts. As with other parts of 4D First's interface, though, you'll need to explore the



4D First is an entry-level relational-database program, but it doesn't lack powerful tools. Once you've mastered the layout tools, you can create sophisticated custom layouts that include buttons, graphs, and information from multiple files.

tool palette carefully in order to find the best way of doing things. An automated layout assistant would be a welcome addition, as would a wider variety of (better-designed) predefined forms.

Once you've created a custom layout, you'll be tempted to round out the database interface with custom menus, multiple windows, and maybe even some security features — all of which are nicely supported in 4D First. The menu editor lets you create and modify menu bars and attach custom procedures (routines written in 4D First's programming language) to individual menu items. You can set these procedures to run in

their own windows, so, for example, a Client entry screen and an Inventory entry screen can be open simultaneously. The security features in 4D First let you assign passwords, restrict access to certain files and functions, and track database usage.

The programming language built in to 4D First is powerful — it's a robust subset of 4th Dimension's — but it's not especially easy to use. The language gives you almost complete control over everything you can do in the program, including entering data and searching, sorting, deleting, duplicating, and printing records. It would be nice if more of these powerful functions were automated, however. To calculate the total for an invoice, for example, you must write a script that performs the calculation and then place the script in the appropriate location (not always obvious).

Not 4D Fast

Although 4D First is powerful, its speed is less than impressive. We clocked five typical database-program operations (importing, deleting, printing, searching, and sorting), using a data set consisting of 2,500 client records, 625 inventory items, and 320 invoices with five line items each. We performed the same tests with a similarly sized flat-file FileMaker Pro database and compared the results. We also tested 4D First's ability to handle large increases in file size, by timing the same five operations on databases containing 5,000 and 10,000 client records.

Overall, we didn't find 4D First much faster than FileMaker Pro. In fact, 4D First was slower at some tasks, although it does things FileMaker Pro can't. 4D First was notably faster at deleting 250 records and at sorting 2,500 records on a single key. It was slightly slower than FileMaker Pro at importing records, however, and considerably slower at sorting on two keys and at spooling 500 records for printing in a simple list format.

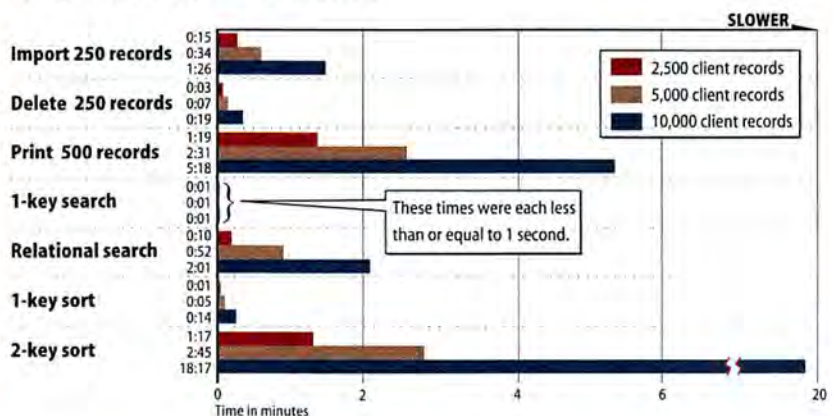
For searching, 4D First and FileMaker Pro were closely matched. The only 4D First search operation we found somewhat slow was a search across relations — an operation the flat-file database program can't perform at all.

When we increased the size of the 4D First database to 5,000 and then 10,000 client records, we found that importing, deleting,

figure 1

Bigger Files, Longer Waits

"Less than lightning-fast" was our overall impression of 4D First's speed. Whereas some operations were reasonably fast, printing was generally slow and the program's speed on compound-key sorts and on searches across files degraded greatly when we increased the number of client records in the database.



and printing records and doing simple searches (one key, one data set) scaled fairly linearly — that is, the same operation with twice the number of records took roughly twice as long. Sorts and complex searches, however, showed more-dramatic speed degradations when we increased the size of the database. Sorting speed degraded between 5,000 and 10,000 records, with compound-key sorts showing the worst degradation, taking nearly 3 minutes for 5,000 records and more than 18 minutes for 10,000 records. Search operations across relations also showed serious degradation when we increased the database size from 2,500 to 10,000 records (10 seconds for 2,500 records versus 2 minutes for 10,000).

4D Family Values

4D First's value as a member of the 4D product family is another consideration for potential buyers. If your needs grow beyond the capabilities of 4D First, you have the option of converting your 4D First databases to 4th Dimension 3.1 or later. And to add multiuser capabilities, you can move 4D First databases to 4D Server, ACI US' client/server product for the Mac — the upgrade cost to 4D Server (\$1,500 for three users) is significant, though. Interestingly, 4D First also works as a single-user run-time module for 4D databases, making it a useful application for users who want to customize such databases.

The Bottom Line

So, is 4D First the database program you've been hoping for? Maybe. If you need to create sophisticated single-user databases in which the focus is on features and interface, 4D First can do the job. Its usefulness for running and editing 4D databases is another plus.

However, if your priorities are stellar performance, inexpensive multiuser capabilities, and established cross-platform compatibility, you may have to look beyond this entry-level relational-database product to a more complex development environment such as Microsoft's FoxPro. Alternatively, you can wait for ACI US to fulfill its cross-platform promises and its PowerPC intentions — we just heard that the company plans to ship a PowerPC-compatible version of 4D First sometime this summer.

/ J. W. Davis

4D First 1.0

Rating: ★★★★★

List Price: \$295.

Pros: Fully relational. Easy database setup. Flexible layout editor. Programmable. Runs 4D databases.

Cons: Some interface quirks. Programming could be easier. Mediocre speed. Multiuser capabilities cost extra.

Company: ACI US, Cupertino, CA; 800-384-0010 or 408-252-4444.

Reader Service: Circle #401.



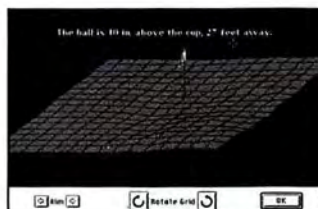
THE PLAYERS CHAMPIONSHIP

LOVE	-10	KITE	-4
ONEARA	-9	JANZEN	-3
BOB	-5	SLUMAN	-3
COUPLES	-4	ZOELLER	-3
STADLER	-4	FAXON	-3

There's Just One Other Way To Make
The PGA TOUR®. In Your Dreams.



Enjoy three different game play formats: A practice round, a 4-round tournament, or a skins challenge.

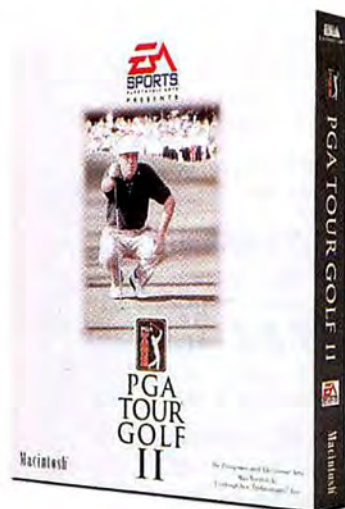


3-D putting grid rotates to expose the contours of each green. Read the breaks from a TOUR pro's perspective.



PGA TOUR® GOLF II

The only official PGA TOUR game • with 7 TPC® courses • 6 PGA TOUR tournaments • Full screen graphics • Skins game • Specialty shots • Draw and Fade Meter • 60 pros • Hole Browser™ • 10 Ball Lies • Ball-Cam™ • PowerBook® compatible • and more.



EA SPORTS™

Mac SE/30, Classic II, Color Classic, LC-series, Powerbook, Color Powerbook, Mac II-series, Quadra, Performa, Centris

EA SPORTS and Hole Browser are trademarks of Electronic Arts. PGA TOUR, The PLAYERS Championship, and TPC are registered trademarks of PGA TOUR, Inc. used by permission. Mac, Macintosh, and PowerBook are registered trademarks of Apple Computers Inc.

RUN LONGER WITH THE PACK.



VST ThinPack™ and ThinPack PLUS™ high-density, maintenance-free batteries for the PowerBook 100 through 180c. Both are UL listed for safety and come bundled with VST Utilities battery management software.

ThinPack

- Dimensions: 5" x 9" x 1/4"
- Weight: Only 1.5 lbs.
- Runtimes: 5-9 hours (b/w)
3-4 hours (color)

ThinPack PLUS

(Great for 165c & 180c users!)

- Dimensions: 11" x 9" x 1/4"
- Weight: Only 3 lbs.
- Runtimes: 8-15 hours (b/w)
4-7 hours (color)

"TheThinPack is a real bargain."
MacUser Jan '94

MW★★★★

Distributed by:

**MERISEL INGRAM
MICRO**

Available through all major
resellers or at:

VST Power Systems, Inc.

Phone: (508) 287-4600

Fax: (508) 287-4068

ThinPack is a trademark of
VST Power Systems, Inc.
PowerBook is a trademark of
Apple Computer, Inc.

Passport Producer Pro / Passport Designs' multimedia presentation tool goes interactive.

BILLED AS A REAL-TIME production tool for interactive media, Passport Producer Pro is a sweeping upgrade to Passport Designs' Passport Producer presentation-software package. Aimed at multimedia professionals looking for an alternative to programming with Macromedia Director, Passport Producer Pro boasts a highly graphical interface that makes it easier to use than Director. Passport Producer is an excellent tool for synchronizing video and audio devices — including MIDI — for live presentations; the Pro version goes further by adding support for interactive-presentation elements.

Take Your Cue

Passport Producer Pro retains the same basic interface as its predecessor, with several additions. The chief enhancement is Producer Pro's ability to create user-configurable interactive elements — buttons that trigger actions. Any object or on-screen area can be configured as a button.

The program's controls for configuring buttons are intuitive, making it easy to create sophisticated effects, such as buttons that change their appearance when users click on them or that transform the cursor when it's placed over them. Creating similar effects with Macromedia Director requires considerably more elbow grease.

Creating presentations with Producer Pro is relatively straightforward. You select

icons representing media and control elements from palettes and drag them into the program's main window, the Cue Sheet. The Cue Sheet is a timeline that lets you graphically organize your elements, or *cues*, in horizontal tracks. Time is measured in SMPTE time code.

To modify your presentation, you simply reposition elements in the Cue Sheet by sliding their icons along the timeline. For extra-precise timing, you can type in start and end times for each element.

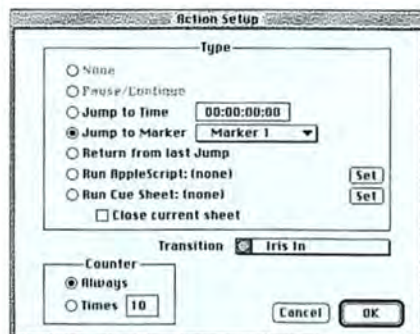
Producer Pro lets you customize the look of the Cue Sheet too. For each element, you can either view its numerical parameters (start and end times, for example) or view it graphically. With the latter option, you can view the first frame of a QuickTime-movie element, which is helpful for organization. Producer Pro also boasts a variety of new transition effects for dissolving and wiping elements.

Ready for Action

Buttons can trigger actions, but you can also place action cues in the Cue Sheet. When the playback bar in the timeline comes to the action cue, the action is performed. A convenient counting mechanism keeps track of how many times an action cue is played, so you can set another action to occur after a cue has been triggered a certain number of times. To set up a similar effect in any other authoring system, including Director and HyperCard, you have to create a fairly complex script.

Actions can produce a variety of results, including branching to a specific frame or marker in the Cue Sheet (similar to Director's frame/marker branching), launching another Cue Sheet, pausing or continuing playback, and initiating AppleScript macros. AppleScript support allows for some sophisticated possibilities. For example, a presentation can launch an external application as well as control any aspect of machine behavior.

In addition to action cues, Producer Pro features new video-window and machine-control cues. The video-window cues



Intuitive controls for creating interactive presentations are a strong suit of Passport Producer Pro. The Action Setup dialog box lets you specify what actions occur when you click on a button or trigger an action cue.

support a variety of video digitizers and enable you to play live video directly to the screen. The machine-control cues control video decks and laserdisc players connected to the video digitizers. Producer Pro supports protocols for Sony ViSCA, MIDI Machine Control, Pioneer Laserdisc, and V-LAN and ARTI networks. Also worth mentioning is the CD Disc cue, which plays any track from an audio CD in a CD-ROM drive — a unique and useful feature.

Once you've placed all of your elements in the Cue Sheet, you can switch to Producer Pro's Stage view to see how each element will be positioned on-screen at playback. If you need to adjust positioning, you simply drag elements around onstage. The handy stage grid allows for uniform positioning. New with Producer Pro is the ability to move elements onto and off the stage, using basic motion paths. You can't enhance motion paths with complex variables such as rotation and scaling, however.

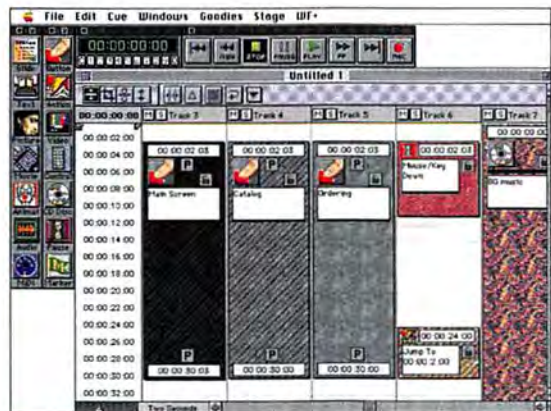
Text handling is significantly improved in Producer Pro. You can now create bullet-point entries and anti-aliased text, but typographical fine-tuning features, such as leading and kerning, are still absent (to be fair, we should note that these capabilities are also missing from Director).

Many of the minor bugs we encountered in Passport Producer have been fixed in the Pro version, including a particularly bothersome QuickTime-movie redraw problem. Overall, Producer Pro feels much more solid and reliable than its predecessor. We did run into one annoying limitation, though — when we used buttons to jump from one part of a Cue Sheet to another, the sound and music that were playing when the jump occurred simply stopped instead of playing along smoothly through the branch. And one feature we'd like to see incorporated in subsequent versions is the ability to group cue elements, such as a set of related buttons or action cues.

Producer Pro runs on any color Mac, but you'll want at least a Quadra-class machine for optimal playback performance, especially when you're working with simultaneous events. And although the company

recommends at least 8 megabytes of RAM, we recommend 12 to 20 megabytes for those who want smooth-running presentations.

Producer Pro's documentation is very clear. The comprehensive tutorial covers many aspects of creating interactive presentations. A run-time player and a pair of CD-ROMs, which contain sample audio and animation clips you can use with your presentations, are also included.



The Cue Sheet, Passport Producer's main window, lets you organize presentation elements — including buttons (tracks 3 to 5) and actions (bottom of track 6) — along a timeline.

Owners of Passport Producer can upgrade to Producer Pro by paying a \$15 shipping-and-handling fee — a great bargain.

The Bottom Line

Multimedia professionals looking for an easier-to-use alternative to Macromedia Director will likely find what they need in Passport Producer Pro. And for those whose requirements include MIDI support and the ability to do live presentations, Producer Pro has no equal. There is a trade-off, though: Despite its strengths, Producer Pro is not a complete replacement for the full-blown authoring and animation capabilities of Director. / David Biedny

Passport Producer Pro 1.0

Rating: ★★★★★

List Price: \$995; upgrade from Passport Producer, \$15.

Pros: Intuitive controls for interactivity. Excellent live-presentation and audio support.

Cons: No tools for fine-tuning type and grouping cues. Minor sound bug.

Company: Passport Designs, Inc., Half Moon Bay, CA; 415-726-0280; 415-726-2254 (fax).

Reader Service: Circle #402.

Is your accounting slowing you down?



Speed up with CheckMark!

CheckMark MultiLedger

MultiLedger combines G/L, A/R, A/P, and Inventory into a fast and efficient accounting solution.

- **Speed up** transaction entry with pop-up lists.
- **Simplify** bookkeeping with automatic updating of accounts and reports.
- **Accelerate** business decisions with up-to-the-minute status reports.
- **Save time** with the multiuser version that allows more than one person to work on your books.



CheckMark Payroll

Called "an ideal product for small businesses" (*Accounting Today*) and touted as "the best of all Mac payroll programs." (*Macworld*)

- **Calculate payroll** automatically, including all taxes and deductions, such as 401(k) and cafeteria plans.
- **Enter all employee hours** in one spreadsheet-style window.
- **Use as a stand-alone**, post into MultiLedger or Cash Ledger, or export to Teleware's M.Y.O.B.™

CHECK MARK
SOFTWARE INC.

724 Whalers Way, Bldg. H
Fort Collins, Colorado 80525
303-225-0522
FAX 303-225-0611

Call 800-444-9922
today for a free
demo disk!

CIRCLE 38 ON READER SERVICE CARD

Elastic REALITY

PROFESSIONAL
MORPHING
FOR MACINTOSH



BLOWS AWAY
THE COMPETITION!



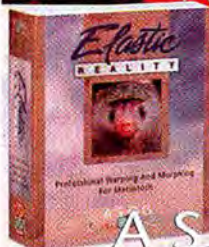
- ▶ **Easy Outline Based Approach**
- ▶ **Advanced Capabilities**
- ▶ **Still and Full Motion Effects**
- ▶ **Includes Tutorial Video**
- ▶ **Also Great For DTP**

Special Price

\$99⁹⁵

\$349 List

30 Day Money
Back Guarantee



See your dealer or call now!

American Express, MasterCard and Visa Welcome

608.273.9240

Film Sequence: "Full Eclipse" copyright © 1993 Home Box Office

CIRCLE 6 ON READER SERVICE CARD

LANsurveyor / Neon Software puts easy network troubleshooting on the map.

NEON SOFTWARE'S LANsurveyor combines some of the best features of network-polling, -monitoring, and -inventory programs under a simple graphical front end. LANsurveyor builds a logical map of any AppleTalk network and lets network managers inspect and test connections between devices. Because LANsurveyor lets you associate icons with any application you want to launch from within the map, it also makes a great console for troubleshooting and managing devices on a network.

More Than Mapping

When you create a new map, LANsurveyor discovers all the objects — nodes such as Macs, printers, network modems, and routers — in the selected AppleTalk networks by discerning which services they're advertising. Each network object is assigned a customizable icon, based on the highest-priority service it's advertising, and you can juggle these priorities so the information most important to you stands out on the map. For example, by assigning AppleShare a higher priority than the Mac operating system, you can quickly see which Macs on the network are running AppleShare.

Once the map has been built, you can select objects for polling or monitoring. Polling sends echo packets to the selected devices; if a packet doesn't answer in the specified time period, a preconfigured alarm alerts you by sound, message-display box, QuickMail, or pager system (the pager system, from Notify, costs \$99 extra).

Monitoring devices means gathering SNMP-based traffic statistics for each device as well as keeping track of the percentage of error packets (you can have LANsurveyor notify you if the number of errors exceeds a specified threshold). Because most AppleTalk routers respond to the required SNMP requests, you can monitor them easily; Macs must have Apple's MacSNMP client software — available in AppleTalk Connection for the Macintosh (\$32 for the initial package and \$39 more for a 20-user license) — installed before you can monitor SNMP data, which is much more extensive than the basic Responder data.

Polls, monitors, and logs are stored with

the map. Unfortunately, LANsurveyor can't automatically gather poll data over a period of time; you must save the data under a different name each time it polls, exporting it to tab-delimited text files. You can then import the files into a program such as Microsoft Excel to plot the peaks and valleys.

Unlike the mapping modules included with tools such as GraceLAN and Network Supervisor, LANsurveyor builds a map based on the relationship of network devices to the physical cable rather than to the zones. This means you can trace the path between devices for easier troubleshooting.

You double-click on an icon on the map to perform a simple query or generate a report. And Apple-events support lets you launch other applications — for example, you can link Neon's RouterCheck to router icons and launch it as needed. Customizable note fields let you keep notes on your findings.

The Bottom Line

Neon Software's LANsurveyor is an excellent network-management and -troubleshooting tool. Because it uses a cable-based map as its front end, LANsurveyor is great for tracking down disconnections, broken cables, and faulty network cards. And because you can collect SNMP-based traffic data about your routers and those Macs equipped with the MacSNMP client software, you can set thresholds that let you proactively monitor your network. To top things off, LANsurveyor 1.1, which runs on PowerPC Macs, should be available by the time you read this. / Kelli Wiseth

LANsurveyor 1.0

Rating: ★★★★★

List Price: 5-zone version, \$395; unlimited-zone version, \$695.

Pros: Cable-based map allows easy device management and troubleshooting. Collects SNMP data. Can notify you when thresholds are exceeded.

Cons: Can't automatically gather poll data over time for trend observation.

Company: Neon Software, Inc., Lafayette, CA; 800-334-6366 or 510-283-9771; 510-283-6507 (fax).

Reader Service: Circle #403.



A side-by-side comparison between SyQuest® and the new Bernoulli® 150.

The new Bernoulli® MultiDisk™ 150. The most rugged storage to hit the industry.

When it comes to reliability and value, the Bernoulli MultiDisk 150 is a tough one to crack. A big 150MB capacity means more space for color and multimedia projects. Bernoulli's legendary ruggedness withstands over three times the shock than our competition. (No more courier or mailing worries.) Cartridges mount first time, every time. And our new prices are two-thirds the megabyte cost of SyQuest's cartridges.



You'll find Bernoulli is dropping in everywhere. For more information or to locate the Iomega reseller nearest you, call 1-800-723-1538.

Bernoulli Advantages	Bernoulli MultiDisk 150	SyQuest 88c
70% more capacity.	150MB	88MB
Handles over 3x the shock—no more courier/mail worries.	96 inch drop	30 inch drop
Mounts every time.	Yes	No
2/3 the cart cost per megabyte.	67¢/MB	\$1.00/MB
More capacities to choose from to fit your job.	35, 65, 90, 105, 150MB	44, 88MB
Competitive performance.	18 msec	20 msec
Resists head crash.	Yes	No

iOMEGA®

CIRCLE 125 ON READER SERVICE CARD

©1994 Iomega Corporation. Iomega, the Iomega logo and Bernoulli are registered trademarks and MultiDisk is a trademark of Iomega Corporation. All other products are trademarks of their respective holders.

DayMaker Organizer 3.0 / Pastel's powerful PIM gets more personable and phone-savvy in version 3.0.

PERSONAL INFORMATION managers and calendar programs are an idiosyncratic bunch, and Pastel's DayMaker Organizer has been no exception. Although DayMaker is one of the most powerful PIMs available for the Mac, its previous interface was less than intuitive and it was occasionally unstable in early releases.

In version 3.0, however, Pastel has made DayMaker much stronger by simplifying its user interface, adding contact and phone-call management, and improving the program's speed in saving files and deleting records and in changing views.

Everything's Itemizable

The heart of DayMaker has always been the *item*, Pastel's term for any bit of information

forced to choose between calendar and to-do classifications, for instance, and alarms are an option in either case. However, this flexibility has also frustrated some users in the past; those who weren't careful could become lost in an unstructured maze. Fortunately, Pastel has cleaned up DayMaker's interface in this version, with simpler default views, more-logically arranged menus, and less-confusing terminology (*categories* instead of *tags*).

Contact Highs and Lows

Contact management is a significant addition in DayMaker 3.0, for several reasons. First, it's actually an add-in module designed to take advantage of a new modular architecture. Pastel hopes the architecture

contact item as many as three categories for additional sorting.

The People Picker window, a compact list of contacts that's available whenever you're not in the Contact view, is a particularly helpful new feature. You can drag a name from the People Picker window and drop it onto a certain day to automatically link the contact to any phone call, calendar event, or other item on that day.

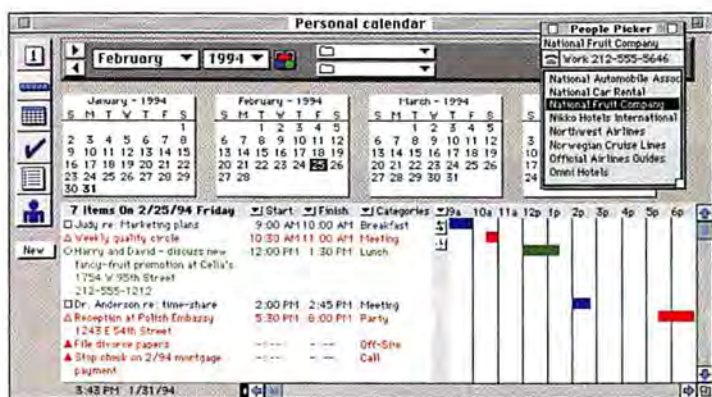
After importing a 2,500-name FileMaker database file into DayMaker (with some effort), we were pleased to find that DayMaker's speed at finding a name remained reasonable. However, we were a little disappointed at the resultant file size; at almost a megabyte, it's a bit large for moving back and forth between a desktop Mac and a PowerBook.

Fancy Phone Tricks

The new call-management feature also adds a great deal to DayMaker's power and flexibility. This feature lets you automatically dial phone numbers directly from within the program. You can also create special phone notes for tracking calls and automatically setting up follow-up actions. Unfortunately, DayMaker's automatic-dialing feature, like most autodialers, has problems with automated switchboard systems; it didn't work with our office Centrex system.

The Bottom Line

Version 3.0 of DayMaker is a mature, solid product likely to attract many loyal users. DayMaker veterans who once used it mostly to list to-do items and reminders can now use it to manage all of their appointments and contacts, dutifully dragging their PowerBooks on all outings. Now, if Pastel would only hurry up and release its Newton version of DayMaker . . . / John Markoff



You can access your contacts at any time in DayMaker 3.0's People Picker window. To link a contact to a calendar or to-do item, just drag the contact to that item.

you want to track. You define a standard item by entering some descriptive text and then setting item characteristics — priority, category, timing information, and so on — using check boxes and pull-down menus. Contact items, new in this version, have their own special format but can fall into the same categories as standard items.

DayMaker offers six ways to view the items you've entered: by day, week, month, to-do status, contact information, or as a list of items meeting search criteria that you specify (such as items containing a particular word or phrase). A series of sorting options helps you rank items within a list.

The powerful flexibility of this item-based structure is what differentiates DayMaker from its competition. You're not

will lead to the creation of a variety of modules, perhaps from third parties (although this hasn't happened yet). Also, DayMaker's method of contact management makes it easy to enter contacts and to link contact data to other items, such as to-do items and calendar entries.

In the Contact view, the DayMaker display is divided into two sections. The top section displays a list of contacts, which you can sort and search in many ways. The bottom section shows items linked to a selected contact. You can double-click on any line in the Contact view to bring up an individual record, or *contact item*, which includes fields for name, address, e-mail addresses, and as many as seven phone numbers and four customizable fields. You can assign each

DayMaker Organizer 3.0

Rating: ★★★★★

List Price: \$149; upgrade from 2.0, \$39.

Pros: Easy linking of contacts to calendar and to-do items. Flexible listing and viewing options for tasks and appointments.

Cons: Automatic phone dialing doesn't work with some office phone systems. Large file sizes.

Company: Pastel Development Corp., New York, NY; 212-941-7500.

Reader Service: Circle #404.

At Ease and At Ease for Workgroups

/ Utilities control who's in and who's out of a Mac's files and folders.

IF YOU'RE LOOKING for an inexpensive way to control access to the files and folders on a Macintosh — one that doesn't require a full-fledged security program — Apple's At Ease 2.0 or At Ease 2.0 for Workgroups may be just the ticket. Each program is a Finder alternative that's easy to set up and use, making it a solid no-frills choice for home, school, and other shared-Macintosh environments.

At Ease 2.0

At Ease 2.0 is a big improvement over its predecessor. As before, the program uses a simple file-card metaphor in place of the Finder. Each card that appears on the desktop is assigned to a user. The cards display buttons that represent the applications and documents available to that user. To open an application or document, a user simply clicks once on its button.

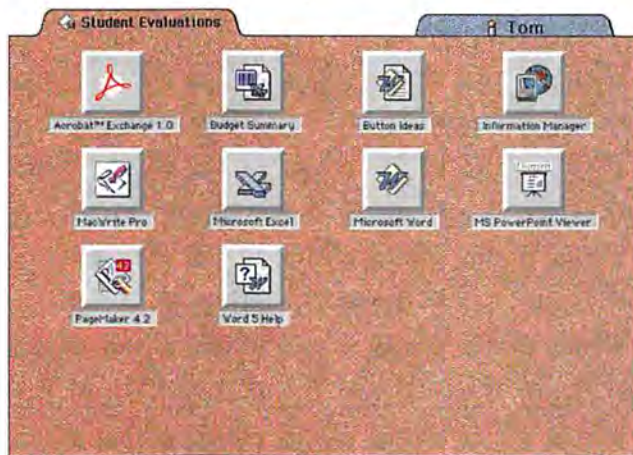
With At Ease Setup, the administrator defines the card setup for each user as well as access privileges. The original version permitted only one card setup per Mac, but with version 2.0, you can create as many as ten different setups on a single Mac — a big improvement when you have users with different needs sharing one machine.

During setup, the administrator can choose from several options. You can specify who has access to full menus within At Ease, so you can control access to Apple-menu items as well as to file commands such as Rename and Delete. You can also opt for a text-to-speech feature that prompts the Mac to "speak" button names as the cursor passes over the buttons — a great feature for kids or the visually impaired. Last, you can limit a user to opening and saving only those files within the user's folder or on a floppy disk. When appropriate, you can opt to give some users access to the normal Finder desktop.

A Font/DA-style dialog box lets you set up application-access controls. The At Ease Setup program scans the hard disk and displays a list of all applications. You select those you want to make accessible to users and click on the Add button. Unfortunately,

selecting specific documents for access control is more cumbersome. You must type in the name of each document and have At Ease search for it.

Another frustration is that you cannot



At Ease 2.0 and **At Ease 2.0 for Workgroups** each replace the Finder with a simple file-card metaphor that's tailor-made for home, school, and other shared-Macintosh environments.

duplicate a setup and then slightly modify it, a feature provided by several other packages, such as Magna Software's Empower I. Instead, you must create each new At Ease setup from scratch — not difficult, but definitely tedious.

At Ease 2.0 for Workgroups

At Ease 2.0 for Workgroups lets you create and update as many as 200 user setups for as many as ten Macs, all from a central workstation on an AppleTalk network.

From a user's perspective, the At Ease desktop-configuration options look the same for the individual and the workgroup versions. The difference is in the setup process. With At Ease for Workgroups, you first create a list of users and then configure the card setups and assign users to groups.

Unlike the individual version of At Ease, At Ease for Workgroups lets you duplicate and modify existing setups. Also, the workgroup version includes another way to add documents to the access-control list — it can find all the documents created by a specified application. This is a bit of an improvement, but the process is still tiresome.

The workgroup version's security options are slightly more robust than the individual

version's. Administrators can require users to change their passwords after a set period of time. You can also set a minimum number of characters required for passwords. In addition, you can opt to disallow passwords that consist of a user's name, consecutive keyboard characters (asdfg), or a repeating character. At Ease for Workgroups also provides an activity log that tracks application use, user log-ins, and unsuccessful log-in attempts.

The Bottom Line

Apple Computer's At Ease 2.0 and At Ease 2.0 for Workgroups are basic and easy-to-use utilities for managing file access. These two alternatives to the Finder provide a minimal first line of defense for shared-Macintosh environments that is well-conceived and affordable at the same time.
/ Tom Petaccia

At Ease 2.0

Rating: ★★★★★

List Price: \$59.

Pros: Easy setup and use.

Cons: No duplicate-setup feature. Tedious document search.

Company: Apple Computer, Inc., Cupertino, CA; 408-996-1010.

Reader Service: Circle #405.

At Ease 2.0 for Workgroups

Rating: ★★★★★

List Price: \$295 (supports 10 Macs).

Pros: Easy network setup.

Cons: Tedious document search.

Company: Apple Computer, Inc., Cupertino, CA; 408-996-1010.

Reader Service: Circle #406.

Ready,Set,Go! 6.0 / Manhattan Graphics jockeys for the middle ground in the page-layout features race.

WHAT PACKS MORE MUSCLE than an entry-level page-layout program but costs less than half the price of QuarkXPress or Aldus PageMaker? Manhattan Graphics' \$395 Ready,Set,Go! 6.0. The new Ready,Set,Go! nicely fills the price and feature-set gap between the powerhouse page-layout programs and budget entries such as Publish It! Easy and Personal Press. To the previous version's excellent typographic and color-separation controls — some of which surpass those of the high-end programs — Manhattan Graphics has added convenient floating palettes, support for multiple master pages, and enhanced trapping controls. There are several caveats, however — oddly organized menus make Ready,Set,Go! difficult to use, you can't customize the program with third-party add-ons, and a few rough edges remain.

More Palette-able

The most apparent enhancement in Ready,Set,Go! 6.0 is the addition of six floating palettes, available only if you're using System 7. Although not nearly as full-featured as QuarkXPress' or PageMaker's palettes, Ready,Set,Go!'s do provide convenient access to controls for applying style sheets, navigating documents, assigning colors, and specifying dimensions.

The one drawback is that the palettes take up more precious screen real estate than they need to. Most of them contain a fair amount of unused space and could easily be reduced. Or Manhattan Graphics could have put the empty space to better use by enlarging palette text entries or by adding more features. It would also make good conservation sense to combine the Styles palette and the Typography palette.

Ready,Set,Go!'s tool palette contains a welcome new magnifying-glass tool, along with 400-percent and 800-percent views. But here too, the program's designers could have gone further. Although you can zoom in and out with the magnifying-glass tool, as expected, you cannot select an area for magnification.

In order to speed the design process, you

can create as many as 26 left and 26 right master pages per document to handle repeating elements, such as running heads, page numbers, and rules. Ready,Set,Go! makes the process of associating a page with a master a snap. You simply click on the page's icon and then select a master page from a pop-up menu. Unfortunately, you can't assign custom names to your master pages. You are stuck with Ready,Set,Go!'s A-through-Z lettering scheme, meaning that you must rely on memory to distinguish one master page from another. For big projects, this can be a real drawback.

Prints Charming

Ready,Set,Go!'s professional-level printing features may attract many users who have outgrown their entry-level page-layout programs. For spot- or process-color separations, the program separates files in the major formats — CMYK TIFF, DCS, EPS, EPS5, RGB, RGB RIFF, and 72-dpi PICT2 — and it also separates the color graphics you create with the program's drawing tools.

Improved, ultraprecise object-level trapping is another of Ready,Set,Go!'s excellent printing features. The program supports both chokes and spreads. You'll need trapping if you plan to print on a printing press documents that contain overlapping colors. Trapping helps compensate for any misregistration on the press. With Ready,Set,

Go!, you can manually trap any object that you create with the program and you can specify the size of the trap in units as precise as .001 point.

Another advanced printing feature is Ready,Set,Go!'s controls for PostScript screens. You can control the screening of a rule, a line, or a graphic-object frame as well as the interior fill of a graphic object or text block, the text itself, a gradient, or a gray-level TIFF or RIFF image. You can also specify the dot shape, screen frequency, and angle. Screens applied to individual objects override documentwide screen settings.

A new text feature is the automatic drop cap — you just specify baseline alignment, font, type style, and so on. This feature is handy, but it's not as easy to access as it should be. You won't find it on the Text menu (our first choice) or the Format menu (our second) but on the Object menu, buried in the Specifications dialog box.

Other inconveniences, such as the lack of a visual cue that shows how text blocks are linked, give Ready,Set,Go! a decidedly unpolished feel. Another problem crops up when you use white text. Because a text block's background automatically becomes white when you highlight the text, white text is impossible to read when you try to edit it.

New design features include linear and circular gradient fills. You can also have Ready,Set,Go! automatically scale text and graphics to fit exactly within a frame. In the case of text, Ready,Set,Go! adjusts the point size and horizontal scaling. Likewise, you can have the frame scaled to accommodate graphics or a block of text.

Ready,Set,Go!'s already powerful word-



A fleet of new floating palettes speeds access to Ready,Set,Go! 6.0's page-layout features.

Should the New MiniCad 5 be your CAD Program?

Take the Quiz.



Accelerated for
Power Macintosh

- I want a full-featured, proven market leader which can handle any job: 2D, 3D, cost estimation and client presentations.
- I want a program that runs on both the 68K-based Macintosh and the Power Macintosh. At no extra charge!
- I want a CAD program that is tailored to my needs, with specialized tools for architecture, mechanical engineering and design.
- I want an expandable CAD program which can be customized for specific solutions easily and inexpensively.
- I don't want to spend a lot for training or experience an enormous learning curve.
- I want an established company with constant R&D funding, so that my investment stays safe.



3 Free Application Specific Modules Mechanical, Architectural, & Advanced Design

MiniCad 5 offers all of the above and more. The award-winning software has been hailed as the "features champion" by Macworld Magazine (March, 1993). Further, Graphsoft is dedicated to aggressive investment in CAD R&D. Graphsoft customers stay more productive than their competitors because Graphsoft supports both the latest technology and evolving user needs. MiniCad has long been the price/performance leader in Macintosh CAD. Don't be steered away from MiniCad by VARS who want you to buy high-priced CAD products that are hard to learn and only do a few things well. The VARS won't tell you that MiniCad 5 ships with a multi-media training CD, or that you receive 18 months of free technical support with Graphsoft products or upgrades. In short, MiniCad keeps more of your money in your pocket. Buy MiniCad 5 and save!

MiniCad 5 also includes: speed increases up to 100% even on 68K-based Macintoshes, a Claris CAD conversion program including a \$495 upgrade price, a Claris CAD translator, and a helpful conversion guide, translators for importing and exporting to the other major CAD products, an upcoming Windows version, multi-media training CD 18 months of free technical support and a no-hassles 30-day money-back guarantee through authorized dealers. Contact Graphsoft today for detailed literature. To order immediately, call MacWarehouse, MacConnection, or your local dealer. Demo: \$19.00 Buy MiniCad 5 and save!



Also from...

Diehl Graphsoft Inc.



Azimuth

The ultimate map creation tool, including nine cartographic projections and more! Used by US News & World Report. 4 mice

Blueprint

Full-featured 2D drafting. Experience ease of use, high precision and an affordable price. 4 mice. MacWorld Editor's Choice!

10270 Old Columbia Road, Suite 100, Columbia Maryland 21046 Ph:410-290-5114 Fax: 410-290-8050

Power Macintosh is a trademark of Apple Computer Inc. MiniCad, Blueprint, and Azimuth are trademarks of Diehl Graphsoft, Inc.

Claris CAD is a trademark of Claris Corp.
CIRCLE 108 ON READER SERVICE CARD

Apple made it easy to use. We make it easy to do.



In fact, we'll do it for you. Introducing Open Sesame!, the world's first intelligent software assistant for the Macintosh. Open Sesame! observes how you work, *learns* your repetitive patterns, and then offers to do them for you. Automatically.

With a single click, Open Sesame! will open and close related sets of folders, documents and applications, create and manage multiple Apple Menu and Desktop items folders, and perform routine maintenance, like rebuilding your desktop...automatically. So you can do more with fewer clicks.

For example, suppose that every time you start up your Macintosh you immediately open your mail program. Open Sesame! will observe this and offer to do it for you. It will even find more efficient ways for you to use System 7.0, like making aliases and stationery automatically.

Here's what the critics say: "One that knocks my socks off is called Open Sesame! ...the simple fact is that Open Sesame! works smarter for me. It might just herald a new wave in mac smartware. ...The more you use it the better it gets." The Mac Manager, *MacWEEK*

"Macintosh users who like the flexibility of System 7 but tire of 'tweaking' their desktop and Apple menu items will appreciate Charles River Analytics Inc.'s Open Sesame!" *INFOWORLD*

Open Sesame! is available at these quality resellers: MacWarehouse 800-255-6227, EGGHEAD 800-EGGHEAD, The Mac Zone 800-248-0800, ComputerWare 800-326-0092.

To order direct, call 1-800-913-3535.

For more information, call 617-491-3474 or fax 617-868-0780.

OPEN SESAME!

Charles River Analytics, 55 Wheeler St., Cambridge, MA 02138. Open Sesame! is registered trademark of Charles River Analytics, Macintosh and Apple are registered trademarks of Apple Computer, Inc.

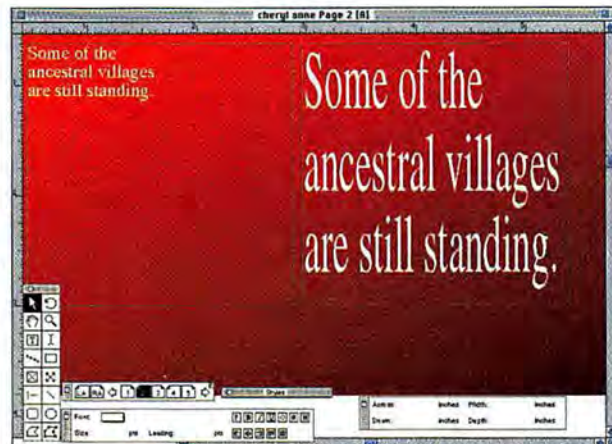
CIRCLE 49 ON READER SERVICE CARD

processing features include the ability to apply style sheets to individual characters, not just to whole paragraphs as in the more expensive page-layout programs. Fine control of hyphenation, kerning, and indents continues in this version too. Version 6.0 adds an enhancement that lets you specify style-sheet information for empty text frames, a helpful alternative to templates for those who divide production tasks.

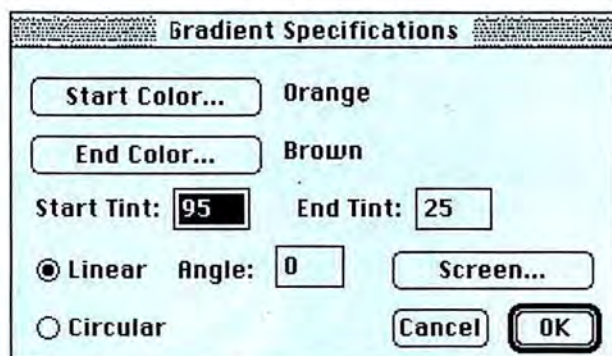
Just like the big players in the page-layout category, Ready,Set,Go! comes with several add-ons, which are called Annexes, that expand the program's feature set. It's good news, except that as we went to press, not a single Annex was available from third-party developers; for the time being, users are limited to the Annexes developed by Manhattan Graphics. The complete selection (with the exception of those that provide foreign-language support) ships with the product and includes Annexes for exporting pages in EPS format, counting words and characters, creating slide shows, and identifying the fonts used in a particular document. Overall, Ready,Set,Go!'s add-ons do not begin to match the tremendous functionality of add-ons for PageMaker and QuarkXPress.

If you use an uncommon word processor, you will appreciate Ready,Set,Go!'s newly added support for XTND technology. The program ships with 26 of the most common translators for importing and exporting formatted text. And best of all, you can now use third-party filters for formats the package doesn't support.

Ready,Set,Go! 6.0 supports System 7's publish-and-subscribe and, of less importance in a page-layout program, QuickTime. Also noteworthy is Manhattan Graphics' offer of unlimited free technical support.



A new text-handling feature allows Ready,Set,Go! 6.0 to scale text (left) so it fits within a frame (right).



Gradient-fill support is a welcome new addition to Ready,Set,Go! 6.0.

The Bottom Line

In many ways, Ready,Set,Go! 6.0 stacks up well against heavyweights Aldus PageMaker and QuarkXPress. Excellent printing and text controls abound. But an inferior interface, lack of expansion capabilities, and rough edges keep it from being a serious threat to the high-end programs. Nevertheless, for budget-conscious designers who have outgrown their entry-level page-layout programs, Ready,Set,Go!'s affordable \$395 price tag will be a decided attraction. / Shelley Cryan

Ready,Set,Go! 6.0.2

Rating: ★★

List Price: \$395.

Pros: Excellent printing and text controls. Unlimited free technical support.

Cons: No third-party add-ons. Awkward interface.

Company: Manhattan Graphics Corp., Hartsdale, NY; 914-725-2048.

Reader Service: Circle #407.

WE'RE REDEFINING
WHAT YOU
SHOULD EXPECT
FROM
OFFICE PRINTERS.

Citizen Notebook Printer II / Color-capable PowerBook printing companion is a sluggish performer.

AT FIRST GLANCE, the Citizen Notebook Printer II appears to be a winner. Not only is it one of the smallest and lightest of the current crop of PowerBook-friendly portable printers but it also offers a color-cartridge option and comes with a handy built-in five-page sheet feeder. Unfortunately, glacial speed for color output combined with poorly implemented color features relegate the QuickDraw-based Notebook Printer II to second-string status.

One for the Road

Unlike most other portable printers, which use inkjet or Bubble Jet technology, the 360-

Printer II's chief rival, the color-capable Hewlett-Packard DeskWriter 310 (see review, February '94, page 61), offers a separate sheet feeder/docking station that adds considerable bulk and cost. Chalk one up for Citizen.

But the Notebook Printer II loses big points for speed. It has a painfully slow serial interface and is further hampered by a slow print engine. In our tests, using a PowerBook 180 equipped with 14 megabytes of RAM, we compared the print speed of the Notebook Printer II with that of the HP DeskWriter 310. The Citizen printer took more than twice as long as the HP printer to print a black-and-white Microsoft Word document and nearly five times as long (almost three hours!) to print a color Microsoft Excel document. The speed difference between the two printers was even more dramatic when we used the HP printer's AppleTalk interface, a feature noticeably absent from the Citizen printer.

And when we factored the cost of the Notebook Printer II's color cartridge (\$7) with the inconvenience of the cartridge's incredibly short life span, the printer's color op-

tion became even less attractive. Like the HP DeskWriter 310, the Notebook Printer II is primarily a monochrome printer that's color-capable. So you can save time and money, each printer lets you switch from the cheaper and faster monochrome cartridge to a four-color (cyan, magenta, yellow, and black) cartridge. However, in our tests with highly saturated images, one Citizen cartridge barely covered an entire page and often required replacement *during* a print job.

We also experienced problems with the printer's proprietary driver, required for

color printing. The printer mysteriously powered itself off while plugged in, used the wrong colors for some graphic elements, and had trouble printing a MacDraw Pro document. In addition, we encountered a few paper jams and misfeeds with the printer's built-in multisheet feeder. When we did manage to get pages to print, output quality was a disappointment. Solid areas of color suffered from spotty coverage, and ink streaks marred unprinted areas.

StyleWriter Mode

We also tested the Notebook Printer II in its black-and-white Apple StyleWriter emulation mode (the StyleWriter driver doesn't support color). Once we'd managed to get the printer properly configured, it performed about 20 percent faster than with Citizen's proprietary driver on our three-page Microsoft Word test document. One other benefit of the StyleWriter emulation mode is its support for Apple's GrayShare technology. But you're on your own when it comes to obtaining the Apple driver — it doesn't ship with the printer.

The Notebook Printer II comes with an impressive two-year warranty on parts and labor. A 24-hour express support service is available for \$20 per year.

The Bottom Line

With its thermal-fusion technology, the Citizen Notebook Printer II takes a unique approach to low-cost portable printing. Unfortunately, despite the pleasing small size and light weight of the Notebook Printer II, its slow speed and short-lived color cartridge are major stumbling blocks. Considering the fierce competition in the portable-printer class posed by the HP DeskWriter 310, the only trip we can recommend for the Notebook Printer II is one that leads back to the drawing board. / Anita Epler



The Citizen Notebook Printer II is small enough to fit easily into a briefcase but is compromised by slow speed and poorly designed color features.

dpi Notebook Printer II uses thermal-fusion technology. The ink, stored in a small cartridge similar in size and appearance to an audio minicassette, is transferred to paper via a small thermal print head.

Weighing just 2.6 pounds with battery pack (2.2 pounds without) and measuring 12 x 4 x 2 inches, the Citizen Notebook Printer II fits easily in a briefcase or carry-on bag. The battery pack prints 30 to 50 pages on a single charge. It includes a built-in five-page sheet feeder, rare among portable printers. By contrast, the Notebook

Citizen Notebook Printer II

Rating: ★★½

List Price: \$399.

Pros: Compact and lightweight. Built-in sheet feeder.

Cons: Slow. Poorly implemented color features.

Company: Citizen America Corp., Santa Monica, CA; 800-477-4683 or 310-453-0614.

Reader Service: Circle #408.

Flexibility (flek·sə·'bil·ət·ē) *n.* 1, A feature previously not found in this category. *example:* For under \$800, **TI microWriter™** printers with **Adobe® PostScript®** give you more networking and paper handling *flexibility* than Apple and HP, at a lot lower price.



THE UNDER \$800 PRINTER, REDEFINED.

	TI microWriter PS23	Apple LaserWriter Select 310	HP 4ML
Print Speed	5 ppm	5 ppm	4 ppm
AppleTalk® Connection	Standard	Not Avail.	Standard
Paper Trays	(std.) 250 sheet	250 sheet	100 sheet
	(opt.) 250 sheet	250 sheet	Not Avail.
Auto Emulation Switching	Standard	Not Avail.	Standard
List Price	\$799	\$1079	\$1279

If you're looking for a PostScript printer with a street price well under \$800, you'll have a hard time finding one with as many features as a TI microWriter.

Just look at the chart and compare it to our leading competitors, Apple and HP. Then, when you're ready for a full-featured printer that's truly flexible, at a price that's truly affordable, take a look at a TI microWriter. For more information or a dealer near you, call 1-800-527-3500.

EXTENDING YOUR REACH
WITH INNOVATION™

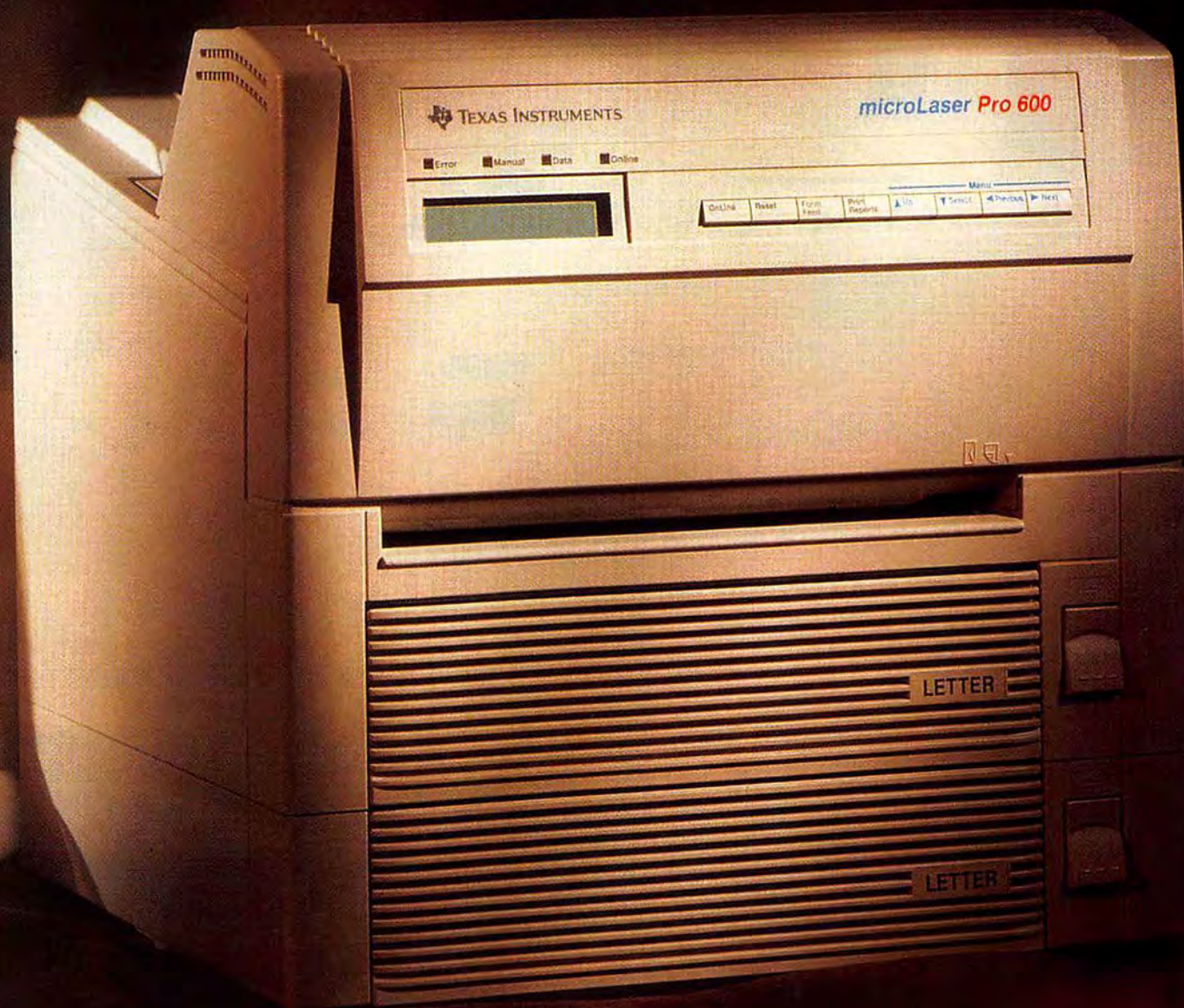
 **TEXAS
INSTRUMENTS**



Specifications in chart are based on information as of 12/93. microWriter and "Extending Your Reach With Innovation" are trademarks of Texas Instruments. Adobe, PostScript and the PostScript logo are registered trademarks of Adobe Systems, Inc. AppleTalk is a registered trademark of Apple Computer, Inc. © 1993 TI.

CIRCLE 138 ON READER SERVICE CARD

Compatibility (kəm·pat·ə·'bil·ət·ē) *n.* 1, A feature typically lacking in this category. *example:* The new **600 dpi TI microLaser™ Pro 600** printer gives you Mac®, DOS, Windows, PostScript® and PCL5 *compatibility* standard; Apple and HP charge hundreds more.



Specifications in chart are based on information as of 11/93. *Estimated dealer price including manufacturer's rebate is under \$1400. Dealer prices may vary. † At 4% coverage. ‡ Rebate applies to PS23 model. microLaser and "Extending Your Reach With Innovation" are trademarks of Texas Instruments. Adobe, PostScript and the PostScript logo are registered trademarks of Adobe Systems, Inc. LaserJet is a registered trademark of Hewlett-Packard, Inc. Mac is a registered trademark of Apple Computer, Inc. © 1993 TI.

THE UNDER \$1400 PRINTER, REDEFINED.

If you're looking for a true 600 dpi printer with a street price under \$1400*, you'll have a tough time beating the new TI microLaser Pro 600.

You see, when we set out to design the ideal office printer, we began by asking thousands of users what they wanted most. And then, instead of making those "key care-about" optional, we made them standard.

Take print quality. We began with true 600 dpi resolution. And then enhanced it with 6MB of memory for improved graphics. Compatibility? We're Mac®, DOS and Windows compatible right out of the box. With all the right languages and interfaces. And with the intelligence to switch these automatically, depending on the environment. Connectivity? All popular protocols are supported with a single network option board.

Low maintenance? Our new toner cartridge typically gives you 15,000 pages between changes. Paper handling? Two 250-sheet trays come standard. And finally, value. Take a look at the chart below, compare features and price, and your choice should be simple.

Ask
About Our \$60
End User
Rebate.†

We invite you to try the new TI microLaser Pro 600. For additional information or a dealer near you, call 1-800-527-3500.

	TI microLaser Pro 600	Apple LW Pro 600	HP LaserJet 4M
True 600 dpi	Yes	Yes	Yes
Speed/Processor	8 ppm/RISC	8 ppm/68030	8 ppm/RISC
Emulations	PCL5/ Adobe® PostScript 2	PCL4/ Adobe PostScript 2	PCL5E/ Adobe PostScript 2
Compatibility	Mac/DOS	Mac/DOS	Mac/DOS
Toner Cart. Life	15K pages†	6K pages	6K pages
Paper Trays	250 sheet/ 250 sheet	250 sheet/ 100 sheet	250 sheet/ 100 sheet
Auto Language Switching	Yes	No	Yes
Auto Interface Switching	Yes	Yes	Yes
40MHz Processor Upgrade	Optional	Not Avail.	Not Avail.
List Price	\$1599*	\$2099	\$2479

EXTENDING YOUR REACH
WITH INNOVATION™

 **TEXAS
INSTRUMENTS**
CIRCLE 139 ON READER SERVICE CARD

Help!

The Intelligent
System Problem Solver

**Recognized by Mac experts
as the premier utility for
keeping your Mac configured
correctly and operating at
maximum performance.**

Help! uses its SMART
Technology™ to analyze your
Mac and advise you about how
it is set-up. It can find
problems and tell you how to
fix them, or just point out
things you should know to
make it operate better. Help!
knows of over 8,300 situations
affecting more than 3,800
products.

**You don't have to be a
technical wizard to use Help!**

All the intelligence about Macs
is built-in. Help! explains its
findings in terms anyone can
understand. And, it only takes
about 3 minutes to get a
comprehensive report. Even
technical wizards use Help!,
because it saves them so much
time. Besides, who could
remember all the things Help!
already knows?

**Get Help! in single user or
network versions.** Sized to fit
your needs.

US 800-873-3494
International 813-620-3494
Fax 813-620-4039



Teknosys inc.
3923 Coconut Palm Dr., Suite 111
Tampa, FL 33619

E-Machines EtherDock / Docking station delivers versatility and fast network connections to Duo owners.

POWERBOOK DUO OWNERS who are
searching for a portable dock with speedy
network connections need look no further
than the E-Machines
MacUser Labs EtherDock. The Ether-
Dock is currently the only portable dock that
adds Ethernet support to a variety of other
expansion options, providing flexibility for
Duo owners on the road and in the office.

No One-Trick Pony

The EtherDock's 10BASE-T Ethernet sup-
port sets the dock apart from competing
docks and offers Duo
owners a faster alterna-
tive to the Duo's built-
in LocalTalk connection.
But the 1.24-pound, \$699
EtherDock is no one-
trick pony. It also comes
with an HDI-20 floppy-
disk port, an ADB port
for an external keyboard
and/or a mouse, 8-bit-
color-video support for
many large-screen monitors, two serial
ports for LocalTalk and external-modem
connections, an HDI-30 SCSI port, sound-
in and -out connectors, and a security-cable
slot.

The EtherDock's specifications are nearly
identical to those of Apple's Duo MiniDock,
with two exceptions. The Duo MiniDock
lacks a 10BASE-T Ethernet port, but it does
provide a pass-through-modem port for use
with either Apple's PowerBook Express Mo-
dem or Global Village's PowerPort/Mercury
for the Duo. That's a good thing, because the
Duo MiniDock, like the EtherDock, fits over
the Duo's modem port. The EtherDock lacks
a pass-through-modem port — a serious
drawback if you've already purchased an
internal modem.

E-Machines provides several trouble-
shooting utilities with the EtherDock, in-
cluding Network Diagnostics and Network
Snooper software for diagnosing problems
with the dock's Ethernet functions. Addi-
tional utilities include video software that
lets you connect your Duo to a variety of

external monitors and control mirroring
between your Duo's monitor and the exter-
nal monitor. The video software is especially
handy when you are using your Duo to
display presentations on a large-screen
monitor.

We tested the EtherDock, teamed with a
PowerBook Duo 230, at home, in the office,
and on the road. The dock performed reli-
ably and consistently for most of our net-
work-based applications. Most important,
its Ethernet support made operations over
the network really scream. For example, we

were able to copy some
files six times as fast as
with LocalTalk.

At test time, we were
not able to use either
EtherPeek or NetMinder
Ethernet to observe net-
work traffic with our
EtherDock-equipped
Duo. However, interface
files that enable you to
work with these net-

work-management programs should be
available by the time this review appears.

The Bottom Line

At \$699, SuperMac's E-Machines EtherDock
is a solid value for those who are looking for
a way to transform their Duos into fully
functional desktop machines with Ethernet
support. Furthermore, the dock's 8-bit-
color-video capabilities on large-screen
monitors will be especially attractive to
those who frequently travel to give business
presentations. / Mark Bieler

E-Machines EtherDock

Rating: ★★★★★

List Price: \$699.

Pros: 10BASE-T Ethernet support.

Cons: No pass-through-modem port. Lacks
support for network-management tools.

Company: SuperMac, E-Machines
Division, Sunnyvale, CA; 800-344-7274
or 408-541-6100.

Reader Service: Circle #409.



Ethernet support sets the Ether-
Dock apart from its competition.

Satisfaction (*sat·əs·'fak·shən*) *n.* 1, A feature previously left to chance in the purchase of a printer. *example:* When you buy a new TI printer*, your **satisfaction** is **guaranteed** or call TI within 30 days and we'll take it back.



TEXAS INSTRUMENTS



THE WAY YOU BUY A PRINTER, REDEFINED.

In the past year, we've introduced a whole new line of office printers. And as you've seen in the previous pages, they're some of the most advanced models on the market today. But now, we're also going to change the way you buy a printer.

When you buy one of these new TI printers, if you need any help at all, simply call us toll-free at 1-800-TI-TEXAS, and we'll work with you. Then, within 30 days from date of purchase, if you're still not completely happy, call TI and we'll take it back. It's as easy as that. That's how confident we are in each

and every printer we make. And even after the 30 days, you can continue to call the 800 number for any help you may need.

For more information about the TI microMarc™, the TI microWriter™ or the new TI microLaser™ Pro 600 printers, and for the name of a dealer near you, call 1-800-527-3500. And see for yourself how TI is redefining what you should expect from an office printer.

EXTENDING YOUR REACH
WITH INNOVATION™



TEXAS
INSTRUMENTS

* Offer applies to all new TI microMarc, microWriter and microLaser Pro 600 printers, if returned in good condition. microMarc, microWriter, microLaser and "Extending Your Reach With Innovation" are trademarks of Texas Instruments. ©1993 TI.

A Pad for Everyone!



Moustrak customizes mouspads, wristpads, and graphic pads.

And now available is our new line of Star Trek® graphic mouspads and Colani ergonomic mice. Dealers call for a display sample (custom orders in quantities of 50 pc. or more) – retail price for our graphic pads ranges from \$9.95 to \$15.95.

MOUSTRAK™ INC.

United States-800-221-6687
International-702-884-1925
Fax-702-884-1827
Canada-800-668-8440

STAR TREK is a Registered Trademark of Paramount Pictures

DEALERS CIRCLE 95 ON READER SERVICE CARD
END USERS CIRCLE 94 ON READER SERVICE CARD

CrossTalk for Macintosh / DCA's first telecommunications program for the Mac gets off to a strong start.

WITH THREE POWERFUL telecommunications programs already available for the Mac, why consider another? DCA, a big player on the Windows side of the telecommunications arena, has the answer. Debuting with version 2.0 to match its Windows counterpart, CrossTalk for Macintosh offers a more comprehensive set of telecommunications protocols and emulators than its three main competitors — White Knight, Hayes Smartcom, and MicroPhone Pro. Add a hefty scripting language, cross-platform compatibility, and basic Apple-events support, and DCA has a telecommunications newcomer well worth considering.

Well Connected

If you can't connect to a host computer with CrossTalk, you probably can't connect to it with a Mac at all. In addition to all the standard terminal emulations — Color ANSI PC, IBM 3101, Televideo 912/920/925, TTY, and VT52/100/102/220/320 — CrossTalk

of the Macintosh Communications Toolbox as a telecommunications engine, which enables DCA to add emulations and protocols by simply plugging in modules.

Although it doesn't use a proprietary graphical interface like that of First Class or CompuServe Information Manager, CrossTalk provides nearly point-and-click telecommunications functionality. It's easy to connect to a service — 13 prescribed session files for such popular communications services as AT&T Mail, CompuServe, Delphi, Dow Jones, GENie, and Lexis are included in the package.

The first time you use these files, the program guides you through a wonderfully scripted series of dialog boxes as you fill in your vital telecommunications statistics — local phone number, log-on ID, password, and so on. The program saves the information to a log-on script and uses it in subsequent sessions. CrossTalk also includes a Create New Session script, which guides you

through a similar process for logging on to your local BBS.

Once you've logged on to a service, CrossTalk provides more time-saving shortcuts. An icon bar lets you quickly perform common tasks such as opening and saving files, capturing text, and uploading and downloading files.

You can devise your own shortcuts as well, with CrossTalk's customizable QuickPads — separate windows that contain text and icon buttons you've created to trigger a sequence of key-

strokes (GO NEWS, for example) or to run external or embedded scripts. You can even import PICTs to enhance the appearance of your QuickPads.

Powerful Scripting Language

To say CrossTalk for Macintosh has a scripting language doesn't do it justice. The program boasts a full-blown programming environment called the CrossTalk Application



For fast access to common commands, CrossTalk provides an icon bar at the top of session windows.

provides a slew of others, including ADDS ViewPoint+, Hazeltine 1500, HP 700/94, Lear-Siegler ADM3a, and PC-TERM.

The program provides the same comprehensive support for file-transfer protocols. You can choose from CompuServe B+ QuickB, Kermit, straight ASCII (text), IBM IND\$FILE, Zmodem, and the various flavors of Xmodem and Ymodem.

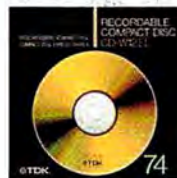
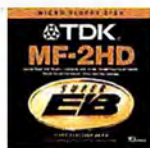
CrossTalk's versatility stems from its use

Data Storage Media

Un-commonplace Disks.



**FLOPPY DISKS
CD-RECORDABLE
DATA CARTRIDGES**



Information isn't just data, it's your intellectual property. Which is why the more you value your work, the more you'll appreciate TDK data storage media.

TDK Floppy Disks are sophisticated storage media. Pre-tested and guaranteed 100% error free, they provide an unequalled level of reliability. And for your multimedia, software development or archiving needs, TDK Recordable Compact Discs (CD-R's) provide optimum durability, integrity, and system compatibility. While TDK Data Cartridges ensure dependable operation, longevity and maximum data protection for your mass data storage requirements.

Intellectual property is an idea we take very seriously. So when you think un-common data storage, think TDK—to save, retrieve and distribute your property with absolute confidence. For more information, call 1-800-835-8273, x203.

Before you write. Think TDK.

CIRCLE 90 ON READER SERVICE CARD



RASTEROPS PAINTBOARD 24-BIT DISPLAY SOLUTIONS MAKE QUITE AN IMPRESSION.



No matter how well you've mastered technique, the wrong display can obscure the subtleties.

That's why RasterOps makes display solutions for every style and budget.



Degas undoubtedly would've been impressed with the 20T Multiscan Color Display for picture-perfect accuracy, paired with the PaintBoard Professional™ and RasterOps DSPro™, a Photoshop™ accelerator daughtercard. On the other hand, Mondrian might have found the RasterOps 20/20 Multimode Color Display and PaintBoard Lightning™ accelerated graphics card a perfect fit for his straight lines and sparse color.

Both would be able to choose from the same 16.7 million color palette. And the competitive price means neither has to be a starving artist.

Portrait of an industry leader

The first company to deliver Macintosh® 24-bit color is a world leader in workstation-performance color. We're in our fourth generation of QuickDraw™ acceleration technology—achieving performance increases of up to 4400%. Check the chart below, and you'll find a display solution that brings lifelike—and fast—color to your desktop.



The PaintBoard™ line offers single-slot photorealistic 24-bit big-canvas color, multiple resolutions and reliable acceleration for every graphic artist's needs.

There's an impressive display at a dealer near you. To find out where, call **1-800-SAY-COLOR**.

		PAINTBOARD 24-BIT COLOR GRAPHIC ACCELERATOR CARDS			
		PROFESSIONAL \$2,199*	TURBO XL \$1,399	TURBO \$1,199	LIGHTNING \$999
RASTEROPS COLOR DISPLAYS	RasterOps 21" Color (1152 x 870) • \$2,749	■	■		
	RasterOps 20T Trinitron Multiscan Color (1024 x 768) • \$2,859	■	■	■	■
	RasterOps 20/20 Multimode Color (1024 x 768) • \$1,859		■	■	■
	RasterOps Sweet 16 Color (832 x 624) • \$1,099		■	■	■

■ High-end color design solutions ■ Cost-effective high-performance ■ Most affordable 24-bit color solutions

RASTEROPS®

2500 Walsh Avenue • Santa Clara, California 95051

©1994 RasterOps Corporation. All rights reserved.
DSPro, PaintBoard Professional, Turbo, Turbo XL and Lightning are trademarks of RasterOps and all trademarks and tradenames are property of their respective owners.
*MSRP. Prices do not include RasterOps DSPro card. All prices are US suggested retail.

CIRCLE 63 ON READER SERVICE CARD



CrossTalk's QuickPads contain buttons that trigger keystroke sequences or run scripts.

Script Language (CASL). The powerful CASL is aimed at expert users, but even experienced White Knight and MicroPhone scripters may find that CASL presents a fairly steep learning curve. With CASL, systems professionals can create custom scripts for corporate users that filter text, transfer files, control cursor movements, present input dialog boxes, and more.

Unfortunately, the only way to create custom scripts is with CASL's text-editing window. CrossTalk lacks the graphical script-building environment provided by rivals White Knight, MicroPhone, and Smartcom.

For those who are not up to mastering a scripting language, CrossTalk provides a Learn facility, which records your keystrokes and creates scripts automatically. The Learn facility works well for the most frequently used wait-and-reply scripts.

You can easily exchange CrossTalk sessions, QuickPads, and scripts with the Windows version of the program. Only those items associated with filenames conventions require modification. Of course, icons and graphics don't transfer between the two versions.

Apple-events aficionados will welcome CrossTalk's support for the four basic Apple-events commands (Open, Save, Print, Quit) as well as for DoScript commands. The latter let you control CrossTalk with macro and scripting programs such as AppleScript, Frontier, and QuickKeys as well as with other applications.

CrossTalk 2.0 has no major flaws, but it does lack several features and suffers from some minor inconveniences. The most frustrating omission is automatic text wrap in uploaded and pasted text. As you're composing messages off-line, you must enter a carriage return at the end of each line. In addition, because DCA has mapped the Page Up, Page Down, Home, and End keys for specific functions, you can't use those keys to navigate session windows. And the session window lacks a Search command.

We also encountered several minor bugs. You can't search for a specific topic in on-line

help while you're working on-line — all of your search strings end up in the session window. Another bug in the QuickPad Editor limits the background color to white for all text objects.

Last, a default setting makes resizing the session window an adventure. Hint: You must first deselect the Autosize Font option in the Terminal Settings dialog box. According to the company, these bugs will be corrected in an update to the program that may be available by the time this review appears.

Fortunately, the excellent quality of DCA's technical support helps offset these imperfections. The company provides a direct tech-support phone line, and you can reach DCA through the DCA BBS or CompuServe.

As an industrial-strength telecommunications environment, CrossTalk comes with a rather prodigious appetite for RAM and disk space. It requires System 7 and a Mac equipped with at least 4 megabytes of RAM (we recommend more). Depending on the installation options you choose, you'll need 2 to 5 megabytes of disk space.

The Bottom Line

CrossTalk for Macintosh is a welcome addition to the Mac's family of telecommunications programs. Chock-full of sophisticated tools to warm the hearts of experts, it also comes with a slew of prescribed session files to help inexperienced users connect to most popular communication services. If DCA can smooth the rough edges of the initial release, CrossTalk may well find itself the leader of the pack. / Tom Petaccia

CrossTalk for Macintosh 2.0

Rating: ★★★★★

List Price: \$195.

Pros: Comprehensive selection of emulators and file-transfer protocols. Powerful scripting language.

Cons: No text wrap. Minor bugs.

Company: Digital Communications Associates, Inc., Alpharetta, GA; 800-348-3221 or 404-442-4000.

Reader Service: Circle #410.

A great deal!

There are thousands more in our free catalog.



\$224.

Get connected then surf the Net with FREE WorldLink.

The SupraFAXModem V.32bis MacPac features 14,400 bps data and fax communications with up to 57,600 bps throughput using V.42bis data compression. This modem automatically negotiates the fastest connection, and sending a fax is as easy as printing. You can even delay transmission until times when long-distance rates are lower. The Silent Answer feature detects if an incoming call is fax or voice, and handles it appropriately. And it includes cables, FaxMania, and WorldLink, FREE. FaxMania is a collection of fun fax cover sheets, and WorldLink gives you access to the Internet with one month of FREE service. You won't find a better way to get your Mac Internet ready. (#8112)



Previously known as
Mac's Place

Same great service, '3 overnight delivery, and even lower prices. Call for our FREE catalog.

Call 1-800-897-9009

Fax 1-800-881-3090 • AOL "Outfitters"

CIRCLE 167 ON READER SERVICE CARD

Without *training*, thousands of dollars already spent on computers and software is needlessly wasted.



"...just one short-cut on your Word video saved me 20 minutes of set-up time, not to mention frustration..."

Harland Anderson - Computer Consultant

\$3,800 Wasted Without TRAINING!



"As a result of your videos my Mac is running lean and mean..."

J. J. Johnson - San Jose, CA

\$1,800 Wasted Without TRAINING!

"A company having a difficult business year is often the one that needs to train the most, because they're clearly in a competitive situation where it's even more important to elevate the skills of their people... We find the **BEST RETURN ON ANY INVESTMENT COMES FROM TRAINING**...your rewards go for the lifetime of the employee rather than just for the lifetime of the equipment." Tom Peters

Excellent Low Cost Training Solution

MacAcademy training videos are simple, low cost, easy-to-use and extremely effective. New users to the Mac or to a Macintosh program can master a program by watching t.v.! Each technique is described in detail with the user *seeing* each step on a Macintosh screen.

Award Winning Excellence in Training

MACWORLD Magazine readers voted MacAcademy the World Class Award for training giving MacAcademy more than twice as many votes as any other training product or company.

Guaranteed Results

Each MacAcademy Training Video carries an iron clad, money-back guarantee. If, within 30 days, you are not totally satisfied with every video you purchase from MacAcademy you may receive a full refund...no questions asked!

MacAcademy Videos Work

MacAcademy training videos have helped over 100,000 people learn new Macintosh skills. By using the videos new users can cut their learning curve by up to 75%.

To Order

To order with a credit card call 800-527-1914 Dept. MU594. Purchase orders, checks, and credit card orders may be mailed to the address listed below. Please add \$3 plus \$1 per video shipping and handling. FAX number is 904-677-6717, International 904-677-1918.

MacAcademy®

477 S. Nova Rd.

Ormond Beach, FL 32174

CIRCLE 83 ON READER SERVICE CARD

Acius 4th Dimension (1)
Acius 4th Dimension (2)
Acius 4th Dimension (3)
Acius 4th Dimension (4)
Adobe Illustrator 3.2 (1)
Adobe Illustrator 3.2 (2)
Adobe Illustrator 3.2 (3)
Adobe Photoshop (1)
Adobe Photoshop (2)
Adobe Photoshop (3)
Adobe Photoshop (4)
Aldus Freehand (1)
Aldus Freehand (2)
Aldus Freehand (3)
Aldus Freehand (4)
Aldus PageMaker (1)
Aldus PageMaker (2)
Aldus PageMaker (3)
Aldus PageMaker (4)
Aldus Persuasion (1)
Aldus Persuasion (2)
Aldus SuperPaint (1)
Aldus SuperPaint (2)
Aldus SuperPaint (3)
Claris FileMaker Pro (1)
Claris FileMaker Pro (2)
Claris FileMaker Pro (3)
Claris FileMaker Pro (4)
Claris HyperCard (1)
Claris HyperCard (2)
Claris HyperCard (3)
Claris MacDraw Pro (1)
Claris MacDraw Pro (2)
Claris MacProject II (1)
Claris MacProject II (2)
Claris MacProject II (3)
Claris MacWrite II (1)
Claris MacWrite II (2)
ClarisWorks (1)
ClarisWorks (2)
ClarisWorks (3)
ClarisWorks (4)
Deneba Canvas (1)
Deneba Canvas (2)
Deneba Canvas (3)
Intuit Quicken (1)
Intuit Quicken (2)
Learning Macintosh (1)
Learning Macintosh (2)
Learning Macintosh (3)
Microsoft Excel (1)
Microsoft Excel (2)
Microsoft Excel (3)
Microsoft Excel (4)
Microsoft Excel (5)
Microsoft PowerPoint (1)
Microsoft Word (1)
Microsoft Word (2)
Microsoft Word (3)
Microsoft Word (4)
Microsoft Works (1)
Microsoft Works (2)
Microsoft Works (3)
Microsoft Works (4)
QuarkXPress (1)
QuarkXPress (2)
QuarkXPress (3)
Using PowerBooks (1)
Using PowerBooks (2)
WordPerfect (1)
WordPerfect (2)

\$49/ea.

MacAcademy Training Videos

\$49/ea.

CheckWriter Pro 6.0 / Friendly

personal finance

YOU DON'T HAVE TO BE A CPA to use CheckWriter Pro 6.0, from Aatrix. Recently beefed up with investment features that bring it closer to its main competitor, Intuit's Quicken, CheckWriter Pro also features a notably novice-friendly attitude.

Taking Stock. With its newly added investment features (brought over from Aatrix's Hi! Finance), CheckWriter Pro goes further than Quicken in some ways. It lets you monitor changing stock quotes and can automatically download quotes from on-line services.

The Buddy System. CheckWriter Pro offers an informal, friendly approach geared to novices. Its manual avoids accounting terms in favor of basic, concise explanations (three pages to explain check-register balancing, for example, versus Quicken's ten). Reminders of impending bills are another friendly feature, as is the program's exceptional variety of tools for budgeting tasks such as planning for college costs, calculating a loan, and buying insurance. CheckWriter Pro also makes it



easy to quickly format output for personal checks. It took us only 15 minutes to create a template from scratch that worked perfectly with bank checks from a personal checkbook.

Business Bonuses. For small businesses, CheckWriter Pro offers such features as a simple but complete inventory system and a way to produce invoices. The latter even lets you attach a sound, a PICT file, or a QuickTime movie as part of an inventory item's description.

Less Than Perfect. CheckWriter Pro has its weaknesses. Its interface, revamped greatly in version 5.0, still isn't as efficient as Quicken's — many functions are in separate windows, requiring lots of mouse clicks. The lack of a charting function is a notable minus as well.

Still, although CheckWriter Pro lacks Quicken's efficient interface and snazzy charts, the program's novice-friendly approach, economical check printing, and unique billing and inventory features may make it the right financial program for you. / **Thom Holmes**

CheckWriter Pro 6.0 ★★★★★ / List Price: \$79. Company: Aatrix Software, Inc., Grand Forks, ND; 800-426-0854 or 701-746-6801. Reader Service: Circle #411.

SimCity 2000 / More fun than original Sim

IN A MOVE BOTH NOSTALGIC and forward-thinking, Maxis has released SimCity 2000, a spectacular revision of its first simulation game, SimCity. As before, your job as mayor is to lay out zones for industry, commerce, and residence; fling down roads and rail; supply a bit of power; tax the poor citizen schmoe; and hope your city grows and prospers as the simulation runs its course. But Maxis has added new challenges — and more visual entertainment.

Urban Renewal. First, the interface is no longer a flat, overhead view of your domain. Cityscapes are presented in 3-D, at a 45-degree angle. The structures are also more varied. For example, commercial high-rises are no longer just boxlike structures labeled "C"; they can be anything from Cassidy's red-brick toy store to the baby-blue corporate headquarters of KSIM. Along with these visual enhancements, you'll find a terrain editor (including controls for adjusting altitude); preset scenarios to be completed by a certain time; subway and water systems; libraries, zoos, and prisons; on-screen advisors; the ability to issue bonds; and many savory rewards for the successful mayor.

Tough New Challenges. With these new features comes more complexity. The road-versus-rail decision, for instance, now includes the thorny issue of location. If train and subway stations aren't conveniently placed, your citizens may boycott the system. Or take the library issue. Without enough public libraries, the Sim citizens will dumb down — and then the intellectual pool of your city won't be deep enough to attract high-tech industries.

Aside from one small but irritating omission — there's no Undo command, so you may pay big bucks to replace a mistakenly bulldozed structure — SimCity 2000 should delight Sim veterans and newcomers alike. It's Simply too much fun. / **Christopher Breen**

SimCity 2000 1.0 ★★★★★ / List Price: \$69.95. Company: Maxis, Orinda, CA; 510-254-9700. Reader Service: Circle #412.



Thinkin' Things / Brain-building games

CHILDREN MAY NOT THINK THE WORDS *thinking* and *fun* have much to do with each other — until they discover Thinkin' Things, from Edmark. The six learning activities in this program give 4-to-8-year-olds a head start with memory, critical thinking, problem solving, and creativity. They are also way more fun than you'd expect.

Frolicsome Logic. In Oranga Banga, a friendly orangutan with a drum set helps children develop auditory and visual discrimination and memory. Frizzle Shop asks children to help a series of comical customers select specific Frizzles according to such attributes as curly hair and purple stripes; in the process, players learn to recognize AND, OR, and NOT (Boolean logic) relationships. Feathered Friends asks children to create birds with the right characteristics to complete a series. In Toony Loon, children improvise or match musical patterns on some very unusual xylophones to increase memory and musical skills.

Each of these four activities has a Create mode as well as a more directed Question & Answer mode, in which the program adjusts the difficulty of the questions automatically. (An adult section lets you set the initial difficulty level.) Used with Edmark's KidDesk, the program can track levels for more than one child at a time.

Better Than Lava Lamps. Two more activities, Flying Spheres and Flying Shapes, help children develop spatial awareness as they select shapes and set them into motion — creating colorful, sound-enhanced kinetic art. Our student testers liked these activities best of all, and even adults find them hard to resist.

Thinkin' Things epitomizes our definition of the ideal toy: While promoting thinking skills, it entertains the child in all of us. / **Doug and Denise Green**

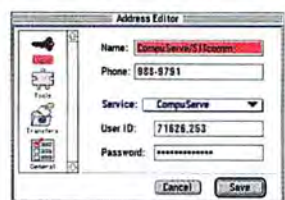


Thinkin' Things 1.0 ★★★★★ / List Price: \$59.95; school version, \$69.95 (includes lesson plans). Company: Edmark Corp., Redmond, WA; 206-556-8484. Reader Service: Circle #413.

SITcomm / End telecommunications frustration

ALADDIN SYSTEMS HAS BROUGHT a breath of fresh air to telecommunications software, with SITcomm. SITcomm gently nudges novice modem users into the mainstream with an extremely well written manual and a simple user interface while providing powerful features that stay out of the way until they're needed.

Click 'n' Connect. SITcomm's main window, which displays incoming and outgoing communications, has a handy floating tool bar with buttons for every major function in the program — including the useful address book. The address book lets you store all the information you need for smooth connection to remote computers and your favorite on-line services and BBSs. If you want to change any of this information on the fly, you can do so directly from the tool bar. The tool bar also lets you access a notepad for general notes as well as one for each address-book entry.



information you need for smooth connection to remote computers and your favorite on-line services and BBSs. If you want to change any of this information on the fly, you can do so directly from the tool bar. The tool bar also lets you access a notepad for general notes as well as one for each address-book entry.

SITcomm handles compression well. You can stuff or unstuff files within the program, which itself needs only 500K of RAM and 600K of disk space (roughly half of what its main competitors require).

Cool Tools. Modem setup is another area that SITcomm aims to simplify. SITcomm's enhancement of version 1.5 of Apple's new Modem Tool (the software that lets you use your modem to make remote connections) adds support for the most-popular modems — so you

don't need to enter arcane setup-string information. The company has even provided a cabling diagram for each supported modem. Plus, Aladdin's versions of the other standard telecommunications tools — terminal emulators, the text tool, and so on — are more powerful, easier to use, and less memory-consuming than Apple's.

Power-User Perks. When you need power, SITcomm obliges. A long list of translators for various compression schemes and file formats from other platforms makes it virtually impossible to send or receive a document that can't be opened. SITcomm also accommodates scripting: It includes a run-time version of UserLand's Frontier, plus some sample macros and suggestions for AppleScript users. You can use either AppleScript or Frontier to make SITcomm react to prompts from other software and learn and automate complicated and repetitive tasks.

Reliance on external scripting software is SITcomm's only real drawback. Competitors Smartcom and MicroPhone can learn and automate user actions on their own — but their capabilities are also more limited than SITcomm's (at least until Smartcom II, version 4 comes out). And because SITcomm knows the sign-on routines for a comprehensive list of popular BBSs and information services, it doesn't need to watch your actions to develop sign-on scripts.

Finally, the program is solid and dependable. So if you've been waiting for a truly easy telecommunications program that doesn't sacrifice power, sit down with SITcomm. / Ken Gruberman

SITcomm 1.0 ★★★★★ / List Price: \$120. Company: Aladdin Systems, Watsonville, CA; 408-761-6200. Reader Service: Circle #414

GET READY TO EXPLODE, SHATTER AND ATOMIZE



Now you can create sizzling Hollywood-style movies on your Mac. The exclusive special effects Explode, Shatter and Atomize are only part of Strata StudioPro's incredible power. It offers fully integrated advanced spline-based modeling, award-winning rendering technology, and a sophisticated Event-Based Animation System; putting StudioPro in a class by itself. Along with these powerful features, StudioPro's graphical interface and dialogues are easy to use, making it a breeze to create stunning 3-D designs and animation's. If you're looking for professional 3-D tools you've found them in StudioPro. Call now to order StudioPro.



1-800-869-6855

Strata, Inc. • 2 West St. George Blvd., Suite 2100 • St. George, Utah 84770 • (801) 628-5218

STRATA

CIRCLE 45 ON READER SERVICE CARD



One of these is a color proof and one is output from our new printer. We forgot which is which.

We paid \$70 and waited three days for one of these. The other popped out of our new Tektronix Phaser™ 480 in minutes. Pull out your loupe and start guessing. And while you're down there staring, note our output's phenomenal color. PANTONE®-approved, it's perfect for matching those tricky product colors, logos and skin tones. You might also notice the full 11" x 17" print area. Yes, Virginia, there are tabloid-sized full bleeds. And it shares easily: the Phaser 480 is a work group printer for Macs,

PCs or workstations. Plus, it boasts a powerful RISC processor and true Adobe® PostScript™ Level 2. Spread-sized bleeds? Reprint quality comps? Pre-film proofing right at your desk? Welcome to preproduction heaven. So head down to your nearest Tektronix dealer to see for yourself. And by the way, our guess is that the one on the bottom is our print. Well, then again ...



Tektronix

For a free print sample or dealer location call 800/835-6100, Dept. 32A.

Phaser is trademark of Tektronix, Inc. All other marks are trademarks or registered trademarks of their respective companies.

BUYING OUR
NEW SCANNER IS LIKE
TRAVELING FIRST CLASS ON
AN ECONOMY TICKET.

AGFA INTRODUCES STUDIOSCAN.[™]
SO MUCH SCANNER FOR
SO LITTLE MONEY.

It used to be that unless you had a lot of money to spend, a scanner was simply out of the picture. But now there's Agfa StudioScan, the new feature-rich scanner that's wonderfully affordable.

StudioScan offers the speed and efficiency of one-pass scanning for both black-and-white and color images. Its flatbed design accommodates sizes up to 8.5" x 14", and an

optional transparency module scans 35mm slides up to 8" x 10".

What's more, StudioScan comes with a complete software package, including Agfa's proven labor-saving FotoLook,[™] FotoTune LE,[™] FotoSnap[™] programs, and Adobe PhotoShop LE. Compatible with both Macintosh and PC systems, StudioScan actually guides an entry-level user through the entire scanning process.

To find out more about StudioScan's high-quality imaging for your layouts, in-house publications, illustrated reports, and more, call 1-800-685-4271 today. And discover the Agfa scanner that offers first-class features at an economy price.

AGFA 
The complete picture.

Agfa and the Agfa-rhombus are registered trademarks of Agfa-Gevaert AG, Germany. StudioScan, FotoLook, FotoSnap, and FotoTune LE are trademarks of Agfa-Gevaert N.V., Belgium. Adobe and Adobe PhotoShop LE are trademarks of Adobe, Inc. Macintosh is a registered trademark of Apple Computer, Inc.

CIRCLE 52 ON READER SERVICE CARD

CDU (Connectix Desktop Utilities)

/ Productivity, protection, and power savings

FOLLOWING ON THE SUCCESS OF CPU, its PowerBook-utility collection, Connectix has unveiled the \$99 CDU (Connectix Desktop Utilities). Accessible from a pull-down menu on the menu bar, CDU's modules perform basic keyboard-automation, desktop-enhancement, security, power-saving, and file-syncing tasks.

Keyboard Shortcuts. CDU's five keyboard-automation modules are like a "lite" version of CE Software's QuickKeys. The Hot Keys module lets you define key combinations that open files or applications or type a sequence of characters. App Manager, Balloon Help, and Extended Keys provide keyboard shortcuts for cycling through open applications, turning Balloon Help on and off, and performing function-key actions from a nonextended keyboard. Keyboard Power is the most novel module: It lets you navigate menus and dialog boxes by using keyboard controls. We found these controls useful, but a conflict with Now Software's NowMenus kept them from working correctly until we made sure CDU loaded last during startup.

You can also use keyboard controls to navigate CDU's own menu, which provides quick ways to set sound levels and the monitor's bit depth and toggle System 7 file sharing on and off. Unfortunately, this menu lacks toggles for network or remote-access settings.

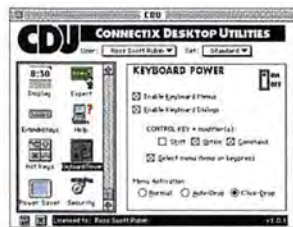
Desktop Enhancement. CDU provides three desktop-enhancement modules. The Desktop module lets you dress up your desktop with pictures or predesigned color schemes (none of which wowed us). The Cursors module lets you enlarge the I-beam and easily locate the

arrow pointer. The Display module is more useful: It lets you configure CDU's menu-bar clock to show the time, the date, disk activity, or how much space is available on your hard disk.

CPU Legacies. The other CDU modules address mobile-user concerns that apply to some desktop-computer users too. The Security module presents a password dialog box at startup that can foil casual snoopers. Power Saver can reduce your Mac's electricity use by dimming the monitor or turning the machine off after a preset idle period. Easy Sync helps you synchronize files between your Mac's hard disk and other disks. And Sets and Users lets you create different CDU settings for different users or different situations, such as home and office (in case you lug your desktop Mac between the two?).

To us, some of CDU's features seem geared more to mobile users than to deskbound ones. Also, much of what the collection does is addressed as well or better by shareware or other, more specialized utilities packages. Still, CDU provides a satisfying taste of keyboard automation, desktop enhancement, security, and file synchronization in one package. It can serve as a useful companion for novice users on a budget. / Ross Scott Rubin

CDU (Connectix Desktop Utilities) 1.0.1 ★★ / List Price: \$99. Company: Connectix, San Mateo, CA; 800-950-5880 or 415-571-5100. Reader Service: Circle #415.



Equipped with a modem and SITcomm, you can smoothly communicate across town or around the world.

SITcomm doesn't require you to be an expert at communications. Unlike other modem software, SITcomm already knows how to connect to all major online services, so you can get started right away without scripting.

And only SITcomm can automatically expand and compress files, saving you significant time and phone charges. Do more with your modem. Drive with SITcomm.

Call your favorite mail order outlet or visit your local SITcomm dealer today.

SITCOMM
From the makers of StuffIt Deluxe



**GET MORE MILEAGE OUT OF YOUR MODEM WITH
AUTOMATIC TRANSMISSION.**

© 1993 Aladdin Systems, Inc. (408) 761-6200, (408) 761-6206 fax.

CIRCLE 55 ON READER SERVICE CARD

"All he left me was this guitar, a hound dog, and a broken heart."

Why is it that some software companies remind you of country music? Is it because their love lies elsewhere?

Not so at WordPerfect®. New WordPerfect 3.0 says we're completely faithful to the Macintosh® platform. In fact, when Apple® introduced the Power Macintosh, we were there—running native. That "Windows™ company" wasn't.

We're also committed to new features. Macintosh features. Like customizable button bars that put your most-used commands right in front of you. And new ruler bars that let you do everything from change layouts and styles, to create tables at the click of a mouse. They even give you direct access to our sophisticated drawing tools and grammar checker.



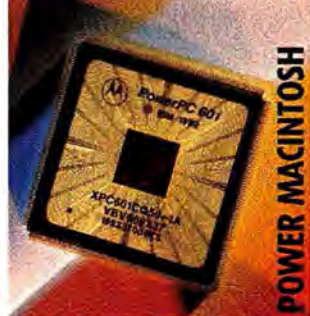
We were first to support QuickTime. First with AppleScript, WorldScript, PowerTalk. And now the Power Macintosh. Are you sensing a theme here?

Now you can express yourself for just \$99*. Why such a bargain? Because we love the Mac. And we'd never leave it. Besides, our pickup truck is busted.

\$99* (800) 526-2296
Competitive Upgrade. Visit your local reseller or call us.

WordPerfect®
macintosh®





The Power Macs are cheap, fast, and versatile — and best of all, they're still Macs. You'll want one, but should you buy one now?

POWER MACS:

Full Speed Ahead

APPLE'S FINALLY PLAYING HARDBALL. It's fed up — fed up with users defecting to Microsoft Windows on inexpensive PCs, fed up with the popular press raving over Intel's Pentium chip, fed up with settling for second place in the personal-computer race. With the introduction of the Power Macintosh line, Apple's fighting back — hard.

And now it has all the right moves.

Apple's Power Macs deserve their name. Thanks to the muscular PowerPC 601 RISC microprocessor — the first in a line of new chips from the Apple/IBM/

MacUser Labs

Motorola alliance — a Power Mac's speed can be two to five times that of Apple's previous top-of-the-line Mac, the Quadra 840AV.

And to protect your past investments, all three Power Macs — the 6100/60, the 7100/66, and the 8100/80 — can run your current software and can work seamlessly with existing hard drives, printers, scanners, and other peripherals.

In a direct challenge to the makers of cheap but fast PCs and PC clones, Apple no longer charges a premium for top performance. For around \$2,000, you can take home a Power Mac 6100/60 and a mouse, a keyboard, and a 14-inch color monitor. Even the high-end 8100/80 is aggressively priced, costing about \$4,000 in its basic configuration, with no monitor or keyboard — that's about the price you'd pay for a Quadra 800 with 8 megabytes of RAM and a 1-gigabyte hard drive.

**By Henry Bortman, Cheryl England,
and Stephan Somogyi**



And finally, Apple is admitting that some people want — or at least *need* — to use Windows. SoftWindows, a new program from Insignia Solutions, lets you run Windows software on the Power Macs at speeds rivaling those of a 486SX PC — fast enough to satisfy most business users. The Power Macs' all-in-one combination of high speed, low price, and the ability to run both Mac and Windows operating systems may lure users — and particularly corporate users — into the Macintosh fold.

Sounds good, but if you feel a bit like you did on your first date — excited, expectant, but a little skeptical — we don't blame you. Apple's Power Macs have hit the streets (or really, dealers' shelves) full of promises that seem too good to be true. To find out whether Apple has really delivered the goods, MacUser Labs tested near-final versions of all three Power Macs. Here's our in-depth report.

Family Resemblances

Although the Power Macs represent a new generation of the Macintosh, much about them will be familiar to you. They're the culmination of much that was technologically good in previous Macs along with the single biggest technical advance in Apple's history — the PowerPC chip.

First, the Power Mac 6100/60, 7100/66, and 8100/80 have the same industrial designs as the Mac Quadra 610, 650, and 800, respectively. Second, as with many previous Macs, Apple is offering complete logic-board upgrades for owners of older Macs based on these three designs. And, as we went to press, Apple announced its intention to provide Power Mac upgrades for the Quadra 605 and several LC and Performa all-in-one models; these upgrades won't be

available until next year, however. (For the full story on currently available upgrade options, see "Upgrades: From Mac to Power Mac," in this issue.)

The Power Macs also come standard with many features that were optional on older Macs or available only on the most expensive models. For instance, for about \$300 extra, you can purchase any of the Power Macs with an AV card that supports video in a window and full-motion video-in and -out. (The AV card does not include an expensive DSP chip, as do the Quadra 660AV and the Quadra 840AV; instead, the PowerPC chip handles DSP-type functions such as speech recognition.)

And, no matter which Power Mac configuration you buy, you get at least 8 megabytes of RAM — Apple's way of admitting that you and your Mac can't function efficiently with less. A new version of system software (System 7.1.2) is bundled with AppleScript, PC Exchange, PlainTalk text-to-speech software, and new versions of QuickTime and PlainTalk speech-recognition software that have been converted to take advantage of the PowerPC chip. There's also support for software-based fax-modem telecommunications.

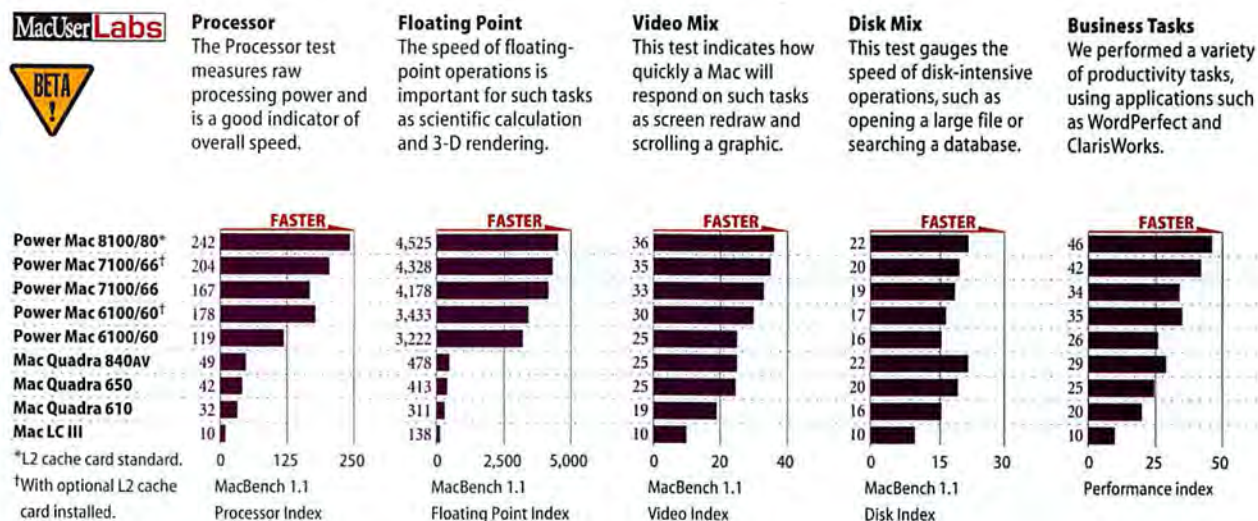
Some ideas that were conceptually clever but poorly implemented in older Macs — internal video, for example — have been successfully reworked for the Power Macs. The IIfx was the first Mac that could drive a monitor without requiring additional hardware, but to do so, it used system memory (RAM) instead of specialized video memory (VRAM). This scheme helped reduce the cost of the IIfx but drew criticism when users discovered noticeable performance degradation when a monitor was plugged in to the IIfx's video port instead of in to one on a NuBus video card. Although the Power Macs'

figure 1

The Power of Power Macintosh

Not just another Mac. Speed is one of the main differences between Power Macs and 680x0 Macs. Our MacBench 1.1 suite of subsystem-level benchmark tests showed that Power Macs have the raw processing potential, especially for floating-point operations, to outperform

Quadrads several times over. We also performed more than a dozen common real-life tasks, using prerelease versions of native applications on the Power Macs and shipping applications on the 680x0 Macs. Even though we used early prerelease software, the Power Macs



video is also RAM-based, smarter hardware helps provide out-of-the-box video speed better than that of any previous Mac.

Pure, Raw Speed

The single biggest promise of the PowerPC 601 chip — and of the Power Macs that use it — is an improvement in performance that's more significant than any previous step in the Mac's evolution. Indeed, how well these Macs sell will be based largely on how well they deliver on this promise, not only compared to older Macs but also compared to PCs based on Intel chips (see figure 5).

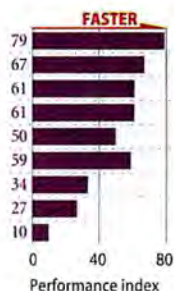
So, how fast are the Power Macs? Very fast. Usually.

The main reason the Power Macs are so fast is a PowerPC chip running at 60 megahertz in the 6100/60, 66 megahertz in the 7100/66, and 80 megahertz in the 8100/80 (caught on to the naming scheme yet?) Also, the logic boards have been designed for ultimate efficiency when moving bits of data around — and the pathway for moving those bits has doubled in width, from 32 to 64 bits (see figure 3). To squeeze out every last drop of performance, the 8100/80 includes a 256K SRAM (static RAM) cache card, which acts as a holding bin for frequently used data. The card is a \$299 option for 6100/60 and 7100/66 owners — \$299 that our tests show is money well spent.

showed their muscle. You can expect native applications running on these machines to be significantly faster by the time the applications ship. In our application-based tests, all scores are referenced to those of an LC III with an optional FPU, which are assigned a score of 10.

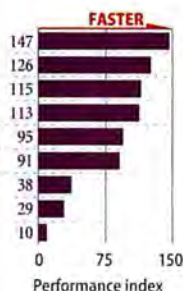
Publishing Tasks

To perform a variety of publishing tasks, we used FreeHand, PageMaker, and Photoshop.



Rendering Tasks

We used Infini-D, Painter, and VideoFusion for performing our suite of rendering tasks.



Before deciding to use the PowerPC 601, Apple built a handful of motherboards that used other RISC microprocessors — including one that used the Motorola 88100 RISC chip. This chip was used to develop an early forerunner of the 680x0 emulator now embedded in the ROMs of the Power Macs.

To find out just how fast Power Mac hardware is, we ran MacBench 1.1, our benchmark application, on each of the Power Macs. MacBench tests four basic subsystems — the processor, floating-point unit, disk, and video. (You can download a free copy of MacBench 1.1 from the MacUser Forum on ZiffNet/Mac, our on-line service. See page 4 for information on how to access ZiffNet/Mac.)

In the Processor test, the Power Macs clearly showed their muscle. Even the least powerful Power Mac, the 6100/60, ran more than twice as fast as Apple's high-end Quadra 840AV (see figure 1). The Power Macs' speed in our Floating Point test was even more impressive. For floating-point-math operations — used heavily in video-effects-processing and rendering applications, for example — the 6100/60 was more than six and a half times as fast as the Quadra 840AV. And the 8100/80 was a whopping nine and a half times as fast as the 840AV.

For video-intensive tasks, such as scrolling through graphics or drawing shapes, MacBench results showed the fastest Power Mac to be 50 percent faster than an 840AV. Disk operations showed less impressive improvements, because Apple has not yet converted its disk drivers and SCSI Manager to take full advantage of the PowerPC chip. Thus, the Power Macs' speed for disk-intensive operations was about the same as that of the Quadras.

Lightning-Fast Apps

So far, so good. But will all of your applications running on a Power Mac be two to nine times as fast as on a Quadra? That depends.

For you to see a speed increase in Microsoft Word, for example, Microsoft must convert Word to run in native mode on a Power Mac — that is, applications need to be reworked into a form that takes full advantage of the PowerPC chip.

Applications that haven't been reworked to run in native mode can work on a Power Mac, but they will run in the Power Mac's emulation mode, which is slower than native mode — much slower, in many cases. In emulation mode, software — called an *emulator* — in the Power Mac's ROM translates 680x0 instructions into the

PowerPC chip's language — applications written for 680x0 Macs think they're running on a 680x0 chip. However, just as with a human translator, things slow down in the process.

We found that updated applications running in native mode on the Power Macs were much more responsive and interactive than 680x0 versions running on 680x0 Macs. Launching applications takes a fraction of the time it does on Quadras, and opening large documents is also much quicker. Menus pop down almost instantaneously when you click on them. You spend less time waiting for dialog boxes to appear. And — artists and designers particularly will appreciate this — when you drag graphic images around on-screen, some applications let you see smooth motion of the entire image, not just an outline, in real time. Also, when you paint with a large brush in Photoshop or Painter, a Power Mac keeps up with you, even if you make long, rapid strokes.

We tested more than a dozen prerelease versions of native applications to find out if our initial enthusiasm would survive stopwatches and objective assessments. Note the word *prerelease* — these applications were still works in progress at the time of our testing and had not yet been optimized for speed. But in spite of their not-ready-for-shrink-wrap status, we found that most of the prerelease native applications acquitted themselves handsomely (see figure 1). On the low-end Power Mac, the 6100/60, prerelease native applications performing a series of business-oriented tasks ran about as fast as fully optimized 680x0 applications on a Quadra 650 — and a full two and a half times as fast as on an LC III.

For a group of publishing tasks, the overall results were better. For

example, a high-end Power Mac 8100/80 running unoptimized, prerelease native applications was more than 30 percent faster than a Quadra 840AV running applications optimized for the 680x0. The only exceptions were on tasks for which the Quadra 840AV used its DSP chip — for example, on a Photoshop Gaussian blur, the Quadra 840AV ran at the same speed as the 8100/80.

Number-crunching, rendering applications let the Power Macs really shine: The 6100/60 edged out the Quadra 840AV, and the 8100/80 was 60 percent faster than the Quadra 840AV and almost four times as fast as the Quadra 650.

The developers of the prerelease native software we used for our testing hope to increase speeds by as much as two times before they ship the products. We normally take a skeptical attitude toward this type of claim, but in this case, we think they've got a chance: Not only does the Power Macs' raw horsepower make such an increase achievable but also the developers, if they don't succeed in optimizing their applications, run a real risk of being overshadowed by competitors who do.

Old and In the Way

Although the future of native applications looks promising, 680x0 applications running under emulation on the Power Macs aren't as snappy. Your old software runs fine, but it can't keep up with native software. Depending on the task, 680x0 applications running under emulation on a Power Mac are anywhere from as fast as on an LC III to considerably faster than on a Quadra 650 (see figure 2).

There's also one caveat when it comes to the promise that your old

figure 2

A Solid Showing / applications running under emulation perform admirably

You can run your current 680x0 software on a Power Mac but not at rocket-ship speeds. Worst case, Power Macs run software written for 680x0 Macs under emulation at speeds equal to those on an LC III.

Other programs' speeds equal those on a fast 68040 Mac. Granted, you aren't buying a Power Mac to run applications at 68040 speeds, but as more applications are reworked for the PowerPC and as Apple updates

MacUser Labs



Processor

The Processor test measures raw processing power and is a good indicator of a machine's overall speed.

Floating Point

The speed of floating-point operations is important for such tasks as scientific calculation and 3-D rendering.

Video Mix

This test indicates how quickly a Mac will respond when performing such tasks as screen redraw and scrolling a graphic.

Disk Mix

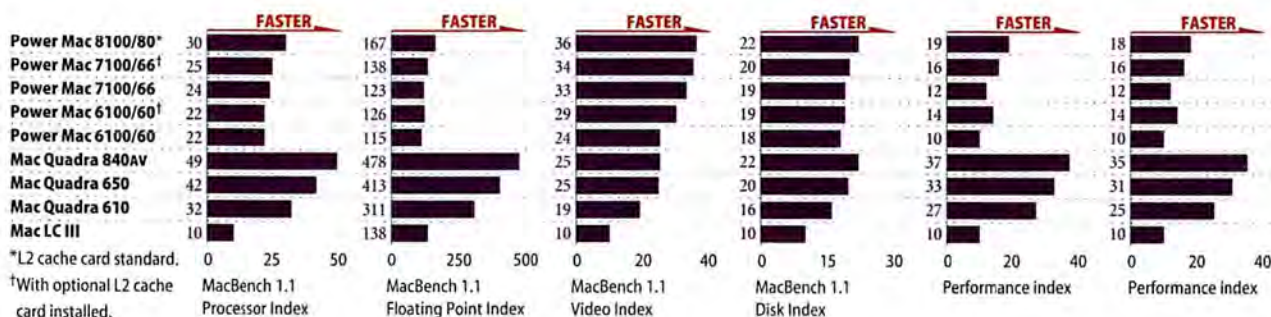
This test gauges the speed of disk-intensive operations, such as opening a large file or searching a database.

Word

Even on the 8100/80, Microsoft Word performed poorly under emulation in this search-and-replace test.

Excel

We ran a macro that recalculated a business spreadsheet multiple times. This test does not use an FPU.



Opening Up to DOS

IF YOU NEED TO LIVE IN A WINDOWS WORLD but you've always wanted a Mac, then Apple's got good news. A Power Mac with SoftWindows, Windows emulation software from Insignia Solutions, may let you have your Mac and Windows too. Just as the power of RISC enables the Power Macs to run current 680x0 Mac programs at speeds rivaling those on a Quadra 650, it also enables SoftWindows to run most DOS and Windows software at thoroughly acceptable Intel 486SX speeds. (See this month's Mac to PC for results of speed tests and a discussion of compatibility issues.)

Like Insignia's SoftPC, SoftWindows lets you use your Mac's mouse, hard disk, and display and run DOS and Windows applications just the way they run on a PC. You can cut and paste between Windows and Mac applications, and you can use your Mac's floppy and CD-ROM drives to read PC disks and CD-ROMs. You can also access PC as well as Mac networks from within SoftWindows.

You need at least 16 megabytes of RAM to run SoftWindows (that's why Apple bundles SoftWindows only with 16-megabyte Power Mac configurations). That may sound like a lot (and it is), but that memory has to support some hefty software. With 16 megabytes of RAM, a Power Mac can run the Mac operating system, the Finder, SoftWindows, DOS, Windows, a couple of business-oriented Windows applications, and a small Mac application. Having 16 megabytes of memory under Windows is a lot like having 8 megabytes with the Mac operating system. You can run standard business applications comfortably, but you need more memory to run large applications, such as those for managing databases.



The best of both worlds. Thanks to Insignia Solutions' SoftWindows software and Power Mac speed, living in both the Mac and the Windows worlds is finally practical.

Running DOS and Windows on a Mac is not new; it's just more practical on a Power Mac. For some years now, you've had the option of equipping your Mac with Orange Micro's OrangePC, a speedy 486SX coprocessor card, but at almost the cost of a PC. For just a few hundred dollars, you were able to run Insignia's SoftPC software, but you paid in very slow Windows speed. With SoftWindows installed on a Power Mac, you get the speed of lower-end 486SX hardware for the cost of a piece of software.

SoftWindows comes installed on several configurations of the Power Macs (see figure 6 for pricing and configurations). Alternatively, you can buy SoftWindows directly from Insignia Solutions (415-694-7600); pricing was unavailable at press time. / John Rizzo

more of its system software, your Power Mac will perform even faster. In our application-based tests, all scores are referenced to those of an LC III with an optional FPU, which are assigned a score of 10.

FileMaker Pro
Using FileMaker Pro, we sorted a large database. This is a common task and can be very time-consuming.

Persuasion
We drew thumbnails of a large presentation. This task relies on QuickDraw, which runs native on Power Macs.

QuarkXPress
In this global-font-change test, QuarkXPress performed at speeds close to those on high-end Quadas.



software will run under emulation on a Power Mac: Some applications — most 3-D modelers and renderers, for example — require a floating-point unit (FPU), either the FPU within a 68040 or a separate 68882 FPU coprocessor, for 68020 and 68030 Macs. Such applications first check for the presence of an FPU; if they don't find one, they politely tell you that, no, they don't feel like working today — which is what they do on a IIx or an LC III that doesn't have an optional FPU installed. Such applications can't run in emulation mode on a Power Mac, because the Power Mac's emulator mimics the operations of a 68LC040 chip — a version of the 68040 processor that lacks an FPU.

Apple engineers opted to emulate the FPU-less 68LC040 in order to reduce the complexity of the emulator — and in order to meet the Power Macs' planned release date. To be fair, applications that perform floating-point operations are prime candidates to be reworked to take advantage of the PowerPC's astoundingly fast floating-point unit — the 8100/80, for example, is more than 32 times as fast as an LC III that has an optional 68882 FPU installed when performing floating-point operations.

Despite the lack of FPU emulation, Apple's rock-solid emulator is to be applauded. MacUser Labs tested dozens of applications, control panels, and extensions, secretly suspecting that Apple's claims of near-total compatibility were a bit overblown, but we found that with a very few exceptions (most of which were server products), Apple's emulator works.

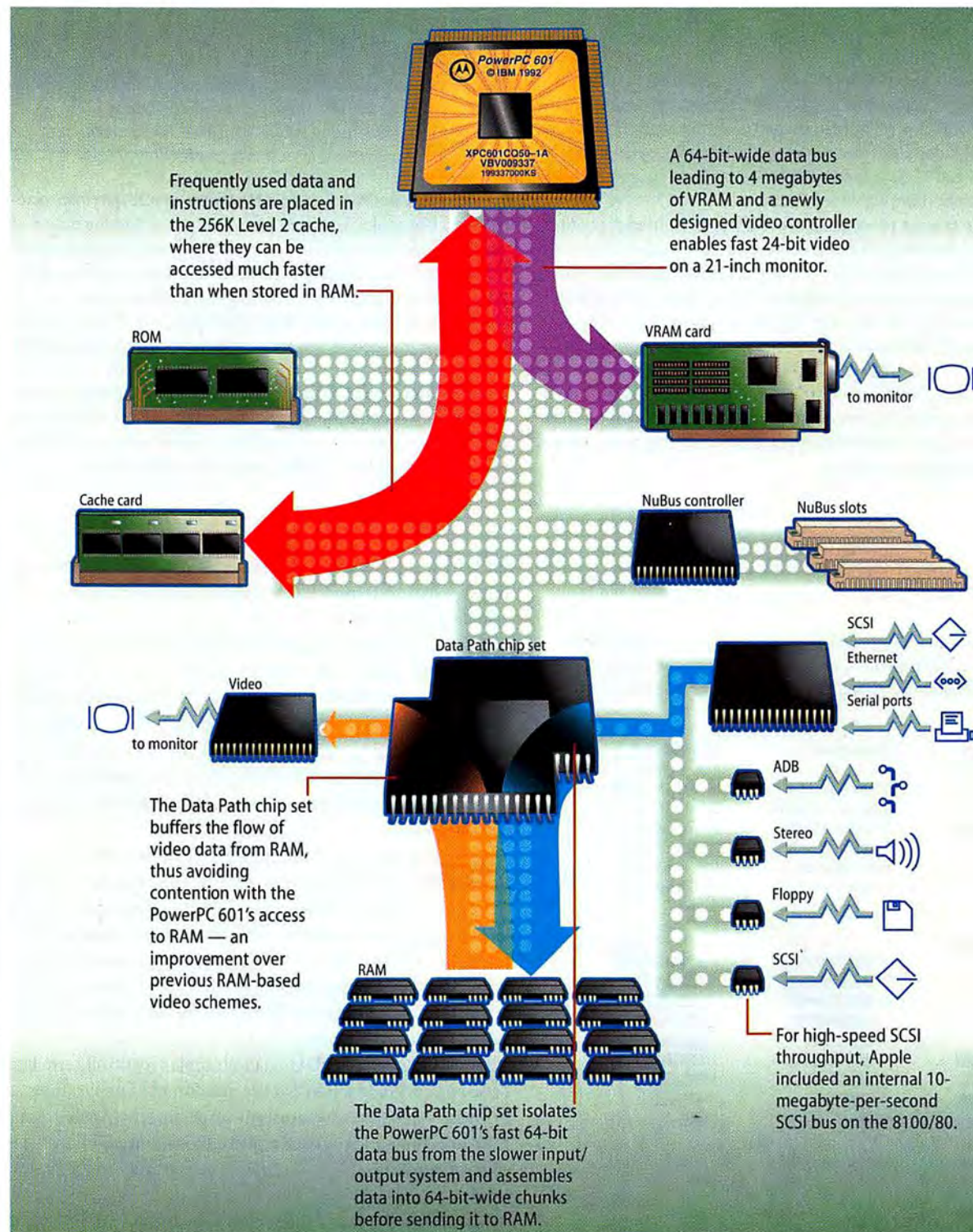
Also, Apple has made sure 680x0 applications run in emulation mode on the Power Macs at speeds that are, if not always impressive,

figure 3

Built for Speed / why the Power Macs are fast

The Power Mac 8100/80 is the fastest Mac ever — and the 6100/60 and 7100/66 aren't far behind. The key features (shown here in the full 8100/80 implementation) all contribute to the Power Macs' speed. But of the dozen new chips common to all three Power Macs, the Data Path chip set wins the best-supporting-actor award. This pair of chips takes

the load off the PowerPC 601 chip for many simple but time-consuming tasks. By using a process called DMA (direct memory access), the Data Path chip set allows fast data transfer to and from RAM, thus helping the PowerPC 601 concentrate on what it does best — crunching numbers and processing data. / Rik Myslewski



at least acceptable to most users. Much of that speed is because Apple has converted the most-performance-critical portions of the operating system to run in native mode. Because they had neither the time nor the resources to convert the whole of System 7 in one fell swoop, Apple engineers invoked the 90/10 rule (10 percent of the operating system is executed 90 percent of the time) and converted the parts that applications use most often. One example is QuickDraw, the part of the system software that handles graphics operations: Any operations that use on-screen graphics run at native PowerPC speeds — even if the applications that use QuickDraw operations are running under emulation.

Apple's marketing department is fond of mentioning that Power Macs will get faster over time (which happens to be true, so we're repeating it). They'll get faster not because you'll upgrade your Power Mac with faster hardware but because each time you install a native application in place of one written for the 680x0, you'll see a huge jump in speed. Also, as Apple converts more parts of the Mac's operating system to run in native mode, all operations that use those parts will immediately run faster.

Many vendors claim that their applications will be available in native versions within 30 days after the Power Macs first ship (see "Software: The Power and the Promise," in this issue). Others won't have native versions for several months. Microsoft Word and Excel, for example — the two most popular applications for the Mac and two of the poorest performers in our emulation tests — won't be available in native versions until this summer. If you spend a lot of time using applications that won't have native versions soon and if you are already using a powerful Centris (remember it?) or Quadra, you may find your productivity temporarily *decreasing* if you use these applications on a Power Mac.

More Than Fast

If, however, you're currently using an older Mac (or — gasp! — a PC), there are plenty of reasons to spring for a Power Mac, even if the applications you rely on haven't yet "gone native." The Power Macs pack a lot of features that can be costly to add to an older system — for example, all Power Macs come with Ethernet as well as LocalTalk ports; built-in support for 8-bit gray scale or 16-bit color on a 14-inch monitor; and two high-speed serial GeoPorts, which, with the addition of a \$130 GeoPort Telecomm adapter and its accompanying software, provides a software-based V.32bis modem with fax capabilities. You also get a full 16-bit-stereo sound system with audio quality that rivals that Bang & Olufsen rig you've had your eye on.

Apple offers the Power Macs in a variety of configurations (see figure 6). Some options include

- An AV card that supports video in a window and full-motion video-input and -output.
- Preinstalled SoftWindows software, from Insignia Solutions, that lets you run DOS and Windows programs at 486SX-processor speeds (see the "Opening Up to DOS" sidebar).
- A built-in dual-speed CD-ROM drive in a new top-loading design that eliminates the need for annoying caddies.
- Hard-disk drives with capacities from 160 megabytes to 1 gigabyte.

If you purchase a 6100/60 or 7100/66 and are more concerned about performance than budget, we recommend that you add a *level*

2 (or L2) cache card — the 8100/80 already includes Apple's 256K SRAM L2 cache card — which will dramatically boost your Power Mac's speed. In some of our tests, the 6100/60 with Apple's cache card installed outran a stock 7100/66. Third-party L2 cache cards are already being announced: Mobius plans to ship the Speedster Cache, a \$299 256K L2 cache card, soon after the release of the Power Macs. You'll also start to see slightly more expensive 512K and 1-megabyte L2 cache cards that promise even greater speed boosts.

Apple's use of a cache card to increase speed is not a new ploy. When the IIci was first introduced, its cache card was available as an option. It wasn't until much later that Apple began including the card with every IIci — and that cache card wasn't nearly as effective as the 256K SRAM L2 cache card for the Power Macs. Hopefully, Apple will include the cache card in Power Macs later down the road when costs allow it to do so without raising the price of the machines.

Making a Choice

Once you've decided to purchase a Power Mac, how do you know which one you'll need? The bad news is that making that choice is a bit harder than balancing price and performance (which can be a difficult job in itself). The good news is that if you move through your options logically, you can make a solid choice.

First, you need to figure out what type of video support you require. All three Power Macs have a monitor port to which you can attach a 12-, 13-, 14-, or 16-inch monitor. Using built-in video is inexpensive (you don't need to buy a separate card to run the monitor), efficient, and simple.

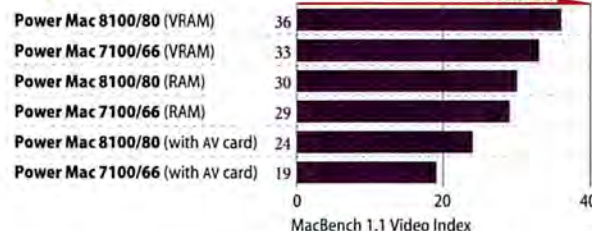
But if you opt to use this port, you should be aware of its limitations. First, an attached monitor uses 600K of your Power Mac's main memory. More important, the number of colors you can see on-screen is limited: thousands of colors on a 13- or 14-inch monitor and a mere 256 colors on a 16-inch monitor.

figure 4

Power Mac / built-in-video speed

For the best video speed, use a VRAM card. The speed of the Power Macs' built-in video varies greatly, depending on which flavor you use. In all cases, the VRAM card (available only on the 7100/66 and the 8100/80) was the fastest in our tests. The runner-up was the Power Macs' built-in RAM-based video. And watch out if you choose an AV configuration: The AV card's video speed was the slowest of the lot.

MacUser Labs



Most people in the business world can get by just fine with a 14-inch monitor that displays thousands of colors. Some of them will gladly give up a few of those thousands to have a larger screen. After all, how many colors does Excel need?

If the Power Macs' built-in video is sufficient for you, then you're a likely candidate for the lowest-cost machine, the 6100/60. If you need a larger display and more colors or if you require full-motion-video capability, then consider purchasing the 6100/60 with the AV card — at about \$300 more, it's a reasonably priced option. Like the Quadra 660AV and 840AV, the AV configuration of the 6100/60 offers NTSC, PAL, and SECAM video-in; video in a resizable window; frame and video capture; and NTSC and PAL video-out. The physical interface for video-in/out is S-video, although Apple includes an adapter for composite video.

Plus — and here's where the larger-monitor/more-colors part comes in — the AV card also contains 2 megabytes of VRAM, which gives you millions of colors on a 16-inch or smaller monitor and thousands of colors on a 19- or 21-inch monitor. The AV card installs

in the 6100/60's only expansion slot, so if you go the AV route, you can't add any other cards. But with built-in Ethernet, video capture, 16-bit sound, large-screen-monitor support, and all the other Power Mac features, you may not need to add other cards to your system, ever. Be forewarned, however: If you want an AV-configured Power Mac, you have to buy it that way — Apple doesn't plan to offer AV cards as stand-alone options. Also, the AV cards exact a video-speed penalty — their video isn't as snappy as the 6100/60's RAM video.

Your only other option for upgrading a 6100/60's video is to purchase a \$99 Power Macintosh 6100/60 NuBus adapter card. Plug it in to the 6100/60's PDS, and you have a 7-inch NuBus slot into which you can add a third-party video card.

Two on One

So, as you can see, you can run two monitors simultaneously from the 6100/60 — one from the built-in RAM video and one from an AV card or a third-party video card. The picture gets even better with the 7100/66 and the 8100/80: Straight out of the box, each can run

figure 5

The Pentium Challenge

Welcome to the face-off of the year: Power Macs versus Pentium PCs. Apple's aggressive pricing structure assures that Power Macs can compete successfully with Pentium PCs in the features-per-dollar category. Now, we're waiting to find out whether Apple's PowerPC Macs can outrun machines based on Intel's fastest chips, the Pentium and the 486DX2.

The early returns are in, and it looks like the Power Macs will win. We tested two Intel systems, one a 60-megahertz DEC DECpc XL 560 Pentium system and the other a Dell 466/MXV, which has a 486DX2/66 processor. These systems were running fully optimized, shipping applications under the Windows 3.1 operating system. On the Power

Mac side, we tested all three models plus a 6100/60 and a 7100/66 each with an L2 cache card installed. (A cache card is standard on the DECpc XL 560 and the Dell 466/MXV.) These systems were running a prerelease version of System 7.1.2 for the PowerPC and prerelease versions of native applications. All scores are referenced to those of an LC III with an optional FPU, which are assigned a score of 10.

Despite the Power Macs' handicap in running unoptimized, pre-release code, they still outran the Dell 466/MXV when performing typical business, publishing, and rendering tasks. Even better, except for the stock 6100/60, the Power Macs also outran the DEC Pentium system in most tests. / Henry Bortman

MacUser Labs



Business Tasks

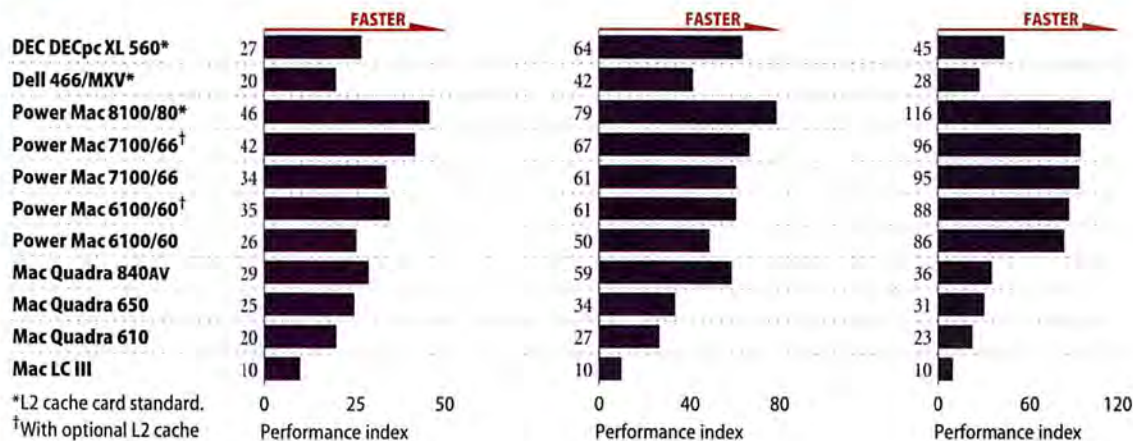
We performed a variety of standard productivity tasks, using applications such as WordPerfect and ClarisWorks.

Publishing Tasks

To perform a variety of publishing tasks, we used FreeHand, PageMaker, and Photoshop.

Painter

To test the rendering speed of the various machines, we applied lighting to an image in Painter.



two monitors. As with the 6100/60, you can drive one monitor with the machine's built-in RAM video, but in addition, the standard 7100/66 and 8100/80 each have a PDS slot that contains a high-speed VRAM card; the same slot is used in the AV configurations of the 7100/66 and the 8100/80 to house the AV card. Either the VRAM card or the AV card can drive a second monitor.

Again, however, you need to choose wisely. You can either buy your Power Mac with an AV card, which provides all the video capabilities described above, or you can get a Power Mac with a VRAM card that has 1 megabyte of VRAM standard for the 7100/66 (expandable to 2 megabytes) or 2 megabytes of VRAM standard for the 8100/80 (expandable to 4 megabytes). But you can't get a Power Mac with both an AV card and a VRAM card — the 7100/66 and 8100/80 each have only one PDS slot — and you can't change your mind after you've made your decision, because Apple is not selling the two cards separately as stand-alone options. You do have other expansion options, though: The 7100/66 and the 8100/80 each have three NuBus slots, which you can use for adding a high-performance NuBus video card. However, you'll see a speed increase only if the video card's driver software has been updated to work with the Power Macs (see "Upgrades: From Mac to Power Mac").

The 7100/66 is a bargain choice for users who don't require the ultimate in performance. If you opt for a 7100/66 with an AV card, for example, you'll have a powerful and versatile multimedia workstation. You get nearly the same video support as with the 8100/80 (the only difference is that with a fully loaded VRAM card on the 7100/66, you get thousands of colors, not millions, on a 19- or 21-inch monitor), and you also get the video-in/out features of the AV card. What you lose is the top-notch processing speed of the 8100/80 and the top-notch video-display speed provided by the VRAM card.

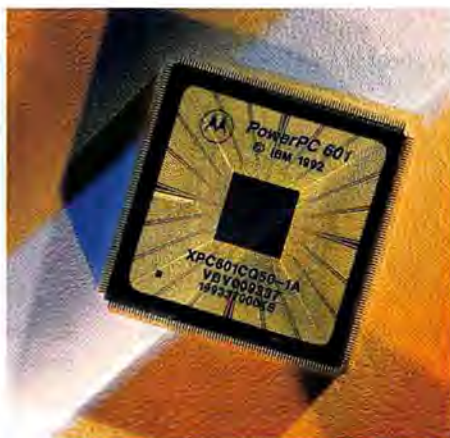
Choose an 8100/80 equipped with a VRAM card if you need the best-performing Mac of all time. The 8100/80 with a full 4-megabyte complement of VRAM installed can support 24-bit color on a 21-inch monitor — the most extensive built-in video support Apple has ever offered. And this video is fast! (See figure 4.) Only those users who have the most-demanding tasks will need to buy a third-party 24-bit accelerator card.

We've Seen the Future . . .

The writing is on the wall: The Power Macintosh is the future of Macintosh computing. The question is not whether you should switch to a Power Mac but when and how you should make the leap. The largest factor in your decision — aside from your budget, of course — is how soon the software you use will be available in native PowerPC form. (For a detailed list of software-conversion plans, see the "Moving On Up" sidebar in "Software: The Power and the Promise," in this issue.)

If you use mainly business applications and have an older Mac such as a IIci or aren't currently using a Mac at all, we recommend that you take the plunge. Buy a Power Mac. Even though some business applications such as Microsoft Word and Excel won't be reworked for Power Macs until later this year, you won't notice any decrease in speed if you run them under emulation on a Power Mac. But you *will* notice a dramatic speed increase when you start switching to upgraded applications.

If you work with graphics, desktop publishing, or multimedia,



THE WRITING IS ON THE WALL:

The Power Macintosh is the future of Macintosh computing. If a critical mass of native applications is released in the next few months, the Power Macs will launch Apple toward the 21st century.

you're a prime candidate for purchasing a Power Mac. These new powerhouses provide the level of performance you've been aching to have for years. First, however, find out when your necessary applications will be available in native form — for instance, multimedia publishers should note that Macromedia Director won't be available for the PowerPC until later this year. Director users might want to wait a while before buying in to the new technology.

What about Quadras, LCs, Performas, Classics, Centrises, SEs, IIs, or SE/30s? Should anyone buy one? We still think there's a market for these Macs. If you're on a tight budget, as many home users and students are, now's the time to look for good bargains on used Macs or buy a brand-new LC or Performa for about half the price of the lowest-cost Power Mac and upgrade it later. In fact, we recommend that before you buy any Mac — new or used — you check out your PowerPC-upgrade options (see "Upgrades: From Mac to Power Mac").

. . . And It Works


The Power Macs' engineering — a powerful microprocessor, a motherboard that keeps it humming, brisk video performance, and an emulator that's rock solid — is elegant and effective. The Power Macs are fast and feature-rich and are built to keep prices down and reliability high. But as solid as these new machines are, Apple is still taking a chance.

With the introduction of the Power Macintosh line, Apple breaks with its past and faces a future that is not completely of its own making. Apple is relying on developers to write native software for the PowerPC microprocessor at the heart of the Power Macs. It's relying on us to purchase Power Macs and then to buy upgraded software that takes full advantage of the power of the PowerPC 601 chip — for although the emulation software is a fine piece of

work, it's merely an interim step, a form of investment insurance.

If a critical mass of native applications is released in the next few months and if users are willing to pay the power those applications will give them, then the Power Macs will launch Apple toward the 21st century. If not — well, that's the gamble.

We believe that it's worth the risk, that the personal-computer revolution is about giving the greatest power to the greatest number

of people at the lowest possible price. The Power Macintosh line will accelerate this revolution. 

Henry Bortman is *MacUser's* technical director. Cheryl England is a *MacUser* senior editor. Stephan Somogyi is *MacUser's* technology editor and the author of *The PowerPC Macintosh Book*, to be published soon by Addison-Wesley.

figure 6

Mix-'n'-Match Power Macs



Power Mac 6100/60



Power Mac 7100/66



Power Mac 8100/80

Sorting out your options when you purchase a Power Mac can be downright confusing. If you want a SoftWindows bundle, for instance, you get 16 megabytes of RAM but no option for a built-in CD-ROM drive. If you get an AV configuration, you automatically get a CD-ROM drive but you don't get SoftWindows bundled.

The video options are more confusing. If you use the RAM-video port, you get 16-bit color on a 14-inch monitor or 8-bit color on a 16-inch monitor. With 1 megabyte of VRAM, you get 24-bit color on a

14-inch monitor, 16-bit color on a 16-inch monitor, or 8-bit color on a 19- or 21-inch monitor. With 2 megabytes of VRAM, you get 24-bit color on a 16-inch or smaller monitor or 16-bit color on a 19- or 21-inch monitor. With 4 megabytes of VRAM, you get 24-bit color on any monitor. All video configurations support 8-bit gray scale.

Use our chart to figure out what options you can get and how much you can expect to pay. (The prices shown here reflect final Apple prices as we went to press.)

	Installed RAM	Max. RAM expansion	Installed VRAM	Max. VRAM expansion	Hard-drive capacity	No. of NuBus slots	CD-ROM drive	SoftWindows	Price
Power Mac 6100/60	8 MB	72 MB	NA	NA	160 MB	0 [†]			\$1,819
	8 MB	72 MB	NA	NA	160 MB	0 [†]	●		\$
	8 MB	72 MB	NA	NA	250 MB	0 [†]	●		\$2,289
	16 MB	72 MB	NA	NA	250 MB	0 [†]		●	\$2,519
AV configuration	8 MB	72 MB	2 MB	2 MB	250 MB	0	●		\$2,599
	16 MB	72 MB	2 MB	2 MB	250 MB	0	●		\$
Power Mac 7100/66*	8 MB	136 MB	1 MB	2 MB	250 MB	3			\$2,899
	8 MB	136 MB	1 MB	2 MB	250 MB	3	●		\$3,179
	16 MB	136 MB	1 MB	2 MB	250 MB	3		●	\$3,379
AV configuration	8 MB	136 MB	2 MB	2 MB	500 MB	3	●		\$3,989
	16 MB	136 MB	2 MB	2 MB	250 MB	3	●		\$
	16 MB	136 MB	2 MB	2 MB	500 MB	3	●		\$
Power Mac 8100/80*	8 MB	264 MB	2 MB	4 MB	250 MB	3			\$4,249
	8 MB	264 MB	2 MB	4 MB	250 MB	3	●		\$4,519
	16 MB	264 MB	2 MB	4 MB	1,000 MB	3	●		\$6,159
	16 MB	264 MB	2 MB	4 MB	500 MB	3		●	\$5,309
AV configuration	16 MB	264 MB	2 MB	2 MB	500 MB	3	●		\$5,659

*Non-AV configurations include a VRAM card.

[†]With an optional \$99 adapter, the 6100/60 can support one 7-inch NuBus card.

[‡]At press time, Apple decided not to offer this configuration.

We're proud of our drive.

**SPECIAL
OFFER!**



HOT!
700MB
TSUNAMI DRIVE
\$699

The drive to satisfy.

At La Cie customer satisfaction is the driving force behind everything we do. From our innovative product design to our capable, courteous customer support, La Cie goes the extra mile to assure you quality, service and value.

La Cie award winning chassis.

The sleek and portable Tsunami drive is the only Macintosh storage product to win an Industrial Design award. Its quality construction is made to last. Its small footprint and portable design requires very little of your precious desktop space and makes it easy to transport data. Our switchable active termination provides maximum data reliability and allows you to easily terminate the SCSI chain with the flip of a switch.

Quantum power under the hood.

We're a Quantum company, makers of the most popular 3.5" drive in the world. We are the ONLY supplier that engineers the drive mechanism and delivers the storage solution directly to you. When you call La Cie, you're calling a Quantum company, with all the service, support and security that only a Fortune 500 company can offer. We'll be there for you when you need us.

Ready for a drive.

Our drives come ready to plug and play, with a No Risk 30-Day Money Back Guarantee and lots of free extras. So don't let the quest for the right mass storage solution drive you wild. Call us. Our friendly, qualified staff will gladly help you select the perfect device to suit your needs and budget.

LACIE
LIMITED
A QUANTUM COMPANY

To order or for more information, call toll-free
800-999-1455
Mon.-Fri. 5 a.m.-7 p.m. & Sat. 8 a.m.-noon PST
International 503-520-9000 Fax 503-520-9100 (24 hrs.)
UK 0800-89-3025 Australia 0014-800-123-007
VISA, MasterCard, C.O.D. and approved purchase orders accepted.*

We're proud of our size.



As low as
\$239



La Cie PocketDrive

When size really counts.

As a Quantum Company, La Cie offers customers the advantages only a Fortune 500 company can offer. State-of-the-art technology. Superior value. And, the assurance of long-term support. We'll be there for you when you need us.

Desktop docking.

With La Cie's PocketDrive, you can enjoy the convenience of our exclusive T-connector or PocketDock, the desktop accessories that make connecting and disconnecting your PocketDrive a snap. La Cie's PocketDrive comes with our unique T-connector which allows you to snap it to almost any Mac. Our optional PocketDock gives you quick, instant desktop connectivity. Our "T" and dock have built-in active on/off SCSI termination, SCSI ID and a pass through SCSI connector, so you can leave them in your SCSI chain, even when your PocketDrive is on the go.

Portability in the palm of your hand.

Pack it in your pocket, purse or briefcase. At just under 10oz. and storage up to 340MB, La Cie's PocketDrive is an easy and convenient way to transport data. For power, speed and portability, this little performer will take you far. Call us now and order the complete PocketDrive system.

"I'm now taking the safer course of buying from corporate-owned companies such as Quantum-backed La Cie..."

MacWeek

Quantum 2.5" Drives

Size	LaserWriter 630	PowerBook Internal	PocketDrive
40MB			\$239
85MB	\$199	\$199	\$299
160MB	\$249	\$249	\$349
170MB	\$259	\$259	\$359
256MB	\$349	\$349	\$449
340MB	\$599	\$599	\$699

PocketDrives, less than 10 oz. 340MB mechanism made by Toshiba.

*Call for details on terms, conditions, limited money back guarantee (shipping not included), warranty and free offers. Comparisons may not apply to all vendor products, check specifications. ZFP+ Drives do not have switchable termination. Prices do not include shipping and only apply to products shipped within the continental United States. International customers must pay for all shipping charges. Add sales tax where applicable. ZFP, ZFP+, Tsunami, PocketDrive, PocketDock, Silverscanner, Silverscan, Silverlining, La Cie and the La Cie logo are trademarks of La Cie, Ltd., a Quantum Company. FORTUNE 500 is a registered trademark of the Time Inc. Magazine Company. All other trademarks are the property of their respective companies. All prices, specifications, terms, warranties, descriptions, products and services herein are subject to change without notice or recourse. © Copyright 1994 La Cie, Ltd. 8700 SW Creekside Place, Beaverton, OR 97005. Phone: (503) 520-9000, Fax: (503) 520-9100. All rights reserved. Printed in U.S.A.

We're proud of our image.



Agfa Arcus (Factory default settings)



HP Scanjet IIc (Factory default settings)



La Cie Silverscanner II (Factory default settings)

Image is everything.

We believe quality is a priority. Our image as a company that produces quality products is well known. We're so confident in the quality of our scanner image that we are willing to compare it to other scanners right here. Compare for yourself.

Great color the first time.

The single-pass Silverscanner II gives you clean, bright scans with excellent detail in those hard-to-get areas and don't require difficult adjustment like other scanners. This can mean substantial time savings when every second counts.

Lay it on the line.

When it comes to line art, the Silverscanner II really shines! At 1600 dpi you get what amounts to an *electronic stat*.



La Cie Silverscanner II
1600 dpi at 100%

Silverscanner II

All Silverscanners come with our powerful Silverscan software, Color It! image editing software and Read-It O.C.R. Pro.

Basic Bundle	\$1599
Basic Bundle Plus Cachet	\$1899
Bundle Plus Cachet & ColorStudio	\$1999
Bundle Plus Photoshop	\$1999
Optional Transparency Attachment	\$999
Optional Sheet Feeder Attachment	\$699

Software to die for!

We're proud of our image when it comes to quality software, too. La Cie has always had a reputation for powerful, well-written software. La Cie's exclusive plug-in modules have been hailed by MacWeek as "Top-of-the-line... close to the ideal of push-button scanning." Enjoy features like fast dynamic color previews, independent color/brightness controls, nine scan modes, savable scan settings, color dropout, magnified previews, proof scans, up to 400% scaling in 1% steps, and up to 1600 dpi in 1 dpi steps—all in one pass. And with new advanced features like a densitometer, white and black limit, color histogram and auto image adjustment, Silverscanner II is unsurpassed. Easy for the beginner, yet plenty of power for the advanced user. Improve your image, order one today.

"...(Silverscanner) can deliver color performance that surpasses anything else in the less-than-\$2,000 price range, including the popular ScanJet IIc from Hewlett-Packard Co." *MacWeek, May 1993*

La Cie Silverscanner II
\$1599



LACIE
LIMITED
A QUANTUM COMPANY

To order or for more information, call toll-free
800-999-1455
Mon.-Fri. 5 a.m.-7 p.m. & Sat. 8 a.m.-noon PST
International 503-520-9000 Fax 503-520-9100 (24 hrs.)
UK 0800-89-3025 Australia 0014-800-123-007
VISA, MasterCard, C.O.D. and approved purchase orders accepted.*

We're proud



170MB Tsunami

\$259



The sleek and portable Tsunami™ drive from La Cie, a Quantum company is made to last. Switchable active termination and our award-winning Silverlining hard disk management software is standard.

La Cie PocketDrive™

As low as

\$239



La Cie's Famous PocketDrive

Pack it in your pocket, purse or briefcase. At only 10oz., La Cie's PocketDrive is the ultimate in convenience and portability. Our unique PocketDock™ cable makes transporting data quickly between locations a real "snap."

**NEW! OPTIONAL
5-YEAR WARRANTY!**
ON QUANTUM DRIVES

\$19⁹⁵* FOR A LIMITED TIME ONLY

Quantum 3.5" Drives

Size	Internal	Tsunami
170MB HOT!	\$199	\$259
270MB	\$269	\$329
340MB HOT!	\$299	\$359
540MB	\$549	\$609
*700MB HOT!		\$699
1080MB	\$859	\$919
1800MB	\$1199	\$1259

*While supplies last.

Seagate Drives

Size (Formatted)	Internal	External
Barracuda 1		
1650MB	\$1979	\$2039
2000MB	\$1919	\$1979
Barracuda 2		
2050MB	\$2269	\$2329
Elite-3 (5.25")		
2750MB	\$2769	\$2919

One year warranty on Seagate drives.

Conner Drives

Size (Formatted)	Internal	External
1060MB	\$899	\$959

One year warranty on Conner drives.

Quantum 2.5" Drives

Size	LaserWriter 630	PowerBook Internal	PocketDrive
40MB			\$239
85MB	\$199	\$199	\$299
160MB	\$249	\$249	\$349
170MB	\$259	\$259	\$359
256MB	\$349	\$349	\$449
340MB	\$599	\$599	\$699

PocketDrives, less than 10 oz. 340MB mechanism made by Toshiba.

The La Cie Advantage

- FREE Silverlining™ Disk Management Software
- Unlimited TOLL-FREE Technical Support
- FREE Switchable Active Termination
- 30 Day Money Back Guarantee
- All Drives Burned In and Tested
- Ready to Plug and Play
- Double Shielded SCSI Cables
- FCC, UL, TUV, VDE & CSA Approved



Bobber's Dozen

ID Awards

*Call for details on terms, conditions, limited money back guarantee (shipping not included), warranty and free offers. Comparisons may not apply to all vendor products, check specifications. ZFP+ Drives do not have switchable termination. Prices do not include shipping and only apply to products shipped within the continental United States. International customers must pay for all shipping charges. Add sales tax where applicable. ZFP, ZFP+, Tsunami, PocketDrive, PocketDock, SilverScanner, SilverScan, Silverlining, La Cie and the La Cie logo are trademarks of La Cie, Ltd., a Quantum Company. FORTUNE 500 is a registered trademark of the Time Inc. Magazine Company. All other trademarks are the property of their respective companies. All prices, specifications, terms, warranties, descriptions, products and services herein are subject to change without notice or recourse. © Copyright 1994 La Cie, Ltd. 8700 SW Creekside Place, Beaverton, OR 97005. Phone: (503) 520-9000. Fax: (503) 520-9100. All rights reserved. Printed in U.S.A.

of our value.

All La Cie products are Power PC compatible!



CD-ROM **\$639**

Our new double speed CD-ROM drive offers fast access times, with fully integrated audio and multi-session Photo CD support. Includes Trantor's CD-ROM driver and Music Box.

CD-ROM Drives

Drive	External
Toshiba Dual Speed	\$639



3.5" Optical **\$1179**

128MB Optical Drives

Size	Internal	External
128MB	\$1119	\$1179
128MB Cartridge		\$45

Each drive comes with Silverlining™ and one free 3.5" optical cartridge.



As low as

\$1599



Silverscanner II

Silverscan II makes scanning as quick, painless and productive as possible. With features like dynamic color preview (16 sec.), magnify in preview, proof in preview, savable scan settings, up to 400% scaling in 1% steps and up to 1600 dpi in 1 dpi steps—all in one pass. It's easy for the beginner and powerful for the advanced user. And it's Macworld's Editor's Choice.

"...Fast and a pleasure to use.

...Produced high-quality printed images with good resolution, and its documentation was tops."

Macworld, November 1993

Silverscanner II

All Silverscanners come with our powerful Silverscan software, Color It! image editing software and Read-It O.C.R. Pro.

Basic Bundle	\$1599
Basic Bundle Plus Cachet	\$1899
Bundle Plus Cachet & ColorStudio	\$1999
Bundle Plus Photoshop	\$1999
Optional Transparency Attachment	\$999
Optional Sheet Feeder Attachment	\$699



FREE!
RETROSPECT 2.0™
\$249 VALUE*

5GB DAT **\$1489**



FREE!
SILVERLINING™
\$149 VALUE*

88MB **\$539**

DAT & Tape Drives

Size	Internal	External
5.0GB DAT	\$1429	\$1489
Turbo DAT	\$1569	\$1629
155MB Tape		\$569
600MB Tape	\$729	\$789

Each drive comes with Retrospect™ and one free DAT or TEAC tape cartridge.

SyQuest Drives

Size	Internal	External
44MB	\$369	\$429
88C MB	\$479	\$539
105MB	\$449	\$509
SyQuest Cartridges	44MB \$69	88MB \$99 105MB \$79

Each drive comes with Silverlining™ and one free SyQuest cartridge.

VALUABLE WARRANTIES!

La Cie offers a FREE FIVE YEAR warranty on 1080MB Quantum drives or larger and a FREE TWO YEAR warranty on Quantum drives under 1080MB. We also have an optional 5-year warranty available for drives under 1080MB. (ONLY \$19.95 FOR LIMITED TIME!)



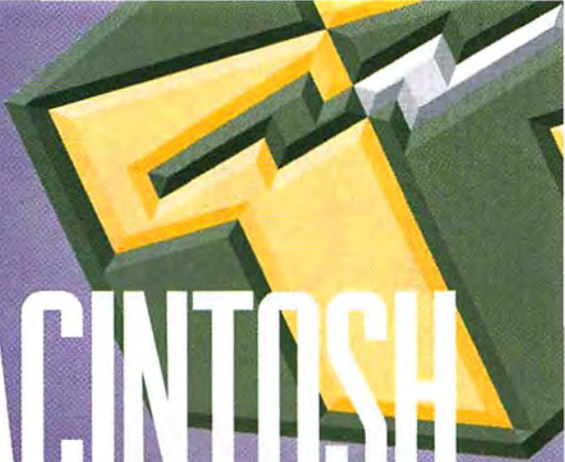
To order or for more information, call toll-free
800-999-1455

Mon.-Fri. 5 a.m.-7 p.m. & Sat. 8 a.m.-noon PST

International 503-520-9000 Fax 503-520-9100 (24 hrs.)

UK 0800-89-3025 Australia 0014-800-123-007

VISA, MasterCard, C.O.D. and approved purchase orders accepted.*



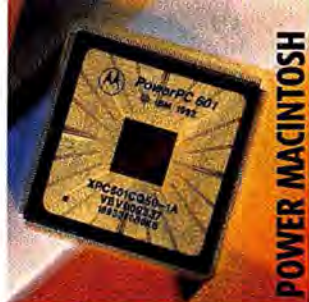
GET POWER MACINTOSH MEMORY FROM US AND WE'LL LET YOU IN ON A LITTLE TRADE SECRET.

TRADE IN YOUR MEMORY FOR BIG DISCOUNTS.

It's no secret what makes TechWorks the leader in memory products. Exceptional quality and Outrageous Customer Service. And we're bringing this same commitment to our new line of Power Macintosh memory. Now for a limited time you can trade in your old memory when you upgrade your Macintosh. So give us a call for details. And learn how this little trade secret can save you big money.

TECHWORKS 

CALL! 1-800-934-4019



You can get
PowerPC
performance
without paying
the full cost of
a Power Mac.

UPGRADES:

From Mac to Power Mac



IF YOU'VE GOT THE LUST FOR POWER

but can't afford one of Apple's new Macs, there are less expensive ways to join the PowerPC party.

Apple is aggressively encouraging current Mac owners to make the switch to PowerPC. Simultaneous with the release of the first Power Macs, Apple began shipping two types of PowerPC upgrades

MacUser Labs

— a complete logic-board upgrade and an add-on processor upgrade card. These upgrades allow most Centris and Quadra owners to move up to PowerPC performance for significantly less than the price of a new Power Mac.

Available immediately are complete logic-board upgrades for owners of Macs based on the same designs as the Power Mac 6100/60, 7100/66, and 8100/80. These Macs include the Ilvx; Ilvi; Performa 600; Centris/Quadra 610, 650, and 660AV; and Quadra 800 and 840AV. Which Power Mac model you can upgrade to depends on which model 68040 Mac you have (see figure 2).

Upgraded machines will be functionally identical to newly purchased 6100/60, 7100/66, and 8100/80 Power Macs. You even get a new plastic case that says Power Macintosh on the outside. If you own a Centris or a Quadra, you'll be able to move your current RAM to the new logic board. Any NuBus cards, as well as storage devices or other peripherals you currently own, should also still work with your upgraded Mac (6100/60 owners will need to purchase a \$99 adapter in order to use 7-inch NuBus cards).

Apple's pricing for these logic-board upgrades makes it clear that

the company wants to move them. At press time, Apple listed final prices as \$999 for a 6100/60 logic-board upgrade, \$1,499 for a 7100/66 upgrade, and \$1,899 for an 8100/80 upgrade. That's a price/performance boost that's hard to beat. For an extra \$100 to \$400, you can get any of the logic-board upgrades in an AV configuration.

Bargain Choices

If you don't own one of the aforementioned Macs — Quadra 700, 900, and 950 owners may be particularly bitter — you still have options. Apple will offer a Power Macintosh Upgrade Card for \$699. This 68040-PDS card will work in nearly every model in the Centris and Quadra lines — exceptions include the Quadra 605, LC 475, Performa 475 and 476, and AV Macs.

Unlike Apple's logic-board upgrade, the Power Macintosh Upgrade Card doesn't replace your Mac's current logic board with a new one; instead, it adds a second processor — a PowerPC 601 chip — to your current system. The speed increase you'll see when you run native applications will depend on the type of Mac you have. The PowerPC 601 processor on the upgrade card will run at double the clock speed of the 68040 processor in the Mac you're upgrading. For example, in a Centris 610, which has a 20-megahertz 68040 processor, the PowerPC 601 on the upgrade card will run at 40 megahertz.

What does this mean to you? In our tests on prerelease versions of native software, we found that, except for floating-point operations,

By Henry Bortman

the Power Macintosh Upgrade Card made a 25-megahertz Quadra 700 run at about the same speed as a stock 60-megahertz Power Mac 6100/60 (see figure 1). A 33-megahertz Quadra 950 with the upgrade card performed on a par with a stock Power Mac 7100/66 (except in the Video Mix test). Viewed another way, the Power Macintosh Upgrade Card boosted the speed of the Quadra 700 and the Quadra 950 by about 15 to 25 percent for common business tasks, by 100 percent for publishing tasks, and by nearly 200 percent for rendering tasks.

If the Power Macintosh Upgrade Card is such a good value, why spend more for a logic-board upgrade or a new Power Mac? First, the upgrade card can't be installed in all Centris and Quadra models. Second, there are some features of the Power Macs (and the logic-board upgrades) that you don't get with the upgrade card. You don't get 16-bit stereo sound input and output or an AV option or support for two monitors. And you don't get the advantage of other performance improvements built in to Power Macs' logic boards. If you can't afford a new Power Mac or if you're not ready to fully commit to PowerPC, though, getting an upgrade card is a great solution.

But is there any room left in the market for third-party PowerPC upgrades? DayStar Digital thinks so. It will offer two PowerPro 601 68040-PDS processor-upgrade cards: one running at 66 megahertz, which is expected to list at around \$1,200, and the other running at 80 megahertz, expected to list at \$1,700.

DayStar designed the PowerPro 601 cards to deliver higher performance than Apple's Power Macintosh Upgrade Card. Unlike Apple's upgrade, the PowerPC 601 processors on DayStar's cards can run at their rated speeds, regardless of which Mac you install them in. With Apple's upgrade card installed, the 25-megahertz Quadra 700 runs at 50 megahertz and rivals the Power Mac 6100/60. But with

an 80-megahertz PowerPro 601 installed, the Quadra 700 should outperform a Quadra 700 with Apple's upgrade card installed. (PowerPro 601 cards were not available in time for testing.)

The PowerPro 601 cards have an additional advantage over the Apple upgrade card. Unlike Apple's card, a PowerPro 601 has four 72-pin SIMM slots; you can install as much as 128 megabytes of RAM directly on the card. The PowerPC processor on the PowerPro 601 should gain an additional speed boost from this arrangement, because it can access this memory faster than Apple's card can access memory on the logic board. (A PowerPro 601 can also access extra memory on the logic board.)

More to Think About

Whether you're buying a new Power Mac or upgrading an older Mac, you have some extra work to do to get maximum performance out of your system. Here are some hardware issues you need to deal with:

SCSI Device Drivers. The ROMs in the Power Macs and in all types of PowerPC upgrades contain version 4.3 of SCSI Manager. If your hard drive's driver software does not directly support SCSI Manager 4.3, the drive will slow down. Dramatically. We tested more than 15 SCSI drivers and found that SCSI Manager 4.3-specific drivers were around 25 percent faster than non-4.3-specific ones.

How do you know if your drive has the right driver? Odds are, unless you're talking about an Apple internal drive on an AV Mac, it doesn't. If you have an older Apple drive, use the Apple HD SC Setup application (version 7.3) that comes with System 7.1.2 to update the driver on your disk. If you have a non-Apple drive, call your drive vendor and request software for updating your driver to make your drive perform optimally with SCSI Manager 4.3. If your drive vendor

figure 1

PowerPC Upgrades / can they keep up?

Not everyone can afford a Power Mac. Several upgrade alternatives can get you going at PowerPC speed. Overall, our tests show that a Quadra 700 and a Quadra 950 upgraded with Apple's \$699 Power Macintosh Upgrade Card were as fast as a Power Mac 6100/60 and 7100/66, respectively. In our application-based tests, all scores are referenced to those of an LC III with an optional FPU, which are assigned a score of 10.

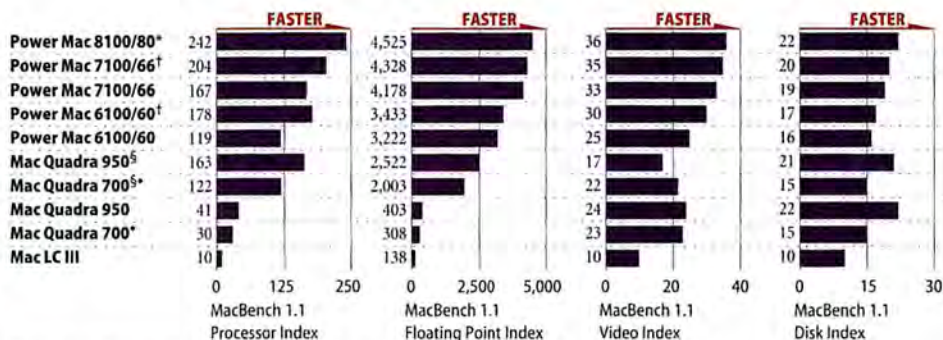


Processor
The Processor test measures raw processing power and is a good indicator of a machine's overall speed.

Floating Point
The speed of floating-point operations is important for such tasks as scientific calculation and 3-D rendering.

Video Mix
This test indicates how quickly a Mac will respond when performing such tasks as screen redraw and scrolling a graphic.

Disk Mix
This test gauges the speed of disk-intensive operations, such as opening a large file or searching a database.



*L2 cache card standard. †With optional L2 cache card installed. ‡With Power Macintosh Upgrade Card.

*Set for 8-bit video in MacBench 1.1 Video Mix test.

figure 2

Upgrade Options / for the lucky few

MacUser Labs



Finally Ilvx owners can feel vindicated. They own one of the few Macs that can currently take advantage of inexpensive upgrade options. Although only Apple and DayStar at present offer upgrades, we don't think it will be long before other vendors step in to fill the gaps.

	Apple 6100/60 Logic Board Upgrade (\$999)	Apple 7100/66 Logic Board Upgrade (\$1,499)	Apple 8100/80 Logic Board Upgrade (\$1,899)	Apple Power Macintosh Upgrade Card (\$699)	DayStar 66-MHz PowerPro 601 (\$1,200)*
Ilvx, Ilvi, Performa 600		●			
Centris/Quadra 610	●			●	
Centris/Quadra 650		●		●†	●
Centris/Quadra 660AV	●				
Quadra 700/900				●†	●
Quadra 800			●	●‡	●
Quadra 840AV			●		
Quadra 950				●‡	●

*DayStar offers an 80-MHz version of the PowerPro 601 for \$500 more.

†The PowerPC chip on the Power Macintosh Upgrade Card will run at 50 MHz on this Mac.

‡The PowerPC chip on the Power Macintosh Upgrade Card will run at 66 MHz on this Mac.

can't supply formatting software that installs a 4.3-specific driver on your hard disk, purchase third-party formatting software that can. Here are the versions to look for: La Cie's Silverlining, 5.6 or later; CharisMac's Anubis, 2.52 or later; Casa Blanca Works' Drive7, 3.0 or later; PLI's PLI Formatter, 4.1 or later; Micronet's Micronet Utility, 6.1.0 or later; and FWB's Hard Disk ToolKit, 1.5 or later.

Accelerated-Video Cards. Although Power Macs ship with built-in

video, you may want to move your current NuBus video card to the Power Mac, particularly if the card provides accelerated video. But it is *almost always a bad idea* to extract an accelerated-video card from a 680x0 Mac and plunk it into a Power Mac without upgrading the driver and, in some cases, the ROM chip on the card. If you fail to do this, your Power Mac's performance may go down the tubes.

For instance, we tested Radius' PrecisionColor Pro24X, a popular accelerated-video card, in a Quadra 840AV and in a Power Mac 8100/80. We found that an 8100/80 with the PrecisionColor Pro24X installed — without the new PowerPC-specific software — performed at only *one-seventh* the speed of the Quadra 840AV with the same card installed. With prerelease native software, however, the PrecisionColor Pro24X provided a much more respectable speed boost — the 8100/80 ran at about the same speed as the Quadra 840AV. This situation is not unique to Radius' card. E-Machines, RasterOps, and SuperMac have said that some of their cards will also need software and possibly ROM upgrades.

The moral is clear: Power Macs will give you unprecedented performance. But if you don't also upgrade the software that runs your peripherals, your new Mac won't deliver on its maximum potential.

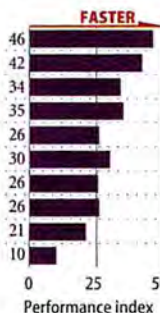
Decision Time

Perhaps your current Mac is a low-end 68040, say, a Quadra 700. You do page layout and illustrations. You want Power Mac power, but you can't afford a new machine. Your best bet may be an upgrade card. With an upgrade card, you'll be able to run native applications at top speed, but for a large job with an application that isn't yet native, you can reboot your Mac in 680x0 mode. If you own a Mac that can support a logic-board upgrade, you're in luck. For roughly half the price of a new Power Mac, you can gain the same functionality and speed. The upgrade is aggressively priced and easily puts you into the next generation of computing. ☞

Henry Bortman is MacUser's technical director.

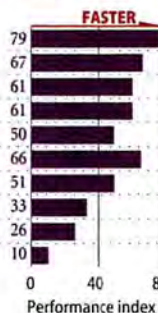
Business Tasks

We performed a variety of standard productivity tasks, using applications such as WordPerfect and ClarisWorks.



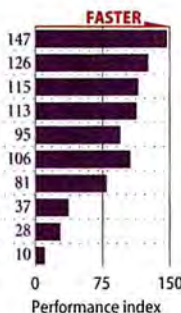
Publishing Tasks

To perform a variety of publishing tasks, such as image processing, we used FreeHand, PageMaker, and Photoshop.



Rendering Tasks

For our rendering tasks, which involved floating-point operations, we used Infini-D, Painter, and VideoFusion.





To get peak performance from your Power Mac, you'll need to upgrade your software.

SOFTWARE:

The Power and the Promise

WHEN YOU MEASURE RAW POWER, the Power Macs undoubtedly have far more than any previous Macintosh. Even the least expensive Power Mac, the 6100/60, can outperform Apple's high-end Quadra 840AV on a variety of tasks. But exactly how fast your Power Mac will run depends on the *software* you install.

The most important software on your Power Mac is System 7.1.2. System 7.1.2 differs little in appearance from System 7.1, which currently ships with 680x0 Macs. The only update to the interface that is immediately evident is a Command-M keyboard command equivalent for Make Alias. **MacUser Labs** There is one big difference between 7.1 and 7.1.2, though — 7.1.2 runs on Power Macs. (Apple doesn't recommend that 680x0 users upgrade to 7.1.2.)

Perhaps the most significant advance in System 7.1.2 is its implementation of virtual memory. Although virtual memory was best left turned off in previous versions of System 7, we recommend that you — get this — turn it *on* in System 7.1.2. With virtual memory turned on, your applications will require less RAM. To take advantage of this feature without causing your system to slow down, we recommend that you set virtual memory to 1 megabyte more than the amount of physical RAM in your Mac.

System 7.1.2 also ships with some components that were not previously bundled with system software. For example, a new version of QuickTime, 1.6.2, is included with System 7.1.2. The most computation-intensive portions of this system extension — the codecs that compress and decompress video and sound to enable higher frame rates and larger QuickTime images on-screen — run native. The result is evident: QuickTime movies played on Power Macs don't suffer from the same jerkiness that has plagued them when they're played on slower Macs.

PlainTalk, Apple's text-to-speech and speech-recognition technology — previously available only with AV Macs — also ships with all Power Macs. Sort of. The native version of the speech-recognition portion of this system enhancement was not ready in time to ship with the first several thousand Power Macs. It will be sent to registered Power Mac owners, along with a microphone, for a nominal fee; it should be available by the time you read this.

AppleScript, Apple's scripting language, and PC Exchange, which lets Macs read DOS-formatted disks, are included as part of System 7.1.2. Previously, Apple included AppleScript only with System 7 Pro and sold PC Exchange as a separate product. Other goodies include a graphing calculator that calculates and displays the graphs of complex mathematical functions in real time as you move the graph around on-screen; the LaserWriter 8.1.1 printer driver (LaserWriter

By Henry Bortman

60 seconds

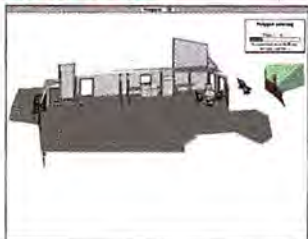
100 seconds

140 seconds

160 seconds

Power Mac 6100/60

Until you've seen a Power Mac in action, you can't fully grasp just how fast it is. To help you visualize that speed, we pitted a low-end Power Mac, a 6100/60, against a Quadra 700 on a rendering task. The image, a home designed by architect Elisabeth Vespremi, was created in ArchiCAD, an architectural modeling and rendering program from Graphisoft. The Power Mac completed the job more than twice as quickly as the Quadra — and it was running an unoptimized, prerelease version of native PowerPC software. It's this quick response to your ideas that will endear Apple's next generation of Macs to you.

Quadra 700

7.1.2 comes preinstalled); and VideoFusion's FusionRecorder, for playing QuickTime movies and (if you have an AV Power Mac model) for recording video to disk.

Making Your Power Mac Fly

But new system software will take you only part of the way toward the warp-speed experience you expect from a Power Mac. You'll also need new versions of your applications.

Applications written for Apple's 680x0 generation of Macs can run under emulation on the Power Macs. Emulation assures compatibility: You can run nearly all your current applications on Power Macs, but they'll run much more slowly than *native* applications — that is, applications converted to take advantage of the PowerPC chip. To see the speed boosts Power Macs promise, you need to "go native."

There's a fly in this ointment, however. You have to pay for all those software upgrades. How much depends on how many applications you upgrade and what the vendors charge for the upgrades. Fortunately, many vendors plan to charge only minimal shipping-and-handling fees for Power Mac upgrades. Some, however — Aldus and Quark, for example — initially plan to treat the Power Mac as a different platform from the 680x0 Mac. Aldus FreeHand, PageMaker, or Persuasion owners should prepare to pay \$100 to \$150 for a Power Mac upgrade — the same as the price for a Mac owner who wants to purchase a Windows version. QuarkXPress owners will pay \$195 to upgrade — until June, that is. Then Quark plans to sell the 680x0 and Power Mac versions as two separate products.

Hurry Up and Wait

Even if your budget can handle the cost of upgrading, you may not be able to get native versions of your applications right away — many won't be available until months after the first Power Macs ship. Microsoft Word, Microsoft Excel, and Macromedia Director are just a few of the popular applications that won't be ready until later this year. You can expect at least a 6-to-12-month transition period during which you'll use a mix of 680x0 applications running under emulation and native applications.

Some vendors are trying to make the delay as painless as possible. For example, the first native versions of Word and Excel will be full-scale upgrades (Word 6.0 and Excel 5.0): You'll get faster applications and new features all at the same time. And, although a native version of Adobe Photoshop won't be available until this summer, Adobe will initially distribute a native plug-in that gives Photoshop 2.5.1 users full Power Mac speed on the most-compute-intensive image-processing tasks. Similarly, ACI US will ship a version of 4D Compiler in March that can produce native 4D applications.

Not all vendors are sure when — or even if — they'll rework their applications. Some of these vendors have small, efficient 680x0 applications — Intuit's Quicken is an example — that run just fine on midrange Macs and thus will run acceptably under emulation. Others are waiting to get Power Macs on which to do development work.

Curiously, Apple itself appears to be as unsure as any other company about when it will come out with native applications. At press time, Apple had no comment on when At Ease, HyperCard, or Apple

Remote Access client software would be available in native versions. The only end-user product Apple is aggressively targeting for an early native release is PhotoFlash, its new image-capture and -processing application. As for Apple's server software — AppleShare 4.0, AppleSearch, and Apple Remote Access Server — the current 680x0 versions of these products can't run under emulation on Power Macs. Look for versions that will run under emulation this spring. But mum's the word on when these products will ship in native versions (see Mac to PC, in this issue).

Tricky Little Bits

Extensions and control panels can have a serious impact on a Power Mac's speed. MacUser Labs tested more than 30 popular third-party 680x0 system extensions — including Adobe Type Manager (ATM), After Dark, Now Utilities, QuickKeys, and Suitcase II — running under emulation to determine whether they would drag down the Power Macs' speed when running native applications. We found only a handful — After Dark, ATM, and Timbuktu were the worst offenders — that caused serious slowdowns.

These slowdowns are due to the way the emulator in Power Macs works. A native application that frequently calls a 680x0 extension running under emulation introduces what Apple calls *mixed-mode switches*. That is, your software causes your Power Mac to flip back and forth between using native code and 680x0 code. Every time the

system makes a mixed-mode switch, it adds a bit of counterproductive overhead. An occasional mixed-mode switch isn't noticeable. But if 680x0 system extensions are running in emulation mode and are used frequently by native software, then you may notice serious speed degradations on your Power Mac.

The biggest culprit we found was ATM. On a series of text-intensive tasks in native versions of ClarisWorks and WordPerfect, we found that ATM slowed down a Power Mac 7100/66 an average of 20 percent. And it gets worse. When we added Type Reunion and Suitcase II, two other extensions popular among desktop publishers, the slowdown on our text tests soared to 30 percent.

Less severe, but noticeable, slowdowns occurred with the popular screen saver After Dark, from Berkeley Systems. After Dark added an average of 10 percent to the time it took to complete a series of text-related tasks. Farallon's Timbuktu Pro also slowed our Power Mac 7100/66 by 10 percent. (Farallon plans to release a maintenance update of Timbuktu Pro in March that will correct the slowdowns.)

New Macs, New Jargon

As if speed issues aren't enough to worry about, you also need to learn a whole new jargon to intelligently query vendors and dealers. (This stuff is fun at cocktail parties too.) Not only have the Power Macs spawned the terms *native applications* and *emulation mode* but they've also created a need to know what a *fat application* is.

Moving On Up / the transition to native PowerPC software

YOUR FAVORITE APPLICATIONS ARE CHANGING. As you read this, programmers are busily converting the applications you use every day, tuning them to take advantage of the Power Mac's PowerPC 601 processor. We called the leading Mac-software vendors to find out when they plan to release native PowerPC versions of their applications. Some gave us exact target dates and some gave general time frames such as spring or summer — for many, "spring" means within 30 days after the first Power Macs appear. "No firm plans" means the vendor has not yet decided when it will release a Power Mac version. / Patty Ames

Company	Application	Ship date
Abacus Concepts	StatView	summer
ACI US	4D First	summer
	4D Server	spring
	4D Write/4D Calc	March
	4th Dimension	summer
	Object Master series	March
Adobe	Adobe Type Manager	summer
	Illustrator	spring
	Photoshop	summer
	Premiere	spring
	Type Reunion	no plans
AG Group	EtherPeek/LocalPeek	March
Aladdin Systems	StuffIt Deluxe	spring
	StuffIt InstallerMaker	March
	StuffIt Lite	spring
	StuffIt SpaceSaver	spring
Aldus	Fetch	summer
	FreeHand	spring
	PageMaker	spring
	Persuasion	1994

Alias	Sketch!	spring
Apple	At Ease	no firm plans
	Apple Media Tool	spring
	Apple Remote Access	no firm plans
	Apple Remote Access Server	no firm plans
	AppleSearch server	no firm plans
	AppleShare server	no firm plans
	HyperCard	no firm plans
	PhotoFlash	May
Ashlar	Ashlar Vellum	March
auto-des-sys	form-Z	March
Berkeley Systems	After Dark	no firm plans
Blyth Software	Omnis 7	no firm plans
Byte by Byte	Sculpt 3D/4D	March
	QuickKeys	no firm plans
CE Software	QuickKeys	no firm plans
	QuickMail	no firm plans
Central Point Software	MacTools	March
Claris	ClarisImpact	spring
	ClarisWorks	March
	FileMaker Pro	no firm plans
	MacWrite Pro	spring
Computer Associates	all products	no firm plans
Connectix	CDU	summer
	RAM Doubler	summer
CoSA	After Effects	no firm plans
Crosswise	Face To Face	summer
Dantz Development	Retrospect/Retrospect Remote	March
Dayna Communications	ProFiles	March
DeltaPoint	DeltaGraph Pro 3	March
Deneba	Canvas	summer
DesignCAD	DesignCAD	no firm plans
Diehl Graphsoft	Azimuth	no firm plans

Vendors can write their applications in one of three ways: in a version that runs on 680x0 Macs only, in a version that runs on Power Macs only, or in a version that runs on both kinds of Macs. The version that runs on both kinds is called a fat application. No matter where you run the application — on a Power Mac or on a 680x0 Mac — it will work. There's no trick to this — fat applications include the code they need in order to run on both kinds of Macs.


Don't be put off by the word *fat* — just because a fat application contains code for two types of Macs, it won't be twice as big as its nonfat counterpart. Dialog boxes, windows, and other on-screen images are responsible for much of an application's size. The application code that is specific to the 680x0 Mac and the Power Mac can share these items. The advantage of a fat application is that you can load it on a hard disk; move the drive between, say, a Quadra and a Power Mac; and run the application on either Mac.

Although the decision to purchase a fat application is mostly a question of convenience, the only extensions you should buy are the ones that are fat. Period. Extensions can be called by a variety of applications, some of which may be written for native Macs and others for 680x0 Macs. If an extension is native only and one of your 680x0 programs running in emulation mode calls it, guess what? You'll introduce mixed-mode switches and your Power Mac will slow down accordingly — and the reverse is also true.

All this *fat* talk brings us to the subject of *smart installers*. A smart

installer knows whether it's installing an application on a 680x0 Mac or a Power Mac and automatically installs the appropriate type of code. With a smart installer, one software package contains all the disks you need to load the application on your Power Mac at the office and on your 680x0 Mac at home. Ideally, developers will provide smart installers with an option to install a fat application or extension, thereby giving you the maximum flexibility. Adobe, for instance, has committed to shipping all of its applications with a smart installer that will let users select a fat option.

Most of the vendors we spoke to in early February said that they would provide a smart installer, although many couldn't tell us whether a fat installation would be an option. Over time, most developers will probably ship both 680x0 and Power Mac versions in the same box. It's too early to tell, however, whether they'll increase the price of their products in the process.

As more and more developers ship native applications and extensions, Power Macs will run faster and faster. But despite Apple's best efforts — and we have to hand it to Apple for making the transition to the Power Macs as painless as possible — it's bound to be a year in which a dose of confusion and frustration is sprinkled in with the excitement, as we learn to get the most out of our Power Macs. 

Henry Bortman is *MacUser's* technical director. Research assistant Patty Ames compiled our applications listing.

Diehl Graphsoft, cont'd.	Blueprint MiniCAD	no firm plans March
Electric Image	ElectricImage Animation System	summer
Farallon	Replica for Macintosh	no firm plans
	Timbuktu Pro for Macintosh	winter
Fractal Design	Dabbler	March
	Painter/Painter X2	March
Frame Technology	FrameMaker	spring
Gold Disk	Astound	1995
Graftek	Ultimage	March
Graphisoft	ArchICAD	April
	Atlantis	April
	Zoom	April
Great Plains Software	Dynamics	March
	Great Plains Accounting	no firm plans
Gryphon Software	Morph	May
Helix Technologies	Helix Express	summer
	Helix Tracker	early 1995
HSC Software	Kal's Power Tools	spring
	Live Picture	no firm plans
	New World Explorer	spring
InterCon	TCP/Connect II	June
Intuit	Quicken	no firm plans
Language Engineering	LogoVista E To J	March
Lotus Development	Lotus ccMail	spring
	Lotus Notes	no firm plans
	Lotus 1-2-3	no firm plans
Macromedia	Macromedia Director	winter
	MacroModel	March
Manhattan Graphics	Ready, Set, Go!	summer
Microsoft	Excel	July
	FoxPro	April

Microsoft, cont'd.	PowerPoint Word	August June
National Instruments	HiQ LabView	March September
Neon Software	LANsurveyor NetMinder Ethernet	March April
Nisus Software	Nisus Writer	spring
Now Software	Now Compress Now Contact Now Up-to-Date Now Utilities	spring spring fall summer
Orkis	ImageBase-Pro	March
Pixar	MacRenderMan/Showplace Typestry	spring no firm plans
Quark	QuarkXPress 3.3	spring
Ray Dream	Ray Dream Designer 3.0	spring
Specular International	BackBurner Collage Infiniti-D LogoMotion	no firm plans spring March spring
Stac Electronics	Stacker for Macintosh	June
Strata	StudioPro	March
Symantec	all products	no firm plans
VideoFusion	QuickFLIXI VideoFusion	spring March
VIDI	Presenter Professional	April
Virtus	Virtus VR Virtus WalkThrough Virtus WalkThrough Pro	March will not be converted spring
Wolfram Research	Mathematica	spring
WordPerfect	WordPerfect 3.0 WordPerfect Works	March August

INTRODUCING DIRECTOR 4.0: EASIER, AND A WHOLE LOT C

If you really want to do the cool stuff, climb aboard our newest version of the leading multimedia authoring software for the Macintosh®. Because even if you've never worked in multimedia, Director® 4.0 can help you develop the most persuasive presentations, most inspired CD-ROM titles, most entertaining kiosks, most enlightening demos, most realistic visualizations, and most anything else you have in mind.

DEVELOPERS...
START YOUR ENGINES.

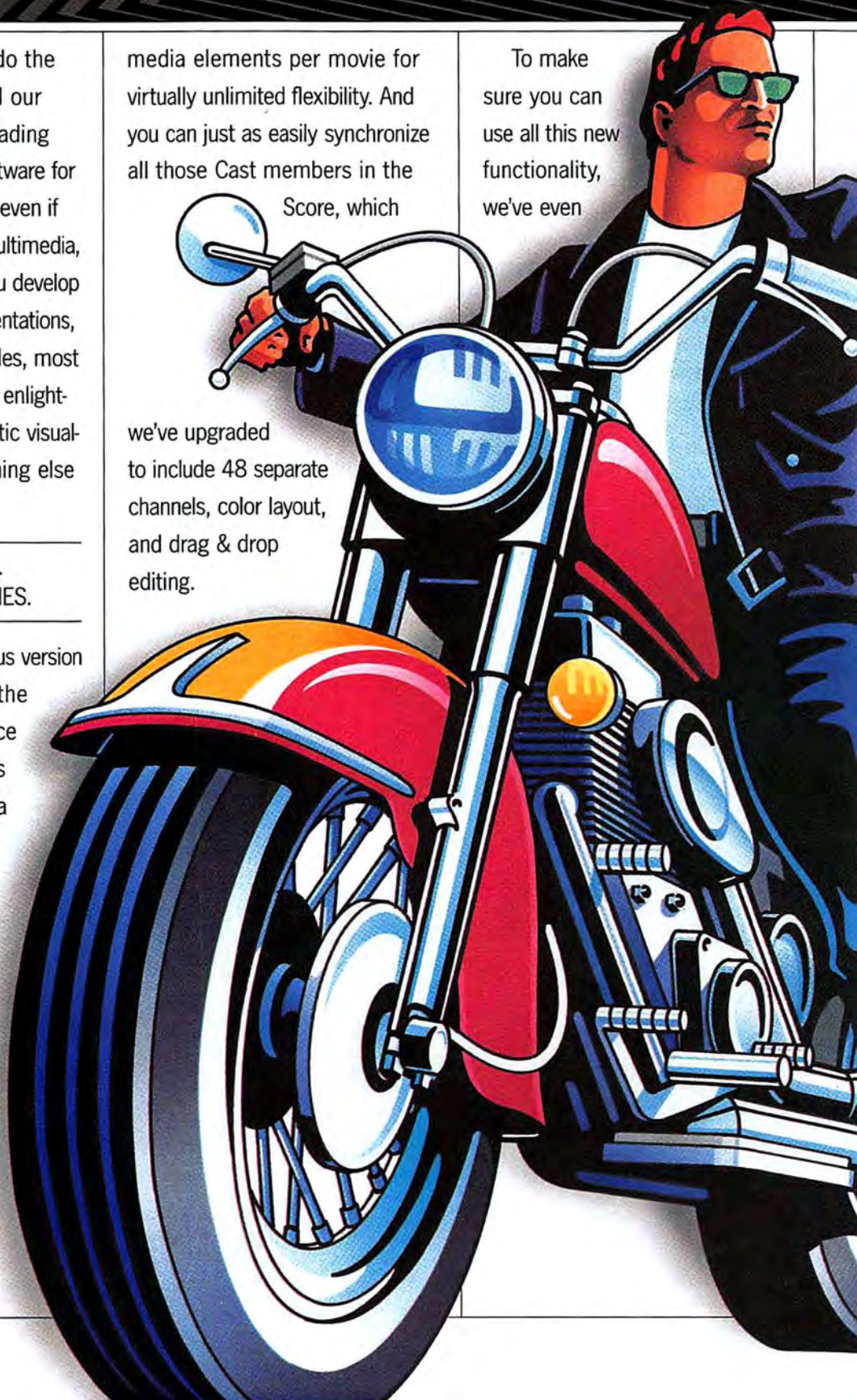
If you've used a previous version of Director®, you'll feel the extraordinary performance of version 4.0 as soon as you start it up. If you're a first-time user, our new and improved interface will enable you to cruise through the program like a pro.

For starters, we've made it easier to organize text, graphics, music, digital video, and sound effects in the Cast, our visual database that now stores up to 32,000

media elements per movie for virtually unlimited flexibility. And you can just as easily synchronize all those Cast members in the Score, which

we've upgraded to include 48 separate channels, color layout, and drag & drop editing.

To make sure you can use all this new functionality, we've even



FASTER, COOLER.

eliminated the 16MB file size limit. Now, Director files are limited only by the amount of disk space in your system.

PUT YOUR PRODUCTIONS INTO HIGH GEAR.

Not only is our newest version of Director more friendly, it's also a whole lot more powerful.

All that power starts with our Lingo™ command language, which you can use to write scripts that add interactivity, create presentation frameworks, control external devices, and build logic into your productions.

And since all Lingo scripts are compiled in Director 4.0, they'll run up to eight times faster!

Speaking of speed, we've actually made it possible for you to determine when individual cast members go in and out of RAM. This unique memory management feature, which we call Purge Priority, opti-

mizes movie playback to dramatically reduce hard disk and CD-ROM access times.

What's more, our new object-oriented Lingo commands provide reusable code and simplified scripting, enabling you to add even the most complex interactivity without all that tedious programming. You can also play and manipulate Director movies within other movies using regular Lingo commands.

MOTOR FROM MAC TO WINDOWS.

Once you complete any production, Director 4.0 ensures a seamless transition to Windows™, using our new 100% binary-compatible file format with the soon-to-be-released Director for Windows. In other words, Macromedia continues to provide the industry's one-and-only set of cross-platform solutions; from Mac to Windows—plus 3DO and other popular consumer platforms—Director productions will play on your platform of choice.

We've also added high-level security features so that the code you create can't be pirated by anyone else. And that's good

to know, since any production developed in Director 4.0 can be distributed royalty free to millions of users worldwide.

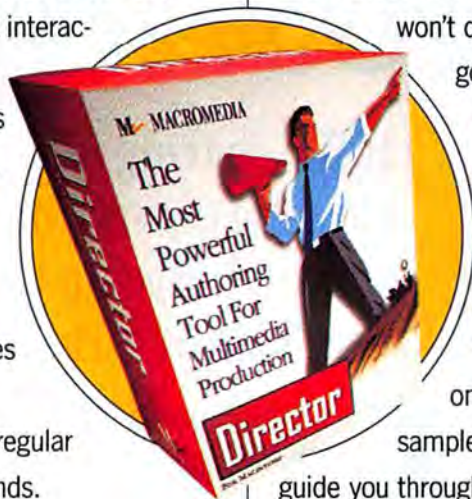
LEAN INTO THE (LEARNING) CURVE.

All these impressive features won't do you much good if you can't use them to their potential. That's why we've included new step-by-step tutorials, online help, and sample movies to guide you through the program.

With all that, it won't be long before you discover why the 200 professional developers who tested Director 4.0 found it to be the most exceptional authoring tool they had ever used.

If you're ready to see why, call **1-800-945-4058** for the name of the Macromedia Authorized Reseller nearest you (current Director users should call **1-800-457-1774** for the Version 4.0 Upgrade Kit).

Because you're only as cool as your next production.



M

MACROMEDIA

TOOLS TO POWER YOUR IDEAS.

MacUser**Labs**

Choosing the Right Server

If file sharing or an old server is slowing down your office, it's time to move up to one of these fast, feature-rich alternatives.

IF YOU NEED TO BE CONVINCED you need a file server, chances are you can do without one. If, on the other hand, your workgroup or department's hunger for shared information has outgrown System 7's file sharing or if your present server just can't keep up with your growing business, the question isn't whether you should get a new server but which one you should buy.

The answer is not as straightforward as buying a new Mac and equipping it with the right software. Not all server software has to run on a Mac, even if it's running in a primarily Mac-equipped office. In addition to the familiar Apple offerings, several server-software products are available that run on PCs or PC-compatible machines.

We took a look at six server-software products that have widely disparate features, target markets, and speed. We evaluated their suitability for a mostly Mac workgroup, administrative features, ease of use, and relative speed.

Because the range of choices is so great, we split the six products we tested into two categories, based on the number of users a single server can realistically support and the features the software offers. The three workgroup-server-software products we tested are designed for groups of 60 or fewer

active clients who have little need for advanced security and management features. The software is available as stand-alone packages but usually comes bundled with the server hardware. The three network operating systems are complex software packages that run on a variety of powerful platforms and provide network administrators with all the security, reporting, and organizational tools needed by large, multi-platform networks.

Before evaluating the server software, consider your needs. How many users will your server need to support? Is your office all-Mac or Macs mixed with PCs? Who will administer the server? After answering these questions, proceed to pick a server that's within your budget and that will grow with your company.

Workgroup-Server Software

If you're planning to add a file server to your office network, it's probably because of growth. File sharing's no longer adequate, your storage needs have expanded, and you may be concerned about data management and security.

For our workgroup-server tests, we looked at AppleShare 4.0 software running on a Quadra 800. Apple sells this bundle



as the Apple Workgroup Server (AWS) 80. We also looked at EasyServer software, from COPS (CoOperative Printing Solutions), running on a Cobra 486DX/66 with a SCSI card that supports storage devices formatted for Macs. (COPS sells the software bundled with other PC clones too.) Finally, we revisited AppleShare Pro 1.0 running on a Quadra 950 with a PDS card that includes a second-level memory cache and a DMA (direct memory access) SCSI port, available in a bundle as the Apple Workgroup Server 95 (see review, December '93, page 73). AppleShare Pro is a version of AppleShare that runs on top of A/UX, Apple's UNIX operating system. A/UX makes it possible to tune the server for increased speed by adjusting memory and file caches.

Setting up any of these three servers is a breeze — you simply plug them in. The AWS 80 and the AWS 95 come with AppleShare installed. Even though the EasyServer server is a PC clone, getting the server up and running is as easy as attaching a Macintosh-formatted hard-disk drive to the SCSI-card port and inserting the EasyServer floppy disk into it.

The EasyServer server is managed from a Mac on the network, where the administration software is installed — no monitor or

keyboard is required for the PC that's running EasyServer. With the AWS 80 and the AWS 95, on the other hand, AppleShare features must be managed from the server — unless you have an administration tool such as TechWorks' Server Manager or Sonic Systems' Server Sentry, which can be used on a client Macintosh.

Like AppleShare 3.0 before them, AppleShare 4.0 and AppleShare Pro include print-server software, allowing users to spool their print jobs to the server, thus freeing up the client machines. EasyServer provides no print services.

Each product has straightforward administration tools for creating users and groups and assigning passwords. AppleShare Pro includes two-way encryption of passwords. When you type a user password, it is scrambled, so it can't be captured by network-monitoring systems. AppleShare's administrator security allows you to limit the number of failed log-ins and specify a minimum password length. EasyServer sends passwords without encryption and does not have any password-administration features.

By Julie Baher and Shelly Brisbin

Each package lets administrators set various folder-access rights, much as System 7's file sharing does. Users can set rights for the folders they control.

Workgroup-Server Speed. The more simultaneous requests a server can handle without grinding to a halt, the better. We attached each server over Ethernet to a network of 80 Mac clients and tested it with 0, 10, 20, 40, 60, and 80 clients providing background traffic. We copied a file and a folder from another client to the server and from the server to the client and then opened a file on the server and saved it back to the client (see figure 1). We measured both the response time and *scalability*, how well the server responded to the increasing workload.

We found minimal differences among the AWS 80, the AWS 95, and the EasyServer server in *read speed* — that is, the speed of copying files and folders from the server. However, both the AWS 80 and the AWS 95 outperformed the EasyServer server in *write speed* — copying files and folders to the server. The AWS 80 was as much as 40 percent slower than the AWS 95 on the write tests but was more than 10 percent faster when reading.

We also tested a beta version of Apple's upgrade to the AWS 95 software, which includes improvements to A/UX and AppleShare Pro. We noted a whopping 240-percent increase in read speed and a 30-percent boost in write speed. For those who purchased an AWS 95 before December 1993, the upgrade, available now, is \$199; for more-recent buyers, it's free.

According to Apple, the AWS 95 can support as many as 50 active users, but we found that it held up even under much heavier loads. The AWS 80 is intended for no more than 30

active clients; our testing brought it to its knees at 40.

Where Apple was modest, COPS was a mite optimistic. COPS sells its product with a variety of hardware platforms based on Intel chips and claims that it supports an unlimited number of users. We tested it with COPS' Cobra 486DX/66 PC, with 32 megabytes of RAM and a 1-gigabyte Seagate hard drive — a robust system. The EasyServer server completed some of the tests when accessed by 80 users, but in most cases, it ground to a halt with 60 users. Of course, the number of active users a file server can support depends greatly on the amount of data being transferred and, in the case of EasyServer, on the hardware configuration you choose.

Network Operating Systems

Sluggish speed, heightened security concerns, and the need to connect your site to larger networks are all signs that your workgroup server may no longer meet your requirements. You could choose to solve the speed problem merely by adding more servers to the network, but administration would become a headache. A *network operating system* (NOS) designed for a large local-area network (LAN) or enterprisewide network can solve your problem — unfortunately, no current NOS runs on a Mac.

NOS products can support a few dozen users or a few hundred. They lack the familiar interface of Apple software, but they offer more and better features, such as built-in routing, cross-platform and multiprotocol support, robust security, and greater speed.

We evaluated three PC-based NOS server-software packages — Banyan's VINES 5.52, Microsoft Windows NT Advanced Server 1.0, and Novell's NetWare 4.01 — focusing on their support for Mac networks and users, their feature sets, and their speed. Although each provides a rich environment for DOS and Windows clients, they have often treated Mac users as second-class citizens, giving them less access to the advanced features PC users take for granted. Fortunately, that's beginning to change.

OS Détente. The most intriguing product we evaluated was Windows NT Advanced Server — a merger of Microsoft's Windows NT operating system and LAN Manager server software. It is the only NOS we reviewed that includes AppleTalk support at no extra cost. With solid, clear documentation and an icon-based interface, Windows NT Advanced Server is quick to set up. By offering a complete range of services to PC and Mac clients in this product, Microsoft has set a new standard for Mac integration into NOS environments.

NetWare 4.0 is Novell's long-awaited successor to NetWare 3.x. NetWare 4.01, the version we tested, includes a free 5-user license pack of NetWare for Macintosh 4.01 to whet your appetite. To get Mac support for all of your users, you need to buy NetWare for Macintosh. The complete Mac package provides support for 1,000 users (up from NetWare 3.x's limit of 200


The Bottom Line

FILE-SERVER SOFTWARE VARIES WIDELY in capability and speed and is designed for networks of different sizes. For small workgroups, no one product merits our full recommendation. Among network operating systems, however, a clear winner emerges, based on price/performance, customer service, Mac-specific features, and ease of use.

⊕ = OUTSTANDING

● = ACCEPTABLE

⊖ = POOR

	PRICE/ PERFORMANCE	CUSTOMER SERVICE	FEATURES	EASE OF USE
★★★★ NetWare 4.01	⊕	●	⊕	●
 The undisputed speed champ, Novell's NetWare (\$9,990 list, \$7,570 street) is also the most mature network operating system we tested. It's complex but loaded with advanced features.				
★★★★ AppleShare 4.0	●	●	●	⊕
★★★★ Microsoft Windows NT Advanced Server 1.0	⊕	●	●	⊕
★★★★ AppleShare Pro 1.0	●	●	●	●
★★★★ EasyServer 1.0	●	●	●	⊕
★ VINES 5.52	⊖	⊖	●	●

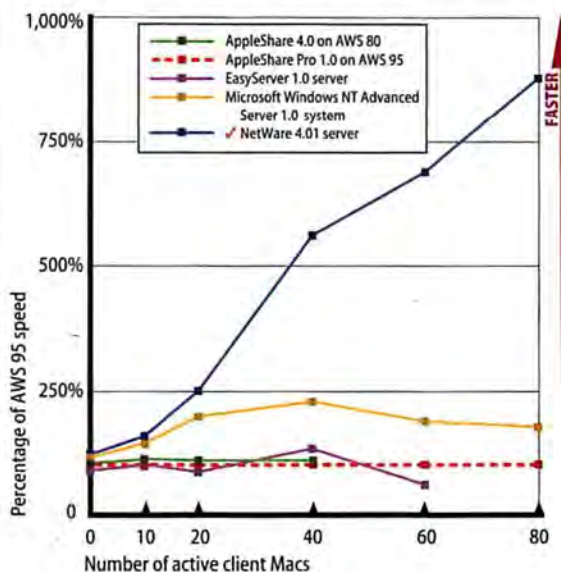
Listing is alphabetical within groups of equal mouse ratings.

figure 1

Speed Tests / finding the servers' limits

MacUser Labs

Some servers are stronger than others — they manage simultaneous requests from more clients and do so faster. We connected each of our six file servers over Ethernet to a network of 80 Mac clients, which generated background traffic while we did our tests, and began testing with no clients (no background traffic). Then we increased the client load to 10,



✓ MacUser RECOMMENDS

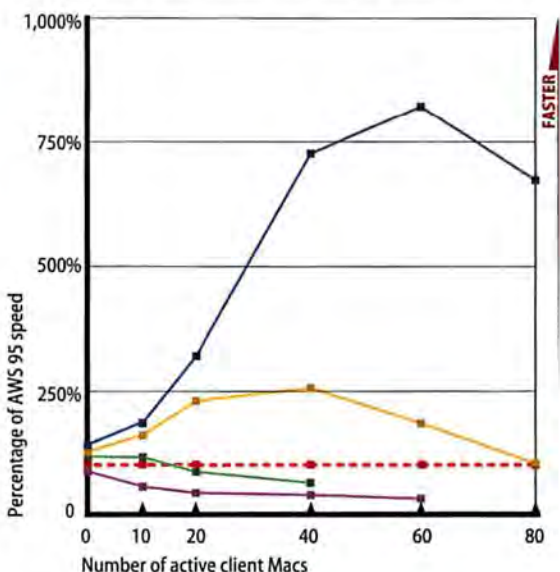
Note: The VINES 5.52 server failed to complete any of our speed tests.

Reading Files from the Server

To test the servers' read speed, we copied a 5-megabyte file and a 5-megabyte folder from the server to a Mac client. We also opened an Excel spreadsheet on the server from the Mac client.

20, 40, 60, and 80 Macs. The speeds shown are relative to the AWS 95's.

The differences in server speed were apparent even with 10 and 20 active clients — and became extreme with higher loads. The AWS 80 and the EasyServer server failed at 40 and 60 active clients, respectively. Despite the best efforts of Banyan technicians, the VINES server consistently crashed at a mere 10 active clients.



Writing Files to the Server

To test write speed, we reversed the procedure, copying the same file and folder from the client back to the server. We also saved the Excel spreadsheet from the client to the server.

users). Several included NLMs (NetWare Loadable Modules) control AppleTalk services, and you need to work with several of them to get your server ready for Mac clients.

Like NetWare, Banyan's VINES supports Mac clients through an add-on product — in this case, VINES Option for Macintosh, which provides AppleTalk services.

It is possible to install and maintain NetWare and VINES server software yourself by studying the voluminous documentation. However, many organizations choose to send their network administrators to training courses to become certified system administrators. Windows NT Advanced Server, on the other hand, requires no special training — although a knowledge of Microsoft Windows is helpful.

All three of these products are easy to install, if not to configure. Windows NT Advanced Server is the simplest, partly because Mac support is integrated. NetWare and VINES require some tinkering to get AppleTalk up and running. If you intend to use the products' network routing capability, for example, plan on a more complex installation/configuration process.

We found Windows NT Advanced Server intuitive, logically

Improving on AppleShare

STRAIGHT OUT OF THE BOX, AppleShare may not contain all the bells and whistles of a sophisticated NOS (network operating system), but Apple offers options for AppleTalk networks that take up some of the slack.

Users of System 7 Pro (\$149) can log on to many AppleShare servers simultaneously, using the PowerTalk Key Chain, a global-log-in ability that also extends to the mail- and catalog-server software in the PowerShare Collaboration Servers package (\$999).

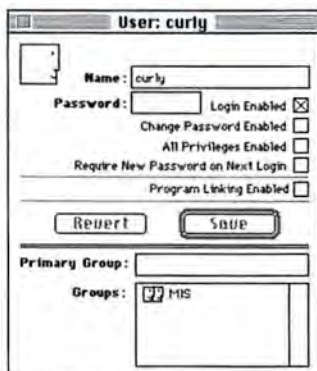
The catalog-server software gives your network sophisticated directory services that can be automatically distributed over several servers. Third-party gateways connect PowerShare to PC- and UNIX-based directory and mail systems. PowerShare also adds security to an AppleTalk network by authenticating users and encrypting data.

PC-based NOS products provide dial-in server connections for their PC clients, but none support Macs. Macs can reach an AppleShare server remotely through an Apple Remote Access Multiport Server (\$1,799 for four ports), which includes NOS-like multilevel security and can handle as many as 16 modems.

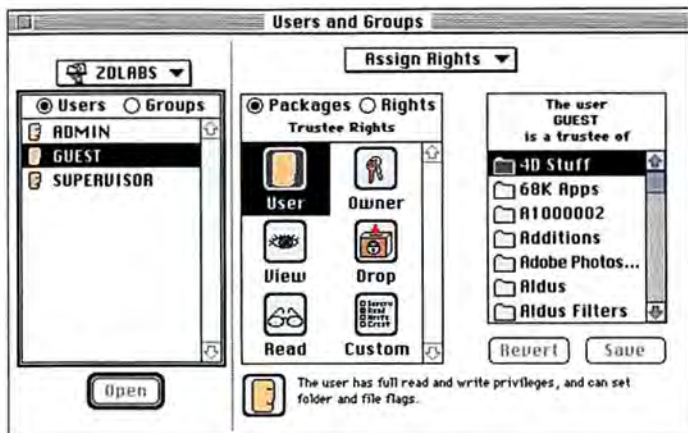
/ John Rizzo

figure 2

Mac Management / Apple has the advantage



AppleShare administration features include configuration of user and group access as well as definition of password restrictions. All management occurs on the server machine. The interface is the same in AppleShare Pro and AppleShare 4.0.



The Mac utility for NetWare 4.01 boasts an improved interface but does not replace the PC-based administrator software you need in order to create users and groups. You can assign server-access rights from the Mac utility, however.

designed, and the simplest to manage of the three NOS products. Functions such as setting file permissions and printing are integrated into the standard Windows print and file managers. To simplify administration, almost all Mac-client functions are handled identically to those for PC clients. All server administration can be done from the server machine or from a PC running Windows NT — you can't manage the server from a Mac, unfortunately.

Management of a NetWare server takes place at both the server and the administrator's client PC. You can invoke AppleTalk printing, server configuration, and routing, among other things, from the server. All user and file administration takes place on a DOS or Windows client. Using NetWare's Mac-client utilities, you can perform some administrative tasks — the management of print queues, users, groups, access rights, and messaging — from a Mac. The Mac utilities, although improved greatly over NetWare 3.11's NetWare DA, are still a poor substitute for the PC administration software.

VINES is configured from the server and a client PC. You can set file access, but little else, from a Mac.

Easier and More Powerful. One powerful feature of NOS products is *global log-in*, the ability to allow administrators to grant users access rights to services and directories on all networked servers rather than having to create accounts and privileges for each individual server. Users also gain the convenience of logging in just once for all the services they use — a user does not have to know the physical location of the network's servers. Apple's AOCE (Apple Open Collaboration Environment) offerings, PowerTalk and PowerShare, have begun to offer these and other global capabilities to all-Mac environments (see the "Improving on AppleShare" sidebar).

Each of the NOS products offers global log-in for DOS and

Windows clients. However, although an administrator can set global access rights for Mac clients, Mac users must still log in to each server individually. Novell promises that its next version of NetWare for Macintosh will provide global-log-in support.



AppleShare 4.0

Rating: ★★★★★

Price: \$1,899 list/\$1,600 street; AWS 80 bundle (Quadra 800, 16 megabytes of RAM, 1-gigabyte hard drive, DDS-DC tape drive, AppleShare 4.0), \$7,009 list/\$6,685 street.

Pros: Easy to install and use.

Cons: Slow. Limited administration options.

Max. no. of clients: 150 per server.

Max. no. of active users: 30 per server.

Hardware supported: 68040-based Mac (except v Macs).

Server OS: System 7.1.

Client OS: System 6.0.4 or later.

Protocols: AppleTalk, TCP/IP.

Topologies: Ethernet, FDDI, LocalTalk, token ring.

Company: Apple Computer, Inc., Cupertino, CA; 800-776-2333 or 408-996-1010.



AppleShare Pro 1.0

Rating: ★★★★★

Price: \$2,279 list/\$1,815 street (includes AppleShare Pro software, A/UX, and PDS card with 128K cache); AWS 95 bundle (Quadra 950, 32 megabytes of RAM, 1-gigabyte hard drive, PDS card with 512K cache, DDS-DC tape drive, A/UX, AppleShare Pro), \$10,349 list/\$9,800 street.

Pros: Easy to install and use. Print-server software included. Upgrade shipping at press time should improve speed.

Cons: Expensive. A/UX is quirky.

Limited administration options.

Max. no. of clients: 200 per server.

Max. no. of active users: 50 per server.

Hardware supported: Quadra 900 or 950.

Server OS: A/UX 3.01.

Client OS: System 6.0.4 or later.

Protocols: AppleTalk, TCP/IP.

Topologies: Ethernet, LocalTalk.

Company: Apple Computer, Inc., Cupertino, CA; 800-776-2333 or 408-996-1010.

Access to global-directory services is among the great advantages of a true NOS. Global directories are databases of users and services that can be shared among different types of servers. Users can share access to remote servers and can locate others in the global directory.

VINES' StreetTalk directory services are complete and well connected (through gateways and standard protocols such as X.400) to other directory platforms. NetWare 4.0 marked the launch of NDS (NetWare Directory Services). Novell has not yet made global services available to Mac users of NetWare, although it plans to have NDS support for the Mac later this year. Windows NT Advanced Server has no global-directory services. Microsoft plans to implement them in its Enterprise Messaging System, but no release date has been announced.

Printing and Security. We connected an Apple LaserWriter IIg (with built-in Ethernet) to a server running Windows NT Advanced Server and one running NetWare. VINES required an additional package (VINES PC Print, \$495) to support network printing. This seems odd, because most printers are networked. We requested a copy of VINES PC Print for testing, but Banyan declined to provide it.

Windows NT Advanced Server has a built-in Microsoft TrueImage PostScript-clone RIP (raster-image processor), which allows Mac users to print to non-PostScript printers

such as the popular Hewlett-Packard LaserJet II. This is a great advantage for offices that have non-PostScript printers.

NetWare for Macintosh supports non-Mac clients printing to AppleTalk printers. The software also has new PPD (PostScript Printer Description) files that support PostScript Level 2 and the new PostScript Level 2 drivers.

The PC world has always been more security-conscious than the Mac community — but we'll resist the temptation to revive fading stereotypes. Windows NT Advanced Server and NetWare each include User Authentication Method (UAM) utilities, which allow Mac clients to use password encryption and extended password lengths. Mac clients log in to a VINES server through Banyan's VINES system extension or through the Chooser.

NOS administrators can choose from a variety of client-access restrictions, including log-in times, log-in durations, and the available disk space per client. They can also set expiration dates for user accounts and passwords. NetWare has the most options of this kind, and each of the three NOS products offers more options than AppleShare does.

In addition, each one lets administrators set access rights to individual files. AppleShare supports only folder-level rights. With VINES and NetWare client utilities, Mac users can set access rights to the files and folders they control.



EasyServer 1.0

Rating: ★★

Price: \$1,000 list/\$1,000 street; bundle as tested (Cobra 486DX/66, 32 megabytes of RAM, Ethernet and SCSI cards, software), \$5,600 list/\$5,150 street; Ethernet and SCSI cards, software, \$1,400 list/\$1,300 street.

Pros: Inexpensive if existing hardware is used.

Cons: No print services. Mediocre speed.

Max. no. of clients: Unlimited.

Max. no. of active users: 100 per server.

Hardware supported: 286 or later PC or compatible.

Server OS: DOS 3.3 or later.

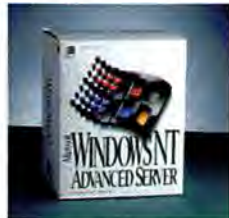
Client OS: System 6.0.4 or later.

Protocols: AppleTalk.

Topologies: Ethernet, LocalTalk.

Company: CoOperative Printing

Solutions, Inc., Norcross, GA; 404-840-0810; 404-448-7821 (fax).



Microsoft Windows NT Advanced Server 1.0

Rating: ★★

Price: \$2,995 list/\$970 street (unlimited users).

Pros: Easy to install and use. Excellent price/performance ratio. Integrated Mac services.

Cons: Average speed. No global-directory services.

Max. no. of clients: Unlimited.

Max. no. of active users: Depends on hardware.

Hardware supported: 286 or later PC or compatible; DEC Alpha, Intergraph Clipper, or SPARC workstation.

Server OS: Windows NT Advanced Server.

Client OS: MS-DOS, OS/2, System 6.0.4 or later, Windows, Windows for Workgroups, Windows NT.

Protocols: AppleTalk, DLC, IPX, NetBEUI, TCP/IP.

Topologies: Ethernet, LocalTalk, token ring.

Company: Microsoft, Redmond, WA; 800-426-9400 or 206-882-8080; 206-936-7329 (fax).



NetWare 4.01

Rating: ★★★★★

Price: \$8,795 list/\$6,665 street (100 users); NetWare for Macintosh 4.01, \$1,195 list/\$905 street (1,000 users).

Pros: Very fast. Feature-rich. Mature technology.

Cons: Expensive. Complex administration. Mac access to directory services incomplete.

Max. no. of clients: 1,000 per server.

Max. no. of active users: Depends on hardware.

Hardware supported: 386 or later PC or compatible.

Server OS: NetWare 4.01.

Client OS: DOS, OS/2, System 6.0.4, UNIX, Windows.

Protocols: AppleTalk, IPX/SPX, LAT, OSI, SNA, TCP/IP.

Topologies: ARCnet, Ethernet, FDDI, LocalTalk, token ring.

Company: Novell, Provo, UT; 800-453-1267 or 801-429-7000.



VINES 5.52

Rating: ★

Price: With VINES Option for Macintosh, \$11,990 list/\$10,790 street (100-user license); VINES Option for Macintosh, \$1,995 list/\$1,795 street; VINES PC Print, \$495 list/\$450 street.

Pros: Global-directory services. **Cons:** Failed speed tests. Network-printer support costs extra. Outdated interface.

Max. no. of clients: 250 per server.

Max. no. of active users: 250 per server.

Hardware supported: 386 or 486 PC or compatible.

Server OS: UNIX.

Client OS: DOS, OS/2, System 6.0.4 or later, * Windows, Windows for Workgroups.

Protocols: AppleTalk, * IPX, NetBIOS, TCP/IP, VINES IP.

Topologies: Ethernet, LocalTalk, * token ring.

Company: Banyan Systems, Inc., Westboro, MA; 508-898-1000; 508-898-1755 (fax).

*With VINES Option for Macintosh.

NOS-Server Speed. To evaluate the three NOS products fairly, we loaded them on typically hefty PC server hardware: a Compaq System Pro XL 486DX/50 with 32 megabytes of RAM and a Seagate 1-gigabyte hard drive. We divided our Ethernet network of 80 client Macs into four segments to minimize network-based bottlenecks.

The NetWare server showed remarkable speed and scalability. Its read speed was nearly 700 to 900 percent that of the AWS 95 when dealing with requests from 60 to 80 active clients. It also easily outpaced the server running Windows NT Advanced Server, which began to slow at loads greater than 40 users. However, the latter was as much as 150 percent faster than the AWS 95 for reads and writes with varying client loads. Microsoft has announced an upgrade, scheduled for release during the second quarter of 1994, that it claims will boost a server's speed on AppleTalk networks.

On the other hand, the VINES server was a complete bust. We were unable to use VINES on a segmented network, and on an unsegmented network, the software consistently crashed when copying files to and from the server, even at a 20-user load. Despite their best efforts, Banyan representatives were unable to diagnose and fix the problems within the time frame available for our tests — eight weeks.

Hard Choices

Although AppleShare 4.0 and AppleShare Pro are easy to use and offer the familiarity of the Mac interface, neither they nor EasyServer earned our endorsement. If you must pick server software for a workgroup, one of the AppleShare packages is your best bet, depending on the number of Mac clients. Keep

PowerPC / faster servers

POWERPC-BASED APPLE SERVERS that have AppleShare running in emulation mode are scheduled to appear later this year — today's AppleShare won't run in emulation on the new Power Macintosh computers. A native version of AppleShare is slated to appear after that — and the speed improvement promises to be well worth the wait.

Other vendors are jumping on the PowerPC bandwagon. Novell has announced that it will port NetWare to Apple's Power Macs, and Microsoft's Windows NT Advanced Server will run on IBM's PowerPC Reference Platform, which is scheduled to be released this summer.
/ Shelly Brisbin

in mind, though, that AppleShare lacks the administration features of a NOS.

If you do settle for AppleShare, investigate adding Apple's PowerShare (\$999). It lets you add directory services and — if you have System 7 Pro installed on Mac clients — global login, features otherwise available only with NOS products.

Windows NT Advanced Server integrates Mac support and simplicity of management, but server speed was somewhat disappointing when compared to that of a NetWare server. Despite its complexity and cost, NetWare has a proven track record and is the clear choice for medium-sized and large organizations. It's scalable; feature-rich; and very, very fast. ☞

Julie Baher is a San Francisco-based writer and consultant. Shelly Brisbin is a *MacUser* associate editor. ZD Labs' Lori Mitchell and Alan Chan managed the testing for this report.

figure 3

Features of File-Server Software / sizing them up

Matching server software to your needs means asking and answering questions. You'll need to pick a product that is compatible with your

network and that has the features you're looking for. Advanced printing features are important if you plan to use a print server.

	AppleShare 4.0	AppleShare Pro 1.0	EasyServer 1.0	Microsoft Windows NT Advanced Server 1.0	✓ NetWare 4.01	VINES 5.52
DOS/Mac filename mapping	●	●		●	●	●
Global directory services					●*	●
PostScript Level 2 support				●	●	●
Print-server software	●	●		●	●	†
Backup software	§	§		●	●	●
Routing software				●	●	●
File passwords				●	●	●
Printer passwords				●	●	●
Password encryption	●	●		●	●	●

✓ MacUser RECOMMENDS

*Not yet available in NetWare for Macintosh.

†VINES PC Print print-server software is available as an option.

§Retrospect Remote backup software is available as an option.

There are
really only
two reasons
to buy
your next
personal
printer
from Apple.

It does more.

It's more intelligent. The LaserWriter Select[™] 320 complies with the EPA's Energy Star standards. And then some. Our smart "Auto-On" feature means that when it's not in use, the printer uses under 10 watts of power—less than a lightbulb.

It's more expandable. With a simple memory upgrade, you can take advantage of Apple's PhotoGrade[™] technology. You'll get photographic quality that rivals printers of much higher resolution (with price tags to prove it).

It's more streamlined. Thanks to careful Apple[®] industrial design, the LaserWriter Select 320 weighs in at 15 pounds and has a very small footprint, so it easily adapts to your work space (not to mention your work style).



The feature-packed LaserWriter Select 320.

It's more powerful. The LaserWriter Select 320 delivers the advanced capabilities of Adobe[®] PostScript[™] Level 2 (and the speed of a RISC processor). Not surprising for a big-budget printer—but pretty amazing for one at this price.

It's more refined. Apple's FinePrint[™] technology enhances the 300-dpi laser clarity, so you get exceptionally sharp text and graphics—especially in details (such as clean curves) that give your work a more professional look.

It's more personal. The LaserWriter Select 320 is built to work hand in hand with Macintosh[®] computers—which also means it's just as easy for you to use. Just plug your printer in, pop the software in your Mac[®] and click on "Install." It's that simple.

It costs less.

It's less, period. A comparable personal printer such as the Hewlett-Packard LaserJet 4ML will cost you \$1,279 (SRP), while you can take home the LaserWriter Select 320 for only \$959. In other words, you can get a lot more printer for a lot less money. It's that simple.*



The economical LaserWriter Select 320.



MacUser**Labs**

A Printer on Every Desk

Inexpensive printer technologies bring laser-quality output to the comfort and security of your home or office.

By Tony Bojorquez and Rik Myslewski

A few short years ago, everyone had a personal desktop printer. It was called a typewriter. During this golden age, every office worker enjoyed the convenience and privacy of personal printing; not even the lowliest entry-level clerks had to walk down the hall and wait with the rest of the staff to see their work appear on paper.

The advent of word processing sounded the death knell for that confidant (the typewriter, not the entry-level clerk). Although the keyboard remained, type on paper was replaced by characters on a screen — first green on black, then black on white. And after a brief interlude with daisy-wheel and dot-matrix technologies, laser and inkjet printers emerged as the preferred paths from screen to paper.

But in the early '80s, when a \$1,000+ IBM Selectric typewriter seemed plenty expensive, the Apple LaserWriter checked in at a cool \$6,999 — far too costly for personal use. It took nearly ten years of engineering and price adjustments for a Mac/printer combo to cost about the same as that '80s-priced professional office typewriter. But it finally made it. It's now time to finish the word-processing revolution. It's time to put a personal desktop printer on every person's desk.

We found 13 personal printers you can buy for less than \$1,000 apiece and 6 others that cost a few hundred dollars more. Of the 19 printers, 16 use laser technology and 3 use inkjet. Laser printers produce better-looking output, but inkjet printers cost less (although the cost differential has narrowed considerably).

There are two types of printing preparation: QuickDraw and PostScript. QuickDraw is perfectly acceptable if all you print is correspondence, reports, and spreadsheets; PostScript is useful if your work includes complex graphics files such as those created with page-layout and drawing applications.

QuickDraw printing relies on your Mac to turn the image to be printed into a *bit map* — a collection of dots that the printer places on the page — in a process that uses a *raster-image processor*, or *RIP*. You need TrueType fonts or Adobe Type Manager or some other font-smoothing technology to enable a QuickDraw printer to create smooth text, and the speed of the entire process is dependent on your Mac's power and RAM.

Although QuickDraw printers cost less than PostScript ones, you may be disappointed if you use a QuickDraw printer for documents that contain EPS (Encapsulated PostScript) files or files that were created in PostScript-based applications



such as Adobe Illustrator or Aldus FreeHand. QuickDraw printers print these at a resolution of 72 dpi (dots per inch) — the resolution that you see on your screen — rather than at the 300- or 360-dpi resolution most of them are capable of. Images that appear acceptable on-screen may be jagged on paper.

PostScript, on the other hand, aids in both the speed of processing and the quality of the resulting image. Instead of relying on your Mac's processor to perform the time-consuming RIPing and on your Mac's RAM to provide the space to do so, a PostScript printer contains its own processor and RAM — your Mac is free to get back to work as soon as it sends a page to the printer. You need Apple or Adobe *driver software* to translate QuickDraw information from your Mac into PostScript code and send the code to the printer's PostScript *interpreter*. The interpreter uses this code to create a bit map that prints smoothly at the printer's resolution. Driver software is provided with every PostScript printer we tested.

Deceptive Documentation

Whether you choose laser or inkjet, QuickDraw or PostScript, we believe that installing a printer should be as painless as possible.

A packing list and warranty should be among the first things you encounter when you open the box your printer comes in. Manuals should be informative and easy to understand, with a technical-support number in plain view. Most of the printers we tested for this report were accompanied by acceptable packaging and manuals; those of the Hewlett-Packard LaserJet 4ML and the Apple LaserWriter Select 360 were especially good.

Less successful in this regard was the Brother HJ-400 printer, which came with two DOS-oriented manuals barely sprinkled with Macintosh information. A Windows and Macintosh addendum helped a bit but appeared to have been written by someone who had little familiarity with the Macintosh.

The worst was the documentation for the NEC Silentwriter 1097, which was, at best, disingenuous. Although the Silentwriter 1097 is touted as a true 600-dpi printer, its images did not appear to have 600-dpi resolution. A call to NEC eventually uncovered the truth: The Silentwriter 1097 is actually a 300-x-600-dpi printer that uses a software-based scheme called *interpolation* to approximate true 600-dpi printing. Pretty sneaky, guys.

It's a Snap

Plug-and-play is not just an ideal for personal printers; it's a must. We're happy to announce that messy toner installation, for one, is a thing of the past. However, not all consumables are

created equal (see the "How We Tested" sidebar).

All three inkjet printers use ink cartridges that are easy to install. Six of the laser printers use a single unit that contains the printer's *consumables*: toner, drum, and developer. Although this may seem like an efficient arrangement, if you frequently print page-covering graphics, you may run out of toner before the drum life ends (it's unlikely that the drum life will end before you run out of toner). With a one-piece setup, when you run out of toner, you must purchase an entire new consumables unit.

The other ten laser printers — all six of the GCC printers, the MacFriends QuickorTS, the Sharp JX-9460PS, and the Texas Instruments microLaser Pro 600 PS23 and microWriter PS65 — have two-unit consumables, with toner separate from the drum and developer.

The HP LaserJet 4ML's EconoMode draft mode goes one step further in efficiency by using only half the toner of standard printing. The print quality may be less than optimal, but it's perfectly acceptable for draft documents.

Speed Is Key

The rated engine speed printer vendors advertise is simply the time it takes to move a letter-sized piece of paper through the printer engine and to the output tray. It doesn't include the time it takes the Mac to process the print data and send it to the printer, nor does it include the preparation time the printer needs before it prints each page. The more complex the image, the longer it takes to process. If you want to print a complex image on an inkjet printer — or even on a slow laser printer — it may take a very long time indeed (see figure 1). Those with a more powerful Mac than our IICI test unit, however, should be able to achieve faster QuickDraw-printer speeds.

Text. A simple document requires little processing or transmission time. Our simplest test document was a 20-page Microsoft Word document that had only a single font, Times, which is resident in each of the PostScript printers we tested. As expected, the printers with the higher-rated engines were the fastest. The Apple LaserWriter Select 360, rated at 10 ppm (pages per minute), took top honors, with the 10-ppm NEC Silentwriter 1097 and 9-ppm TI microLaser Pro 600 PS23 following close behind.

The printers with 4-ppm engines were among the slowest of the laser printers, with GCC's 4-ppm BLP Eclipse 4 and PLP II bringing up the rear.

The inkjet printers, with their slower engines, fell well behind the laser printers on this test. Although the Apple StyleWriter II was the fastest inkjet printer by almost a minute, it was significantly slower than the slowest laser printer. The Brother HJ-400 inkjet printer redefines *slow*, with speed we had to rate not in pages per minute but in minutes per page. It took the HJ-400 more than 60 minutes to print our 20-page document. To be fair, we must note that we ran our tests with

The Bottom Line

NOW IS THE RIGHT TIME TO BUY, if you're in the market for a low-cost personal printer. We judged this batch of 19 printers on price/performance, ease of installation, documentation, and output quality. Although inkjet printers' prices are lower than ever, the price difference between inkjet and laser printers is small enough these days to make laser printers a much more attractive alternative.

⊕ = OUTSTANDING

● = ACCEPTABLE

⊖ = POOR

PRICE/
PERFORMANCE

OUTPUT
QUALITY

PRINTING
SPEED

★★★★ Apple LaserWriter Select 360 (PL) ⊕ ⊕ ⊕



The sharpest text and best output quality came from the Apple LaserWriter Select 360 (\$1,499 list, \$1,425 street). This PostScript laser printer not only garnered the highest rating from our jury of printer experts but was also one of the top performers in all of our tests. Several years ago, this printer would have easily cost three times what it does today.

★★★★ HP LaserJet 4ML (PL) ⊕ ● ●



The best overall value among PostScript laser printers is the Hewlett-Packard LaserJet 4ML (\$1,279 list, \$975 street). This compact, well-designed printer comes standard with 4 megabytes of RAM and excellent text quality, thanks to HP's Resolution Enhancement Technology. The LaserJet 4ML is Energy Star-compliant and offers the EconoMode draft mode for dramatic toner savings.

★★★★ GCC PLP II (QL) ⊕ ● ●



The best entry-level printer is the GCC PLP II (\$659 list, \$475 street). This QuickDraw laser printer offers laser-quality text at an affordable price. Keep in mind the limitations, however: Although you get sharp-looking text, EPS graphics files print at a jagged 72 dpi.

★★★★ Apple Personal LaserWriter 320 (PL)	⊕	●	●
★★★★ TI microLaser Pro 600 PS23 (PL)	●	⊕	●
★★★★ Digital DEClaser 1152 (PL)	⊕	●	●
★★★★ GCC BLP Elite 8 (PL)	●	●	●
★★★★ MacFriends QuickorTS (PL)	●	●	●
★★★★ Apple StyleWriter II (QI)	●	●	●
★★★★ GCC BLP Eclipse 4 (PL)	●	●	●
★★★★ GCC BLP Elite 4 (PL)	●	●	●
★★★★ GCC PLP IIS (QL)	●	●	●
★★★★ NEC Silentwriter 1097 (PL)	●	●	⊕
★★★★ TI microWriter PS65 (PL)	●	●	●
★★★★ Apple LaserWriter Select 300 (QL)	●	●	●
★★★★ GCC BLP Eclipse 8 (PL)	⊖	●	●
★★★★ HP DeskWriter (QI)	●	●	●
★★★★ Sharp JX-9460PS (PL)	●	⊖	●
★★★★ Brother HJ-400 (QI)	⊖	⊖	⊖

PL = PostScript or PostScript-clone laser QL = QuickDraw laser QI = QuickDraw inkjet

Listing is alphabetical within groups of equal mouse ratings.

SEE TO IT THAT THE PRINTER YOU CHOOSE TODAY IS THE PRINTER YOU'LL USE TOMORROW.

Insist upon a printer with genuine Adobe™ PostScript™ software inside.
It's the industry standard and the only way to guarantee that your printer will work
with virtually every software application and hardware environment, today
and tomorrow. Adobe PostScript software sets the standard for new color and network
printers. In fact, leading printer manufacturers offer over 300 Adobe PostScript
printers. Adobe PostScript is your assurance of the highest-quality output—
every time—whether you're printing from DOS, Windows™, OS/2®, Macintosh®, or
UNIX®. So if you're anyone from a small business owner to a professional publisher, an
Adobe PostScript printer is the best long term value for your company, today and
tomorrow. For a free guide on how to choose a printer,
call 1-800-833-6687, Dept E, Ext. 1106.

SET YOUR SIGHTS ON GENUINE ADOBE POSTSCRIPT DEVICES:
BLACK-AND-WHITE, COLOR, NETWORK AND FAX PRINTERS.



IT'S NOT JUST PRINTING,
IT'S **ADOBE POSTSCRIPT** PRINTING.

Adobe, the Adobe logo, PostScript, the PostScript logo and the tagline, "It's not just printing, it's Adobe PostScript printing" are trademarks of Adobe Systems Incorporated which may be registered in certain jurisdictions. All other marks and trademarks are the property of their respective companies. ©1994 Adobe Systems Incorporated. All rights reserved.

figure 1

Printer Speed / start your engines

Good-quality, fast printing at attractive prices is the hallmark of these personal printers. MacUser Labs used a suite of documents created in Microsoft Word 5.1, Microsoft Excel 4.0, and Aldus PageMaker 5.0 to test printer speed. We weighted the tests more toward word-processing tasks. The printers are ranked in the order of their overall

performance. Keep in mind that whereas PostScript printers use an on-board processor to image documents, QuickDraw printers rely on the Mac's processor and RAM (in this case, a Mac IIci with 8 megabytes of RAM and an 80-megabyte hard drive); printer-engine speed is independent of where document imaging occurs.

MacUser Labs

■ PostScript or PostScript-clone laser
■ QuickDraw laser
■ QuickDraw inkjet

Word

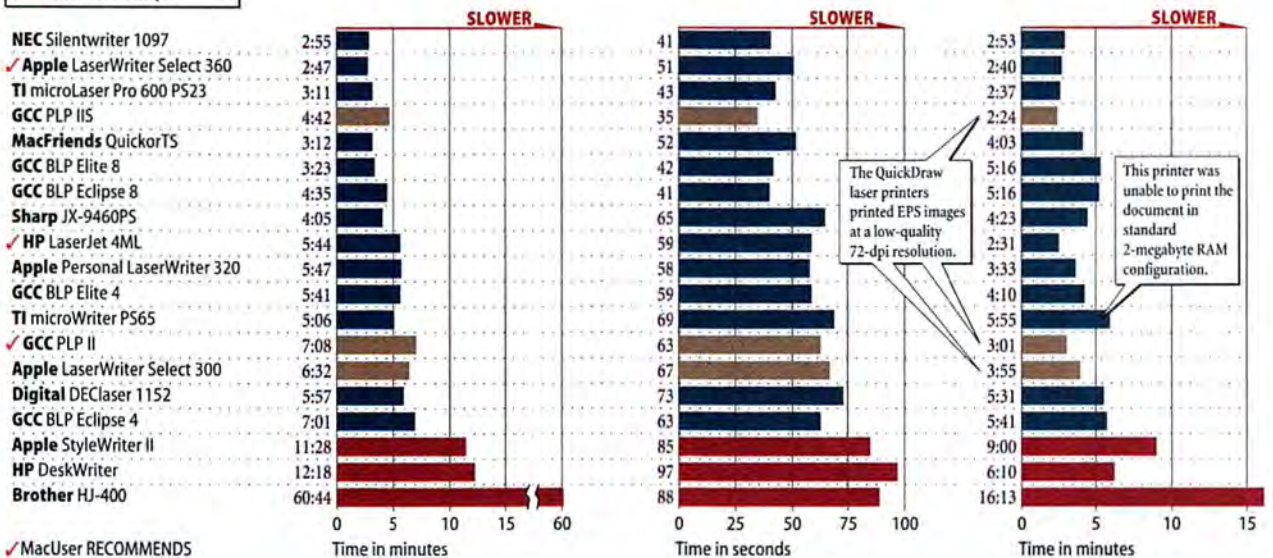
Our 20-page Word document tests raw engine speed. Top honors went to the 10-ppm Apple LaserWriter Select 360 and NEC Silentwriter 1097.

Excel

Our Excel document included data and charts as well as text. This document tests a combination of raster-image-processing power and engine speed.

PageMaker

Our PageMaker document — with its TIFF image, EPS files, gray-scale ramps, and downloadable fonts, tests a printer's (or the Mac's) processing power.



a replacement driver; Brother's original driver was faster but had unacceptable letterspacing problems. A Brother representative assured us the company is working on a new and improved driver.

Charts and Data. Spreadsheets often contain not just text but also lines and charts that tax the processing power of a printer — or of your Mac. In our Excel tests, the QuickDraw GCC PLP IIS was the fastest, beating out the 300-dpi PostScript GCC BLP Eclipse 8 and the 300-x-600-dpi PostScript NEC Silentwriter 1097, which tied for second. Less than two seconds behind was a true 600-dpi printer: the TI microLaser Pro 600 PS23 — an impressive performance, considering that 600-dpi printers have to process four times as much information (360,000 dots per square inch) as 300-dpi printers (90,000 dots per square inch).

Again, the inkjet printers placed behind the laser ones, but the Apple StyleWriter II took only 12 seconds longer than the slowest laser printer in this test, the Digital DEClaser 1152. The software-based interpreter in the StyleWriter II's driver processed the information at speeds comparable to those of a hardware-based interpreter.



Apple LaserWriter Select 300

Rating: ★★
List Price: \$730.
Street Price: \$700.
Pros: Excellent blacks.
Cons: Slow. Not upgradable.
Technology: Laser.
Imaging Model: QuickDraw.
No. of Fonts Included: 39.
Interfaces: Serial.
RAM (Std./Max.): 512K/512K.
Engine Res.: 300 dpi.
Consumables: Toner cartridge, \$89/4,000 pages.
Size (L x W x H): 15 x 15 x 6.5 in.
Weight: 15 lb.
Warranty: 1 year.
Company: Apple Computer, Cupertino, CA; 800-538-9696 or 408-996-1010.



Apple LaserWriter Select 360

Rating: ★★★★★
List Price: \$1,425.
Street Price: \$1,499.
Pros: Best image quality. Fast, 10-ppm engine. Energy Star-compliant. Supports PCL 7 MB of RAM standard.
Cons: Expensive.
Technology: Laser.
Imaging Model: PostScript Level 2.
No. of Fonts Included: 64.
Interfaces: Serial, parallel, LocalTalk.
RAM (Std./Max.): 7 MB/16 MB.
Engine Res.: 600 dpi.
Consumables: Toner cartridge, \$89/4,000 pages.
Size (L x W x H): 18.5 x 15 x 8 in.
Weight: 26 lb.
Warranty: 1 year.
Company: Apple Computer, Cupertino, CA; 800-538-9696 or 408-996-1010.

At only
\$279,⁹⁹ the
reasons to buy
EtherLAN Print
are really stacking up.

NEW!

Asanté Print \$509*
EtherPrint \$499*
Ether•Write \$695*



Power and Activity LEDs
keep you informed.

Auto sensing thinnet AND
10BaseT connections.

Supports two LocalTalk devices.
EtherLAN Print Plus supports
up to six LocalTalk devices.

High performance. Plug & play. Connects 2-6 LocalTalk devices. Saves you a cool \$219.**



Introducing the new EtherLAN Print from FOCUS Enhancements. Developed to provide you with instant LocalTalk printer capability for your Ethernet network. At \$279 it's the easy winner for your print routing needs.

The EtherLAN Print is a self configuring, plug-and-play printer solution that lets your LocalTalk printer keep up with the rest of your thin or 10BaseT Ethernet network.

You upgraded to Ethernet because it was faster. You needed increased network speed to keep your people productive. And happy. What you didn't expect was having to pay for an expensive LocalTalk to Ethernet router, or an expensive print router.

Choose From Over 30 Quality Ethernet & LocalTalk Solutions

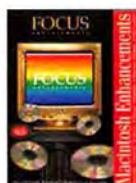
EtherLAN Cards		
EtherLAN II	60-2000	\$99.99
EtherLAN II-T	60-2500	\$99.99
EtherLAN A1-II	60-3600	\$139.99
Transceivers		
EtherLAN Tr/FN	60-2150	\$59.99
EtherLAN Tr/FN-T	60-2160	\$59.99
EtherLAN Tr/Combo	60-2170	\$79.99
EtherLAN SC	60-1000	\$199.99
EtherLAN Mini SC	60-5030	\$259.99
TurboNet Din-8	10-1008	\$14.99
TurboStar	20-1600	\$474.99

Plus much more! Call for our full catalog!

With the new EtherLAN Print you now have the most economical way to keep that investment in your Apple LaserWriter or HP LaserJet. The EtherLAN Print will support two printers, or any two LocalTalk devices. The EtherLAN Print Plus will support up to six. Both include thinnet and 10BaseT connectors.

We stand behind our technology with a five year warranty, a 30 day Money Back guarantee, and tech support seven days a week. FOCUS Enhancements has a complete line of Ethernet products from boards to transceivers to SCSI

Ethernet devices. If you've been in the dark over Ethernet, our solutions are stacked in your favor.



To Order And Get Your Free Catalog:
800-538-8862

FOCUS
enhancements



How to Order: Our customer advisors will help you Monday thru Friday 8am to 9pm, Saturday and Sunday 11am to 5pm EST. We accept Visa, MasterCard, American Express, Discover, Cashiers Checks, and Money Orders. FOCUS Enhancements, Inc. 800 West Cummings Park, Woburn, MA 01801 (617) 938-8088 fax 938-7741 You can also contact us at the following electronic addresses: 71075.1262 on CompuServe, FOCUS TECH on America Online, FOCUS on AppleLink or focus@applelink.apple.com on Internet.

©1993 Focus Enhancements, Inc. All rights reserved. All FOCUS Enhancements products are registered trademarks of FOCUS Enhancements, Inc. All prices and items are subject to change and availability. All product names are trademarks of their respective holders.

*Suggested retail prices. Prices verified on 10/20/93. Ether•Write supports up to six LocalTalk devices.
***Manufactured under patent license from Paragon Computing, Inc.

**EtherLAN Print Plus \$349.99.

Buy It Today-Get It Tomorrow only applies to "in-stock" items; orders must be placed by 4:00pm EST, Monday-Thursday.

How We Tested / *how many pages can you really print?*

MacUser Labs WITHOUT THE PROPER GUIDANCE, setting up a personal printer can become a personal nightmare, so we evaluated each printer for its documentation, packaging, and ease of installation. No matter how easy it is to set up, though, if a printer is as slow as a dog and has lousy output, it's not worth a dime.

To test the overall speed of these low-cost personal printers, MacUser Labs printed a 20-page Microsoft Word 5.1 document, a Microsoft Excel 4.0 spreadsheet with charts, and a complex Aldus PageMaker 5.0 document. Our test unit was a Mac IIci with 8 megabytes of RAM and an 80-megabyte hard drive. In addition to testing each printer's speed, we showed the PageMaker documents to our panel of experts and asked them to judge each printer's output quality.

Perhaps the most-personal experience you'll have with your printer is the one that involves your pocketbook. In addition to making the initial purchase, you'll eventually need to buy more ink and toner cartridges. Most engine manufacturers estimate how many pages you can expect from an ink or toner cartridge — for example, 4,000 pages at 5-percent page coverage. We weren't sure if users or vendors were sure exactly what "5-percent page coverage" meant — neither were we. To test the accuracy of these ratings, MacUser Labs devised a method to measure page coverage exactly.

To discover the exact pixel count of each test page, we used

TeleTypesetting's TScript 3.3 RIP software to save our test files to disk in PICT format. We then opened them in Adobe Photoshop 2.5.1 and used the Selection Info Filter from HSC's Kai's Power Tools 2.0 to count the pixels. By comparing the total number of pixels available on a page to the number of pixels actually in a page of the Word document, we were able to create a Word document with exactly 5-percent coverage. By way of comparison, our Excel document and PageMaker document had about 7-percent and 14-percent coverage, respectively.

To test the accuracy of manufacturers' claims for how long consumables last, we selected four different printer engines, represented by the Apple LaserWriter Select 360, HP LaserJet 4ML, Digital DEClaser 1152, and Apple StyleWriter II. We outfitted the printers with new cartridges and printed our Word document until the quality became unacceptable. We took the final page count, which ranged from 525 to 3,890, and compared it with the manufacturer's ratings (see the chart).

The StyleWriter II, with its inkjet cartridge, was the only printer that exceeded its rating. Although the other three fell below the manufacturers' projections, keep in mind that printer dot size, toner-density setting, toner grade, humidity, and paper quality may influence results. Most important, however, you should know that if you're printing files with lots of graphics, you're sure to see fewer pages per cartridge than a manufacturer's rating indicates. / Roman Victor Loyola

Improving Your Image. Our next test ranged beyond the normal use of a personal printer and for this reason carried less weight in our overall-performance rankings. A PageMaker document containing EPS graphics, scanned TIFF images, downloadable fonts, and hairline graphics simulated a real-world page layout and exercised the ability of each printer to

handle multiple elements in a single printing job.

Because QuickDraw printers do not support PostScript graphics, they have less work to do but produce poorer-quality output: PostScript graphics print as jagged 72-dpi bit maps. The QuickDraw GCC PLP II and PLP IIS were as fast as many of the PostScript printers, but the image quality of the



Apple Personal LaserWriter 320

Rating: ★★★★★
List Price: \$959.
Street Price: \$925.
Pros: PhotoGrade available with 6-MB RAM upgrade (\$349). Energy Star-compliant.
Technology: Laser.
Imaging Model: PostScript Level 2.
No. of Fonts Included: 35.
Interfaces: LocalTalk.
RAM (Std./Max.): 2 MB/8 MB.
Engine Res.: 300 dpi.
Consumables: Toner cartridge, \$79/4,000 pages.
Size (L x W x H): 15 x 15 x 6.5 in.
Weight: 15.5 lb.
Warranty: 1 year.
Company: Apple Computer, Cupertino, CA; 800-538-9696 or 408-996-1010.



Apple StyleWriter II

Rating: ★★★
List Price: \$359.
Street Price: \$320.
Pros: Inexpensive. Best inkjet text and graphic-image quality. Small footprint.
Cons: Slow.
Technology: Inkjet.
Imaging Model: QuickDraw.
No. of Fonts Included: 39.
Interfaces: Serial.
RAM (Std./Max.): 128K/128K.
Engine Res.: 360 dpi.
Consumables: Ink cartridge, \$22/500 pages.
Size (L x W x H): 13.5 x 8 x 7 in.
Weight: 7 lb.
Warranty: 1 year.
Company: Apple Computer, Cupertino, CA; 800-538-9696 or 408-996-1010.



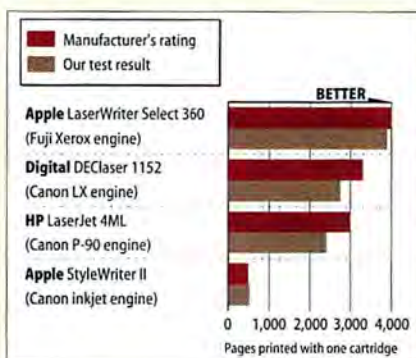
Brother HJ-400

Rating: ★★
List Price: \$399.
Street Price: \$325.
Pros: Energy Star-compliant.
Cons: Slowest printer. Poor driver software.
Technology: Inkjet.
Imaging Model: QuickDraw.
No. of Fonts Included: 18.
Interfaces: Serial, parallel.
RAM (Std./Max.): 64K/64K.
Engine Res.: 360 dpi.
Consumables: Ink cartridge, \$25/1 million characters.
Size (L x W x H): 14.5 x 12 x 11 in.
Weight: 9 lb.
Warranty: 2 years.
Company: Brother International, Somerset, NJ; 800-276-7746 or 908-356-8880; 714-859-2272 (fax).



Digital DEClaser 1152

Rating: ★★★
List Price: \$699.
Street Price: \$699 (direct).
Pros: Inexpensive. Supports PCL.
Technology: Laser.
Imaging Model: PostScript Level 2.
No. of Fonts Included: 17.
Interfaces: Serial, parallel, LocalTalk.
RAM (Std./Max.): 2 MB/4 MB.
Engine Res.: 300 dpi.
Consumables: Toner cartridge, \$33/3,300 pages.
Size (L x W x H): 16 x 14 x 8 in.
Weight: 25 lb.
Warranty: 1 year.
Company: Digital Equipment Corp., Maynard, MA; 800-777-4343 or 508-493-5111; 800-234-2298 (fax).



The Apple StyleWriter II was the only printer whose cartridge outperformed its manufacturer's rating.

We created a Word document with exactly 5-percent page coverage to test manufacturers' page-per-cartridge claims.

Our PageMaker document covered about 14 percent of the page — almost three times as much as our Word test document.

PostScript graphics they printed was poor. The RISC-based Apple LaserWriter Select 360, HP LaserJet 4ML, NEC Silentwriter 1097, and TI microLaser Pro 600 PS23 sped to the front of the PostScript-printer lineup. The slower GCC BLP Eclipse 4 and BLP Eclipse 8 and the Digital DEClaser 1152 took about twice as long to print as the fastest printers. The TI

microWriter PS65, which comes with 2 megabytes of RAM, needed more RAM before it could print the test page. When brought up to 4.5 megabytes of RAM, the microWriter PS65 was still the slowest laser printer. If desktop publishing is your stock in trade, avoid this printer.

The microLaser Pro 600 PS23 was already one of the fastest printers in this test, but you can accelerate the processing of complex graphics even more with a \$349 Texas Instruments PowerStep upgrade card. Preliminary testing showed only the PageMaker document benefiting from the card's presence on the printer's motherboard — but that document printed a full 25 percent faster. If you buy this printer and plan to print a lot of complex graphics and images, we recommend that you purchase a PowerStep as well.

Although the Sharp JX-9460PS uses a high-quality PostScript clone, PhoenixPage, it was unable to print the PostScript graphics in the PageMaker document, producing instead 72-dpi bit maps identical to those from the QuickDraw printers. A Sharp representative said the company is aware of the problem and should have a fix ready by the time you read this.

The Brother HJ-400 inkjet printer took more than 15 minutes to print the document and turned the TIFF elements into negative images. A Brother representative could only say that the company was working on it . . .

Picture Perfect

When it comes to output quality, you deserve the best, even when a printer is purely personal, right? With the 600-dpi Apple LaserWriter Select 360 and TI microLaser Pro 600 PS23,



GCC BLP Eclipse 4

Rating: ★★
List Price: \$1,099.
Street Price: \$850.
Pros: All ports active.
Cons: Slowest toner-based printer.
Technology: Laser.
Imaging Model: PhoenixPage Level 2.
No. of Fonts Included: 17.
Interfaces: Serial, parallel, LocalTalk.
RAM (Std./Max.): 2 MB/6 MB.
Engine Res.: 300 dpi.
Consumables: Toner cartridge, \$33/2,500 pages; drum, \$289/15,000 pages.
Size (L x W x H): 18 x 18 x 5.25 in.
Weight: 24 lb.
Warranty: 1 year.
Company: GCC Technologies, Inc., Bedford, MA; 800-422-7777 or 617-275-5800; 617-275-1115 (fax).



GCC BLP Eclipse 8

Rating: ★★
List Price: \$1,799.
Street Price: \$1,450.
Pros: All ports active.
Cons: Expensive.
Technology: Laser.
Imaging Model: PhoenixPage Level 2.
No. of Fonts Included: 35.
Interfaces: Serial, parallel, LocalTalk.
RAM (Std./Max.): 2 MB/6 MB.
Engine Res.: 300 dpi.
Consumables: Toner cartridge, \$33/2,500 pages; drum, \$289/15,000 pages.
Size (L x W x H): 18 x 18 x 5.25 in.
Weight: 24 lb.
Warranty: 1 year.
Company: GCC Technologies, Inc., Bedford, MA; 800-422-7777 or 617-275-5800; 617-275-1115 (fax).



GCC BLP Elite 4

Rating: ★★
List Price: \$879.
Street Price: \$745.
Pros: Inexpensive.
Technology: Laser.
Imaging Model: PostScript Level 1.
No. of Fonts Included: 17.
Interfaces: Serial, parallel, LocalTalk.
RAM (Std./Max.): 2 MB/4 MB.
Engine Res.: 300 dpi.
Consumables: Toner cartridge, \$33/2,500 pages; drum, \$289/15,000 pages.
Size (L x W x H): 18 x 18 x 5.25 in.
Weight: 24 lb.
Warranty: 1 year.
Company: GCC Technologies, Inc., Bedford, MA; 800-422-7777 or 617-275-5800; 617-275-1115 (fax).



GCC BLP Elite 8

Rating: ★★
List Price: \$1,199.
Street Price: \$975.
Pros: Fast 8-ppm engine.
Technology: Laser.
Imaging Model: PostScript Level 1.
No. of Fonts Included: 17.
Interfaces: Serial, parallel, LocalTalk.
RAM (Std./Max.): 2 MB/4 MB.
Engine Res.: 300 dpi.
Consumables: Toner cartridge, \$33/2,500 pages; drum, \$289/15,000 pages.
Size (L x W x H): 18 x 18 x 5.25 in.
Weight: 24 lb.
Warranty: 1 year.
Company: GCC Technologies, Inc., Bedford, MA; 800-422-7777 or 617-275-5800; 617-275-1115 (fax).

you've got it. Our jury found the crisp text, sharp hairlines, and excellent gray-scale images these printers produced as good as or better than those from printers many times their price (see figure 2).

The other two 600-dpi printers did not fare nearly as well. As mentioned above, the NEC Silentwriter 1097 isn't a true 600-dpi printer; it interpolates from 300 x 600 dpi. NEC's Photo-Match gray-scale technology was also a disappointment — and the fact that you can use it only when the Silentwriter 1097 is set to 300 x 300 dpi is nowhere to be found in the manual: It's stuffed away in a Read Me file on one of the installation disks.

The Sharp JX-9460PS presented an interesting challenge to our jurors. The quality of the 600-dpi text output and gray-scale images it produced received high praise, but the printer was unable to correctly print the EPS graphics that had been imported into the PageMaker 5.0 document.

The HP LaserJet 4ML, with Resolution Enhancement Technology (RET), and the Apple Personal LaserWriter 320, with FinePrint, produced higher-quality text output than the other 300-dpi printers. An optional 6-megabyte RAM card (\$349) enabled the Personal LaserWriter 320 to produce gray-scale images on a par with those from the best 600-dpi printers.

Although inkjet technology has improved, our jury still dropped the three inkjet printers into the last three places. Among them, the 360-dpi Apple StyleWriter II produced the sharpest text and graphics, with minimal wrinkling and ink bleeding. The HP DeskWriter produced heavy-looking text and graphics, and the Brother HJ-400 again secured its position as the least desirable printer, with mediocre text quality and poor image quality.

Take It Home

Coupling a personal printer to your Mac can provide high-quality, high-speed output of text and complex graphics undreamed of during the Typewriter Age. The Apple LaserWriter Select 360 and the NEC Silentwriter 1097 even offer the option of turning your personal printer into a PostScript-capable fax machine — try that with an IBM Selectric.

In our opinion — and as indicated by the results of our testing — the best personal printer you can buy is the Apple LaserWriter Select 360 (\$1,425 street). It prints beautifully, it's fast, and it's solidly built.

If the LaserWriter Select 360 is a bit too pricey for you, pick up a Hewlett-Packard LaserJet 4ML (\$975 street). With 4 megabytes of RAM standard, text-perfecting RET, a toner-saving draft mode, and power-saving Energy Star capability, the LaserJet 4ML is the best printer you can get for less than \$1,000. (While we were in the middle of testing, HP unveiled the LaserJet 4MP, a 600-dpi printer with a 4-ppm engine, which will sell for around \$1,400.)

If you're looking for the least expensive way to put a personal printer on your desk, we recommend that you bite the bullet and spring for a GCC PLP II (\$475 street). The \$320 Apple StyleWriter II may be the best of the inkjet printers, but the extra \$150 you'll spend for the PLP II's laser quality and speed will be worth it in the long run.

Tony Bojorquez is a MacUser Labs project leader. Rik Myslewski is MacUser's executive editor. Roman Victor Loyola, a MacUser Labs technician, managed the testing for this report.



GCC PLP II

Rating: ★★★★★
List Price: \$659.
Street Price: \$475.
Pros: Least expensive laser printer.
Cons: EPS graphics files print at 72 dpi.
Technology: Laser.
Imaging Model: QuickDraw.
No. of Fonts Included: 0.
Interfaces: SCSI.
RAM (Std./Max.): NA.
Engine Res.: 300 dpi.
Consumables: Toner cartridge, \$33/2,500 pages; drum, \$289/15,000 pages.
Size (L x W x H): 18 x 18 x 5.25 in.
Weight: 24 lb.
Warranty: 1 year.
Company: GCC Technologies, Inc., Bedford, MA; 800-422-7777 or 617-275-5800; 617-275-1115 (fax).



GCC PLP IIS

Rating: ★★★★★
List Price: \$879.
Street Price: \$700.
Pros: Fast 8-ppm engine.
Cons: EPS graphics files print at 72 dpi.
Technology: Laser.
Imaging Model: QuickDraw.
No. of Fonts Included: 0.
Interfaces: SCSI.
RAM (Std./Max.): NA.
Engine Res.: 300 dpi.
Consumables: Toner cartridge, \$33/2,500 pages; drum, \$289/15,000 pages.
Size (L x W x H): 18 x 18 x 5.25 in.
Weight: 24 lb.
Warranty: 1 year.
Company: GCC Technologies, Inc., Bedford, MA; 800-422-7777 or 617-275-5800; 617-275-1115 (fax).



HP DeskWriter

Rating: ★★☆☆☆
List Price: \$365.
Street Price: \$320.
Pros: Inexpensive. 3-year warranty.
Cons: Lowest text-output quality. Slow.
Technology: Inkjet.
Imaging Model: QuickDraw.
No. of Fonts Included: 35.
Interfaces: Serial, LocalTalk.
RAM (Std./Max.): 64K/64K.
Engine Res.: 300 dpi.
Consumables: Ink cartridge, \$32/1,000 pages.
Size (L x W x H): 17.3 x 14.8 x 8 in.
Weight: 14.5 lb.
Warranty: 3 years.
Company: Hewlett-Packard, Cupertino, CA; 800-752-0900 or 208-323-2551; 208-344-4809 (fax).



HP LaserJet 4ML

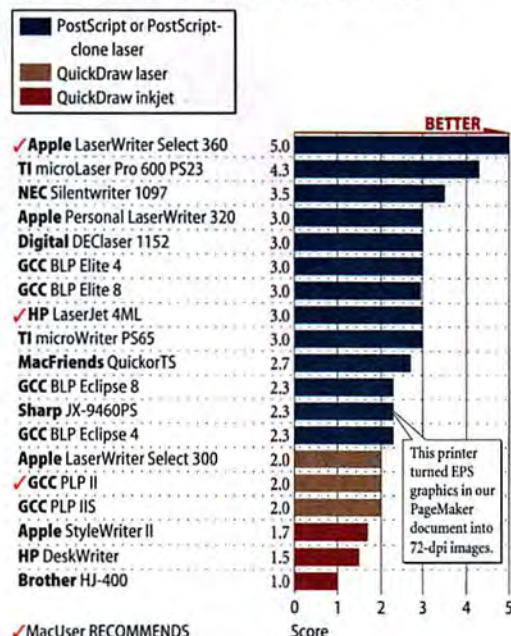
Rating: ★★★★★
List Price: \$1,279.
Street Price: \$975.
Pros: RET produces sharp text. EconoMode saves toner. Energy Star-compliant. Supports PCL.
Technology: Laser.
Imaging Model: PostScript Level 2.
No. of Fonts Included: 80.
Interfaces: Parallel, LocalTalk.
RAM (Std./Max.): 4 MB/4 MB.
Engine Res.: 300 dpi.
Consumables: Toner cartridge, \$89/3,000 pages.
Size (L x W x H): 14.5 x 14 x 6.5 in.
Weight: 15.5 lb.
Warranty: 1 year.
Company: Hewlett-Packard, Cupertino, CA; 800-752-0900 or 208-323-2551; 208-344-4809 (fax).

figure 2

Output Quality / looking good

MacUser Labs

We asked a jury of experts to judge the output quality of text, graphics, and gray-scale ramps in our PageMaker document and rate it on a scale of 0 to 5. The type of printing technology a printer uses has a tremendous influence on output quality. We were not surprised to find that QuickDraw inkjet and laser printers received the lowest ratings and that PostScript and PostScript-clone laser printers garnered the highest. We found that output quality was similar for the QuickDraw laser printers.



Best
suscipit
aliquip ex
on-sequat.
vel eum

Worst
hen-drerit
velit esse
equat, vel
u feugiat

PostScript and PostScript-Clone Laser-Printer Output

Best: Apple LaserWriter Select 360.

This 600-dpi printer produced sharp text and excellent gray-scale images.

Worst: GCC BLP Eclipse 4.

Although its text quality was acceptable, this printer's output was darker than that of the other 300-dpi printers.

Best
suscipit
aliquip ex
on-sequat.
vel eum

Worst
hen-drerit
velit esse
equat, vel
u feugiat

Inkjet-Printer Output

Best: Apple StyleWriter II.

The 360-dpi StyleWriter II is the best of the inkjet printers, which all fared poorly with our jury of experts. Apple's GrayShare technology helped improve the quality of graphic images.

Worst: Brother HJ-400.

The driver software that came with the HJ-400 not only produced slow results but also inverted our graphic image. The result is like looking at a negative of a picture.



TI microWriter PS65

Rating: ★★

List Price: \$1,099.

Street Price: \$1,050.

Pros: Includes 65 fonts. Supports PCL. Energy Star-compliant.

Technology: Laser.

Imaging Model: PostScript Level 1.

No. of Fonts Included: 65.

Interfaces: Serial, LocalTalk.

RAM (Std./Max.): 2 MB/4.5 MB.

Engine Res.: 300 dpi.

Consumables: Toner cartridge, \$49/2,500 pages; imager cartridge, \$169/15,000 pages.

Size (L x W x H): 14.8 x 13.8 x 10.4 in.

Weight: 33 lb.

Warranty: 1 year.

Company: Texas Instruments, Inc., Austin, TX; 800-527-3500 or 512-794-5970; 512-250-7329 (fax).



MacFriends QuickorTS

Rating: ★★

List Price: \$1,099.

Street Price: \$890.

Pros: Inexpensive. Fast 9-ppm engine. Supports PCL.

Technology: Laser.

Imaging Model: PostScript Level 2.

No. of Fonts Included: 35.

Interfaces: Serial, parallel, LocalTalk.

RAM (Std./Max.): 4 MB/8 MB.

Engine Res.: 300 dpi.

Consumables: Toner cartridge, \$59/3,000 pages; developer, \$129/25,000 pages; drum, \$129/85,000 pages.

Size (L x W x H): 14.8 x 13.4 x 10.5 in.

Weight: 34 lb.

Warranty: 2 years.

Company: MacFriends, Portland, OR; 800-331-1322 or 503-286-9350; 503-286-8710 (fax).



NEC Silentwriter 1097

Rating: ★★

List Price: \$1,499.

Street Price: \$1,475.

Pros: Fast 10-ppm engine. Supports PCL. 7 MB of RAM standard.

Cons: Poor documentation.

Technology: Laser.

Imaging Model: PostScript Level 2.

No. of Fonts Included: 35.

Interfaces: Serial, parallel, LocalTalk.

RAM (Std./Max.): 7 MB/9 MB.

Engine Res.: 300 x 600 dpi.

Consumables: Toner cartridge, \$240/8,000 pages.

Size (L x W x H): 18.6 x 15 x 10.4 in.

Weight: 42 lb.

Warranty: 1 year.

Company: NEC Technologies, Inc., Boxborough, MA; 800-388-8888 or 508-264-8000; 508-264-8673 (fax).



Sharp JX-9460PS

Rating: ★★

List Price: \$1,199.

Street Price: \$1,075.

Pros: Inexpensive. Supports PCL.

Cons: Poor PPD software.

Technology: Laser.

Imaging Model: PhoenixPage Level 1.

No. of Fonts Included: 62.

Interfaces: Parallel, LocalTalk.

RAM (Std./Max.): 2 MB/9 MB.

Engine Res.: 600 dpi.

Consumables: Toner cartridge, \$210/15,000 pages; photoconductor cartridge, \$190/30,000 pages.

Size (L x W x H): 14.4 x 13 x 10.5 in.

Weight: 27 lb.

Warranty: 1 year.

Company: Sharp Electronics Corp., Mahwah, NJ; 800-237-4277 or 201-529-9593; 201-529-9637 (fax).



TI microLaser Pro 600 PS23

Rating: ★★

List Price: \$1,599.

Street Price: \$1,370.

Pros: Excellent output. Supports PCL. \$349 PowerStep increases speed.

Technology: Laser.

Imaging Model: PostScript Level 2.

No. of Fonts Included: 23.

Interfaces: Serial, LocalTalk.

RAM (Std./Max.): 6 MB/22 MB.

Engine Res.: 600 dpi.

Consumables: Toner cartridge, \$49/2,500 pages; imager cartridge, \$169/15,000 pages.

Size (L x W x H): 14.4 x 13 x 12.8 in.

Weight: 32 lb.

Warranty: 1 year.

Company: Texas Instruments, Inc., Austin, TX; 800-527-3500 or 512-794-5970; 512-250-7329 (fax).



P u t t i n g I m a g i n a t i o n



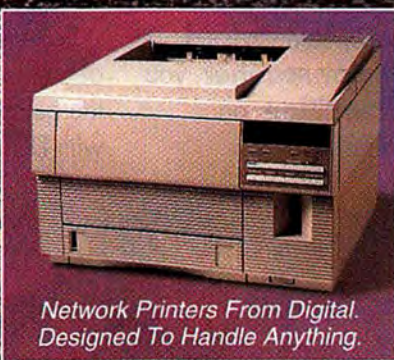
A1C

© Digital Equipment Corporation, 1994. Digital, DEClasser, and the DIGITAL Logo are trademarks of Digital Equipment Corporation. PCL is a registered trademark of Hewlett-Packard Company. PostScript is a trademark of Adobe Systems Inc. AppleTalk is a registered trademark of Apple Computer Inc.

Introducing The DEClaser 5100. The New 600 dpi Network Printer That Can Play On Any Team.

Now, from the leader in network printing, comes an exceptional 8 ppm laser printer offering unmatched performance, high-resolution graphics and expandability. The new DEClaser™ 5100. Designed to handle anything with an all-star line-up of features. Like a RISC processor, graphical coprocessor and Digital's Intelligent Printing System to deliver the fastest first page in the industry. Standard 600 dpi, upgradeable to true 1200 dpi for superb image quality. Simultaneously active serial, bi-directional parallel and AppleTalk® ports, and a built-in network interface slot for multiprotocol Ethernet or Token Ring connectivity. Two PCMCIA Type II slots and a user-installable optional hard disk for additional fonts and forms. Plus EPA "Energy Star" compliance to save you energy and money. How can you get network printing's MVP

on your team? Just call 1-800-777-4343 to order your DEClaser 5100 today, or for the name of your local reseller. Outside the U.S., contact your local Digital Sales Office.



*Network Printers From Digital.
Designed To Handle Anything.*

DEClaser 5100 includes:

- 8 ppm, 600 dpi (1200 dpi optional)
- Adobe PostScript® L2 (73 fonts)
- PCL® 5E support (47 fonts)
- RISC and graphical processors

- Serial, parallel and AppleTalk hot ports
- EPA "Energy Star" compliant
- 2 PCMCIA Type II slots
- Optional Ethernet card
- Optional internal hard disk

To Work

digital™

We Scan Corrected.



You expect a scanned image to accurately reflect the color found in your original. Getting there, however, is usually no picnic. After scanning, precious hours are often spent adjusting the image in software to capture the truest blue, a faithful fuchsia, or for example, just the right kind of red in a ripe watermelon. But DCR™ has changed all that.

Now, when you purchase the **new, low-priced ScanMaker® IISp single-pass color scanner**, you also get **DCR, Dynamic Color Rendition**, an advanced, yet easy-to-use color calibration and correction system.

DCR actually calibrates the ScanMaker IISp to a photographic industry-accepted calibration target, creating a custom color profile of your

specific scanner, ensuring the most accurate color possible as you scan the image. But don't take our word for it. Here's what *PC Magazine* said in their February 8, 1994 issue: "...this mechanism (DCR) seems to have worked well, because the ScanMaker IISp's color output was clearly the best of any scanner in our survey."

So, even if you need to capture the bright yellow flesh of a Honeyheart watermelon, like the wedge on the left, the quickest way to do it is with the new ScanMaker IISp with DCR.



For more information about the ScanMaker IISp, DCR, your nearest authorized Microtek reseller, or a **FREE** copy of *The Scanned Image* — a scanning primer, call **1-800-654-4160** or fax (310) 297-5050.

The ScanMaker IISp accurately captures millions of brilliant colors at resolutions up to 1200 x 1200 dpi through software interpolation (300 x 600 dpi optically). In addition to the DCR color calibration/correction system, the ScanMaker IISp is bundled with Adobe Photoshop 2.5 LE for either Windows or Macintosh. Windows users also get Caere's PageKeeper Portfolio document and image management software.



Get a hands-on demonstration of the ScanMaker IISp with DCR and find out more about accurate color scanning by attending Focus Seminars' "ColorRight. Color Correction & Reproduction Workshop." For dates and locations, call Microtek at 1-800-654-4160.

MICROTEK
Better Images Through Innovation.

The DCR color calibration / correction system is a proprietary system of Microtek Lab, Inc. The following are trademarks or registered trademarks of their respective companies: Microtek, ScanMaker and DCR (Dynamic Color Rendition) of Microtek Lab, Inc. Adobe Photoshop LE of Adobe Systems, Inc. PageKeeper Portfolio of Caere Corporation. SMIIISP294

HANDS ON Desktop Publishing

LASER PRINTERS /

DESKTOP CAMERA-READY COPY

NOT ALL DESKTOP-PUBLISHED material is destined for a four-color printing press. Clean gray-scale output is often all that's needed for reproduction at a quick-print or photocopy shop. That's where GCC Technologies' SelectPress 1200 comes in. This 1,200-dpi laser printer gives desktop publishers the high-resolution output required for camera-ready copy at a reasonable price.

The SelectPress scores in a couple of areas. It prints on paper as large as 12 x 19 inches, enough room for full-bleed spreads. Two paper trays — including a somewhat clumsy multipurpose feeder that attaches separately — are provided for a variety of paper sizes and media types. The output samples we printed showed crisp type and detailed halftones.

Design studios and corporate publishing departments will appreciate its functionality in mixed-platform environments. Offering both PostScript Level 2 (PhoenixPage) and PCL 5, the SelectPress automatically switches to the correct language. For networked environments, the SelectPress connects through its serial or parallel ports and supports LocalTalk, EtherTalk, and optional TCP/IP simultaneously — receiving data from one port while holding off the other ports until the current job is completed.



GCC's SelectPress 1200 delivers high-resolution, full-bleed, camera-ready output.

Built around a Toshiba print engine and powered by a 25-megahertz RISC processor, the SelectPress boasts print speeds of 8 ppm for letter pages and 4 ppm for tabloid pages. It ships with 24 megabytes of RAM (expandable to 40) and a 160-megabyte internal hard drive with 135 Monotype PostScript fonts. A SCSI port lets you add an external hard drive for even more font storage.

Priced at \$7,499, the SelectPress enters a competitive market that includes LaserMaster's Unity 1200XL-O (\$8,995), NewGen Systems' ImagerPlus 12 (\$7,495), and Xante's Accel-a-Writer 8100 (\$6,695). 800-422-7777 or 617-275-5800. / Jason Snell

FONTS / ANSWERING TO MULTIPLE MASTERS

ADOBE'S MULTIPLE-MASTER FONT TECHNOLOGY has been overshadowed these days by Apple's impending TrueType GX. But the multiple-master format, which lets you create multiple variations of weight, width, style, and size of a font from two or more core designs, is alive and kicking. Recently, Adobe (800-445-8787 or 415-961-4400) added Viva, Sanvito, Cafilisch Script, Graphite, and Tekton (\$89 each) to its multiple-master lineup. Joining the ranks are three more — with the code

names Mezz, designed by Michael Harvey; Baja, by Carol Twombly; and Luna, by Lance Hidy (which is the first font whose serifs grow). Third-party type vendors have jumped on board too: International Typeface Corp. (ITC) puts a new spin on an old favorite with ITC Avant Garde Gothic MM (available from Adobe), and Monotype Typography (312-855-1440) makes waves with Ocean Sans (\$130). By the way, Adobe has lowered its font prices by 25 percent, and other vendors have followed suit. / Pamela Pfiffner

Baja Multiple Master
Mezz Multiple Master
LUNA MM
Viva MM
Cafilisch Script MM
Ocean Sans MM

COLOR MANAGEMENT /

EFI OFFERS COLOR WITH THE WORKS

The color-management-system (CMS) wars have settled into strategic negotiations as vendors anticipate the release of Apple's ColorSync 2. But the veteran CMS developer Electronics for Imaging is moving ahead with the release of EfiColor Works, an all-in-one color-management package.

Like the integrated packages that share the Works designation, the EfiColor Works package contains everything you need in order to maintain consistent color throughout your production chain, from scanner to monitor to printer to press. It includes the core EfiColor 2.0 Processor, for handling color matching throughout the system; the new EPS XTension, for matching EPS and DCS files in QuarkXPress; EfiColor for Photoshop, for color matching of native Photoshop files; and EfiColor for Scanners, for calibrating scanners.

For QuarkXPress users, the EPS XTension is notable in that color matching can apply to all graphic types in a page layout — photographs and illustrations, spot colors as well as process colors.

EfiColor Works also contains the entire EfiColor Profile Library — software that contains critical color information about 100 popular peripherals, including monitors (Apple, Ikegami, Radius, and more), printers (Hewlett-Packard, QMS, Tektronix, and others), and printing-press inks (SWOP, Euroscale, and so on). The EfiColor Profile Editor lets you customize these profiles.

Previously, these components were available as part of another software package (an earlier EfiColor XTension shipped with QuarkXPress 3.2) or individually — a printer profile could set you back \$129 or more. EfiColor Works is priced at \$349. Users of EFI's Cachet, EfiColor for Photoshop, or any EfiColor Profile Library package can upgrade for \$79. 800-285-4565 or 415-286-8600. / PP



EfiColor target images let you calibrate your scanner.

Illustrating with Type

Treating symbol fonts as illustrations yields a surprising variety of graphic elements for your publications. BY JANET ASHFORD

WHEN YOU'RE IN A PINCH for graphic elements, the illustrations you need may be at your fingertips in the fonts you use every day. Many fonts contain characters you can use as stand-alone ornaments or manipulate to create decorative borders and handsome illustrations. Recently, there's been a surge in the number of symbol and picture fonts, which instead of containing letters are made up of tiny illustrations. The best known of these, of course, is Zapf Dingbats, but scores more are available, some quite elaborate.

To give you an idea of the versatility of symbol fonts, I chose readily available fonts such as Carta (mapmaking symbols), Woodtype Ornaments 2 (old-style printer's ornaments), and Zapf Dingbats (general symbols and ornaments), all from Adobe Systems.

To save trips to KeyFinder, make a chart for each symbol font you own, showing the characters and their respective keystrokes (type-specimen software is designed for this purpose). Zapf Dingbats, for example, includes 200 characters.

You can use a drawing program to manipulate the following illustrations, but a page-layout program works too. I used Aldus PageMaker 5.0, taking advantage of its reflection and skewing capabilities, features that are also available in QuarkXPress. Remember, too, that you're working with *typefaces* and that rules pertaining to fonts (such as automatically overprinting black) apply to them.

Janet Ashford is coauthor with Linnea Dayton of a forthcoming series of graphics how-to books, to be published by Graphic-sha, of Tokyo.



1 Start with Single Characters

A wide variety of symbol fonts are available these days. Some symbol-font characters are interesting enough to use alone as ornaments. Clockwise from top left, the leaf and square symbols are from Woodtype Ornaments 2, the deer is from Carta, and the pointing-hand and four-leaved dingbats are from Zapf Dingbats.



2 Combine and Reflect

For this simple illustration, I make four copies of the Carta deer symbol, color them medium blue, and place them over a lighter-blue background with a moon drawn by using PageMaker's circle tool. I then select and copy the four deer and use the mirror tool on PageMaker's Control Palette to flip them across the horizontal axis. I color these reflected deer dark blue and place them on a medium-blue background to create the illusion of running deer reflected in water.



3 Add Color

Adding color to picture fonts transforms them from simple symbols into rich illustrations. I start with a single ornament from Woodtype Ornaments 2 and then use PageMaker's circle and rectangle tools to create colored shapes behind the symbol, which show through its transparent areas. The exploded view shows how the elements are layered.



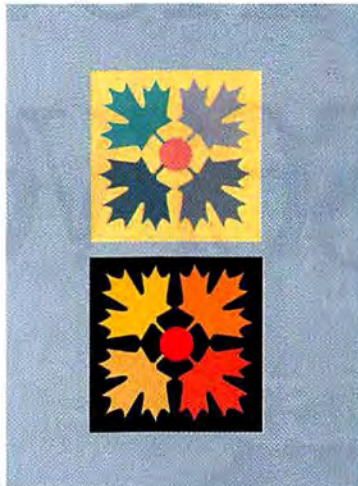
4 Scale and Overlap

You can easily resize and layer symbol fonts in a page-layout program. Using the city symbol from Carta, I create a skyline by typing five city characters in a row and making each a different type size. I color the skyline medium blue. I then make a copy of the skyline, color it dark blue, flip it on its vertical axis with the reflection tool, and place it on top of the first skyline. The dark horizontal bar at the bottom and the setting sun complete the scene.



5 Combine and Mask

Remember that in a page-layout program, fonts are treated differently from illustrations. To make this graphic element, I first color the Zapf Dingbat scissors gray and the heart red and position them so that the scissors' blades overlap the heart. Where the shorter blade touches the heart, I draw a small red patch with PageMaker's circle and line tools to cover the overlap. With the shorter blade behind the heart, it looks as if the scissors are cutting the heart.



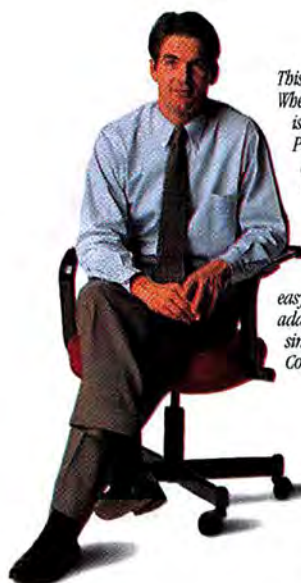
6 Scale, Skew, and Rotate

Do some experimenting with your application's transformation tools. After duplicating a maple leaf from Carta, I apply shades of yellow, gold, orange, and red to the leaves. Each leaf is scaled, skewed, rotated, and positioned to look as if autumn leaves are falling on the ground. In a variation, the same leaf, undistorted, is copied, rotated 90 degrees around a circle, and then colored with two different palettes.



7 Create Ornamental Borders

Typing in a string of repeated symbol characters results in an ornamental border. I start with a row of leaf symbols from Zapf Dingbats, alternate the leaf symbols with bullets and add border lines, and then apply color (top three rows). Another way to create a border is to overlap rows of differently colored characters, such as half circles and arrows (fourth row). Next, I type a row of arrow symbols and tighten the letterspacing until they touch each other (fifth row). It's also possible to mirror font strings to create a symmetrical border, as with the Zapf Dingbat pointing hands and the leaf ornaments from Woodtype Ornaments 2 (bottom two rows).



This is Bob, the new employee. Whether Bob works at home or is part of your office network, PowerTalk software makes it easy for him to collaborate with colleagues—without wasting his energy on lots of complex procedures or training. Plus, PowerShare makes network expansion easy for you. So easy, you can add 200 or 2000 more Bobs by simply adding more PowerShare Collaboration Servers.

PURCHASE ORDER
90972

PRIZES	DATE	1/31/94
TY PARTNERS	JOB NO.	XL9485
EQUIPMENT PURCHASE FOR PROTOTYPE	RE NO.	3990786

Send for your bill. Service bill on request to Accounts Payable.

PLEASE INITIAL FOR APPROVAL

Job No:	XL9485	Date:	1/31	Time:	4:32
Title:	PROTOTYPE DEVELOPMENT	Engineering:	ME		
Accounting:		Project Manager:	JS		
Production:		Revision:			
Marketing:					

It takes a lot of effort to physically route paper documents between different departments. With PowerTalk and DigiSign software, however, people can now approve things electronically—saving time and money (and, of course, trees).

Announcing conserve energy

PowerTalk, when used with any personal gateway, combines your voice mail, e-mail and faxes into a single universal mailbox. So you can check all your messages in one place (instead of going to the trouble of checking them separately, like you're used to doing).*



You can spend your time and energy learning five different communications programs. Or, you can use PowerTalk, which lets you send faxes, e-mail or any other kind of message, all with one simple procedure—right from the program you're already working in.



With PowerTalk, sending a simple business letter is the last thing you'd expect: simple. Instead of fiddling with passwords and enclosures, just drag your letter icon onto the recipient's business card icon. PowerTalk does the rest.

It's easier than ever to stay in touch when you're on the road. Just choose who you want to send your document to, and PowerTalk takes care of passwords, phone numbers and how it gets there (fax, e-mail, etc.). So you don't have to waste your energy doing so.



In a world of immovable deadlines and shrinking bottom lines, you've got better ways to spend your energy than fiddling with passwords, enclosures and multiple interfaces. Recognizing this, the engineers at Apple

created two of the most helpful networking innovations in the history of personal computing:

PowerTalk™ and PowerShare™ Collaboration Servers

software. With these improvements, your Macintosh®

now automatically does many of the tasks you used to do manually—so you can focus on working with your colleagues, instead of focusing on getting your computers to connect. PowerTalk is the first piece of software



PowerTalk comes standard with System 7 Pro. PowerShare Collaboration Servers software is available separately.

a new way to y in your office.

Install

You install PowerShare server software on a Macintosh or an Apple® Workgroup Server by simply pressing a button. What's more, a PowerShare network is as easy to expand—and maintain—as it is to set up.



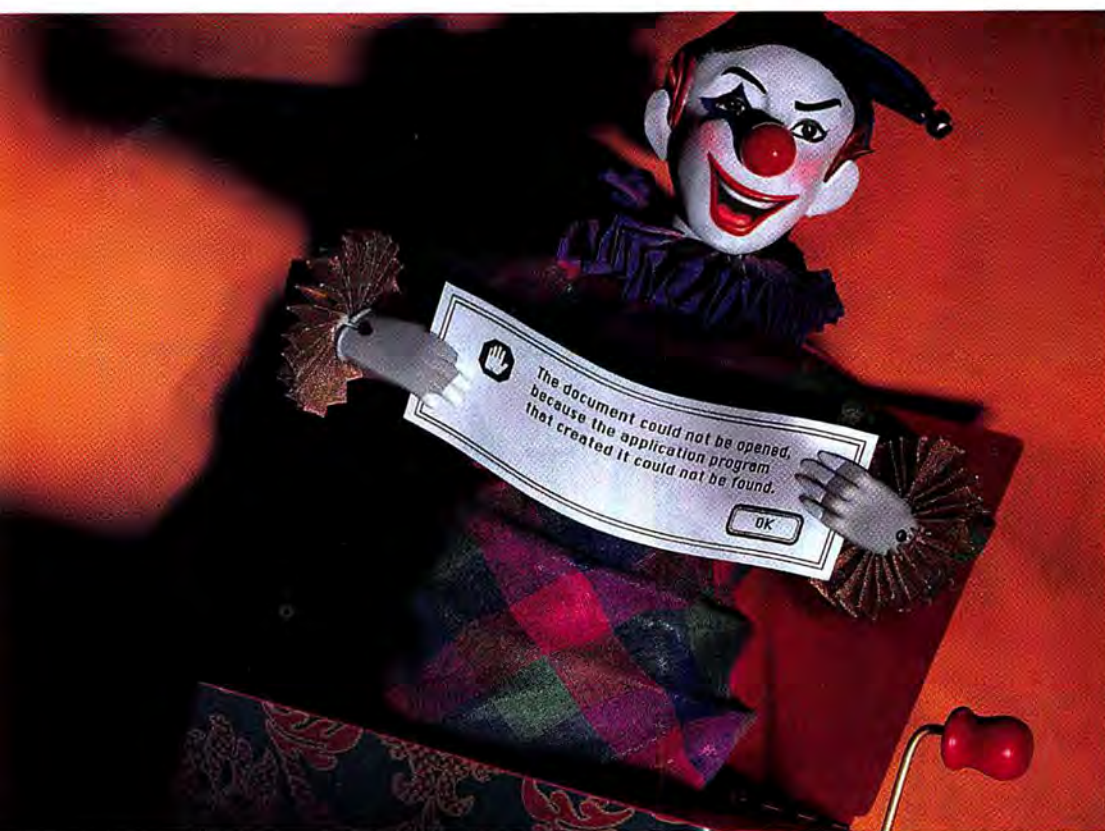
The bigger the network, the greater the need for security. That's why, to ensure total confidentiality, PowerTalk and PowerShare automatically encrypt all messages sent over your network—eliminating extra work and extra worry for everyone.

designed to make collaboration easier for individual users. Instead of bothering with separate voice mails, faxes and e-mails, all communications now reside in a single mailbox. And all messages are sent and received with the mere click of a mouse—no separate programs, no separate passwords. Plus, a catalog feature even lets people keep detailed information on their colleagues: numbers, addresses and instructions on how to send them information. PowerShare makes setting up a network equally simple. The software is easy to install and easy to maintain. Keeping track of people is easy, and adding new people is easy. To see how PowerTalk and PowerShare can help your company, call 800-732-3131, ext. 200, for the name of the authorized dealer nearest you. And discover the power that takes the work out of working together. The power of Macintosh. The power to be your best.®



Introducing PowerTalk and PowerShare from Apple

MacLinkPlus Prevents PC File Incompatibilities From Popping Up On Your Mac.



No More Surprises.

When you're trying to open DOS and Windows files on your Mac, the last thing you want is a big surprise. Now you can put an end to file incompatibility by simply installing MacLinkPlus.™ Our vast selection of translators and Macintosh® Easy Open let you open and edit almost any DOS or Windows file just by clicking on it. No fooling!

We Don't Make The Applications You Use. We Make Them Compatible.

With MacLinkPlus on your Macintosh, everyday applications are more compatible with the rest of the computing world. Use DOS and Windows files within Mac applications like Word, WordPerfect, ClarisWorks, SuperPaint, Excel and more. And if a PC user "pops up", you can turn Mac files into DOS or Windows files for them in seconds, all with original text formatting and graphics intact.



Choose The MacLinkPlus Solution That's Right For You.

Whether you share files via disk, by modem or over a network, there's a MacLinkPlus product that's right for you. They all include over 1000 translation combinations and Macintosh Easy Open. Some also contain Macintosh PC Exchange™ from Apple for accessing DOS disks, and a serial cable for PC connections. So quit clowning around with half-baked solutions. Get MacLinkPlus. And get the last laugh on file incompatibility.



Only MacLinkPlus Gives You The Complete Solution.

	Macintosh PC Exchange	DOS Mounter	Access PC	MacLinkPlus	Acrobat	Common Ground	Replica
Mounts DOS Disks	✓	✓	✓	✓*			
Can View/Print PC Files			✓	✓	✓†	✓†	✓†
Translates Word Processors			✓	✓			
Translates Graphics			✓	✓			
Translates Spreadsheets			✓	✓			
Translates Databases			✓	✓			
Can Connect Mac to PC via Cable or Modem			✓	✓			

* Includes Macintosh PC Exchange. † File must be in special format; no editing capability.

Call 800-791-1466 For More Information.
Multi-packs and site licenses available.

DATAVIZ™

THE DATABRIDGE SPECIALISTS

CIRCLE 162 ON READER SERVICE CARD FOR SPECIAL MULTIPACK PRICING AND GENERAL INFORMATION

CIRCLE 163 ON READER SERVICE CARD FOR GENERAL INFORMATION

All product names are trademarks or registered trademarks of their respective holders. ©1994 DataViz, Inc. 55 Corporate Drive, Trumbull, CT 06611 (203) 268-0030 FAX (203) 268-4345

HANDS ON Bridges

ETHERNET HUBS /

PINT-SIZED PORTABLES

A 10BASE-T HUB THAT'S SMALLER than your Mac's mouse? The NetExtender (\$239), from Asanté (800-662-9686 or 408-435-8388), is easy to move from office to office, not only because it's small but also because it doesn't require a bulky power supply — it gets power from an Ethernet port (either AAUI or AUI) on a Mac or a printer. The NetExtender lets you plug as many as four Ethernet devices in to a single network wall connector via RJ-45 plugs so you can build a mini Ethernet network in your own office. For instance, you can hook up a PowerBook, a printer, and another Mac to the Ethernet port of your office Mac.

You can safely plug or unplug any of the devices connected to the NetExtender without worrying about the effect on your network. In fact, turning off the host Mac or printer turns off the hub but doesn't disrupt the rest of your network. / John Rizzo



PHOTOGRAPHY / LEON



SERVERS /

APPLE FIXES APPLESARE

FILE SERVING IS FASTER AND MORE FLEXIBLE with the latest round of AppleShare products. The new enhanced version of the Apple Workgroup Server (AWS) 95 runs 40 percent faster than last year's version, Apple claims. The AWS 95 can hold more data than before too: as many as 10 gigabytes on five 2-gigabyte internal drives (the minimum setup costs \$5,419).

Apple has improved its AppleShare software with version 4.0.1. Unlike version 4.0, the new version supports all 68040 Macs except the AVs. The update is also compatible with more Apple server software — the Apple Remote Access MultiPort Server, the Apple Internet Router 3.0.1, AppleSearch, PowerShare Collaboration Servers, and PowerTalk — so you don't need a dedicated Mac for each server-software package.

If you already own AppleShare 4.0, you can get a free 4.0.1 Tune-Up package from Apple (call 800-769-2775, ext. 7851, or download it from AppleLink or the Internet, where you'll find it in ftp.apple.com or aux.support.apple.com, in the /appleshare directory: Just type in the user name anonymous ftp). / JR

REMOTE LAN ACCESS /

GOING MULTIPROTOCOL

PCS AND MACS CAN USE THE SAME remote-access server if the server understands PC protocols as well as Apple Remote Access (ARA). Asanté Technologies' NetConnect Remote Access Server (8 ports, \$3,899; 16 ports, \$5,875; 8-port upgrade, \$2,175) does just that by supporting both ARA and standard IPX over Point-to-Point Protocol (PPP) for connection to Novell NetWare servers. Asynchronous modems can access the NetConnect server at transmission rates as high as 57.6 kbps.

If instead of accessing a NetWare server you need to dial in to a UNIX server from your Mac, you'll need a product such as LanRover/E 2.0 for Apple Remote Access (4 ports, \$2,499; 8 ports, \$3,499), from Shiva (617-270-8300), which lets Mac users with MacTCP use an IP application to dial in. / JR

ETHERNET /

HIGH SPEED, LOW COST

THE FASTEST ETHERNET CARD for the buck may be the Ethernet LC Twisted Pair Card (\$96 to \$103), from Apple (800-538-9696 or 408-996-1010). This PDS card for the Power Mac 6100/60, 6100/60AV, the LC family, and the Color Classic uses an Ethernet driver that Apple claims is 25 percent faster than earlier versions of the driver, making the card's Ethernet

somewhat faster than built-in Ethernet on a Quadra. The card also includes a built-in 10BASE-T port. A NuBus version of the card (\$176 to \$188) is also available. / JR



LOCALTALK /

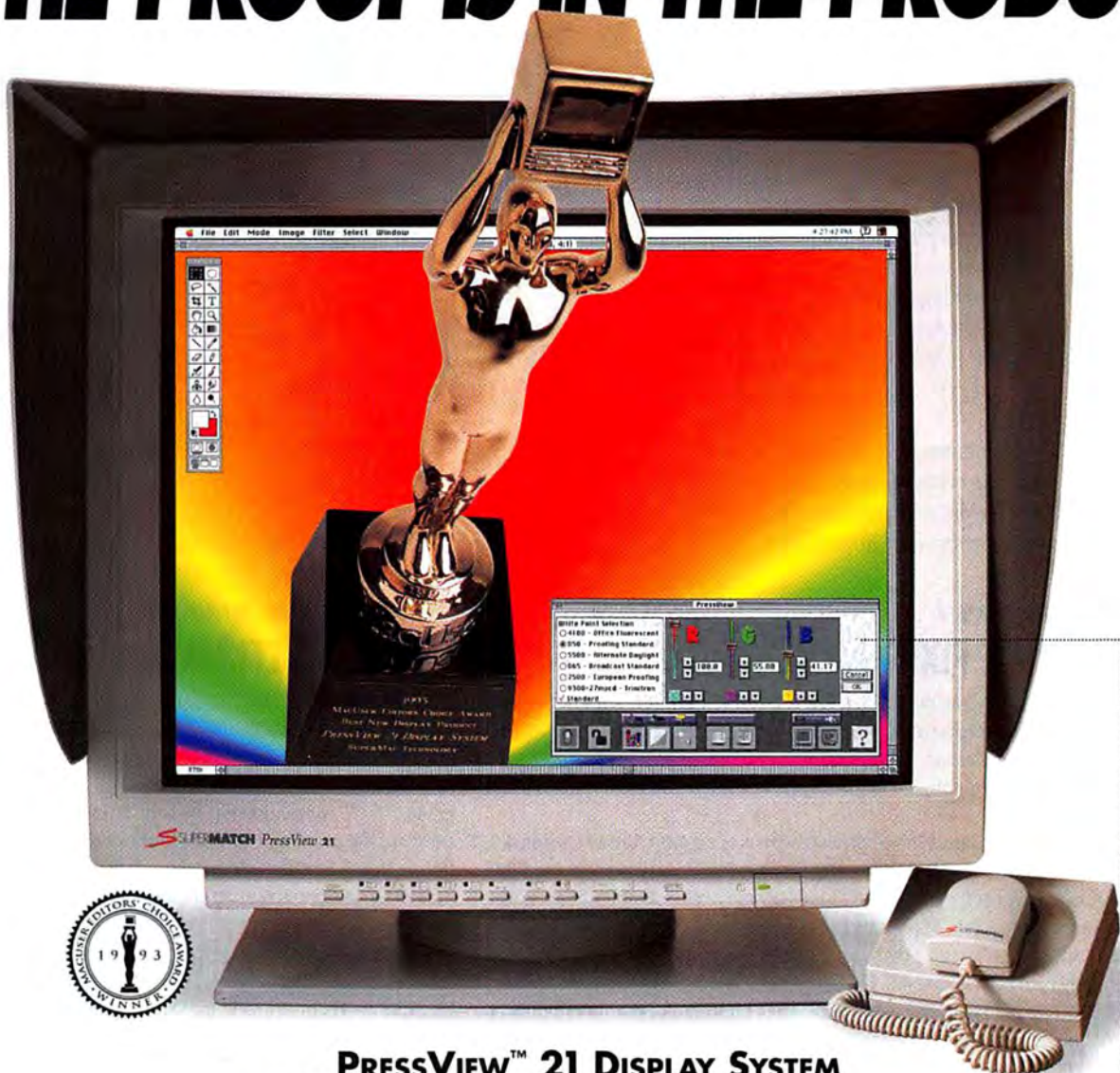
A NEW PC OPTION

EVERYTHING YOU NEED in order to hook up a PC to a Mac or a Mac network comes in the PCTalk/Timbuktu kit (\$379), from Apexx (800-767-4858 or 208-336-9400). The kit includes Farallon Computing's Timbuktu for Windows and PhoneNET PC software as well as Apexx's PCTalk adapter. Plugging the adapter in to your PC's parallel port gives you an instant LocalTalk connection. (Timbuktu also works with Ethernet and token ring.)

If your PC already has AppleTalk software, such as Farallon's PhoneNET PC or Miramar's MacLAN Connect, all you need is the PCTalk adapter (\$199). / JR



THE PROOF IS IN THE PRODUCT



PRESSVIEW™ 21 DISPLAY SYSTEM 1993 MACUSER EDDY AWARD WINNER

NOW YOU CAN CONTROL THE WAY YOU SEE COLOR!

CONTROL COLOR VIEWING

PressView 21 offers a calibrated 5000° Kelvin white point, delivering natural daylight colors on your display for accurate and consistent color and letting you better match what you see printed on paper.

Designed exclusively for SuperMac by Hitachi, PressView 21 offers high-resolution viewing — up to 1360 x 1024 — with nearly 40-percent more viewable work area than most other 21" displays.

CONTROL WITH CALIBRATION

PressView includes the SuperMatch™ Calibrator Pro tristimulus colorimeter for highly accurate display calibration. Because the calibrator updates the display control software, as well as your color management software, you'll know that your settings are accurate and up to date.

CONTROL PROOFING COSTS

Now you can save time by preproofing on the screen — and save money by reducing the use of costly proofing materials.

THE COMPUTER IS IN THE DISPLAY

PressView 21 Display System gives you the ultimate in control over color settings and screen geometry. Your Macintosh® computer communicates directly to the computer inside PressView 21 via a standard serial connection.

PressView software lets you customize, save, and restore display settings. The ColorSentry™ password security system ensures your settings won't be altered accidentally.

For the nearest Authorized Reseller, call: (800) 334-3005
For information via fax, call: (800) 541-7680

SUPERMAC
The SuperSource for Color

© 1994 SuperMac Technology, Inc. All rights reserved. The SuperMac logo, the SuperMac stylized "S," ColorSentry, PressView, and SuperMatch are trademarks of SuperMac Technology, Inc. Macintosh is a registered trademark of Apple Computer, Inc.

The Corporate Power Mac



Apple's new Power Macs are better team players in corporate environments than any other Mac so far. Here's what to expect when you plug a Power Mac in to your network. BY JOHN RIZZO

IF GETTING A PORSCHE for the price of a Chevy seems like a good deal, I can guarantee you're going to want a Power Mac and you're going to want it now. But with the Power Macs' architecture being so radically different from that of 680x0 Macs, there are pragmatic questions to consider: How well do these RISC-powered Macs fit into existing networks of 680x0 Macs, PCs based on Intel chips, and RISC-based UNIX machines? Can a Power Mac be a well-connected network client? Does a Power Mac make a good server? After I looked at some prerelease Power Macs and their software — and after MacUser Labs did some testing — I concluded that the Power Macs will fit easily into today's network environments. In fact, with some additional technology to be released during the next year, the Power Macs are probably going to be the best cross-platform machines you can buy.

In addition to doing what 680x0 Macs already do, Power Macs promise two features

IS managers have wanted on the Mac for years: the ability to run DOS and Windows software at normal PC speeds and the ability to use standard PC expansion cards. The first capability is here now, with Insignia Solutions' SoftWindows, PC-emulation software that lets DOS and Windows applications run on Power Macs at the same speed as they run on a low-end 486 PC. Higher-end-486 speed and better Windows compatibility are expected by the end of the year. Around that same time, Apple will replace NuBus slots in certain Power Mac models with PCIs (Peripheral Component Interfaces); the PCI is an expansion slot created by Intel and used in newer PCs. Apple intends to offer PCI expansion cards that will work in Power Macs as well as in PCs.

Getting Connected

As network clients, the Power Macs don't differ that much from 68040 Macs. Power Macs have built-in Ethernet and LocalTalk and can use existing NuBus cards for token-

ring, FDDI, or any other networks that Macs can access today. Most Mac client software (for example, that for AppleShare, Novell's NetWare, and CE's Quick-Mail) and network drivers (including those for AppleTalk and MacTCP) can run in a Power Mac's 680x0-emulation mode at speeds similar to those on a midlevel 68040 Mac. One of the first network applications to be ported to native PowerPC mode should be Neon Software's network-packet analyzer, NetMinder Ethernet 3.1, which was planned for release in April. Apple and other vendors will shortly follow suit.

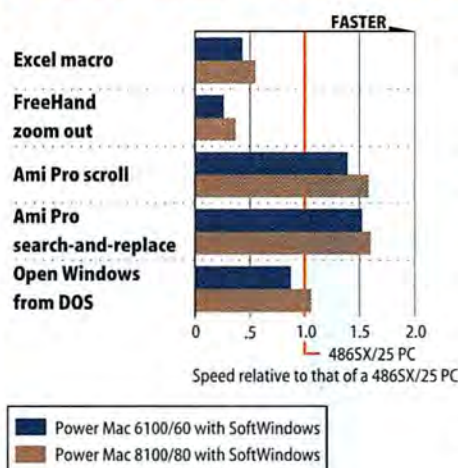
The advent of the PCI in the latter part of this year will be an important change for those with networked Macs. Apple plans to implement the platform-independent PCI specs to the letter, which means you'll be able to take a card out of a PC and put it into a Power Macintosh. Multiplatform expansion cards will ease the transition to new networking standards — such as 100-megabyte-per-second Ethernet — because corporate users will be able to specify a single board for use in Macs as well as PCs. Costs to users should go down, because vendors will be able to market a single card for both platforms. One of these vendors will be Apple, which will start to ship PCI versions of its Ethernet, four-port serial, and token-ring cards later this year.

Although PCI will eventually replace the NuBus standard, there's no reason to lament the passage of the latter. The PCI can handle a throughput of 155 megabytes per second, more than *three times* that of the fastest NuBus implementation in a Mac. And the PCI is not your typical PC expansion slot —



figure 1

Power Mac with SoftWindows / real PC speed



How well a Power Mac with SoftWindows performs varies with the Windows application you use and the Power Mac model, **MacUser Labs** but it's generally similar to the performance of a low-end 486 PC. Graphic manipulations seem to be among the slower operations when Windows is running in emulation, as you can see in the results of our tests of both FreeHand for Windows, in which we zoomed out from a complex four-color graphic, and Excel for Windows, in which we ran a macro that made calculations and drew several charts.

MacUser

COMING SOON:



MAKING THE PERFECT MAC

The editors recommend ideal desktop configurations based on what you need. Whether you're using the Mac for business, home, education, DTP or Multimedia, we can suggest the baseline system — and key peripherals — that you're most likely to need. Nobody knows what buyers need like MacUser.

HARD COPY ON HARD DRIVES

This July, MacUser tests over 30 hard drives — from 300-500 Mb — for design, quality of construction, technical support, and noise levels. SCSI Manager compatibility and performance are also tested. Plus, price-per-megabyte efficiency is detailed: 1 gigabyte drive won't cost you much more than 500 megabytes. All in the magazine that turns hard drives into easy decisions: MacUser.

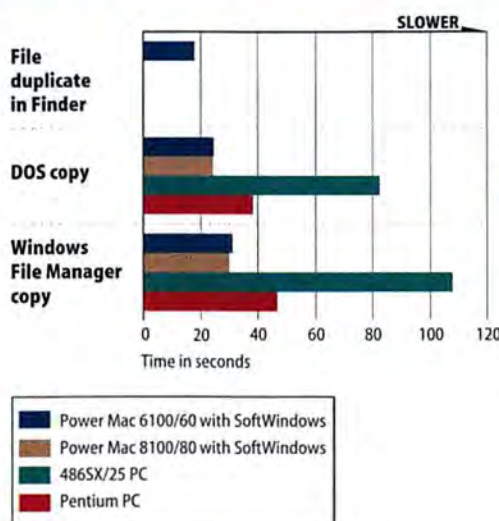
LET'S POWERTALK

PowerTalk is a System 7 Pro feature giving your system an input/output box and the ability to easily send mail within documents. This article debuts MacUser's usability testing, bringing users into the Labs to evaluate every important facet of how people interface with products. The Usability Labs is just another reason why MacUser is every buyer's most important tool.

JULY AD CLOSE:
TUESDAY,
APRIL 26TH, 1994

figure 2

SoftWindows' Speeds / faster than a Pentium PC



File-level functions work faster under Insignia's SoftWindows on a Power Mac than they do

MacUser Labs

BETA on high-end PC hardware. Even on the low-priced Power Mac 6100/60, copying a file under SoftWindows was faster than copying it on a DEC PC based on a Pentium chip, the top-of-the-line Intel CPU.

you have no DIP switches and jumpers to set. Like the NuBus, the PCI is self-configuring and plug-and-play.

No Servers Yet

The Power Mac 8100/80 is particularly well suited for use as a server. Not only does it have a large storage capacity and impressive speed but also its two SCSI ports can be used for secure data-storage techniques such as using disk mirroring and disk arrays. Even so, you may want to hold onto your 68040 servers for a few more months.

Why? Unfortunately, not much server software currently runs on Power Macs, even in 680x0-emulation mode, and the applications that do so run somewhat more slowly than on today's 68040 servers. Although products such as CE's QuickMail server software and Apple's PowerShare Collaboration Servers do run under emulation

now, important products such as AppleShare, Apple Remote Access (ARA), and AppleSearch server software do not. Apple won't have these running in emulation mode until at least May.

Around that time, we'll also see PowerPC versions of the Apple Workgroup Servers based on the current line of Power Macs, with AppleShare running under emulation. Like today's AWS line, the PowerPC server machines are expected to be beefed-up versions of the desktop hardware, sporting larger-capacity disk drives and more RAM.

What's going to turn the Power Macs into high-speed servers is native versions of server software. One of the first native server applications will be ACI US' 4D Server 2.0, which will ship sometime this spring. Apple has not announced a shipping date for native versions of AppleShare, ARA, and AppleSearch server software, but all are

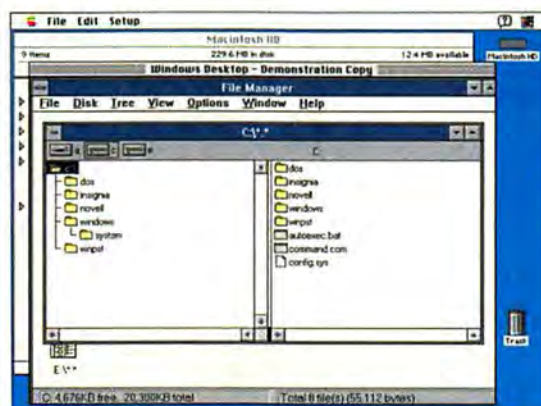


figure 3 / SoftWindows runs DOS and Windows in a window on a Power Mac, or either can fill your whole screen. Which way you choose, you can switch between Windows and the Finder or Windows and a Mac application as the active screen.

WANNA SEE WINDOWS SCREAM ON YOUR POWER MAC?



So you finally get your hands on the hottest new Mac and what happens?

Somebody insists that you run Microsoft Windows™ applications.

Don't despair. Just double click on SoftWindows™ and hang on tight.

You see, SoftWindows not only lets you use your Mac as a Mac, it also lets you run thousands of popular

Windows programs—as fast as a 486.

You can run DOS programs, too. Not to mention PC network applications such as NetWare, LAN Manager and TCP/IP.

How can SoftWindows be so utterly compatible? Because it includes Windows 3.1 and MS-DOS® 6.2, optimized to run at top speed.

And since both DOS and Windows are prein-

stalled, you don't have to put up with tedious installations.

With SoftWindows, you can copy and paste between PC and Mac applications. You can even use Macintosh peripherals—CD-ROMs, printers, modems and more—with PC programs.

Call us today at 800-848-7677 Dept. A. Or visit your dealer. What you discover will blow you away.

SOFT WINDOWS

Windows Compatibility for the Power Macintosh.

Insignia®

In Europe, call (44) 494 459426.

CIRCLE 154 ON READER SERVICE CARD



When I Said "I Need A Truly Portable Ethernet Connector,"

Dayna Said, "Take It Away."

No Boundaries
NO LIMITS

Pocket SCSI/Link. Portable, Flexible, Affordable.

If you're looking for an Ethernet connector that is truly portable, then size up the new convenient Pocket SCSI/Link™ from Dayna. Its innovative design makes it the lightest and most compact Ethernet connector available. Weighing in at a mere 5 ounces, Pocket SCSI/Link is easy to carry around and it's light on your budget as well.



DB-25 and HDI-30 connectors allow a single SCSI cable to connect to any Macintosh.

For complete flexibility and ease of use, we've included things that others leave out.

Features like DB-25 and HDI-30 SCSI ports, so that a single SCSI cable lets you easily connect to either a PowerBook or a desktop Mac; a PowerMiser™ cord that

lets Pocket SCSI/Link run from the Mac ADB port on 10BASE-T networks; and a tiny 2 ounce power supply.

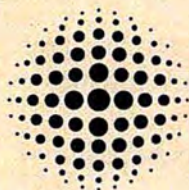
Extra Features At No Extra Cost.

Pocket SCSI/Link is the ideal network connection for PowerBooks and desktop systems that have no internal card slot or built-in Ethernet. And, because it's backed by our lifetime warranty, 24-hour replacement, and expert technical support, you'll have the confidence that all your connections will be right. At work or on the road. Call 800-443-2962 ext. 818 today and find out about Pocket SCSI/Link. Or use our handy 24-hour FAX Response System.

FEATURES	
Pocket Size - 4"x3"x1.25"	✓
Light Weight - 5 oz.	✓
PowerMiser ADB Cord*	✓
Light Weight Power Supply - 2 oz.	✓
SCSI ID and Termination Switch	✓
Pass-Through SCSI - DB25 & HDI30	✓
10BASE-T and Thin Ethernet	✓
Autosensing Technology	✓
100% Apple SCSI Compatible	✓
Lifetime Warranty	✓

* Recommended for 10BASE-T networks only

FAX Response: 801-269-7340, Doc.#1203



Dayna®

likely to be available in less than a year.

This time frame overlaps with another development Apple has been talking about: the eventual support of DOS and Windows clients by ARA and other server software. We may be seeing the assembly of the elements necessary to create Mac-based server software that competes with PC-based server software such as NetWare: multiple services, high speed, storage redundancy, and support of PC clients.

Apple has indicated that rather than using AU/X, the operating system of the AWS 95, the Power Macs will use PowerOpen, the joint Apple/IBM UNIX version, which is based on IBM's popular AIX. Although a Mac-based competitor to NetWare is still the stuff of speculation, the Power Macs may open some doors in this area.

Power Macs Do Windows

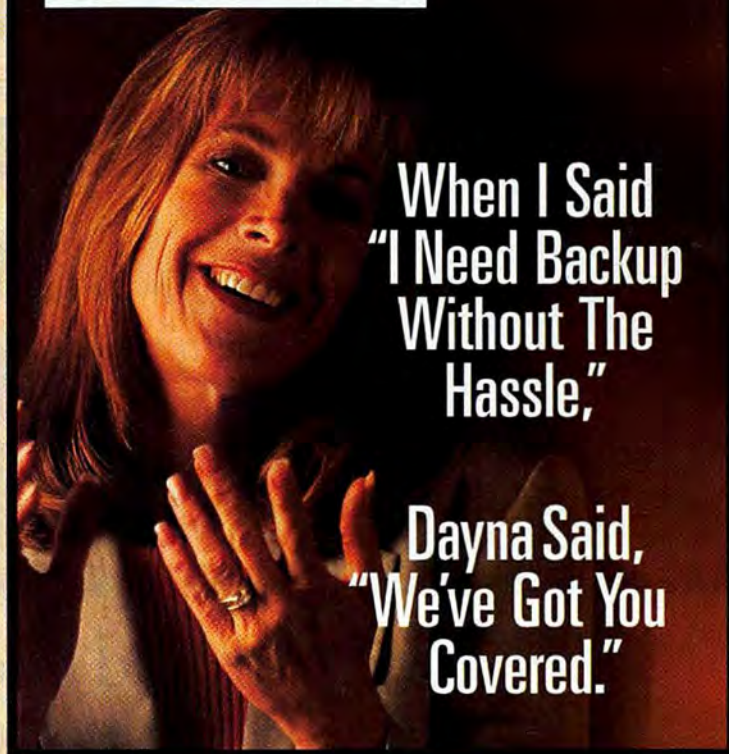
In the meantime, SoftWindows will effectively integrate Macs into corporate environments, where it can be used to run Windows software on Power Macs. The two main supporters of Insignia's Windows-emulation technology are Apple and Microsoft: Apple is offering three Power Mac/SoftWindows bundles, and Microsoft is using SoftWindows to enable users to run Windows software on its Windows NT operating system. In return, Microsoft let Insignia use Windows source code in SoftWindows. It is this source code combined with the number-crunching power of the Power Macs' PowerPC 601 CPUs that makes SoftWindows much faster than its 680x0 predecessor, SoftPC.

Apple's bundles come with SoftWindows preinstalled and are available for \$2,909 for the 6100/60, \$3,859 for the 7100/66, and \$5,929 for the 8100/80 (Apple's prices as of press time). The price includes a monitor and a keyboard, 16 megabytes of RAM, and a 250-megabyte hard drive for the 6100/60 and 7100/66 and a 500-megabyte hard drive for the 8100/80. SoftWindows is also available separately from Insignia, but pricing was not available at press time.

SoftWindows on a Power Mac really makes the machine look and feel like a Windows PC, right down to the bouncing cards in Windows' Solitaire. You'll need at least the 16 megabytes of RAM Apple provides — I felt more comfortable with the 20 megabytes on the beta version of the Power Mac

No Boundaries

NO LIMITS



When I Said
"I Need Backup
Without The
Hassle,"

Dayna Said,
"We've Got You
Covered."

SafeDeposit Gives You Easy Backup Anytime, Anywhere.

Whether you're in the office or on the road, the files on your Mac are at risk. If backup wasn't so much trouble, you'd probably do it all the time. Well now there's a way to get the security you need with none of the hassles. We call it SafeDeposit™, the only backup program designed with the user in mind. And the ideal solution for desktop systems and PowerBooks alike.

Unlike any other backup program, SafeDeposit puts you in charge of your own backup schedule. And PowerBook users on the road can back up important files to the office using ARA. To find out more about easy, reliable backup for your desktop Macintosh, PowerBook or AppleShare file server, call 800-443-2962 ext. 821 today. Or use our handy 24-hour FAX System for full details.



MacUser, ★★★★★
December 1993

Dayna®

FAX Response: 801-269-7340, Doc.#2300

SafeDeposit and No Boundaries, No Limits are trademarks of Dayna Communications, Inc. All other product names are the trademarks of their respective holders. ©1994 Dayna Communications, Inc., Sorenson Research Park, 849 West Levey Drive, Salt Lake City, UT 84123

CIRCLE 34 ON READER SERVICE CARD

CompuServe Highway



**CompuServe would like to introduce you
to our information highway.
Complete with visitor centers, shopping malls,
town squares, and other world travelers.**

You've probably been hearing a lot about the information highway lately. But before you take your next trip, maybe you should make sure the highway you're on is a superhighway. Like CompuServe.

CompuServe has nearly 2,000 places for you to go, things for you to see, and fun for you to have. You can turn in to one of our many forums where nearly every hardware and software vendor is represented, along with almost every shade of political opinion. Our Electronic Mall[®] is filled with the newest merchandise, and our CB Simulator and Electronic Convention Center let you just stop by and chat.

Other services range from renowned reference databases to timely financial data and thousands of freeware and shareware programs.

Plus, CompuServe has over a million and a half

members worldwide. So, you're bound to find plenty who will share your interests, be able to offer advice, or just become fast friends.

For only \$8.95 a month, you can get unlimited connect time — day or night — to a full package of more than 50 basic services. That includes news, stock quotes, travel arrangements, movie and restaurant reviews, 60 E-mail messages a month, and more. Plus, a whole universe of other services is available at nominal additional charges.

So, get on the fast track. For more information or to order, see your computer dealer or call 1 800 848-8199. And take our information highway straight into the next century.



CompuServe[®]

The information service you won't outgrow.[™]

on which I evaluated SoftWindows. SoftWindows makes it easy to connect your Power Mac to a PC network, because Novell's NetWare client software comes preinstalled in the Power Mac/SoftWindows bundle. SoftWindows also works with LAN Manager, TCP/IP, Windows for Workgroups, and other PC network protocols.

From within SoftWindows, you can access files stored on your Power Mac's hard disk, and you can use your Power Mac's CD-ROM drive, if you have one, to run PC CD-ROMs. SoftWindows' SmartCopy utility is a Windows/Mac Clipboard link that lets you copy and paste between Windows and Mac applications.


How fast the Power Macs ran applications under SoftWindows varied with the application and the Power Mac model — our results (see figure 1) were generally similar to those of a low-end 486, such as a PC laptop. The exceptions were DOS and Windows system operations, which were faster under SoftWindows than on actual PCs. For instance, copying files in Windows File Manager on either the 6100/60 or the 8100/80 (see figure 2) took *less time* than doing it on a high-end 486 or a Pentium PC!

The most problematic aspect of SoftWindows is that it is incompatible with some software. SoftWindows uses instructions for the 286, so DOS and Windows software that requires a 386 or later processor can't run under SoftWindows. This was true of SoftPC also, but it hasn't been a problem until recently, when some DOS and Windows software-installer programs began requiring 386 compatibility. Applications that do run under SoftWindows include Lotus 1-2-3, Ami Pro, Excel for Windows, and Microsoft's Visual Basic. Software that does not run includes current versions of Quattro Pro, Painter for Windows, ClarisWorks for Windows, and Photoshop for Windows. We found, however, that we could bypass the incompatibility problem by installing a copy of the software that was one version older than the current release.

Insignia plans to solve the incompatibility problems by introducing a SoftWindows upgrade later in the year that will use instructions for the 486. As for speed, improvements to the Power Macs, such as a 100-megahertz version of the PowerPC chip, will improve SoftWindows' speed, and a future Mac using a PowerPC 604 chip may

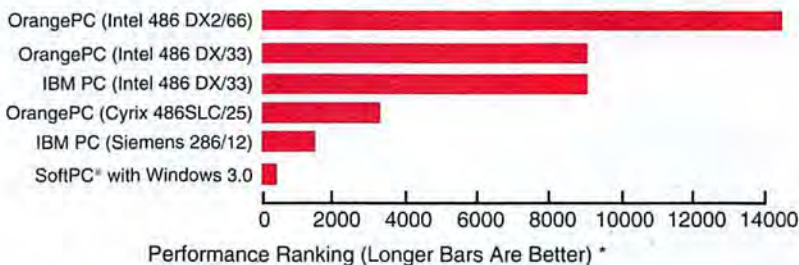
bring the average speed of a Power Mac running applications under SoftWindows up to that of a high-end 486 or beyond.

The outlook is encouraging. The Power Macs will be better corporate players than the 680x0 Macs, and with the adoption of new features such as the PCI and the availability of native server software, they are bound to be attractive options for many

corporations. SoftWindows removes the "nonstandard" stigma the Mac has had all its life and gives the Power Macs an advantage over IBM's PowerPC platforms, which can't yet run Mac software. 

MacUser technical editor John Rizzo is the author of *MacUser Guide to Connectivity* and *How Macs Work* (Ziff-Davis Press).

How fast is WindowsTM on a Macintosh[®]?



It's blazingly fast with our newest version of OrangePC. Incorporating an Intel® 486 DX2/66, the OrangePC NuBus card is a state-of-the-art solution for running your MS-DOS®/Windows based applications inside a Macintosh window. Unlike lumbering DOS software based emulators, OrangePC packs the power and the features to get the job done for serious power users. OrangePC combines dramatic 486 DX2/66 performance with a 128K cache, 64 megabytes of on-board memory, SuperVGA graphics, and PCMCIA for all your expansion needs. Also, the OrangePC offers high-speed, seamless, network connectivity. It's like having a complete IBM® PC inside your Mac which can run Windows applications simultaneously and independently of your Mac's 680X0 or PowerPC™ programs.

So if you want the fastest Windows performance for your Macintosh or PowerPC Mac, call us now for your own OrangePC. Priced from \$999.00.

OrangePC
MS-DOS Coprocessor

SuperVGA compatible graphics;
Supports 1024x768 with 265 colors

On-board RAM; User expandable to
64MB for those large Windows
applications

PC compatible Serial and
Parallel ports



Optional PCMCIA card for
network compatibility;
Ethernet, Token Ring, etc.

128K cache
boosts the
486
performance

Microprocessors up to
Intel 486 DX2/66



MacUser June 93



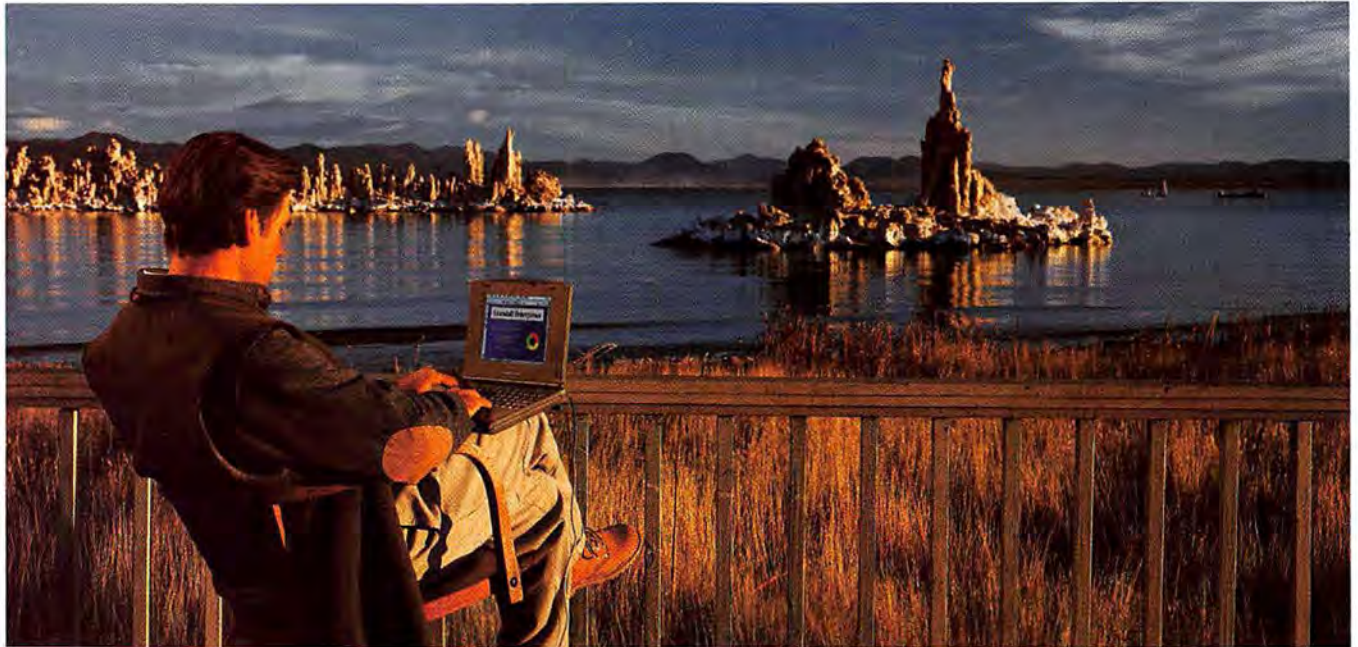
* Benchmark results are based on the Processor Harmonic measurements from PC Bench version 7.21. SoftPC for Windows was run on a Quadra 700. © 1994 Orange Micro, Inc.

Orange Micro
Inc.

"14 Years of Innovation and Excellence"
1400 N. Lakeview Ave., Anaheim, CA 92807
(714) 779-2772

CIRCLE 130 ON READER SERVICE CARD

Now you can access your office from anywhere you happen to be. Bummer.



Under normal circumstances, the last thing you want to think about when you're away from the office is the office. Then again, when was the last time you operated under normal circumstances?

What you really want is the power to control the way you work. To turn wherever you are at the moment into the most productive place on earth. Unrestricted by walls, time sheets and bad coffee.

What you really want, in other words, is freedom. The freedom that comes with the Apple® Remote Access family of Client, Personal Server and Multiport Server products.

With Apple Remote Access, Macintosh® and PowerBook® users can easily dial into office computers, servers and networks from virtually anywhere they happen to be. Anytime they happen to be there.

Once connected, it's just like being in the office. You can retrieve files. Collaborate with colleagues. Send and receive electronic mail. Or even print documents. All from the most remote locations.

Apple Remote Access works with System 7. Which means you work with tools you're already familiar with, such as the Chooser and Finder. And with integrated DialAssist™, you can dial in from just about any place on the planet without having to hassle with outside lines, country codes or credit card numbers.



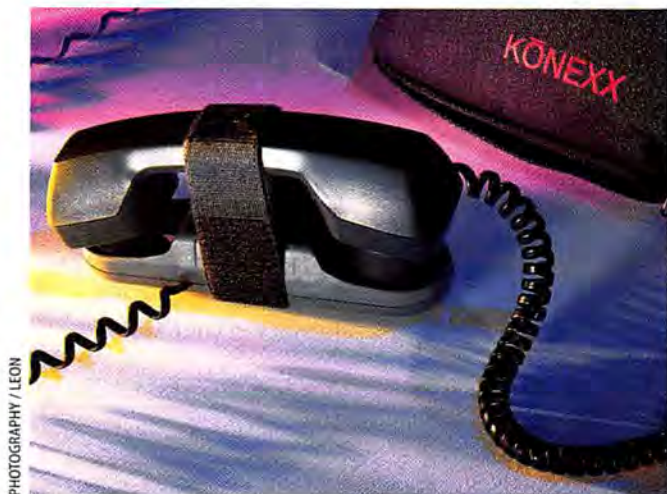
The Apple Remote Access family of Client, Personal Server and Multiport Server products gives you the flexibility to work wherever you want, yet still have access to all your office resources.

No matter how big your organization is, there's an Apple Remote Access solution designed for you. Call 800-538-9696, extension 150, for the Apple reseller in your area. Wherever that may be.



HANDS ON

Mobile Office



PHOTOGRAPHY / LEON

MULTINATIONAL MODEM / KONEXX KOUPLER

THROUGHOUT THE REST OF THE WORLD, the RJ-11 phone plugs used in the U.S. that Americans think are "universal" don't work, which has led to frustration for many a globetrotting PowerBook user: A fax or log-on to the home office devolves quickly from mission-critical to *Mission: Impossible* if you can't hook your modem into the local phone lines.

Unlimited Systems (619-622-1400) has a solution with its Konexx Koupler Model 204 (\$149; with carrying case, tools, and accessories, \$169). It's a portable acoustic coupler that lets you connect your modem to the handsets of overseas phones, pay phones, and most cellular phones. The Konexx Koupler supports data-transmission rates as high as 14.4 kbps on electronic phone systems and 2,400 bps on U.S. pay phones. It requires no special settings and promises 30 hours of modem time from a single 9-volt alkaline battery.

Also available is the Konexx Modem Koupler Model 305 (\$299), which combines the acoustic coupler with a built-in 2,400-bps (data)/9,600-bps (fax) modem. / Jim Shatz-Akin

PAGING ALL NEWTONS / APPLE WIRELESS MESSAGING SERVICE

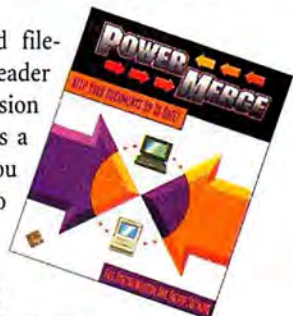
TAKING A CUE from paging services that supply pagers to their subscribers, Apple's Personal Interactive Electronics Division and MobileComm have teamed up to offer the Apple Wireless Messaging Service: a

Newton MessagePad with a Newton Messaging Card for lease. Priced at \$49.95 per month (provided you sign a 24-month lease contract), you get the hardware plus local pager coverage; nationwide coverage costs an additional \$20 per month. This service includes as many as 125 text messages per month as well as four news briefs per day. For more information (within the U.S. only), call 800-474-6374. / Stephan Somogyi

POWERBOOK UTILITIES / NEW, UPGRADED, AND GONE

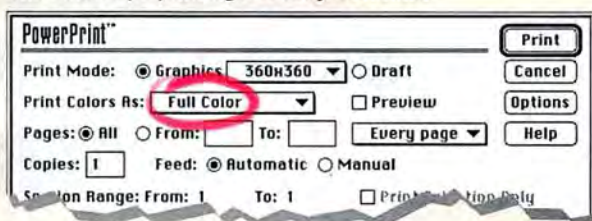
THERE'S NO SHORTAGE of PowerBook utility packages these days. No sooner had Symantec announced that it would stop production of Norton Essentials for the PowerBook than ASD (909-624-2594) started touting its new Wiz Tools for PowerBook package. For \$99.95, you get security software, automatic remote connection to networks, file synchronization, battery-level and disk-activity indicators, and other goodies designed to make PowerBooking a little easier. Frequent travelers (or anyone who makes a lot of overseas phone calls) will like the WorldClock feature, which adds a pop-up clock to your menu bar that tells you the time and date in any countries you select.

For those who want a high-powered file-syncing package, PowerMerge, from Leader Technologies (714-757-1787), is now in version 2.0. Priced at \$129, the new version adds a document-comparison feature that lets you compare two text documents line by line to make sure you're updating the correct version. PowerMerge also lets you rename documents from within the program and locate all duplicate files. Interestingly, Leader is promoting PowerMerge as an easy-to-use basic backup program too. / Victoria von Biel



MAKING CONNECTIONS / COLOR PRINTING

You don't have to worry about finding a compatible color printer when you're traveling with your PowerBook, if you have PowerPrint 2.5 (\$149; upgrade only, \$30), from GDT Softworks (800-663-6222 or 604-291-9121). This serial-to-parallel adapter cable and new driver software support 32-bit color, so you can take advantage of low-cost color printers for PCs and of printers that print millions of colors. You can also use specialty printers, such as those with wide carriages. The software gives you the usual printing controls, such as reduction, enlargement, inversion, horizontal and vertical flips, and landscape printing. / Nancy Peterson



Just Click and Double Your RAM

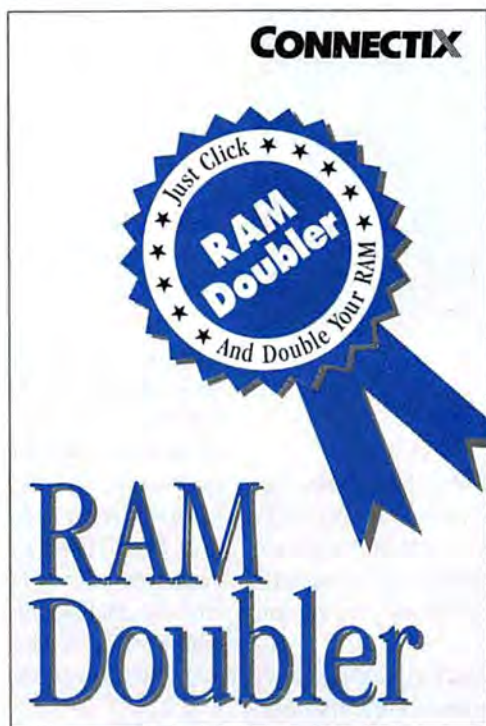
About This Macintosh	
Macintosh Quadra 650	
Total Memory :	5,120K
System Software	1,187K

Before RAM Doubler

RAM Doubler doubles your RAM without expensive hardware or complicated installation. It's worry-free from the start.

RAM Doubler™ gives your Mac twice as much memory to open applications. You'll be rid of "Out of Memory" messages forever.

- Doubles your RAM.
- Compatible with all applications.
- Fast and easy to use.
- United States Patent Number 5,063,499. Other patents pending.
- Requires Mac II or better (68030 or 68040 processor), System 6 or 7, 4 MB RAM (hard disk required for Macs with 4 to 6 MB RAM).



The best thing about RAM Doubler is that it's easy to use. Just click to double your RAM. It's that fast. It's just that easy.

This package includes the one-step installer for the RAM Doubler software and an easy-to-use manual. Nothing else is required.

It's never been easier or more affordable to add memory to your Mac.

About This Macintosh	
Macintosh Quadra 650	
Built-in Memory :	5,120K
Total Memory :	10,240K
System Software	1,187K

After RAM Doubler

RAM Doubler is the latest from Connectix, the Macintosh memory experts and the makers of award-winning products such as CPU - Connectix PowerBook Utilities, CDU - Connectix DesktopUtilities, Virtual, MAXIMA and MODE32.

Adobe Illustrator...	2,000K	
Adobe Photoshop...	2,048K	
Microsoft Excel	2,000K	
Microsoft Word	2,048K	
PageMaker	2,048K	
QuarkXPress	2,048K	
System Software	2,083K	

Double your RAM and keep more applications open.

**Contact Your Favorite Software Supplier
or Call Connectix Direct to Double Your RAM:**

800-950-5880 ext.237

CONNECTIX

2600 Campus Drive • San Mateo, CA 94403 USA 800/950-5880 • 415/571-5100 • FAX: 415/571-5195

© 1994 Connectix Corporation. RAM Doubler, CPU - Connectix PowerBook Utilities, CDU - Connectix Desktop Utilities, Virtual, MAXIMA and MODE32 are trademarks of Connectix Corporation. All other trademarks are property of their respective holders.

CIRCLE 62 ON READER SERVICE CARD

PowerBook Tips

From replacing corrupted files to taming the power adapter, these tips from experienced PowerBook users will keep you on the move. BY JOSEPH O. HOLMES

File Sharing

Here is a quick way to tell when file sharing is on after you wake up or restart your PowerBook: Leave a shared folder on your desktop. (You can share an empty folder if you want, but an alias or a folder with a customized icon won't work.) A quick look at the bar on the folder's icon will tell you that file sharing is on.

Chris Holmes
Berkeley, CA

Monitors Control Panel

If you use an external monitor with your PowerBook, you can select it as your main monitor by dragging the menu bar from the built-in monitor's icon in the Monitors control panel to the external monitor's icon. Unfortunately, some applications, especially some games, don't check for the menu-bar location and still appear only on the built-in monitor. The same is true for startup screens.

To fix this, hold down the Option key while your Monitors control panel is open.

Write to PowerBook Tips

c/o MacUser
950 Tower Lane
18th Floor
Foster City, CA 94404

You can also send your tip to Joseph Holmes (72241,731) on ZiffNet/Mac, MacUser's on-line service. We pay \$25 for every undocumented tip we print, and the Tip of the Month earns \$100; see page 4 for more details.

You'll see a smiling little Mac pop up on your icon of the built-in monitor. Drag the little Mac to the icon of the external monitor. Your games and startup screen image will now display correctly on the external monitor. When you're on the road again, everything automatically reappears on your built-in monitor.

George Pytlik
Vancouver, BC, Canada

AC Adapter

The PowerBook's AC adapter is difficult to pack — its sharp prongs can tear through even PowerBook cases made of tough nylon.

An inexpensive three-prong adapter will cover up those prongs so they are not so dangerous. Just twist off the inexpensive adapter's prongs with a pair of pliers, and fit this adapter over the PowerBook adapter's prongs.

Del Holmes
Muncy, PA

Quieter PowerBooks

You can silence the startup sound of a PowerBook 100, 140, 145, or 170 by inserting a headphone plug into the audio-output port. You don't need headphones — just pick up a mini phone plug from an electronics-supply store.

Richard Hart
Alpena, MI

[You can turn off the startup chime on other PowerBooks by using the lowest setting in the Sound control panel. — Ed.]

A Smaller CIM

If you use CompuServe Information Manager (CIM) on a low-capacity PowerBook hard disk, throw out the file called CIM Data, and you'll save anywhere from 270K to 320K of space. This file contains color resources

TIP OF THE MONTH

Spare System Folder

Here's one way to fix a corrupted System file while you're on the road:

Use a compression utility to compress a freshly installed version of the System and Finder files, and keep them on your PowerBook hard disk.

Should there be any indication that your system is corrupted (frequent crashes, for example), drag the currently installed System and Finder files from your System Folder to the Trash (don't empty it), expand the compressed System and Finder files, place them in the System Folder, and restart. You can then empty the Trash.

Neil Van Ess
Chester, PA

for the splash screen, color icons, and other information. Download the black-and-white CIM Data file from ZiffNet/Mac's Download & Support Forum (ZMLITE.BIN, in Library 5), and you'll have black-and-white icons in your Browse window for only an additional 6K.

Kevin Norris
San Francisco, CA

AppleTalk Networks

If you're continually disconnecting your PowerBook from and reconnecting it to an AppleTalk network, switch AppleTalk off and reboot when you leave the network. If you just switch AppleTalk off and keep on working, AppleTalk continues to take up a great deal of RAM. You can turn off AppleTalk in the Chooser, but I use ToggleAT (available as TOGATA.CPT, in Library 3 of ZiffNet/Mac's Download & Support Forum), which lets you turn AppleTalk on and off without opening the Chooser.

William Gallagher
London, England

[Some commercial PowerBook utilities, such as Billy Steinberg's PBTools and Connectix's CPU, also let you turn AppleTalk on or off without opening the Chooser. — Ed.]



"I Chose A Mitsubishi Monitor For The Same Reasons I Chose A Mitsubishi TV."



Three year parts and labor warranty on all 14"-21" monitors.

Mac users buy Mitsubishi monitors for the same reason they buy our TVs: Trust. Our full line of 14" to 21" desktop and 29" to 42" large screen monitors for all Macintosh® applications delivers the quality, renowned durability, innovation and overall value you expect from Mitsubishi – at an affordable price. All desktop models feature exceptional performance, upgradability and low emission designs. And you can select from a range of advanced CRT technologies including flat square, Trinitron® and the exclusive new DiamondTron™ hybrid design. For information in the U.S. and Mexico, call us at 1-800-843-2515. In Canada, call 1-800-387-9630. For immediate product specifications, call Mitsubishi Quikfax at 1-800-937-2094.

 **MITSUBISHI**
DISPLAY PRODUCTS

In Case of Emergency . . .



Crashing systems, recalcitrant hard drives, and erratic applications are a problem anywhere, but fixing them on the road means planning ahead — and carrying some tools with you. BY SHARON ZARDETTO AKER

ARE YOU PREPARED for emergencies on the road? And what should you pack, just in case?

I recently took a four-day semivacation. You know the kind — you squeeze in a few hours of work each day while the Caribbean waves visible from the hotel-room window do their best to distract you. For the first time in two years of PowerBook schlepping, I decided to live dangerously. All I packed was my PowerBook and an AC adapter. No system disks. No emergency disk. No backups. I figured that if something went wrong with the PowerBook, it would mean that I was fated to take a *real* vacation.

But if you're away for a week or so and you have critical work to do, you can't be quite so cavalier. Without your computer in working order and your files available, you'll be up the old creek without a PowerBook.

All Systems No Go

You should start by packing a full set of system disks. What you're most likely to run into is the inability to start up or unpredictable crashing that nothing but a reinstallation of the system software will cure. Don't forget that in addition to the basic system disks, you will also need the appropriate

System Enabler file.

You'll be carrying six to eight disks for such an emergency situation. And if your PowerBook doesn't have a built-in floppy drive, you'll need to bring one of those along too.

For solving system-software problems, there are two alternatives that let you leave that pile of floppies at home. Each method works for a lot of people, but I mention them with reservations — which is to say I wouldn't bet my *job* on having them work in a crunch.

The first alternative is to use a compression utility to make a condensed copy of your System Folder. Also make yourself a startup disk containing a minimal system, using the Apple Installer. Start up by using the startup disk, and then expand the compressed System Folder. The risk here is that the problem that led to the system corruption may be lurking in your copy of the System Folder too. Make sure you compress a *fresh* copy of the System Folder, not the one with all the iffy extensions and control panels you add the day before you leave home.

The second alternative is to create two partitions of your hard disk and keep a clean



System Folder on the smaller partition. If the PowerBook can't boot from the main partition, it will automatically switch to the other one. With the second partition running the show, you can see the main partition and get to your work, run some disk-diagnostic software, or replace the system files. (By the way, the Mac mounts the partitions in alphabetical order, so name them accordingly. The Startup Disk control panel shows the partitions as separate disks, but because both the partitions share the same SCSI ID number, you can't set one of them to start up out of alphabetical order.)

Emergency First Aid

Right up there with corrupted system software, vying for first place in the Problem Most Likely to Happen on the Road contest,

POWERBOOK SECRETS / new Duo batteries

THE POWERBOOK DUO 250 and 270c each come with a high-capacity NiMH (nickel metal hydride) battery that provides 50 percent longer battery life than the older Duo battery and can be recharged in as little as three hours.

The good news is that this Type 2 battery works nicely in the older-model Duos (the 210 and the 230) as long as you install the latest PowerBook Duo Enabler software; otherwise, you'll find that the battery's performance isn't even as good as the Type 1's. The only way to get the Enabler software is from system software, which comes with a new Duo, or with a new

battery. If you order a Type 2 battery (using order number M1835LLA) from your dealer, you'll get a disk with the new Enabler file and four updated control panels (PowerBook, PowerBook Setup, PowerBook Display, and AutoRemounter). If, however, your dealer orders the battery as a service part (order number 661-1735), you won't get the software.

You can identify a Type 2 battery in three ways: Its battery-release button is smaller than the one on the earlier battery; it doesn't have that useless little battery-charge switch; and the label reads M1499, High Capacity Type 2. / Rich Wolfson



PLUG INTO

NEW 28,800 bps Modems

SupraFAXModem™ 288PB

SupraFAXModem™ 144PB

Supra

Plug into Supra
for price and
performance.

Plug into state-of-the-art technology — the revolutionary new SupraFAXModem 288 moves data at a blazing 28,800 bps, offering the fastest speeds ever! With error-free compression throughput can be as high as 115,000 bps!

Plug into value — SupraFAXModems are worlds ahead of similarly-priced modems. You'll get more features you can depend on, without spending more money.

Plug into dependability — each SupraFAXModem comes complete with cables, top-rated software, easy-to-read manuals, a generous five-year warranty and free support!

**NEW
FOR NEWTON**

So go ahead. Plug into
performance, dependability and value.
Plug into Supra today!

For instant information, call Supra's
FaxBack system at: 503-967-0072

For a Free Modem Catalog, or a
Reseller near you: 1-800-944-8772



Supra Corporation

PRODUCT	MAC	DESCRIPTION
SupraFAXModem PLUS	\$149.95	External 2400 bps data & 9600 bps fax
SupraFAXModem 144LC	\$189.95	External, low-cost 14,400 bps data & fax
SupraFAXModem 144PB	\$269.95	Internal 14,400 bps data & fax for PowerBooks

PRODUCT	MAC	DESCRIPTION
SupraFAXModem V.32bis	\$249.95	External 14,400 bps data & fax with display
SupraFAXModem 288PB	\$399.95	Internal 28,800 bps data & 14,400 bps fax for PowerBooks™
SupraFAXModem 288	\$399.95	Top-of-the-line, external 28,800 bps data & 14,400 bps fax

is a hard disk that refuses to mount, no matter what you try. Or you may have other disk-based problems, and rebuilding the desktop isn't helping and Disk First Aid (right there on your system disks) tells you there's a problem it can't fix.

Whether you swear by Symantec's Norton Utilities for Macintosh, Symantec's Public Utilities, or Central Point's MacTools (my favorite), *always* travel with emergency startup and disk-repair disks. Test the startup disk before you leave home, making sure it actually starts your computer. Don't join the club of panicked and frustrated PowerBook users who run into a disk problem on the road and call to order a disk-repair package to be shipped overnight to whatever hotel they're in. You'll find there's no such thing as a generic startup disk for your PowerBook in any of these packages; you have to make your own, because you need the correct System Enabler file for your PowerBook.

Applications and Files

How are you going to write that report, or crunch those numbers, or log on to your remote network if your main application decides to quit repeatedly for unknown reasons? It's not necessary to bring a set of master disks for reinstalling the whole application; it's seldom an application's support files that are causing the problem (except perhaps for the Preferences file, which you should trash at the first sign of weird problems with any application — especially Word). All you need is the application itself. Most applications fit on a floppy; compress them, and you can fit two or three on a disk. And speaking of compression, if room on your hard disk isn't at a premium, keeping compressed copies of the applications in a folder (with a name such as In Case of Emergency, Break Glass) cuts down the floppy stack.

If your system's covered and your applications are restorable, you might think you're set. Think again. What are you working on? How long will it take you to start again from scratch if the file is corrupted? Bring a backup of your important files, and back them up continually as you work. Keep three copies around — a spare on the hard disk in case the first copy is corrupted and another on a floppy in case the whole PowerBook goes down — you might be lucky enough to

find another Macintosh to work on.

Here's a tried-and-true method for keeping copies of those important files available: E-mail the documents to yourself before you leave. If you need them, you can download them. Or you can make a set of backup disks, packaged and ready to be shipped to you at your remote location; leave them with a colleague or friend who can send them to you overnight if necessary.

Hard-Luck Hardware Stories

So far, we've considered only software emergencies. What about hardware? If you don't do hardware fixes at your home base, you're not likely to do them on the road either. But if you're used to opening your PowerBook (damn the warranty, full speed ahead), you should prepare yourself for some on-the-road fixes too: Cables and memory modules can come loose with all that jostling during travel. What tools you need depends to some extent on your PowerBook model. In general, you should pack an antistatic wrist strap and screwdrivers: Torx #8 and #10 for all-in-one PowerBooks, a T8 for a Duo, and a Phillips for a 100. If you think the idea of packing a tool kit is too far-fetched, I refer you to my colleagues Rich Wolfson and Don Crabb. Don had some RAM installed while visiting a trade show in San Francisco earlier this year and, late that very same night, ended up with a dead PowerBook, due to a bad memory module. If Rich hadn't been in the habit of carrying around all sorts of tools "just in case," Don would have missed a crucial deadline.

When it's a hardware problem you can't fix yourself, don't panic. The folks at Apple SOS are only a phone call away (800-767-2775 within the U.S.); you can ship the PowerBook to them from any location, and they'll ship it back.

Living Dangerously

So what happened to my PowerBook on my vacation? It broke. A faulty motherboard made the keyboard work first erratically and then not at all. I couldn't have fixed it even if I *had* packed everything! I came home with a useless PowerBook and a sun-tan. It was great. ☹️

Sharon Zardetto Aker is the coauthor with Richard Wolfson of the second edition of *The PowerBook Companion*.

KILLER IMAGES IN A KEYSTROKE

Custom illustrations in font format.
Hot, Fun and Affordable.

7 New Collections
(up to 100 images per collection).

Available in a Portfolio Pack.

15 Unique Collections in All!

Call 1-800-343-TYPE for a free demo disk.



CELEBRATIONS



COMMERCIALS



DELECTABLES



JOURNEYS



INDUSTRIALS



WILDLIFES



FontEik
DESIGNFONTS FROM LETRASET®

CIRCLE 65 ON READER SERVICE CARD

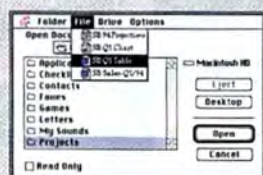
THE CRITICS WOULD TELL YOU NOW UTILITIES MAKES YOUR MAC FASTER AND EASIER TO USE.



THAT IS, IF THEY WEREN'T STILL SPEECHLESS.

Now Utilities has won so many top awards lately, the critics almost seem awestruck. But when they do speak, you'll find their comments echo those of author/consultant Bob LeVitus, who calls Now Utilities "a must have for any serious System 7 user." Why all the fanfare? Because Now Utilities

makes your Macintosh so much faster and easier to use.



Easy instant access.

frequently used files and folders. No more time wasted digging through endless folders in the Finder. You navigate your hard drive faster because you can open items directly from submenus in the Apple menu, assign keyboard shortcuts to any menu item, and locate misplaced files in a flash. Even if they've been compressed or archived. What's more, you can reuse boilerplate items of any type in any application, and organize, view and store graphics, text, sounds and QuickTime movies.

SAVES TIME.

Now Utilities saves time by giving you instant access to



Finds files fast.

MORE CONTROL.

Now Utilities puts you in control. If you use Times the most, just drag it to the top of the Font menu. Fonts appear in their actual typefaces, so you choose the right font the first time. You can also arrange extensions and control panels in the order they work best, and link together extensions that require each other.

KEEPS YOU GOING.

No more lost work if you lose power: Now Utilities automatically saves your work at any interval you specify. You can even save every keystroke to a special backup file. If your Mac crashes at startup, Now Utilities turns off the culprit, so you get back up and running. It's even a one-stop source of system information, perfect for dealing

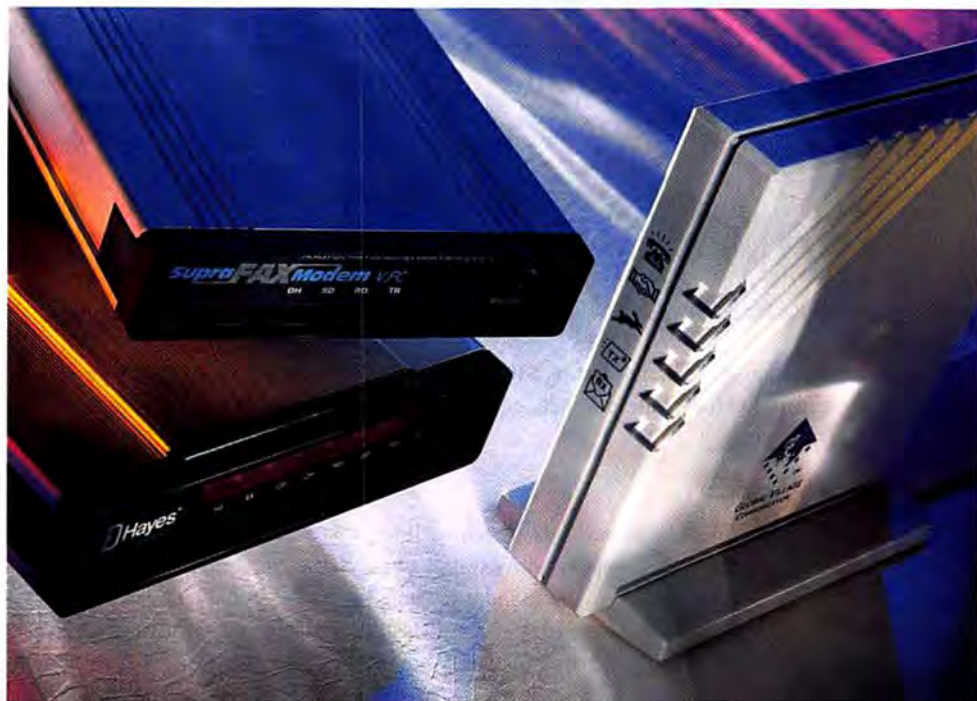


Puts you in control.

with Tech Support questions for any of your software. To order Now Utilities today for just \$89.95*, a \$40.00 savings off the list price, call us directly at 1-800-237-2078. Or see your local reseller. We're certain you'll become a satisfied critic yourself.

**Now
Software**

*Dealer prices may vary. For literature via FaxBack, call 503-274-2810, ext. 5. For 50-packs and site licensing information, call 800-237-3611, ext. 131.
© Now Software, Inc., 921 SW Washington, Suite 500, Portland, Oregon 97204-2823.



PHOTOGRAPHY / LEON

V. Fast Modems

SUPERFAST MODEMS ARE HERE at last, which is great news for anyone doing remote computing. BY STEPHEN SATCHELL AND VICTORIA VON BIEL

Want an inexpensive, superfast modem? Take your pick: There are V.fast, V.FC, V.32terbo, and soon V.34 models, all crowding the shelves of your local superstore.

Confused? You're not alone. During the past year, a dizzying array of modem technologies has appeared in anticipation of the release of modems based on the V.34 (also called V.fast) protocol, which will send data hurtling across phone lines at a top speed of 28.8 kbps (kilobits per second). Although the specs for V.34 have been available for a while, *official* recognition of the guidelines isn't expected until June, meaning that products that use the official specs won't be

in the stores until this fall. Late last year, however, Rockwell International released the V.fast class, or V.FC, chip set, which implements a proprietary version of draft V.34 specs (V.FC modems aren't fully compatible with V.34 modems, but the two types of modems can communicate with each other at speeds lower than 28.8 kbps). Four companies (Hayes Microcomputer Products, Microcom, Supra, and Zoom Telephonics) started offering products incorporating V.FC chips for sale early this year. These companies will probably deliver V.FC-to-V.34 upgrades in the \$50-to-\$100 price range when new products become available after official recognition of the V.34 specs.

Just to make things even more confusing, V.32terbo, which is capable of a 19.2-kbps data-transfer rate, employs technology developed by AT&T that is not based on the V.34 specs. The Global Village Mercury line of modems uses V.32terbo chips. V.32terbo modems are not compatible with either V.34 or V.FC ones but, again, can communicate with these modems at speeds slower than 19.2 kbps.

Who Needs V. Fast?

Should you rush out and buy one of these new modems? Maybe. If you use your modem mainly to access an on-line service and you already have a V.32 modem (capable of 9,600 bps)

or a faster one, you don't need to upgrade — yet. But if you're a PowerBook user who does a lot of remote computing or if you use Farallon's Timbuktu Remote or Apple Remote Access, a V.34 modem is going to make your telecommuting life a *lot* easier. Unfortunately, *internal* V.34 PowerBook modems will draw too much power to be used on battery power alone. For best performance, Supra recommends that its SupraFAX-Modem 288PB V.FC modem be used when the PowerBook is plugged in.

Another area in which V.34 modems will be valuable is in connecting two or more local-area networks. Their high speed will make LAN-to-LAN or remote-computer-to-LAN connections a lot more efficient. With V.42bis data compression, for example, you can transfer a bit-mapped graphic at an effective rate of 200 kbps over a 28.8-kbps connection, a rate an Ethernet or token-ring network can easily support.

If you're expecting V.34 modems to be expensive, then you're in for a pleasant surprise. Unlike V.32bis modems, whose prices started at \$1,500 and then gradually came down as their technology was more widely adopted, V.34 modems are going to have prices that start low and stay stable, with

Inspiration— think of it as your electronic napkin...*Plus!*

It's the Quickest Way to
Develop Ideas and Plans.

With Inspiration's Diagram view,
quickly brainstorm ideas and
visually communicate even your
most complex processes. Flip to
the integrated Outline view to
transform your ideas into effective
written documents.



Call today for your
FREE DEMO!
(800) 877-4292

Inspiration
Inspiration Software®, Inc.
503.245.9011 Tel. • 503.246.4292 Fax
© 1994 Inspiration Software®, Inc.

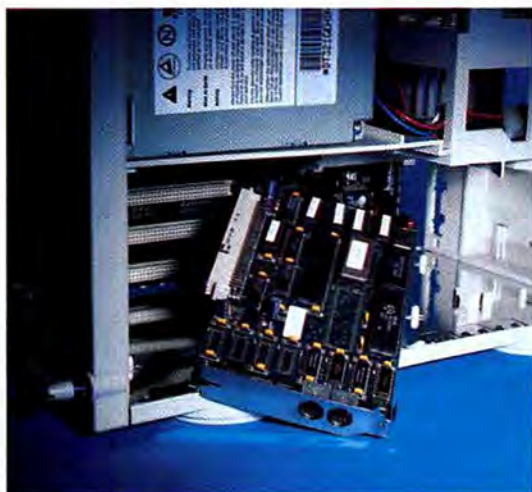


figure 1 / A little too fast for your Mac? The Mac's serial manager limits how fast your computer can communicate with a V.34 modem. You can get around this bottleneck with Creative Solutions' NuBus Hustler High Speed Serial board, which adds one serial port capable of data transfer at 230.4 kbps or two serial ports capable of 115.2 kbps.

consumer-grade modems costing \$400 and up and industrial-grade products costing \$700 and up.

Phony Lines

The news isn't all good, however. V.fast technology is proving to be a very sensitive test of phone-service quality. Many standard telephone-industry practices (pair gain, subscriber-loop loading, and continued use of older central-office subscriber-interface cards, for example) will keep you from attaining full speed. The bottlenecks are in your local phone exchange. Even though a long-distance network will support V.34 at full speed, it's what's between your modem and the first digital switch that will slow you down.

There's not much you can do to remove this bottleneck, short of complaining to your local phone company. Among your other options are to have your inside wiring

checked by an electrician to make sure it's up-to-date and to install a digital connection (a T-1 link) between the phone company and your company's phone switch.

To compensate for poor-quality phone lines, V.34 was designed to examine every single connection and adjust the modem's equalizers and signal converter to get the fastest possible data transmission. From their top speed of 28.8 kbps, V.34 modems can step down in 2.4-kbps increments, just as V.32bis modems can, so that each fallback position slows the data-transfer rate down just a little bit, rather than cutting it in half as V.32 and older protocols do.

So why won't a V.34 modem speed up file-download from an on-line service? The packet-switched networks on-line services use don't have enough bandwidth to handle V.32bis communications, let alone V.34. What's more, the computers used by on-line services have enough problems keeping up

V. WHAT? / a guide to modem-technology names

COULD MODEM-PROTOCOL LABELS be any more complicated? We think not. You won't be surprised to learn that all these names are thought up by a bunch of techno-bureaucrats. In the meantime, here's a quick guide to what the names in the current crop signify:

V.34, V.fast, V.FC. Rather than wait for the official guidelines for V.34 to be ratified (which happens this summer), a few modem manufacturers have jumped the gun and released modems that use V.FC (fast class) chips. These modems are virtually the same as — but aren't fully compatible with — V.34 modems. Another name for V.34 is V.fast, which was the interim (and unofficial) name of V.34 during its development. All these modems are capable of a top speed of 28.8 kbps.

V.32terbo. Also unwilling to wait for final ratification of the V.34 specs, AT&T went ahead and developed V.32terbo technology, which allows data-transfer rates as high as 19.2 kbps. (By the way, V.32terbo is a play on words. This protocol comes after V.32bis; *bis* means *second* in French, and *ter* signifies *third*.) V.32terbo modems are not compatible with V.34, but that's not a big deal. For many people, V.32terbo speed is plenty fast enough, and you can still connect to V.34 modems at 14.4 kbps.

PrecisionColor™ Pro from Radius is the fastest 24-bit color graphics card available for under \$1,800. Not in one category, not in just a few functions, but in overall performance. In fact, it's up to 3000% faster than your unaccelerated Mac.

So now you'll be able to really scream ahead with all the speed and elegance your Mac can deliver.

In addition to unmatched speed, PrecisionColor Pro gives you unrivaled flexibility. You get "on-the-fly" resolution switching.

And you can quickly change between one-page and two-page views without rebooting.

This new card is the only high-performance graphics card that fits in all Macintosh® NuBus™ systems. And it's fully compatible with a wide range of monitors, including

Move As Fast As Your Mind.

PRECISIONCOLOR PRO
radius



our new
IntelliColor™/20
display.

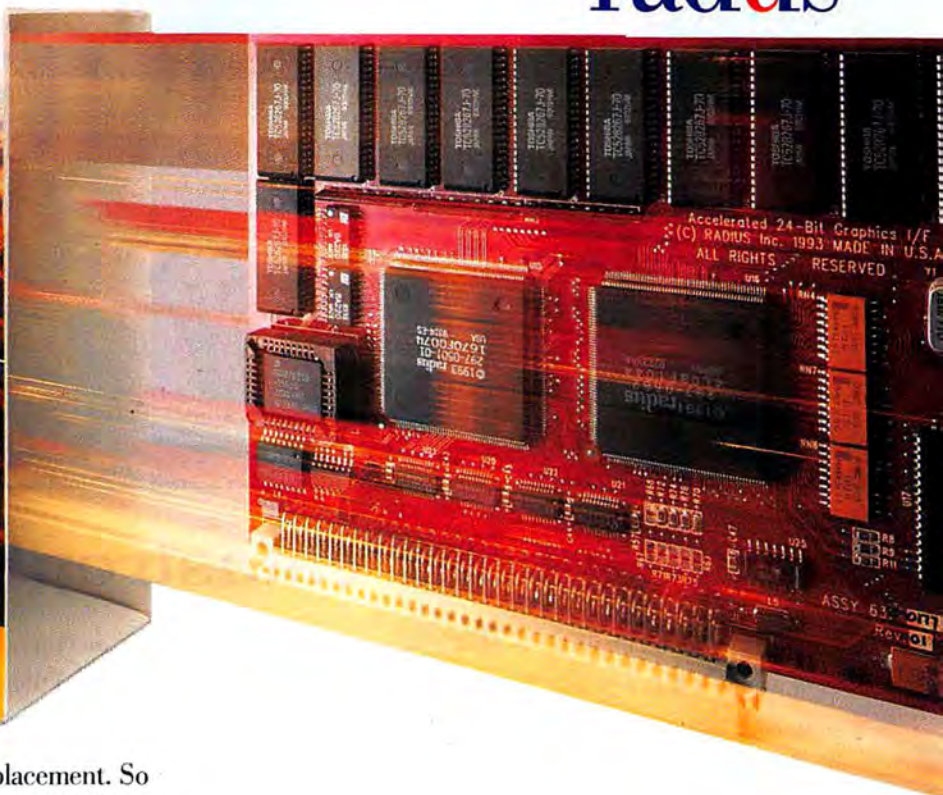
The price? Just \$1,799.

Fully backed by our Lifetime Guarantee and Worry-Free Warranty, with overnight replacement. So now you can really scream through your color publishing work, because with PrecisionColor Pro your creativity doesn't have to wait.

And to really accelerate Photoshop™, there's our new PhotoBooster™ with the most advanced twin DSPs, to help you run your production functions up to 10 times faster than a Quadra™ 950, for only \$999.

For complete details and the name of your nearest Radius reseller, call 1-800-227-2795 Ext 101B. Or call us now at 1-800-966-7360 to receive faxed information.

Get the PrecisionColor Pro and PhotoBooster combo. And start moving at the speed of your mind with your Mac.



ca•tas•tro•phe

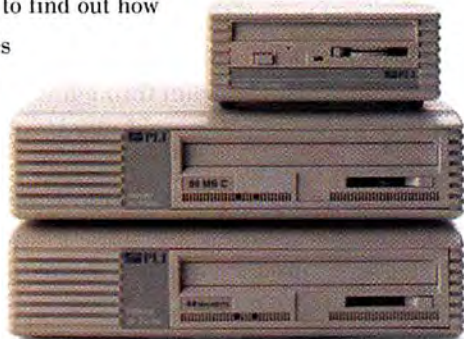
\kə'tas-trə-phē\ *n* **1**: hard drive crash or other disaster resulting in loss of data files



Here's your catastrophe insurance:

Catastrophes aren't predictable. Months of accumulated work can be lost in seconds. That's why you should insure your data with an Infinity Turbo removable cartridge drive. It's the best choice, whether you want to safely move or archive large files, or just want a reliable, affordable way to expand your computer's storage. The Infinity's sturdy, compact cartridges stand up to a lot more than ordinary media can. And, since they come in 44, 88 and 105MB capacities, you don't have to rely on a sensitive hard drive or a pile of floppy disks to carry files. Best of all, PLI's Infinity Turbo drives are as fast, or even faster, than most hard drives.

So, don't rely on outdated methods and wishful thinking to save and transport your precious files. Call us right now at 1-800-288-8754 to find out how to insure your files with a PLI Infinity Turbo drive...before a catastrophe occurs.



PLI... Your data security solution.

Peripheral Land Incorporated • 47421 Bayside Parkway, Fremont, California 94538
510. 657. 2211 • Sales 800. 288. 8754 • Fax 510. 683. 9713. All other brands and product names are trademarks or registered trademarks of their respective holders. MUSE-45

CIRCLE 155 ON READER SERVICE CARD



with 9,600-bps connections. So even if your on-line service could communicate at 28.8 kbps, it's unlikely that the service would be able to handle the data load fast enough to take full advantage of the speed the connection offers.

All Correct

A unique feature of V.34 modems is that they test the telephone channel at the start of each call for defects that they can either correct or take into consideration when they select a transmission speed. Because V.34 modems can work at so many different speeds, you'll need to make sure your modem is set up to use V.42 error control. When you're transferring text, V.42bis compression can take data-transfer rates beyond what the Mac's serial port can handle. In such a case, any slowdowns are due to your Mac's physical limitations, not the modem's.

You can speed up how fast your Mac and modem communicate, by installing in your Mac the \$329 NuBus Hustler High Speed Serial board, from Creative Solutions (800-367-8465 or 301-984-0262). This board adds one serial port capable of 230.4-kbps data transfer or two serial ports capable of 115.2-kbps data transfer (see figure 1). The included software provides Apple Communications Toolbox support, which enables Toolbox-compatible communications software to access *any* serial port, not just the Mac's modem and printer ports. By the time you read this, some modem manufacturers may be bundling Hustler boards with V.34 modems.

Whether you have a Hustler or not, your Mac's serial port, unlike that of a PC, will be compatible with any V.34 modem. It doesn't matter whether the modem uses EIA-530, V.34, or RS-449 connectors — your Mac is already V.34-ready.

That so many companies have come out with V.34-type products even before the official guidelines have been released is good news for modem buyers. The pressure is now on all modem vendors, not just the early birds, to bring out reasonably priced products as quickly as possible after the guidelines are cast in concrete. ☛

Stephen Satchell is a consultant and author of *Satchell Evaluations Public Telecom Letter*. Victoria von Biel is a *MacUser* senior editor.

Cut your wife's head off? Not a problem.



With VideoDirector by Gold Disk®, you can easily edit the blunders, bloopers, and boredom from your video tapes. And instead, make great tapes with just the moments you want, in the order you want them.

VideoDirector is the remarkable personal video tape editing program that has everything you need to turn your Macintosh, camcorder, and VCR into a complete editing system. Everything you need is in our box. No additional hardware is needed.

With a suggested retail of \$199, VideoDirector is a terrific bargain. Get a copy of VideoDirector today. Or for more information call Gold Disk at 1-800-982-9888.

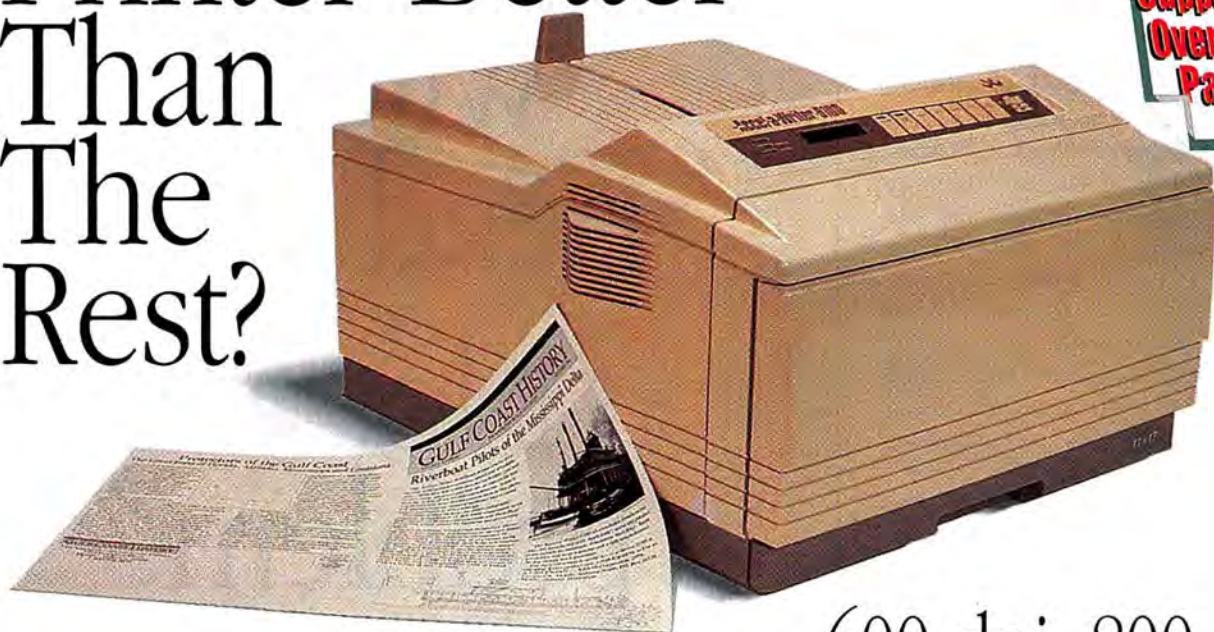


Any Macintosh (except models 128k, 512k, 512k, or Plus) with 1 MB RAM and Apple System 6.07 or higher, any IAN-compatible camcorder or VCR (most Sony or other 8mm) and infrared remote-controlled VCR will do. Gold Disk and VideoDirector are registered trademarks of Gold Disk Inc. Sony is a trademark of Sony Corp. Macintosh is a registered trademark of Apple Computer Inc.

Code M1091

What Makes Our 11x17 Printer Better Than The Rest?

**NOW
Supporting
Oversized
Paper!**



600 dpi, 800 dpi, 960 dpi, 1200 dpi, Speed, Flexibility, Upgradability and Support... oh yeah, Price.

When shopping for an 11x17 PostScript® compatible printer, we realize you have a lot of choices. And while many vendors lay claim to being the best, Xante prefers to leave the judging to you. We invite you to compare our printer with the rest. With the *Accel-a-Writer 8100*, you'll get...

11x17 OverSize Printing - The oversize paper support will give full bleed capabilities on 11" x 17" documents.

True High Resolution - The *Accel-a-Writer 8100* supports true 600 x 600 dpi for incredibly sharp text and graphics. And you have the option to nearly double or triple the resolution with our 800 x 800 dpi, 960 x 960 dpi, and 1200 x 1200 dpi upgrades.

High Speed Printing - The *Accel-a-Writer 8100* is built for speed with the AMD 29030 RISC processor, 12 MB RAM, Xante's *Advanced Memory Management*, and Canon's 8 page per minute LBP®-BX laser print engine.

Quality
Assurance
Guarantee

Flexibility - Sharing among Mac® and PC users is simple with simultaneously active AppleTalk®, Parallel and Serial interfaces. You'll get font flexibility with 35 Type 1 fonts plus the ability to download up to 30 more permanently on the controller with Xante's *Virtual Disk Technology*.

Best Price - The *Accel-a-Writer 8100* gives the highest quality in output, advanced printing technology and flexibility. But the best thing is you won't have to pay a premium. In fact, the *Accel-a-Writer 8100* is only \$3,995.

Quality Assurance Guarantee - To protect your investment, Xante provides a one year warranty and full customer support on all our products. Compare, then call us.

	Accel-a-Writer® 8100	QMS® 860 Print System	NewGen® TurboPS 660 B	CalComp® CCL-600
Standard Resolution (dpi)	600 x 600	600 x 600	600 x 600	600 x 600
Optional Resolution (dpi)	800 x 800, 960 x 960 & 1200 x 1200	None	600 x 1200	None
Standard RAM	12 MB	12 MB	12 MB	16 MB
Virtual Disk Technology	✱†			
Enhanced Gray Scale	✱			
Price	\$3,995	\$4,595	\$5,495	\$3,995

† Optional

Statistics as of 6/93

1-800-926-8839

Ext. 2209

Fax 205-476-9421



XANTE

Innovations In Output

© 1993 XANTE Corporation. XANTE Accel-a-Writer is a registered trademark of Xante Corporation. Other brands and product names are trademarks or registered trademarks of their respective holders. XANTE Corporation 2559 Emogene St., Mobile, AL 36606. Post Office Box 16526, Mobile, AL 36616-0526 USA. Tel. 205-476-8189

CIRCLE 126 ON READER SERVICE CARD



Tip Sheet

A tip you should know before you clean the glass on your monitor and one of the easiest ways to create a slide show. BY PHILIP RUSSELL

IN MICROSOFT WORD 4.0 AND LATER, if you double-click on the numbers or a margin marker (one of the small black triangles) in the ruler, the Paragraph dialog box will appear on-screen.

IF YOU PLACE TEXT from one document in PageMaker (version 4.0 or later) into another, you have the option of placing all the text or just individual text blocks, or stories. To help you choose, PageMaker displays the

first few words of each story during the placing process. You simply Shift-click on those words for the stories you want to place.


TO NAVIGATE QUICKLY through the hierarchy of folders in Open and Save dialog boxes, click on the disk icon next to the disk name on the right side of the dialog box. Each click takes you closer to the root volumes on the desktop.

COMMERCIAL GLASS CLEANERS can ruin your monitor's screen, by removing the antiglare coating, and flammable glass cleaners can be hazardous if there's static electricity. It's safest to use distilled water or a vendor-supplied cleaner.

THE DESKPAINT MODULE of DeskPaint & DeskDraw, from Zedcor (800-482-4567 or 602-881-8101), provides a simple way to view clip art or even create a slide show inexpensively. To view images in quick succession, start on the desktop. Put the clip art or



ILLUSTRATION / JOHN CORBITT

graphic images you want to view into one folder. Open DeskPaint, select Browse from the File menu, navigate through the folders in the Browse dialog box until you find the folder with your graphic images, select the image you want to start with, and click on the Browse button. The images will appear one at a time on-screen. You can control how quickly the images appear by pressing the 0 through 9 keys on your keyboard, 0 being the fastest and 9 the slowest. You'll have to be patient — it takes one frame for a new speed to take effect. 

Write to Tip Sheet

c/o MacUser

950 Tower Lane

18th Floor

Foster City, CA 94404

You can also send your tip to Gregory

Wasson (725 11,36) on ZiffNet/Mac,

MacUser's on-line service. We pay \$25 for

every undocumented tip we print.

and the Tip of the Month earns \$100; see

page 4 for more details.

READER TIPS / compiled by Gregory Wasson

Photoshop 2.5

A frequently overlooked trick in Adobe Photoshop 2.5 is to use the New Window command to see multiple views of large images; it lets you avoid time-consuming scrolling. Choose New Window from the Window menu to get another view of the current image. Changes made in either window affect the original image.

Yolanda Jefferson
Biloxi, MS

FrameMaker 4.0

Frame Technology's FrameMaker 4.0 has a powerful navigational tool — the Cross-Reference dialog box — that serves the same function but far surpasses the features of the Go to Page dialog box. The Cross-Reference dialog box lets you go to any paragraph in any open FrameMaker document. This feature is often overlooked, because users mistakenly assume they can use it only if the document has cross-reference markers.

To use it, choose Cross-Reference from the Special menu, select

the document you want to go to from the Source Document pop-up list, select a Source Type, select the paragraph you want by highlighting one of the lines in the Reference Source scroll box (where the first few words of each paragraph appear), and click on Go To. Presto — you're there.

David Atkinson
Santa Cruz, CA

WordPerfect 3.0

WordPerfect 3.0 has a built-in macro for creating drop caps, but the macro automatically places a frame around the drop caps. If you want to get rid of the frame, you can do so by editing the Drop Cap macro. Go to the Tools menu, select Macro, select Edit, click on the Drop Cap macro, and click on the Edit Content button. Locate the line in the macro that says Box Frame (On), and change it to Box Frame (Off). Save the macro. That pesky frame will be gone.

Ben Groenberg
Salt Lake City, UT

CIM 2.2.2

A bug in CompuServe's CIM (CompuServe Information Manager) 2.2.2 makes filenames appear in the Out Basket, In Basket, and Filing Cabinet for files that aren't really there.

If you have some of these ghost files, hold down the Option key as you open the troublesome Basket or Filing Cabinet that contains one or more of these files. This forces CIM to rebuild the cache files that track the contents of these areas. If that doesn't work, quit CIM and throw away the cache files, which you'll find in the CIM Folder within the Filing Cabinet, In Basket, and Out Basket folders. The next time you run CIM, the program will rebuild the cache files and leave out the ghosts.

Jennifer Heisler
Wilmington, DE

Universal SoftPC

Save disk space and make Insignia Solutions' Universal SoftPC start up faster by customizing it for the Mac. Universal SoftPC and other Insignia DOS emulators usually install the MSCDEX (Microsoft CD Extension) CD-ROM driver, which you don't need unless you're going to use DOS CD-ROMs on your Mac. You can delete the MSCDEX driver file from the Insignia directory by using standard DOS commands. Alternatively, you can delete the code `mscdex.exe`, which loads the MSCDEX driver, from the `autoexec.bat` file.

Steve Huey
Tampa, FL

TIP OF THE MONTH

Excel 4.0: Changing Dates

For those who want to change the default date format in Microsoft Excel 4.0 to day/month/year, a format used outside the U.S., here are two ways to do it (other than manually entering it into the header or footer):

- If you're using System 7.1 or later, just change the short-date format in the Date & Time control panel.
- Create a command macro that inserts the date in the new format for you. Choose New from the File menu, and select Macro Sheet from the list of types of documents you can create. To affect the footer, type the following code into the first two cells in column A:
`=PAGE.SETUP(,TEXT(NOW(),"dd-mm-yy"))`
`=RETURN()`

Select the first cell, choose Define Name from the Formula menu, type a name such as DateFormat in the Name box, click on the Command button, and click on OK. Your macro is complete.

To apply the macro to any Excel document, open the document, select Run from the Macro menu, click on the name of the macro you've just created, and click on OK. To check the results, go to Print Preview, on the File menu.

To place the date in a header, perform the same steps but change the code slightly by removing the first comma, as shown here:

```
=PAGE.SETUP(TEXT(NOW(),"dd-mm-yy"))
=RETURN()
```

Albert Said
Carmel, CA

Shareware to the Macs.



ISBN: 1-56276-076-9
Price: \$34.95

MacUser contributing editor Gregory Wasson critiques hundreds of top-notch programs, explains how to obtain them, and notes their requirements and limitations. Includes a bound-in disk that contains a selection of the finest Macintosh shareware available.

Available at fine bookstores, or call
1-800-688-0448
ext. 7263



© 1992 Ziff-Davis Press

CIRCLE 25 ON READER SERVICE CARD

Changing your mailing address?

It's a simple procedure to ensure that your next issue of MacUser will catch up with you as soon as you move.

Please send your **NEW** address PLUS your current mailing label to:

MacUser
P.O. Box 56986
Boulder, Colorado
80322-6986

Please allow up to 60 days for change of address to take place.



You're not seeing things clearly
with the other guy's digital video
on a large screen, because they
only support 8-bit color.

You'll see much more with a **RasterOps MoviePak2 Pro Suite**: Full-motion video in true 24-bit color on up to 21-inch monitors. And all the stuff pros take for granted — QuickDraw™ acceleration, device control, RGB input — are not to be seen on Radius VideoVision Studio.*

Affordable digital video with a professional focus

MoviePak2 Pro Suite™ is a turnkey solution for expert video: Full-motion, full-screen [60 fields at 640 x 480] compression/decompression, unparalleled RasterOps 24XLTV display technology and complete encoding capabilities for NTSC or PAL —



all the features professionals look for most. And we'll give you Adobe Premiere™ — the Macintosh® professional's choice for QuickTime™ video editing — for free.

If you're just getting started in multimedia, **MoviePak Presenter™** delivers 24-bit QuickTime capture and playback at half the price of the other guys. And we'll throw in Avid VideoShop®, making this a spectacular value for multimedia presentations and CD-ROM authoring.

MoviePak Presenter provides quality video at matinee prices; **MoviePak2 Pro Suite** gives you millions of colors on large-screen displays. See for yourself. For a RasterOps reseller near you, call **1-800-SAY-COLOR**.

FEATURES	RASTEROPS MOVIEPAK2 PRO SUITE	RADIUS VIDEOVISION STUDIO*	RASTEROPS MOVIEPAK PRESENTER
True 60 field/sec (640 x 480) video capture & playback	YES	YES	30-field capture 60-field playback
24-bit color on large screen displays up to 21-inch at 1152 x 870	YES	NO	NO
QuickDraw acceleration	YES	NO	NO
Pro Features: Device control	YES	NO	Optional encoder with genlock for \$649
SMPTE time code	YES	NO	
RGB video input	YES	NO	
Price	\$4199	\$4499	\$1799

RASTEROPS®

2500 Walsh Avenue • Santa Clara, California 95051

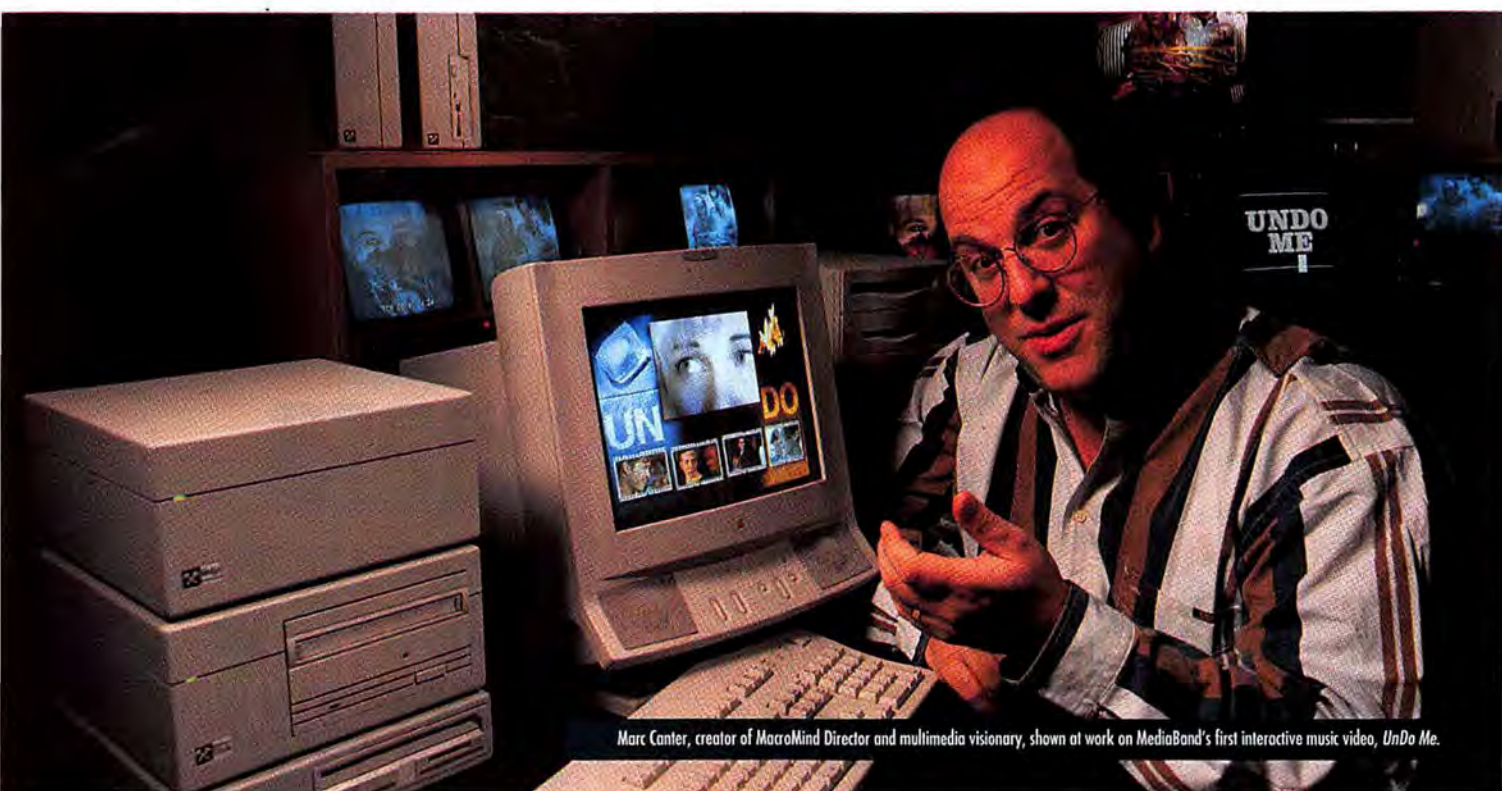
©1994 RasterOps Corporation. All rights reserved.
MoviePak Presenter and MoviePak2 Pro Suite are trademarks of RasterOps, and all trademarks and trade names are property of their respective owners.
Prices and features as of 2/1994. All prices are US suggested retail.

CIRCLE 58 ON READER SERVICE CARD

IF YOU'RE USING THE OTHER GUY'S VIDEO EDITING SYSTEM, THERE'S SOMETHING WRONG WITH YOUR VISION.



How Do You Build The World's Fastest Digital Video Empire?



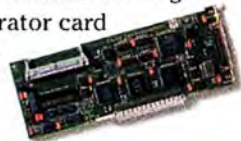
Marc Canter, creator of MacroMind Director and multimedia visionary, shown at work on MediaBand's first interactive music video, *UnDo Me*.

Apply The Hammer.SM

11MB/sec and 13MB/sec on the Quadra[®] 840AV. Are the industry's fastest sustained transfer rates the only reason multimedia visionary, Marc Canter, chose the new SledgeHammer[™] II and SledgeHammer Wide arrays from FWB? No. Capacities of up to 5.6 gigabytes were important. And his other SledgeHammers got top marks from him, as they had from MacWEEK, MacUser and Macworld. But for his new MediaBand digital music video projects, the measure he applied first was RAID speed. That's why he applied the Hammer.[®]

But applying the Hammer means more for *anyone* with *any* Mac looking for a RAID solution. There are

- ☐ high speed optical and SyQuest[®] solutions for nearline and offline storage.
- ☐ the recently Eddy-nominated SCSI JackHammer[™] accelerator card (for Best New Storage System) that can increase system performance up to 700%.
- ☐ the number one selling RAID ToolKit[™] software.
- ☐ FWB's PremiumService[™] warranty, and pricing that crunches the competition like SledgeHammers crunch data.



So, whether you need RAID to help build your next digital video empire or your first desktop color publishing enterprise, here's what to do: Apply The Hammer. Call 415.474.8055 for the name of the reseller nearest you.

HAMMER

Superior SCSI Storage Solutions.

FWB
incorporated

Call FWB at (415) 474-8055,
or fax us at (415) 775-2125.

© 1993 FWB, Inc., FWB, and SCSI JackHammer are registered trademarks of FWB, Inc. SledgeHammer, RAID ToolKit and PremiumService are trademarks of FWB, Inc. All other trademarks are the property of their respective owners.

Help Folder



What to do when your Newton loses time, a simple trick for making an old drive compatible with ever-changing Mac technology, and a new diet plan for your RAM disk. BY ANDY IHNATKO AND BOB LEVITUS

Timely MessagePad

Q. My Newton MessagePad keeps great notes but lousy time. I've replaced the backup battery, but it still loses time — sometimes minutes, sometimes hours. Is this just the price of being one of the first to buy a MessagePad?

Sharon Nye
via ZiffNet/Mac

ANDY: No, the price of being first was \$490 over the cost of the next model. What you've got there is a quirk caused by the way the MessagePad records the time. Normally the Newton keeps perfect time, but when you use the Reset button, the MessagePad resets the clock to a time stored in backup memory. The problem is that the time in backup memory is updated only every five minutes while the MessagePad is running. Furthermore, while the MessagePad is in Sleep mode, the time isn't updated, so the clock can lose hours. Wake up the Newton before resetting it, to avoid this problem.

Old Drive, New System

Q. I can't get the external hard drive I used with my old Mac 512Ke to work with my new Performa, which is running System 7. I set the hard drive to SCSI ID 1, used SCSI-Probe, and tried Mounter 3.2, and it still doesn't mount. Can you tell me what to do?

Fred Pollak
Whitestone, NY

BOB: The problem, Fred, is that the disk of your old external hard drive was initialized with a formatter that was not System 7-compatible. At the very least, you need to install disk drivers that are compatible with System 7. It may be that your drive is so old that you will have to back up the disk and then initialize it with a System 7-compatible formatter.

The formatter you use depends on the drive's vendor. For instance, if it's an Apple drive, you can use Apple's HD SC Setup, on the System 7 Disk Tools disk. In this case, you should be able to update the driver without initializing the disk. If your drive was made by a vendor that's gone out of business after all this time, you will need to get a third-party formatter, such as Hard Disk ToolKit (\$199), from FWB (415-474-8055), or Drive7 (\$79.95), from Casa Blanca Works (415-461-2227).

Downsizing a RAM Disk

Q. I want to set up a RAM disk to hold my 12.8-megabyte System Folder. The problem is that a RAM disk large enough to hold my System Folder leaves me only a few megabytes of RAM for running applications.

How can I trim my System Folder but not lose the control panels and extensions I've grown attached to?

Robert Kerner Jr.
Port Washington, NY

BOB: You can cut down the size of your RAM disk with Conflict Catcher II (\$51.95), from Casady & Greene (800-359-4920 or 408-484-9228). It lets you build a RAM disk with tiny aliases of your beloved extensions and control panels and leave the big, fat original files on your hard disk. Or you can use RAM Doubler (\$99), from Connectix (800-950-5880 or 415-571-5100), to double the available RAM.

For those of you who are wondering what a RAM disk is, it's a pseudodisk made out



THE BASICS

Q. I would like my great-grandkids to be able to read the journal I'm printing from my Mac. How long can I expect pages printed on a laser printer to last? Would they last longer if they were photocopied?

Timothy Bogar
Lansing, MI

ANDY: Output from a laser printer is just as stable as anything from a photocopier. To be on the safe side, use a light toner setting and don't use vast areas of darkness, or pages may imprint on each other during storage.

The real battle for preserving your work is fought on the paper front. Standard paper generally becomes brittle after 20 to 50 years, whereas a sheet of acid-free paper manufactured today should remain intact until the year 2194 and beyond. Likewise, recycled paper is more susceptible to acid damage than nonrecycled stock.

If you're going to use protective bags, get ones made of polyethylene or Mylar. Polypropylene, which is found in a lot of garbage bags, produces gases that harm paper.

Line storage boxes with a single layer of acid-free paper to protect your journal from the acid in the cardboard. Make sure air can circulate around and through the box.

Finally, if you're truly serious about preserving your journal for the ages, consider purchasing an optical drive. Optical cartridges are the most impervious form of data storage on the market, and as long as you leave your great-grandkids a Mac, an optical drive, manuals, and possibly a small diesel generator, you're certain of success. The only thing that truly lasts forever is instant coffee, but optical cartridges are the next-best thing.

Write to Help Folder

c/o MacUser
950 Tower Lane
18th Floor
Foster City, CA 94404

Don't want to wait for an answer? Post your question on ZiffNet/Mac, MacUser's on-line service, and get a reply from Bob (76004, 2076), Andy (72511, 204), or one of the other MacUser experts.

of random-access memory — a very cool thing. Whatever you store on the RAM disk, usually the System Folder or applications that access the hard disk frequently, runs like a bat out of hell, because access times for RAM are so much faster than access times for magnetic or optical storage media.

The RAM is "borrowed" from the memory installed in your Mac. For example, if you have 32 megabytes of memory and create an 18-megabyte RAM disk, you'll have 14 megabytes of memory left over for running applications.

You can create RAM disks with shareware programs, such as Roger Bates' RamDisk+ (filename RAMDSK.SIT, in Library 3 of the Download & Support Forum on ZiffNet/Mac), or commercial products, such as Maxima (\$99), from Connectix. The option of creating RAM disks is part of the system software of all PowerBooks, Quadras, and Centrises.

Ready, Set, Startup

Q. Sometimes, in my zeal to Mac, I press the power switch without first turning on my external hard-disk drive. Does it hurt

anything to turn my hard drive on after my Mac has started up, or will this somehow harm my Mac, the same way unplugging the SCSI cable would?

Scott Klein
Orange, CT


BOB: My research didn't reveal any reason you have to power up all of your SCSI devices before you start up your Mac. Leave the drive off until you need it.

I should point out, though, that this technique doesn't work with every SCSI device. Some SCSI devices absolutely must be turned on, or your Mac won't boot. The only way to tell if your SCSI device is one of these is to leave it off while you power up your Mac. If you see a flashing question mark, you've got one.

ANDY: If you have even one external SCSI device, SCSIProbe belongs in your System Folder. SCSIProbe mounts SCSI devices that are turned on after you've booted your Mac (see figure 1). You can get it for free from any on-line service, for criminy's sake! (To find

SCSIProbe				
SCSIProbe 3.5				
ID	Type	Vendor	Product	Version
0	DISK	QUANTUM	LP80S 980809404	3.3
1				
2				
3	ROM	SONY	CD-ROM CDU-800...	1.9a
4				
5				
6	DISK	MAXTOR	LXT-340S	6.75
7	CPU	APPLE	MACINTOSH IIfx	\$067C
				Update Mount Options...

figure 1 / You may not have to turn on all the SCSI devices connected to your Mac at startup. If you want to leave one or more of them off until you need them, use the shareware program SCSIProbe and mount them later.

it on ZiffNet/Mac, go to Library 3 of the Download & Support Forum and search for the filename SCSIProbe.SIT.) To mount a SCSI device once SCSIProbe is installed, switch on the device and press Command-space bar — and boom — it's mounted. Just don't switch the device off until you've shut down your Mac, in case you have open files on that device. 

More *Inter*Active Ingredients

Introducing Mayo Clinic Family Pharmacist CD-ROM

Exclusive features!

- Reviews over 7,600 medications from the USP DI®
- Includes actual demonstrations of first aid and early detection techniques
- Maintains personal medical profiles
- Printable text

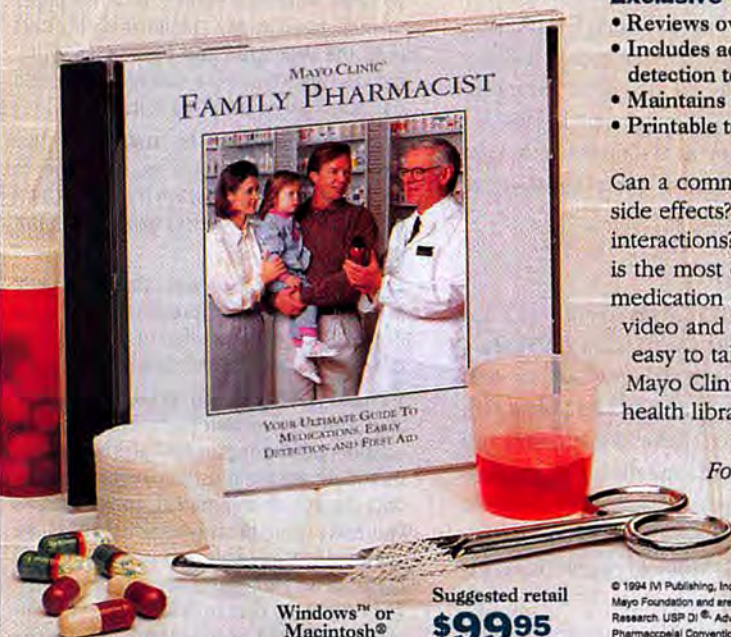
Can a common, over-the-counter medication produce dangerous side effects? What drug combinations may cause harmful interactions? The new Mayo Clinic Family Pharmacist CD-ROM is the most complete multimedia resource available for your medication and treatment questions. Colorful animations, live video and quality narration bring the topics to life, making it easy to take an active role in your family's health care. Make Mayo Clinic Family Pharmacist CD-ROM part of your home health library today.

For more information call

1-800-278-5533, Ext. 509



IVI PUBLISHING



Windows™ or
Macintosh®

Suggested retail
\$99.95

© 1994 IVI Publishing, Inc. All rights reserved. MAYO and MAYO CLINIC are registered marks of Mayo Foundation and are used under license by Mayo Foundation for Medical Education and Research. USP DI® Advice for the Patient is a registered trademark of the United States Pharmacopoeial Convention, Inc. All other trademarks are owned by their respective companies.

Direct Line

MAIL ORDER SECTION



For many of you, mail-order is your primary means of purchasing Macintosh products and services. That's why MacUser has put together the following special section. Direct Line offers a convenient place to quickly find the products you need from the vendors you want to buy from. But before you shop by phone, look for the mail-order company that is best for you. Here are a few tips to help you get the most out of your buying experience.

How to Buy Mail Order Products

Research The Company

Well-established companies tend to be reliable, but if you're not sure how well established a company is, it pays to do a little research and ask a few questions.

Know What You Want

Know exactly what you want before you call. Magazines, on-line forums, and user groups are all good places to seek advice.

Check Compatibility

To avoid having to return merchandise, find out whether the product you're interested in is compatible with your system.

Pay With Credit

Whenever possible, use a credit card. Some credit-card companies do such

things as double your warranty or give you a refund if you find a lower price elsewhere. If you have a problem, your credit-card company will deal with the mail-order company.

Confirm Prices

Confirm the price when you place your order, including delivery charges. Some companies will waive the delivery charge.

Delivery Methods

Ask about delivery methods — find out what carriers are used, how fast they are, and how much each one costs. Record delivery information.

Return Policies

Because you're buying sight unseen, make sure the company has a return policy you're comfortable

with. Find out if you're responsible for paying shipping charges on returned goods and whether you'll be charged a restocking fee.

Check Packing Slips

Before you use your new merchandise, make sure it's exactly what you ordered — the correct model or version number, for example. It's easier to return goods before they've been unpacked.

Repair/Replacement Services

If you're buying hardware, find out how the company handles repairs or replacements.

Technical Support

Technical support varies from company to company. Make sure you know what help is available.



DIRECT CONNECTIONS

SHIPPING DRIVES FOR **7** YEARS !!

TECH: 612-937-9604

FAX: 612-937-6285 HOURS: M-F 8:00-6PM CST

800-572-4305
30 DAY MONEY-BACK



HARD DRIVES

FUJITSU

5 YEAR WARRANTY

CAPACITY	SIZE	ACCESS	INTERNAL	EXTERNAL
240MB*	2.5"	14MS	\$ 375	\$ 435
330MB*	3.5"	9MS	\$ 315	\$ 375
520MB	3.5"	9MS	\$ 575	\$ 635
1.2GIG	3.5"	8.5MS	\$ 825	\$ 885

Seagate

5 YEAR WARRANTY

CAPACITY	SIZE	ACCESS	INTERNAL	EXTERNAL
545MB	2.5"	9MS	Hawk 1	\$ 685
1.2GIG	3.5"	9MS	ST11200N	\$ 899
1.2GIG	3.5"	9MS	ST31200N	\$ 899
2.2GIG	5.25"	12MS	Wren 9	\$ 1515
2.4GIG	3.5"	9MS	ST12400N	\$ 1555
2.0GIG	3.5"	8MS	Barracuda 1	\$ 1585
2.5GIG	3.5"	8MS	Barracuda 2	\$ 1855
2.5GIG	3.5"	8MS	WIDE	CALL
3.4GIG	5.25"	10MS	Elite 3	\$ 2195

HITACHI 5 YEAR WARRANTY

CAPACITY	SIZE	ACCESS	INTERNAL	EXTERNAL
1.2GB	3.5"	11.8 MS	\$ 899	\$ 959
1.6GB	3.5"	11.8 MS	\$ 1239	\$ 1299
3.7GIG	5.25"	12.8 MS	\$ 2295	\$ 2395

Anubis Formatting Software included with all hard drive purchases

THE DC DIFFERENCE

More knowledgeable, courteous and reliable. \$4 Million in Inventory. 96% shipped same day. Not flashy, just the Best!

OPTICAL DRIVES

INCLUDES ONE CARTRIDGE

1 YEAR WARRANTY

CAPACITY	MODEL	ACCESS	EXTERNAL
128MB	Ricoh	30MS	\$ 839
128MB	Fujitsu	30MS	\$ 765
650MB	Ricoh Hyperspace	28MS	\$ 1799
1.0GIG	Panasonic	90MS	\$ 1999
1.3GIG	Sony	40MS	\$ 2299
1.3GIG	Tahiti 3	19MS	\$ 2799

CD ROMS

1 YEAR WARRANTY

Toshiba 4401	\$ 320
Toshiba 3401	\$ 439
Sony CDU-561	\$ 385
Ricoh Playwright 1000	Recordable CD. Make your own! \$ 3899

Direct Connections 7668 Executive Dr. Eden Prairie, MN 55344

TAPE BACKUP SYSTEMS

INCLUDES TAPE + RETROSPECT SOFTWARE

2 YEAR WARRANTY

CAPACITY	MODEL	MEDIA	INTERNAL	EXTERNAL
250MB	Sanyo CP-150	DC6250	\$ 415	\$ 475
1.3-2GIG	Archive 4320*	4MM	\$ 839	\$ 899
1.3-8GIG	Archive Turbo*	4MM	\$ 1039	\$ 1099
1.3-5GIG	Exabyte 8205	8MM	\$ 1539	\$ 1599
1.3-10GIG	Exabyte 8505	8MM	\$ 2179	\$ 2279
4.0-8GIG	Sony 4000	4MM	\$ 1089	\$ 1149
4.0-8GIG	Sony 5000 DDS-2	4MM	\$ 1189	\$ 1249

MEDIA

60M 4mm Tape	\$ 10	1/4"	DC6250	\$ 35
90M 4mm Tape	\$ 12	128MB	Optical	\$ 35
112M 8mm Tape	\$ 18	650MB	Optical	\$ 89
120M 4mm Tape	\$ 22	1.3GIG	Optical	\$ 105

RAID SYSTEMS

1.0 GIG RAID	\$1499
2.0 GIG RAID	\$2199
6.0 GIG RAID	\$3999

* UP TO 84GIG CUSTOM DESIGNED.
* FAST AND WIDE SCSI II INTERFACE.

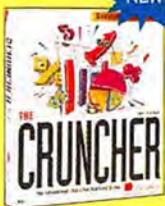


CIRCLE 41 ON READER SERVICE CARD

ORDER TODAY FROM AMERICA'S LARGEST SUPPLIER OF EDUCATIONAL TECHNOLOGY!

Save up to 60% every day on home, school and academic versions, lab packs, site licenses and network versions of the most popular educational software. Great prices on multimedia, hardware and accessories, too! Call today.

NEW



The Cruncher
It computes, talks and teaches math. Combines a full-featured spreadsheet with simple step-by-step tutorials.

\$33.95 MAC
(Retail \$59.95)
School Version \$62.95
Ages 10 - Adult

NEW



K-12 Graphics Collection
Over 300 professionally-drawn color PICT graphics for all school subjects.

\$41.95 MAC
(Retail \$69.95)
Ages 5 - Adult

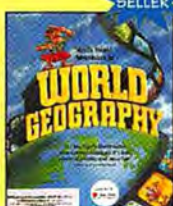
TOP SELLER



The Writing Center
Produce illustrated reports, newsletters, signs, cards, awards, calendars and more. Imports K-12 Graphics Collection.

\$48.95 MAC
(Retail \$89.95)
School Version \$94.95
Ages 7 - Adult

TOP SELLER



Nigel's World
Leadership strategy game set in prehistoric times. 6 levels of challenge. Photos, video clips, cartoons, music, sound effects, etc.

\$26.95 MAC
(Retail \$39.95)
School Version \$41.95
Ages 7 - Adult

Parents & Teachers -
Call 800-860-9003 for your FREE Educational Technology Catalog!



800-860-9003 USA/Canada **708-888-8300** Illinois

Educational Resources • 1550 Executive Dr., Elgin, IL 60123 • Fax 708-888-8499/8689



Checks & School P.O.'s welcome • \$25 min. on charge cards • Free shipping over \$400 in U.S. • Under \$400 add 5% shipping with \$5 min. • Canada under \$200 add 10% with \$6 min./over \$200, add 5% - also add 7% GST • Prices effective through July 29, 1994

Look inside for Hands-on Training see page 136

CIRCLE 112 ON READER SERVICE CARD

**USE OUR TOLL-FREE
INTERNATIONAL PHONE LINES**

Australia 0014-800-125-712
Canada 800-548-2512 • Denmark 0434-0297
France 0590-1099 • Italy 1678-74086
Japan 0031-11-1351 • Netherlands 06-022-8613
Norway 050-12029 • Switzerland 046-05-3420
United Kingdom 0800-89-1178
Our Fax # 310-222-5800



**CALL FOR FREE CATALOG!
FINANCING AVAILABLE**



TM

**Order Toll Free
800-222-2808**

FREE FEDEX
SHIPPING ON YOUR
FIRST ORDER* AND
\$3.00 ON FUTURE ORDERS*



RASTEROPS®
THE ART & SCIENCE OF COLOR™

**RasterOps 20/20
Color Display**

- .31mm super fine dot
- Supports 640x480 to 1158x870 (8 presets)
- Anti-static/glare coating
- Digital user controls
- 3-Year Limited Warranty

\$1499

PaintBoard Lighting\$769

DuoMate 16sc\$499

Memory & Storage Products

Quantum 270MB LPS SCSI Internal... **\$275**

Quantum 270MB LPS SCSI External... **\$339**

Quantum 540MB LPS SCSI Internal... **\$588**

Quantum 540MB LPS SCSI External... **\$648**

1MB x 8 80ns SIMM* memory..... **\$43**

4MB x 8 80ns SIMM* memory..... **\$138**

4MB SIMM 70ns 72pin Quadra/Centris* **\$159**

8MB SIMM 70ns 72pin Quadra/Centris* **\$298**

44MB SYQUEST Cartridge..... **\$58**

88MB SYQUEST Cartridge..... **\$88**

105MB SYQUEST Cartridge..... **\$58**

*Memory prices fluctuate on a daily basis. CALL for current pricing

CLARIS

Claris Impact™
The all-in-one business graphics presentation program

Includes word processing and presentation capabilities; 3,000 clip art images; imports EPS, TIFF, PICT and QuickTime movies. Sophisticated drawing tools, plus automatic styles.

Claris Impact\$265

MacDraw Pro 1.5....\$265

MacWrite Pro 1.5\$99

FileMaker Pro 2.1 ...\$265

**radius Precision
Color 17T**

New 17" color monitor with "on-the-fly" resolution switching from 640x480 to 1152x870. Digital controls for precise settings and super sharp 25mm dot pitch give you quality you can see! Ask about the Radius worry-free service warranty!

\$1239

LeMans GT Display Adapter...\$2369

Radius 24xp - Pro Display Adapter\$469

E-MACHINES

T-16 II

16" Trinitron display with multiple resolutions from 640x480 to large screen 1152x870!

Rated #1 by MacWorld (9/12)

\$1138

EtherDock\$599

Presenter\$419

DAYSTAR

Turbo 040 Processor Upgrade

Turbocharge your software up to 600% faster. Adapters required. Now SAVE \$100 - These models include cache at no extra cost

Turbo040 - 33MHz Accelerator w/FPU and cache\$909

Turbo040 - 40MHz Accelerator w/FPU and cache\$1079

Turbo040i - 40MHz Accelerator w/cache\$745

PhotoMatic
New software that automates repetitive tasks in Adobe PhotoShop. Fast, powerful.

Call for price

NEW!

**HP HEWLETT
PACKARD**

**HP DESKWRITER
560C COLOR
INKJET PRINTER**

The HP DeskWriter 560C printer with both black and color ink cartridges makes your documents - and you - stand out! 600x300 resolution. 35 scalable fonts. Grayscale printing and 3-YEAR Limited Warranty!

\$589

HP DeskWriter 560C Color Inkjet

DeskWriter 520 Inkjet 600x300dpi ...\$299

DeskWriter 310 Inkjet for PowerBook \$309

DeskWriter 550C Color Inkjet 300dpi \$489

DeskWriter Inkjet Printer 300dpi.....\$239

**HP Scanjet IIcx
COLOR SCANNER**

Superior 400dpi optical resolution in 24-bit color. HP Accu-Page 2.0 for better text recognition. One year HP Express Exchange warranty for 24-hour replace-ment! Optional transp. adapter. **\$999**

HP Scanjet IIP grayscale scanner \$2889

WITH CALERA WORDSCAN OCR.....\$499

MacMall CD-ROM Drive

• Double spin speed
• Photo CD (Multisession) Compatible
• High-speed access: 320 ms
• High-speed data transfer rate of 300Kb/sec.

**FREE CD ACCESS
Includes FREE FWB
CD-ROM Bundle**

\$289

Encyclopedia Bundle
Includes these great titles:
• Graders Multimedia Encyclopedia
• Animals CD, US Atlas CD,
• World Atlas CD **\$99**

Entertainment Bundle
Includes these great titles:
• Secret of Monkey Island CD
• Secret of Monkey Island 2 CD
• Indiana Jones CD
• Space Shuttle CD **\$79**

WACOM

**UD-1212R
Drawing Tablet**

New features include: a full menu strip, a transparent overlay surface, a fully customizable pen, and a more powerful interface with 120 levels of pressure. 12x12" tablet.

UD1212R Tablet\$519

Art-Z 6x8" Tablet \$289

Art-Z /Painter 2.0 Bundle \$479

TIME WARNER INTERACTIVE

Hell Cab CD
Get set for a hell ride through history's most infamous periods. **\$63.95**

The New Family Bible CD
Explore the Bible in beautiful watercolor pictures and stories enhanced with original music. **\$32.95**

Seven Days in August\$49.95

**Short Attention Span Theatre:
It's All Relative\$27.95**

**FREE CATALOG
SUBSCRIPTION**

Fill out and mail this coupon to:
Creative Computers - MacMall, 2645 Maricopa St.,
Torrance, CA 90503, Attn: Advertising

Name _____

Address _____ Apt. _____

City _____ State _____ Zip _____



ORDER TOLL FREE 800-222-2808

MacMall Policies: *FREE overnight shipping via FedEx offer applies to first order, up to 10 lbs. delivered in continental U.S. only. \$3.00 for future orders to 10 lbs. Orders over 10 pounds incur additional shipping charges. "Next Day" shipping is available only on orders placed before 5:00 pm EST and may exclude certain rural areas. Call Customer Service at 800-560-6800 for a Return Authorization if necessary. Returned products must be in original condition and packaging, with blank warranty card, and must be sent back within 30 days of our invoice date. No refunds on labor or freight charges. For tech support call 800-760-0300. Prices and availability subject to change without notice. All trademarks are used to benefit and without intent to infringe on the mark holder. NO CREDIT CARD SURCHARGES!

FREE CD!!

Get up to \$200 worth of FREE software included on this disk. Plus interactive previews of over 100 software programs. To purchase any of the programs, simply call the Toll-Free Unlocking Center and you can own the programs instantly.

FREE WITH ANY PURCHASE!

APPLIED ENGINEERING • ADESSO • KENSINGTON • INSIGNIA SOLUTIONS • CONNECTIX • SYMANTEC • RAYDEAM • FARALLON • BRODERBUND • ADOBE • BERKELEY

UNMAX • IOMEGA • GLOBAL VILLAGE • CLARIS • DAYSTAR • MAXELL • MICROSOFT • TARGUS • ALDUS • SUPRA • NEWER TECHNOLOGIES • UPID • AND MANY OTHERS!



Buy Direct from PSI

High-speed Modems designed especially for the Mac®



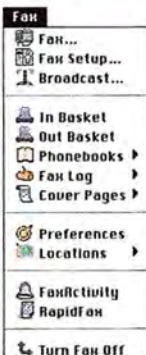
\$199
COMstation 14.4



\$269
COMstation 14.4 Plus
U.S. Pricing



\$249
PowerModem 14.4



As a Macintosh® user you want integrated solutions. Powerful solutions. Solutions designed to work the way you do. That's why you want a PSI fax/data modem.

PSI designs modems especially for the Macintosh. Each PSI product offers a telecommunications solution designed to fit your work style and your kind of computer.

Plus, each PSI faxmodem comes complete with FAXcilitate™ fax software! Designed by the Macintosh experts at PSI, FAXcilitate gives you quick and easy access to lots of powerful features. Like a power-packed fax menu that's available from any standard Macintosh application. And a flexible phonebook that makes it easy to fax from multiple locations. And quick fax forwarding. And Free OCR! All powerful features. All extremely easy-to-use!

COMstation 14.4 The COMstation 14.4 offers great features like 14,400 bps fax/data speeds and compatibility with most fax software and fax machines. It's the perfect high-speed modem for the cost-conscious user!

COMstation 14.4 Plus Call us about this top-of-the-line external 14,000 bps fax/data modem. Features include Silent Answer™, Caller ID, voice compatibility and international approvals. Also compatible with most fax software and fax machines.

PowerModem 14.4 The PowerModem 14.4 is a 100% internal fax/data modem designed exclusively for the PowerBook™, models 100-180c. Boasting 14,400 bps fax/data speeds, the PowerModem 14.4 offers compatibility with Apple Remote Access™ and most fax software and fax machines.

FAXnetwork™ Software

Start with the server, add the number of users you need

\$99 Server
\$199 5-User Pack
\$299 10-User Pack
\$499 25-User Pack

With FAXnetwork each workstation in an Ethernet™ or LocalTalk™ network can transmit faxes using a single, centralized modem. PSI FAXnetwork software works completely in the background, so no dedicated server is required.



Direct from PSI

1-800-236-6952

PSI • 501 SE Columbia Shores Blvd., Ste. 700
Vancouver, WA 98661 • (408) 559-8544
CIRCLE 75 ON READER SERVICE CARD

Order risk-free! All PSI modems come with a 30-day money-back guarantee, free support and a 5-year limited warranty. Plus, when you call PSI you'll speak with a knowledgeable PSI customer advisor with the expertise to answer all your questions. Call Monday through Friday, 8am to 5pm, PST. We accept Visa, MasterCard, Discover, cashiers checks, money orders and company PO's.



COMstation, PowerModem, FAXcilitate and FAXnetwork are trademarks of Supra Corporation. Other trademarks or registered trademarks are the property of their respective companies. Specifications are subject to change without notice. © 1994 PSI, a division of Supra Corporation.



**FOR**

- Best Prices & Service
- Technical Support
- Delivery
- Leasing

**HARD DRIVES****FUJITSU**

CAPACITY	DESCRIPTION	INTERNAL	EXTERNAL
520MB	3.5" HH 9ms	\$485	\$545
1200MB	3.5" HH 9ms	\$895	\$955
2400MB	5.25" FH 11.5ms	\$1,385	\$1,485

Fujitsu Drives carry a 5 year warranty

Quantum

CAPACITY	DESCRIPTION	INTERNAL	EXTERNAL
170MB	2.5" Notebook 17ms	\$245	\$375
42 MB	3.5" LP 17ms	\$99	\$159
85MB	3.5" LP 17ms	\$135	\$195
170MB	3.5" LP 17ms	\$180	\$240
240MB	3.5" LP 10ms	\$235	\$295
270MB	3.5" LP 10ms	\$275	\$335
340MB	3.5" LP 10ms	\$285	\$345
540MB	3.5" LP 10ms	\$475	\$535
1000MB	3.5" HH 10ms	\$885	\$945
1200MB	3.5" HH 10ms	\$995	\$1,055
1800MB	3.5" HH 10ms	\$1,155	\$1,215

Go Drives carry a 1 year warranty / The rest carry a 2 year warranty

Seagate

CAPACITY	DESCRIPTION	INTERNAL	EXTERNAL
500MB	3.5" HH 10ms	\$489	\$549
1200MB	3.5" HH 10.5ms	\$865	\$925
1900MB	Barracuda 1, 8ms	\$1,545	\$1,605
2400MB	Barracuda 2, 8ms	\$1,825	\$1,885
2400MB	3.5" HH 9ms	\$1,595	\$1,655
3400MB	5.25" FH 11ms	\$2,150	\$2,250

Seagate Drives carry a 1 year warranty

Maxtor

CAPACITY	DESCRIPTION	INTERNAL	EXTERNAL
345MB	3.5" LP 10ms	\$359	\$419
540MB	3.5" HH 8.5ms	\$699	\$759
1200MB	3.5" HH 8.5ms	\$1,199	\$1,259

Maxtor 3.5" Drives carry a 1 year warranty
5.25" Drives carry a 2 year warranty**MULTIFUNCTIONAL**

MULTIFUNCTIONAL	MacKit
Syquest 88C & 650 Optical Drive	\$2,389
Syquest 88C & Photo CD-ROM, 520 Hard Drive	\$1,389

A SuperMicro multifunctional drive is a custom-made combination of hard drive, optical drive, CD-ROM drive, tape drive or Syquest drive all mounted together in the same enclosure. You decide which components you need, and SuperMicro will build for you.

There are many advantages to multifunctional drives over individual components:

- Single unit requires less space
- Guaranteed compatibility
- No tangle of power cords
- Easy to move to a different computer
- Costs less than separate components

0% DOWN SUPER LEASING**ONLY \$175 PER MONTH**

Call our new leasing department for all your leasing needs. You will enjoy the freedom to lease the equipment you want to meet your individual needs. We can lease you a complete system or a hi-res printer you can choose a 1, 2, 3, 4 or 5 year 100% tax deductible lease.

QUADRA 650 DTP SUPER SYSTEM

- Quadra 650 33MHz
- 16MB RAM
- 1GB Hard Drive
- Extended Keyboard
- 17" Hi-Res Color Monitor, 24bit
- Texas Instruments PRO 600, 600dpi, 9pm Laser Printer
- Scan AV 600dpi PhotoShop LE
- Syquest 88/44 External Drive

Special Note: You can add equipment to or take equipment away from the above system. Just call our leasing department for a lease estimate.**Three Super reasons to lease from SuperMicro:**

1. 24 hours approvals
2. 100% tax deductible
3. Over 20,000 products available for Lease

24 hour approvals, CALL NOW!

SCANNERS

MODEL	DESCRIPTION	PRICE
MICROTEK / SCAN AV		
ScanMaker II/AV	24-bit Color, 600x300 dpi	\$689/589
ScanMaker IIxe/AV	24-bit Color, 600x300 dpi	\$1,149/999
ADF	For 600/Scanmaker II	\$399
Transparency/AV	For Scanmaker II/1xe/AV	\$599/399
UMAX / SCAN AV		
UC840/AV	24-bit color, 800x400dpi	\$999/799
UC1260/AV	24-bit color, 1200x600dpi	\$1499/1299

SYQUEST DRIVES

MODEL	INTERNAL	EXTERNAL
SyQuest 270	\$499	\$559
SyQuest 105	\$279	\$339
SyQuest 88C	\$275	\$335
SyQuest 44	\$199	\$239

CARTRIDGES	PRICE
270MB Cartridges (5+ or with drive Purchase)	\$98.99
105MB Cartridges (5+ or with drive Purchase)	\$59.99
88MB Cartridges (5+ or with drive Purchase)	\$89.99
44MB Cartridges (5+ or with drive Purchase)	\$59.99

Includes external drive, 25/50 SCSI Cable, Mac SW, and Terminator

TAPE DRIVES

MODEL	CAPACITY	SIZE	MacKit
Archive Viper 250	250MB	3.5" HH	\$499
Archive Viper 525	500MB	3.5" HH	\$699
Sony SDT-2000	2Gbyte	3.5" HH	\$919
Sony SDT-5000	5-16Gbyte	3.5" HH	\$1,349
Exabyte 8200	2Gbyte	5.25" FH	\$1,299
Exabyte 8500	5Gbyte	5.25" FH	\$2,199
Exabyte 8205	2-5Gbyte	5.25" HH	\$1,625
Exabyte 8505	5-10Gbyte	5.25" HH	\$2,375

Includes external drive, 25/50 SCSI Cable, MAG Software II, and Terminator Retrospect 2.0. Add \$75

TAPES

Sony DAT	\$22	Maxell 8mm.....	\$19
----------------	------	-----------------	------

5.25" & 3.5" OPTICAL DRIVES**5.25" Optical Drives**

MODEL	CAPACITY	SEEK	MacKit
Sony-E502	594/650mb	66ms	\$2,049
Ricoh-9200EX/EII	594/650mb	35ms	\$1,849/1,499
MaxOptix-Tahiti I/III	594/650/1gb	25ms	\$2,599/3,199
PLI 650/1.3GB	594/650/1.3GB		\$1,699/2,999
PMO-650	594/650mb	19"ms	\$2,599
PMO-1.3	594/650/1.3GB	25ms	\$2,799

Includes external drive, 25/50 SCSI Cable, Mac SW, and Terminator

CARTRIDGES

Sony 594/650MB as LOW as	\$119
OEM 594/650MB as LOW as	\$85
Sony 1.3 GB as LOW as	\$139

No One Has A More Complete Family Of 5.25" Rewritable Optical Drives than SuperMicro

3.5" Optical Drives

MODEL	CAPACITY	SEEK	MacKit
TEAC	128mb	35ms	\$689
Fujitsu-128	128mb	30ms	\$869
SonyP-301	128mb	35ms	\$1,049
Most-256	128/256mb	37ms	\$1,199

Includes external drive, 25/50 SCSI Cable, Mac SW, and Terminator

CARTRIDGES

Sony 128MB as LOW as	\$45
Komag 128MB/OEM as LOW as	\$33/29

PRESENTATION COMBO

A Syquest 88 cartridge is large enough to hold several presentations. Use the CD-ROM drive as a source of graphic images. With this combo, you can bring everything you need on disk, and quickly connect it to your client's computer for the presentation.

Presentation Combo	MacKit
Syquest 88C & Dual Speed Photo CD-ROM drive	\$775

SYSTEMS

MODEL	DESCRIPTION	PRICE
Q950 8/270	17" Monitor, X Keyboard	\$4,129
Q950 8/270	14" Monitor, X Keyboard	\$3,929
Q840AV 8/270	17" Monitor, X Keyboard	\$3,819
Q840AV 8/270-CD	14" Monitor, X Keyboard	\$3,919
Q650 8/270	17" Monitor, X Keyboard	\$2,789
Q650 8/270-CD	14" Monitor, X Keyboard	\$2,889
Q660AV 8/270	17" Monitor, X Keyboard	\$2,539
Q660AV 8/270-CD	14" Monitor, X Keyboard	\$2,639
Q800 8/270	17" Monitor, X Keyboard	\$3,139
Q800 8/270-CD	14" Monitor, X Keyboard	\$3,239

385 VAN NESS AVE, TORRANCE CA 90501

1-310-782-5760 INTERNATIONAL

1-310-782-5974 FAX

800-352-3415**UPS Federal Express**VISA • MASTERCARD • COD CASH • COD COMPANY CHECK
NET-30 ON AN APPROVED CREDIT APPLICATION.**SuperMicro****We Specialize in Image Processing**

CIRCLE 20 ON READER SERVICE CARD

SONY UMAX

Seagate

RICOH

Maxtor

Quantum

Dataproducts

MICROTEK

FUJITSU

MaxOptix

CONNER

THE MAC SOLUTIONS HOUSE

May 1994

PERIPHERALS

UMAX

UC 1260 \$1429

1200 DPI Color Scanner w/
PhotoShop 2.5



UC 630 LE \$695

600 DPI Color Scanner with PhotoShop 2.5 LE

MONITORS



Radius Precision Color 17" Trin. \$1195

Sigma ErgoView 20" Trinitron...\$2395

Mirror 20" Trinitron...\$1895

Mirror 19" Gray Scale...\$650



NEWEST Hewlett-Packard Corporation

NEW! ImagoPlus 6L...\$3495

880P (800 DPI)...\$1795

Call for Higher End Models!



ScanJet 11c 24-Bit Scanner...\$549

NEW Color DeskWriter 560C...\$595

Color DeskWriter C...\$395 4MP (600dpi) Laser...\$1429



2 GIGABYTES FOR \$19!

Optima DeskTape Software...\$249

"...a technology that turns our conceptions of the world upside down. That's exactly what Optima Technology has created" - MacUser Magazine

• Multiple AWARD WINNING software lets you do more with a DAT drive than backup and restore. DeskTape software mounts any DAT or 8mm tape drive directly on the Macintosh desktop for click and drag copying, viewing, and printing of up to 2 Gigs directly from tape. (Over 19 Squest 105MB cartridges on a single cartridge), at a cost of 1 penny per Meg.

Desktop Mountable Tape

Optima DAT MiniPak 8000...\$1750

Small external unit with either horizontal or vertical orientation

CALL ABOUT OUR WIDE SELECTION
OF OPTIMA INTERNAL
& EXTERNAL DAT, OPTICAL
& HARD DRIVES



*Price Per Month on Lease. Please Call for Details.

YOUR COMPLETE SOURCE

* If You have Questions about Any of the products on this page (or any of our 100s of other name brand items) Please Call Us. We pride ourselves on our Friendly, Specially Trained Mac Computer Specialists. Unlike some "Box Movers" or "Order Takers" that masquerade as complete computer dealers, ABC is truly designed with the customer in mind. ABC prides itself on its Knowledgeable Help, Service and its TOLL-FREE Technical Support. After four years of Mac Sales and Support, we have earned the title of "The Mac Solutions Experts". We carry a Wide Variety of Macintosh computers and products, so if you don't see something on this page, please call us. And if a package below isn't exactly right for you, we will help you put together a System or Network to match YOUR Needs.

MAC SYSTEMS

CALL ABOUT NEW POWERPC MACS!



All Systems Featured Below include the ABC Software Bundle:
Symantec, GrowlWorks, Norton Utilities, Case Manager, Works Drive!

Quadra 840av SuperSystem \$228 p/m*

- Mac Quadra 840av w/ 24MB RAM, 1 Gigabyte Hard Drive, CD ROM Drive (40MHz, Voice Recognition, Speech Generation, Video Input and Output, Stereo 16-Bit Sound, DSP Chip)
- Mirror 20" Trinitron Monitor
- UMAX UC840 24-Bit Scanner
- Apple Adjustable Keyboard
- Texas Instruments 600 dpi Laser Printer
- Adobe PhotoShop 2.5
- ABC Software Bundle & Cables

Quadra 660av GraphicStation \$4820/\$184 p/m*



- Mac Quadra 660av 8MB RAM, 1 GIGABYTE HD, CD ROM (Voice Recognition & Generation, Video In & Out, 16-Bit Sound, DSP)
- Apple AudioVision 14" Monitor
- MicroNet 88/RW44 Syquest Drive
- UMAX 600DPI Color Scanner
- Extended Keyboard
- ABC Software Bundle & cables

Quadra 650 PowerSystem \$4395/\$142 p/m*

- Mac Quadra 650 (33MHz!) 8MB RAM, 1 GIG Hard Drive, CD ROM
- Sigma ErgoView 17" Monitor & 16-Bit VRAM
- Extended Keyboard

Quadra 605 Home Office System \$1699

- NEW! Quadra 605 4/80 (25MHz)
- Supra LC 14.4 BPS Fax/Data Modem
- Ext. Keyboard, Mouse
- Trinitron Color Monitor
- Quicken 4.0
- ABC Software Bundle & Cables

CALL FOR NEW MAC POWER PC SYSTEMS

(OR HAVE US FAX YOU OUR POWER PC MAC COMPLETE SYSTEMS FAXSHEET)

*Price Per Month on Lease. Please Call for Details.

PERIPHERALS

WACOM



ARTZ (6" x 8") Graphics Tablet \$289

NEW! UD 1212R (12" x 12") \$519



ADESSO

Adesso Extended Keyboard...\$ CALL

Adesso PowerBook Keypad...\$ 49

Adesso Mouse...\$ 29



256MB 3.5 Read/Write Optical...\$1095

(Read & Write 256MB & 128MB)

128MB 3.5 R/W Opt. w/3 Discs...\$795

STORAGE DIMENSIONS

ValueStor 1 GigaByte Ext. Drive...\$995 2 GB...\$1895

2 GigaByte Mass Storage DISK ARRAY...\$3295 4 GB Array...\$5259



TENBA

415c Computer Traveler Case...\$ 89

PowerPak Compact Case...\$ 75

Tenba Computer Back Pack...\$ 110



FARGO

Fargo Color Printer...\$ 969

Fargo Photo Realistic Upgrade Kit...\$ 249

COMPARE OUR DRIVE PRICES w/OUR COMPETITORS!



QUANTUM 230MB External Hard Drive...\$275

QUANTUM 230MB Internal Hard Drive...\$195

88MB/44MB Syquest w/Car...\$439

POWERBOOK

AE APPLIED ENGINEERING

POWERCHARGE BATTERY (20% More Power than Apple's)...\$ CALL

POWERCHARGE SINGLE (Unique Battery Recharger/Conditioner)...\$64

PB AUTO ADAPTER (Powers PowerBook from Car)...\$68

The ABC PowerBook 180c Executive Package Below Features the ABC Deluxe PowerBundle:
CPU PowerBook Utilities, CompuLinkWorks Drive 7, Norton Utilities, Applied Engineering Extra PB Battery and Advanced Battery Recharger + Powermax Surge Suppressor.

PowerBook 180c EXECUTIVE PACKAGE \$3970/\$129 p/m*

- PowerBook 180c 8/240
- Citizen NiteBook II Color Printer w/B/W & Color Cartridge
- 14.4 Fax Modem
- Targus Leather Case
- ABC Deluxe PowerBundle



We Carry the Full Line of Mac PowerBooks & DUOs

*Price Per Month on Lease or Finance Plan. Please Call for Details.

1 (800) 723-8262
fax: 1 (310) 325-4073

Return Policy: Call Customer Service at (310) 325-1422 to obtain a return authorization. Returned products must be in original condition and packaging and must be sent back within 30 days of purchase date. Incomplete Products, Returns, Unauthorized Returns, and Refused Shipments are subject to a 15% Restocking Fee. No Returns on Opened Printers or Software packages. No Returns on Specialty-Ordered Items. No Refunds on Freight.

SE HABLE
ESPAÑOL

ADVANCE
BUSINESS
CENTER

1 (800) 723-8262
fax: 1 (310) 325-4073

Conditions: Prices and Information are subject to change without notice. All items subject to availability. We reserve the right to refuse to sell to anyone. Credit Cards: We accept Visa, MasterCard, American Express, Discover's Club and Discover. Nominal Fees apply on some cards. Not responsible for typographical errors. All information presented believed accurate at time of printing.

CIRCLE 150 ON READER SERVICE CARD
(800) 723-8262 • (310) 325-1422 / fax: (310) 325-4073 • 23510 Telo Ave. #5, Torrance, CA 90505 • HOURS: Monday - Friday from 9:00am (Pacific Time) / Saturday 9:00am to 3:00pm

MacLand®

Since 1987

FWB All MacLand Hard Drives are bundled with the **FWB Personal Tool Kit, FREE!**

88c

5.25" Removable Hard Drive
\$329

The 88c drive will read and write 44MB cartridges, but will not format 44MB cartridges.

NEW!

5.25" 200MB Removable Hard Drive
Call For Pricing!

The 200 will read and write 88 and 44MB cartridges, but will not format 44 or 88MB cartridges.

4 Meg SIMMS

\$135

1 Meg SIMMS

\$45

150 Iomega Cartridges

\$95

90 Iomega Cartridges

\$79

Your No. 1 Removable Media Source!



SyQuest
Removable Drives
Unbelievable Prices!



SyQuest

NEW!

270MB 3.5" Removable Hard Drive!

\$499

270MB Cartridges \$99



SyQuest

Products subject to availability/Prices subject to change.

FORMATTED

SyQuest Cartridges

44MB

88MB

\$59

\$88

Any quantity!

MacLand®

1-800-333-3353

4685 S. Ash Ave., Suite H-5 • Tempe, AZ 85282



24HR. FAX
(602) 345-2217

CIRCLE 152 ON READER SERVICE CARD

**All Products
We Sell Are
PowerPC
Compatible!**

MACCENTER®

CD ROMs

NEW!

Eagle MultiMedia Kit
(includes CD ROM drive, 4 CDs,
& Multimedia speakers)

\$499



Eagle Multimedia kit.....\$499
Eagle CD ROM w/3 CDs
(including MultiMedia Encyl).....\$399
Apple CD300 w/5 CDs.....\$399
NEC MultiSpin 3Xe.....\$599
Pioneer DRM-604x.....\$1299

CD ROM Titles

Hundreds Available!

CALL FOR PRICES!

Multimedia Speakers-
Sony, Altec, Koss,
Labtec CALL



\$799 Sony 17" Monitor

Plug and play with the on
board video on your LCIII,
Quadra, Centris, or PowerBook.
WYSIWYG, 832 x 624, 26mm dot pitch.

MONITORS

Sony 1730.....\$1099
E-Machines T1611.....\$1149
SuperMac 20•TXL Special.....\$2399
Radius IntelliColor 20.....CALL
SuperMac Thunder II.....CALL
RasterOps MoviePak.....\$749
Radius PrecisionColor 24x Pro.....\$1949
SuperMac ThunderStorm.....\$439

Mac CPUs

Quadra•PowerBook•Duo•Newton•LC•Power PC Mac
Power Macintosh•Quadra•Centris•Power Macintosh
Duo•Newton•Quadra•Power Macintosh
Quadra•PowerBook•Duo•Newton•LC•Power PC Mac

**CALL FOR POWER PCs and
the NEW POWERBOOKS!!**

MODEMS

Global Village PowerPort Gold.....\$299
Global Village PowerPort Mercury.....CALL
US Robotics Sportster 14.4/14.4.....\$239
SupraFax Modem 14.4 LC.....\$169

MEDIA

128 MB Optical Cartridge.....\$29
44 MB SyQuest Drive Cartridge as low as.....\$49
88 MB SyQuest Drive Cartridge as low as.....\$79
DAT Tapes.....CALL

HARD DRIVES

PowerBook 40 MB.....\$99/169
PowerBook 80 MB.....\$189/289
Seagate 235 MB (PowerBook).....\$399/499
Fujitsu 240 MB (PowerBook).....\$449/549
Toshiba 345 MB (PowerBook).....\$599/699
Toshiba 1.2 GB (3.5").....\$799/899
Seagate 1 GB (3.5").....\$899/999
Micropolis 1.2 GB (3.5").....\$949/1049
Seagate Barracuda 2.4 GB (3.5").....\$1949/2049

We stock all Micropolis, Fujitsu, & Seagate drives.

PUMA™ OPTICAL DRIVES

Puma 256.....\$999



PRINTERS

**Texas Instruments
microLaser Pro 600**

• 6 MB RAM (22MB max) • 8 pages per minute
• 20 MHz RISC Processor • 2 paper drawers
• Mac and PC compatible
• True 600 dpi
• PostScript Level 2

\$1339*

*with Mfg. rebate

Texas Instruments microWriter PS23.....\$699*
*with any system purchase

QMS 860/860 Plus.....\$3999/CALL
QMS ColorScript 210/1000.....\$4279/CALL
Hewlett Packard 4M/4ML.....\$1999/CALL
Hewlett Packard 310.....CALL
NEC SilentWriter 640.....\$799
Apple LaserWriter Pro 630/810.....\$2099/CALL
Citizen Notebook Printer.....\$369
Apple StyleWriter.....\$329



SCSI Tower™ PowerBook SCSI Adapter

- Docking Units Now Shipping!
- The only PowerBook SCSI adapters which do not interfere with the ADB port and the modem jack.
- The only internally shielded PowerBook SCSI adapters (eliminates SCSI chain problems encountered with other types of adapters).
- The lightest PowerBook SCSI adapters: less than 1 oz. vs. 1/4 pound.
- Work with all DuoDocks
- The most compact - 2 in. vs. 3 in.
- 30 Day money back guarantee.

Trade In Your Old SIMMs!

MEMORY LIFETIME WARRANTY ON ALL SIMMs

The only company that accepts SIMM trade ins!
We carry memory for all Macs. Call and Save!

1 MB SIMM as low as.....\$29
4 MB SIMM 80ns.....\$129*
4 MB, 72 Pin SIMM 70ns.....\$159
PowerBook 160/180/165c/180c,
4 MB.....\$199
(* with trade in)



MACCENTER®

4930 South Congress, Suite 303
Austin, Texas 78745

FAX 512.444.3726

International Orders 512.445.5114

OVERSEAS TOLL FREE NUMBERS

Mexico - 95-800-292-7029

United Kingdom - 0800-89-4062

Germany - 0130-81-9054

France - 0590-1970

8 AM - 8 PM CDT Monday-Friday

10 AM - 5 PM CDT Saturday

AppleLink.....MacCenter

CompuServe.....MacCenter 75260.334

All returns require approval and are subject to a restocking fee.

© MacCenter 1993

800 944 0944

Number 1 on Reader Service Card
Number 1 in Service

SYEX EXPRESS

**10 years experience
selling Macintosh peripherals**

Storage Devices

P.L.I.

**Infinity 270 Turbo
Removable Ext. \$625**
Infinity 40 Removable Ext. \$339
Infinity 88/RW44 Removable Ext. \$449
Infinity 105 3.5" Removable Ext. \$419

NEC

**MultiSpin® 3Xe
CD-ROM reader
\$559**

Features a data transfer rate of 450 k/sec & a 195 ms access time. Kodak Multisession PhotoCD™ & QuickTime compatible. Requires interface kit.

New! MultiSpin 4X Pro \$929
Designed for high performance CD-ROM applications, multimedia development, and networks. 600KByte/sec data transfer rate, 180 ms average access—fast access for seek intensive applications.

Removable Cartridges

SyQuest 45MB \$65
88MB \$95
105MB \$59

Modems

**GLOBAL VILLAGE
COMMUNICATION**

**TelePort/Gold™
\$265**

14,400 bps data; 14,400
bps send/receive fax

PowerPort/Gold™ \$275
14,400 bps data; 14,400 bps send/receive fax
PowerPort/Mercury™ \$325
19,200 bps data; 14,400 bps send/receive fax
TelePort/Mercury™ (external) \$325
19,200 bps data; 14,400 bps send/receive fax

**PROMETHEUS
PRODUCTS**

ProModem® 144e (external) \$165
14,400 bps data & send/receive fax
ProModem 144i int. for PowerBooks \$259
Home Office \$225

Supra Corporation®

SupraFAXModem 144LC (external) \$159
14,400 bps data; 14,400 bps send/receive fax
Supra 144PB Int. for PowerBooks \$279
14,400 bps data & send/receive fax

* Discover, MasterCard and VISA only. * Prices and product availability subject to change without notice. All specials and promotions are limited to available stock. * Manufacturer's warranties are honored by SYEX Express as well as the original manufacturer. * We ship via Airborne Express Overnight service. (Some rural areas require an extra day for delivery.) * UPS rates are available upon request. * Orders placed by 4 p.m. CST weekdays for "in stock" items will ship that day for overnight delivery. * APO/FPO box orders are shipped first class U.S. Mail. * We are not responsible for typographical errors. * Defective software will be replaced immediately, and hardware will be repaired or replaced at our discretion. * Other returns may be subject to a restocking fee. * A Return Authorization Number is required for any product returned. * All trademarks or registered trademarks are property of their respective owners. * SYEX Express does not guarantee product compatibility. Orders placed on foreign credit cards are subject to a processing fee.



1030 Wirt Rd. #400 Houston, Tx 77055

CIRCLE 39 ON READER SERVICE CARD

Where You Always Get the Best for Less

SYEX EXPRESS is Your Source for Great Products, Service, and Low Prices!



**Hewlett-Packard
DeskWriter 310
Printer**

\$299

Upgrade to
Color for
Only \$35

300 dpi printing in black. Great
companion for the Mac PowerBook



**Hewlett-Packard
DeskWriter 520
Printer**

\$299

Delivers professional
quality 600 x 300 dpi
printing in black. Features
HP's own Resolution Enhancement technology



**Hewlett-Packard
DeskWriter 560C
Color Printer**

\$579

Affordable laser quality
600 x 300 dpi black & color
printing. Features HP's
breakthrough ColorSmart technology.

Monitors and Graphics Cards



SUPERMAC.

**SuperMatch™ 20
Plus Color Display
\$1625**

20", 1152 x 870, great
value for WYSIWYG

**SuperMatch 20-T XL Multimode
Trinitron® Color Display \$2479**
20" Trinitron® display with unmatched versatility.

**SuperMatch 21 Two-Page
Color Display \$2379**
Great for color publishing. 1152 x 870, Plugs
directly into Quadra's built-in video.

SuperMac™ Graphics Cards

Spectrum8-24 PDQ™ (NuBus) \$499
Spectrum/24™ Series IV \$765
Spectrum™ Power + 1152 \$1179
Spectrum/24 PDQ™ Plus \$999
Thunder/24™ \$1659
DigitalFilm™ \$3099

Complete line of SuperMac products available



E-MACHINES

ColorPage™ T16 II Color Display .. \$1129
16" Trinitron display, 640 x 480 to 1152 x 870

NEC

MultiSync 3V™ 15", 1024 x 768 \$519
MultiSync 4FGe™ 15", 1024 x 768 \$719
MultiSync 5FGe™ 17", 1024 x 768 ... \$1095
MultiSync 5FGp™ 17" 1152 x 870 .. \$1299
MultiSync 6FGp™ 21", 1152 x 870 ... \$2365

Printers

NEC

**Silentwriter®
Model 95f
\$889**
300 dpi, 2MB RAM
expandable to 5MB,
6ppm, 35 Adobe fonts &
22 HP fonts, Mac & DOS autoswitching

**Silentwriter
Model 640
\$719**
6ppm, 3MB RAM
Adobe™ PostScript™
Level 2, 17 Adobe Type
1 fonts, 35 TrueType fonts, EnergyStar compliant

Silentwriter Model 1097 \$1399
600 dpi, 10 ppm, 7MB RAM, PhotoMatch™ gray
scaling, Adobe PostScript Level 2, 35 Adobe Type
1 fonts, high-speed RISC processor, Mac & DOS
auto-switching

Toner

Dataproducts 1560 Toner \$199
Fits Compaq Pagemark & RealTech™ Laser 400

NEC Long Life EP toner \$169
For NEC Model 95, 97, & 1097 printers

Dataproducts 960 Toner \$49
Fits TI MicroLaser and RealTech™ Laser



radius

**PrecisionColor™
Pivot® Display
\$649***

15" dual-orientation, anti-
glare full-page color display
*price after \$150 mail-in rebate

Radius Full Page Display/gs \$499

15" diagonal portrait display. 640 x 870 resolution

Radius Two-Page Display™/20gs \$795

20" monochrome display, Mac AV compatible.

Radius Two-Page Display/21gs \$969

21" monochrome 2-page display. 1152 x 870

Radius PrecisionColor Display/17 \$1199

17" Trinitron display, 1152 x 870 resolution

Radius PrecisionColor Display/20v \$1795

Low cost 20", 1152 x 870, "on-the-fly" resolution
switching. Great for desktop design work.

Radius IntelliColor™ Display/20 \$2499

20" Trinitron®, Macintosh AV compatible

Radius displays are PowerPC compatible

Radius Graphics Cards

Call for Details on Radius' Worry-Free Warranty.

NEW!

LeMansGT™ ... \$2299
Radius unveils the fastest
24-bit graphics card.

PrecisionColor Pro™ 24XP Card \$429

PrecisionColor Pro 24X \$1339

VideoVision™ with software \$1825

VideoVision Studio™ \$3299

Complete line of Radius products available

Networking

Farallon®

EtherWave Transceiver 10Base T \$99

EtherWave™ 10Base-T NuBus \$169

ASANTÉ

FriendlyNet™ Adapters \$65

MacCon+™ LC Thin or 10T \$139

MacCon+™ IIE64 Thin or 10T \$139

MacCon3™ NuBus or IISI \$189

AsantéPrint \$325

MINI EN/SC PB/MINI EN/SC 10T \$299/\$239

10T Hub/8 / 10T Hub/12 \$229/\$465

Complete line of Asanté products available

Dayna

DaynaPORT™ TRX Ethernet transceiver . \$59

DaynaPORT™ E/I, LC \$119

SCSI/Link™ \$239

EtherPrint™ or EtherPrint T \$319

EtherPrint Plus \$379

Complete line of Dayna products available

FREE ExpressNet

Network Consultation

Fax your network needs and a list of your
systems, including hosts, to SYEX Express
(713) 956-5741, & we'll fax back a networking
solution that fits your needs—all at no charge

Scanners

**hp HEWLETT®
PACKARD
Authorized Dealer**



**HP ScanJet Ilex
Scanner
\$929**

400 dpi, provides one pass
24-bit color scanning & 256 levels of gray.

AGFA

Agfa StudioScan™ 300

\$1049

One pass 300 x 600ppi, 24-bit color scanner.
Comes with FotoSnap™, FotoLook™, and Adobe
Photoshop LE v.2.5 software

UMAX®

UMAX UC-630LE \$699

600 dpi through hardware, Photoshop LE v.2.5

UMAX UC-840 \$969

800 dpi color scanner incl. Photoshop v.2.5

UMAX UC-1260 \$1449

1200 dpi through hardware, Photoshop v.2.5

Accelerators



**DAYSTAR
DIGITAL**

33MHz Turbo 040i \$739

33MHz Turbo 040 \$909

40MHz Turbo 040 \$1079

Universal PowerCaches

33MHz/ w/68882 \$273/\$355

50MHz/ w/68882 \$409/\$535

FastCache Turbo \$165

Quad 040 \$1239

FastCache Quadra 700,900,950 (128K) \$315

PowerBook Docks

E-MACHINES

E-Machines EtherDock™ \$575

Full-speed Ethernet support, SCSI, ADB, Serial ports

Lapis SCSI Dock .. \$149

SCSI access for the Macintosh
PowerBook Duo.

Keyboards

SIIG, Inc.

**Suntouch Mac
Extended Keyboard \$89**

To Place an Order Call:

Mon-Thurs: 8 am - 7 pm

Fri: 9 am - 7 pm

(Central Standard Time)

Corporate POs

accepted, Sorry

no C.O.D.s

Call Today!

1-800-876-3467

International & Canadian Orders: call (713) 957-1999 or fax to (713) 956-5741

MacUser 5/94

FREE CATALOG
CALL 1-800-876-3467
or fax name & address
to (713) 956-5741

We're not like the other We'll give you more

Macintosh Systems



Whether you need a system for high-end color publishing, professional pre-press applications, desktop design and production or simply business productivity – Express Direct can custom configure a Mac System that's right for your specific job and right for your budget.

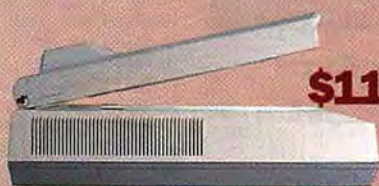
And remember, all Macs aren't created equal! At Express Direct we do more than take orders and ship boxes. We install the memory, video card and system software. Then we test every System – so all you need to do is plug it in! And only Express Direct gives you Toll-Free Technical Support with every Mac!

\$3299

Apple Quadra 840 AV with CD-Rom Drive
8MB RAM, 230 MB HD, includes Ethernet & FPU.
• Add 16" Trinitron display with accelerated 24-bit color card, Extended Keyboard & System 7.1.
Complete System \$4899



Ask about our
4 Year On-Site Service Plans
and other ExpressCare Plans*



\$1199

The Umax UC1260 offers incredibly accurate 1200 dpi scanning in 1 to 24-bit color. Shown with optional transparency adapter.

UMAX®

From affordable 24-bit color at under \$900, to top-of-the-line, 1200 dpi performance, Umax offers a scanner for every need and budget. With Adobe Photoshop for image editing and manipulation and an optional transparency adapter for scanning slides and transparencies, Umax scanners bring professional power to the desktop!



\$2979

Get true RAID performance on any NuBus Mac with the potent combination of FWB's 2.0 GB SledgeHammer 2000 FMF NuBus and FWB's SCSI JackHammer accelerator card.

FWB
incorporated

FWB produces the industry's broadest range of affordable, high-performance disk array storage subsystems. Choose the solution that's best for you from the SledgeHammer family of disk arrays, which now includes the top performing SledgeHammer II and SledgeHammer Wide. Whichever Macintosh you have, FWB has a disk array solution that fits your job and budget. Power Macintosh compatible.



\$3799

newgen

The new high-resolution, edge-to-edge Newgen Imager 6L produces 600 dpi, 11x17 production quality output.

Newgen's superior engineered products bring high-resolution, "service-bureau-like printing" to the personal printer. Newgen's proprietary Image Enhancement Technology produces incredibly crisp output normally found in printers at twice the price. And patented Auto Recognition Technology allows all Newgen printers to be attached to multi-platform networks for maximum flexibility and compatibility.

We stock a complete line of quality products from all of the above manufacturers & more.

1-800-765-0040

Express Hours (Central Standard Time) M-F 8am-7pm, Sat 10am-2pm • 24hr Fax

Get it
Direct!

Apple/Mac are trademarks of Apple Computer. Prices are subject to change without notice. All returned orders may be subject to a 15% restocking fee plus return shipping. Call for RMA before returning. All warranties on Macintosh or Apple brand products sold by Express Direct will be honored by Express Direct or its authorized agents only. All other manufacturers' warranties still apply. * Extended Service Plans are optional and available for an additional cost. Call for complete details.

mail order companies. than a sales pitch.



We'll give it to you straight.

When it comes to product knowledge and understanding the needs of graphic professionals – **nobody even comes close to Express Direct.** Not the other mail-order companies, not the superstores, not even your local dealer.

When you call us – **you'll talk with an expert.** Someone who's done their homework, knows the product, knows what they're talking about. Not an order-taker, like you get with the other mail-order companies.

We carry only top-notch products from the industry's best manufacturers. No garbage. You demand quality and so do we. What's more, our strict criteria for selecting products means we always get the lowest price – directly from the manufacturer. So **nobody can give you a better value** than Express Direct.

But that's just the beginning. With customer service and technical support that's the best in the industry, we make it our business to take care of you. All this is just a free phone call away. So, call Express Direct today. **You're going to love working with us!**



SuperMac Thunder 24 (a), "the fastest 24-bit card" & the award winning 20" Trinitron display (b)

SUPERMAC.

For color publishing & pre-press, nobody delivers more power and performance than SuperMac. SuperMac's 24-bit graphic accelerators constantly sweep MacWorld magazine's top 3 ratings for the fastest cards on the market. SuperMac's large screen displays are tailored to the demands of the graphics professional.



Performance and Value: Focus Enhancements razor sharp Lapis T17 (a) & the most affordable accelerated 24-bit color interface (b)

FOCUS
enhancements

Focus Enhancements' Lapis T17 is without a doubt the best value available today. Offering an unmatched combination of performance and price, this 17" Trinitron gives you sharp, brilliant color in 4 resolutions. Add the accelerated 24-bit color card, and you've got all the features and speed at half the price of all the comparable systems. Now you can have the performance you demand at a price you can afford.



• Unlimited toll-free technical support



• Full warranty coverage



• Authorized service & sales



• Flexible payment & leasing terms for those who qualify



International Orders Shipped Daily
Fax: 312.549.6447 Ph: 312.549.0030

1801 W. Larchmont Ave., Chicago, IL 60613 USA



"The Color Experts"

INTRODUCING MEMORY

POWERBOOK MEMORY AS LOW AS \$169



PB160-180-10MB \$419

PB140-170-4/6	\$169 / \$259
PB160-180-4/6/8/10	\$169 / \$259 / \$329 / \$419
PB165C-180C-4/6/8/10	\$169 / \$272 / \$332 / \$442
DUO 4/6/8/10	\$169 / \$219 / \$305 / \$355
DUO 12/14/20/28	\$575 / \$649 / \$975 / \$1692

ACCESSORIES

Battery Charger - Battery 140-180 Bundle	\$125
Long Life Battery 140-180c	\$59
Automobile Adapter 100-180 / DUO	\$58 / \$69
Newer Technology DUO Micro Dock SCSI / Color	\$135 / \$259
Axion Switch-3 Serial Ports	\$95
Kensington Turbo Mouse 4.0	\$106
Wacom ARTZ	\$305

SCANNERS / PRINTERS

HP IICX	\$999
UMAX UC630 LE	\$729
Microtek ScanMaker IIXE	\$1079
Citizen Notebook II Color Printer	\$378
GCC Write Impact	\$549
LaserWriter 810 4MB / 8MB Memory	\$259 / \$459
HP Printer Memory 4MB / 8MB	\$179 / \$359

Ask about our Lifetime Warranty on all our memory products. Prices and availability are subject to change.

MEMORY

1x8x80	\$40
1x8x100	\$39
1x8x80 (fx)	\$57
2x8x80	\$73
4x8x80	\$145
4x8x80 (fx)	\$150
4x8x80 (II,IIx)	\$155
16x8x80 (Low Profile)	\$625
16x8x80 (fx)	\$619

CENTRIS-LC III-QUADRA

4MB-70ns / 4MB-60ns	\$139 / \$149
8MB-70ns / 8MB-60ns	\$290 / \$299
16MB-70ns non-composite	\$609
16MB-60ns non-composite	\$619
32MB-60ns	\$1299

VIDEO RAM / MATH COPROCESSORS

Video RAM 256K / 512K	\$20 / \$38
16MHz LC / Classic II	\$59
16MHz Color Classic	\$49
25MHz LC III	\$69
35MHz Performa 600 / Duo Dock FPU	\$65
Centris FPU	\$319



MicroMac SIMMDoubler	\$137
MicroMac SIMMchanger	\$98



Rumi SYQUEST DRIVES AS LOW AS \$289



105MB
SyQuest
\$529

88c (R/W 44)
SyQuest
\$289

Includes FREE Cartridge from SyQuest!

Rumi SYQUEST DRIVES

Rumi 44MB SyQuest	\$289
Rumi 88c (R/W 44) SyQuest	\$469
Rumi 105MB SyQuest	\$445
Rumi 85MB Int / Ext	\$209 / \$279
Rumi 170MB Int / Ext	\$219 / \$299
Rumi 270MB Int / Ext	\$299 / \$369
Rumi 525MB Int / Ext	\$639 / \$699
Rumi 1.0GB Int / Ext	\$879 / \$939
Rumi 1.2GB Int / Ext	\$1089 / \$1109
Rumi 2.0GB Barracuda Ext	\$2269

SYQUEST \$59

SyQuest 44MB Cartridge/Formatted ...	\$59 / \$65
SyQuest 88MB Cartridge/Formatted ...	\$94 / \$99
SyQuest 105MB Cartridge	\$80

Rumi DAT DRIVES Includes Tape*

Rumi 2.0GB DAT Drive w/Retrospect*	\$1069
Rumi 8.0GB DAT Drive w/Retrospect*	\$1219

Rumi CD-ROM DRIVE \$299

Rumi OPTICAL DRIVE

Includes 5 Verbatim Cartridges	\$995
Rumi 128MB Optical Drive	\$995

MORE DRIVES Includes Disk*

PLI Infinity 44*	\$355
PLI Infinity 88 R/W 44*	\$515
PLI Infinity 105 Turbo*	\$535
PLI CD-ROM Int / Ext	\$509 / \$559
PLI 128MB 3.5" Optical (Sony Mech)*	\$1219
PLI 128MB 3.5" Optical (IBM Mech)*	\$949
PMO Sierra 1.3GB Optical	\$2879
FWB SCSI JackHammer	\$649
FWB HardDisk ToolKit	\$159
FWB CD-ROM ToolKit	\$69

MODEMS



Supra v.32bis S/R Fax 14.4 w/ C & S	\$225
Supra v.32bis S/R Fax 14.4 LC w/ C & S	\$165
Supra 2400 Modem ONLY	\$59
Supra 2400 Modem S/R Fax 9600 w/ C & S	\$139
Supra v.32bis PowerBook 14.4	\$229
Global Village Teleport / Powerport (Bronze) 24/96/48	\$97
Global Village Teleport / Powerport (Gold) 14,400	\$299
Global Village Teleport / Powerport (Mercury) 19,200	\$349
U.S. Robotics Sportster 14.4 S/R Fax	\$237
Prometheus PowerBook 14.4 w/Voice	\$309
Zoom Pocket 14.4 w/Voice	\$239
Zoom 14.4 w/Voice	\$189

SONIC AS LOW AS \$89



Sonic Micro SCSI PowerBook ... \$235

Sonic Ether 10T/Thin-II/LC	\$89
Sonic Micro SCSI PowerBook	\$235
Sonic FriendlyNet 10T/Thin	\$49
Sonic Starbase T9	\$195
Sonic HubLite 5 port	\$145
Sonic PowerBridge	\$95



FAX
206-454-7302

Educational/Government
1-800-848-1424

Fortune 1000 Companies
1-800-848-1418

AT PRICES YOU WON'T FORGET

40MHz Turbo 040
\$1129



UPGRADE
POWER PC
PROMOTION

DAYSTAR
DIGITAL

* Buy eligible 040 products between
1/7/94 and 3/31/94 and receive a
PowerPC upgrade for only \$199!

TURBO 040 ACCELERATORS **\$609** AS LOW AS



40MHz Turbo 040 / with cache	\$1129 / \$1209
33MHz Turbo 040 / with cache	\$949 / \$1039
25MHz Turbo 040	\$779
040i 20MHz Turbo (No FPU)	\$609
040i 25MHz Turbo (No FPU)	\$695
040i 33MHz Turbo (No FPU)	\$779
128k Cache for Turbo 040's	\$172
Value 040i 33MHz (No FPU)	\$779
Value 040 33MHz	\$949
Value 040 40MHz	\$1129

CENTRIS & QUADRA 040 ACCELERATORS

Image 040 40MHz	\$1899
Quadra 040 40MHz	\$1299



50MHz 030
w/ FPU ... \$565

UNIVERSAL POWERCACHE 68030

UPGRADABLE TO TURBO 040

33MHz / 33MHz with FPU	\$289 / \$379
50MHz / 50MHz with FPU	\$439 / \$565

33MHz Powercache SE/Classic w/ video & adapter	\$779
50MHz Powercache SE/Classic w/ video & adapter	\$909

MORE DAYSTAR PRODUCTS

Quadra Cache	\$249
Adapter IISI NUBUS	\$389
Charger	\$505
Charger Plus w/ Suites	\$649
Photomatic	NEW! \$199



CD-Recordable 640/74Min \$23

VERBATIM **\$23** AS LOW AS

128MB 3.5" Optical	\$32*
*Limited Offer Expires 4/30/94	
128MB 3.5" Optical, Apple Format	\$36
600 / 650MB 5.25" Optical (512 b/s / 1024 b/s)	\$85
1.2 / 1.3GB Optical (512 b/s / 1024 b/s)	\$112
CD - Recordable 640 / 74 min	\$23
DC2120 w/ QIC80	\$19.50
4mm 90m / 60m	\$11.50 / \$8.90
8mm 112m	\$10

SONY MEDIA

1.3 / 1.2GB Optical	\$135
650 / 600MB Optical	\$109
128MB 3.5" Optical	\$46

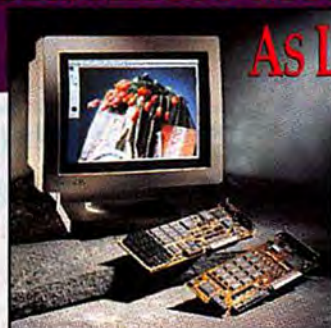
SONY 1/4" DATA CARTRIDGES	
1/4" Mini D/C 120MB / 150MB / 250MB	\$18 / \$20 / \$26
1/4" Mini QIC-80 120MB Formatted	\$23
1/4" D/C 525MB	\$30
1/4" D/C 2.65GB	\$49



SONY PCMCIA CARDS		SONY CD-R	
SRAM Card 1MB / 2MB	\$225 / \$369	650MB/74 Min.	\$25
Flash Card 2MB / 4MB	\$269 / \$469	553MB/63 Min.	\$23

SONY 4mm DAT		SONY 8mm DAT	
4MM 60M 1.3GB	\$13	8MM 15M 600MB	\$12
4MM 90M 2GB	\$15	8MM 54M 2.4GB	\$14
4MM 120M 4GB	\$24	8MM 112M 5GB	\$16
Cleaning Cartridge	\$12.50	Cleaning Cartridge	\$28

RASTEROPS MONITORS **\$949** AS LOW AS



RASTEROPS
THE ART & SCIENCE OF COLOR™

DUO DOCKS

Duo Mate 8	\$349
Duo Mate 16SC	\$559

MONITORS / VIDEO

PaintBoard Turbo 20" / 16" / 13"	\$1159
PaintBoard 8Li / 20" / 16" / 13"	\$339
PaintBoard Lightning	NEW! \$829
24STV	\$769
24Mx	\$609
24XLTV	\$2699
Movie Pak 2	\$1539
Movie Pak 2 Pro Suite	\$3479

RasterOps Sweet 16 Monitor	\$949
RasterOps 20" MultiScan Color Display	\$1619
RasterOps 20T Color Monitor	\$2479

Sony 14" / 17" MultiScan	\$669 / \$1139
Sony 17SE1	NEW! \$1289
Sony GDM 2036s 20" MultiScan	\$2169

THE LLB COMPANY, INC.

300 120th Avenue NE
Bldg 1, Suite 120
Bellevue, WA 98005
(206) 454-7258

"With customer Service Guaranteed. Depend on LLB for Quality, Service and Value"

- Airborne Express Overnight \$6 and up
- First quality New, Brand Name products
- P.O.'s accepted upon approval
- All major credit cards accepted with no surcharge.
- Credit card not charged until order is shipped
- Orders received before 7:30 pm Eastern time weekdays shipped same day
- We export to most countries in the world
- All returns require approval and are subject to a restocking fee
- Prices subject to change
- Open 7 am to 6 pm M-F, 9 am to 4 pm Saturdays

Call 1 - 800 - 848 - 8967

CIRCLE 88 ON READER SERVICE CARD



MEMORY • MEMORY • MEMORY

MACINTOSH MEMORY UPGRADES

YOUR MACHINE	STANDARD	MAXIMUM	VIDEO	2MB	4MB	6MB	8MB	10MB	16MB	32MB	64MB
NEW Newton	640K	4MB		\$220							
Powerbook 100	2MB	8MB		\$85	\$179	\$270					
Powerbook 140	2MB	8MB		\$85	\$169	\$240					
Powerbook 145	4MB	8MB			\$169	\$240					
Powerbook 145B	4MB	8MB			\$159						
Powerbook 160, 165	4MB	14MB			\$179	\$255	\$345				
Powerbook 165c	4MB	14MB			\$179	\$265	\$359	\$395	\$449		
Powerbook 170	2MB	8MB		\$85	\$169	\$240					
Powerbook 180	4MB	14MB			\$179	\$255	\$345	\$395			
NEW Powerbook 180c	4MB	14MB			\$179	\$265	\$359	\$449			
Powerbook Duo 210, 230, 270	4MB	24MB	512K		\$169		\$305				
Plus, SE	1MB	4MB		\$86							
SE/30	1/2MB	32MB			\$168				\$572		
Classic	1MB	4MB		\$86							
Classic II	2/4MB	10MB		\$86	\$160		\$273				
Color Classic	4MB	10MB	256K		\$160		\$273				
LC	2MB	10MB	512K	\$86	\$160		\$273				
LC II	4MB	10MB	512K		\$160		\$273				
LCIII	4MB	36MB	256K		\$145		\$295		\$549	\$1,299	
IIx	1MB	16MB			\$168				\$612		
IIcx	1MB	16MB	CALL		\$168				\$572	\$1,260	\$2,356
IIxi	2/3/5MB	65MB			\$168		\$320		\$572	\$1,260	\$2,356
IIci	1/5MB	128MB			\$168		\$320		\$572	\$1,260	\$2,356
IIfx	4MB	128MB			\$191				\$579	\$1,341	\$2,588
IIvi	4/5MB	68MB			\$168		\$320		\$572	\$1,260	\$2,356
IIvx	4/5MB	68MB	512K		\$168		\$320		\$572	\$1,260	\$2,356
NEW Centris 610, Quadra 610, 605	4MB	68MB	512K		\$145		\$295		\$549	\$1,299	
NEW Centris 650, Quadra 650	4MB	132MB	512K		\$145		\$295		\$549	\$1,299	
NEW Centris 660AV	8MB	68MB			\$145		\$295		\$549	\$1,299	
NEW Quadra 700	4MB	68MB	512K						\$572	\$1,260	\$2,356
NEW Quadra 800	8MB	136MB	512K		\$150		\$299		\$619	\$1,349	
NEW Quadra 840AV	8MB	126MB			\$150		\$299		\$619	\$1,349	
Quadra 900, 950	4MB	256MB	512K		\$168				\$572	\$1,260	\$2,356
Performa 200	4MB	10MB			\$160		\$273				
Performa 400, 405	4MB	10MB		\$94	\$160		\$273				
Performa 430	4MB	10MB		\$94	\$160		\$273				
Performa 450	4MB	35MB	256K		\$145		\$295		\$549		
Performa 600, 600CD	4/5MB	68MB			\$168		\$320		\$572		
NEW Workgroup 60 File Server	8MB	68MB			\$150		\$299		\$619	\$1,349	
NEW Workgroup 80 File Server	8MB	136MB			\$150		\$299		\$619	\$1,349	
NEW Workgroup 95 File Server	16MB	256MB			\$168				\$572	\$1,260	\$2,356



WE SET THE STANDARD:

- MEMORY GUARANTEED - 100% COMPATIBLE IN FORM, FIT, AND FUNCTION
- ALL PRODUCTS USER INSTALLABLE
- INSTALLATION INSTRUCTIONS INCLUDED WITH MOST MEMORY PRODUCTS
- FREE TECHNICAL SUPPORT
- CORPORATE PO'S, APO/FPO'S WELCOME
- GOVERNMENT AND EDUCATIONAL PRICING
- INTERNATIONAL ORDERS WELCOME
- SPECIAL VOLUME PRICING
- OVERNIGHT DELIVERY AVAILABLE
- NO SURCHARGE ON CREDIT CARDS

DON'T SETTLE FOR LESS!



TOLL FREE FROM USA & CANADA

800-467-9866

INTERNATIONAL ORDERS

714-448-7750

FAX ORDERS

714-448-7760

BUSINESS HOURS:

Monday - Friday, 7am-5pm, P.S.T.
Saturday, 9am-3pm, (Orders Only Please)



MAIL OR FAX ORDERS TO:
First Source International, Inc.
7 Journey
Aliso Viejo, CA 92656

Terms and Conditions: Memory products are first party manufacturer's products and are for your convenience. Freight charges are non-refundable. A 25% restocking fee is required for all returns. All orders shipped by air are non-refundable. All non-defective returns, unopened, undamaged, or cancelled orders, will be subject to a 25% restocking fee. Due to U.S. tariffs, placed on some manufacturers, memory pricing may be higher than advertised. Prices and availability are subject to change without notice. Purchase prices at the time of order are final. First Source International cannot be responsible for errors in typographical or photographic. We will list any advertised price with only one identical benefit, offer not good for 5000 or 10000. Trade marks and registered trademarks are of their respective companies.

TWO DAY SHIPPING
\$5.00

APPLE SIMMS



First Source stocks a complete line of SIMM modules for your Apple machine no matter what the model!

All SIMMs are manufactured in the USA by Paragon Memory and carry a Lifetime Warranty!

1x8-70 '42	1x32-70 '145
2x8-70 '78	2x32-70 '295
4x8-70 '143	4x32-70 '549
4x8-70/PAL '158	1x32-60 '150
8x8-70 '315	2x32-60 '299
16x8-70 '589	4x32-60 '619

VIDEO RAM SPECIALS

MORE COLORS & HIGHER SCREEN RESOLUTIONS!

By upgrading your Video RAM to 1MB, increase the colors & screen resolution on your monitor!

SYSTEM	BEFORE UPGRADE	AFTER VRAM UPGRADE
Centris 610, 650	256	32,768
Quadra 605, 610, 650	256	32,768
Quadra 800	256	32,768
Quadra 840AV, 900, 950	32,768	16.7 million
PowerBook Duo 210, 230, 250, 270c	256	32,768

512K Upgrade \$49

POWERBOOK MEMORY BLOWOUT!



PowerBook 100	M1033LLA	'179
4MB	PN N/A	'270
PowerBook 140, 145 and 170	M1033LLA	'169
4MB	PN N/A	'240
PowerBook 160 and 180	M464LLA	'179
4MB	PN N/A	'255
8MB	PN N/A	'345
10MB	PN N/A	'395
PowerBook 165c & 180c		
4MB	PN N/A	'179
8MB	PN N/A	'265
10MB	PN N/A	'359
PowerBook Duo 210, 230 & 270		
4MB	M418LLA	'169
8MB	M418LLA	'305

CALL THE UPGRADE EXPERTS 800-467-9866

Get Ready For PowerPC!

In case you haven't heard yet, PowerPC is a new microprocessor developed jointly by Apple, IBM, and Motorola based on advanced, 32-bit RISC (reduced instruction set computing) technology. It will, quite simply, do a lot more in a lot less time—initial clock speeds range from 60MHz to 80MHz (about twice as fast as the current Quadras).

To get the most from PowerPC, you'll need software specifically designed to take advantage of its RISC architecture. The products featured in this box are optimized to give you the performance advantages of this new chip. Power up for PowerPC right now!



WordPerfect

4268 WordPerfect 3.0—The perfect way to produce more professional documents in less time. Easily combine text, graphics, and charts in the same document. Upgrade now and save!
12049 WordPerfect 3.0 Comp. Upgrade..... 89.
4711 WordPerfect 3.0 Version Upgrade 74.95



Fractal Design

10402 Painter 2.0A—Award-winning 24-bit color paint program that lets you create extraordinary image effects like marbling, glass distortion, and liquid effects. Includes more than 80 Natural Media painting tools.



Graphsoft

11724 MiniCad 5—Provides powerful, integrated 2D and 3D design tools with an easy-to-use, customizable interface. MiniCad Modules provide tools tailored to specific application areas.

Since 1984, the original Macintosh mail-order source. Over 3500 products.
★ denotes Money Back Guarantees.

POWERBOOK/NEWTON

- ★ Applied Engineering ... 30 day MBG
- 8799 Auto Adapt \$69. 8800 Batt. Charger \$67.
- ★ Battery Tech., Inc. ... 30 day MBG
- 7562 140-180 Batt. 59.95 10392 Chrg. 64.95
- ★ Connectix ... 30 day MBG
- 8441 CPU 55.
- ★ Global Village ... 30 day MBG
- 7720 PowerPort/Silver 269. 7710 /Gold 299.
- ★ I/O Design Cases ... 30 day MBG
- 8121 PowerBook SL..... 47.95 8113 EX.. 59.
- ★ Kensington ... 30 day MBG
- 14018 NoteBook Tote Case 35.95
- 1092 Deluxe..... 75. 9585 Executive..... 115.
- Lind Electronic Design
- 14587 SBC-2 139. 14841 BL4-200..... 179.95
- ASD Software
- 15864 Wiz Tools for PowerBook..... 59.95
- ★ Sophisticated Circuits ... 30 day MBG
- 7419 PowerPad Granite w/QuickKeys..... 109.
- 7425 (granite) 69.95 7057 (platinum) 69.95

DAILY BUSINESS

- ★ Targus Cases ... 60 day MBG
- 11207 Leath. PB Case \$95. 1305 Universal \$69.
- Technoggin, Inc. ... 30 day MBG
- 14014 PowerPlate 3X 219.95 14015 5X 279.95
- 14013 PowerPlate Mini 3..... 154.95
- U.S. Robotics
- 11841 WorldPort 14.4 Fax..... 269.
- Utilitron, Inc.
- 3012 PowerSwap (swap batt. w/o shutdown) 25.
- ★ Zoom Telephonics ... 30 day MBG
- 10267 FaxModem PBK144 199.95

- ★ Aldus ... 30 day MBG
- 11558 TouchBase or 11557 DateBk. Pro ea. 49.
- 11559 TouchBase Pro/DateBook Pro ea. 89.95
- ★ Attain Corporation ... 60 day MBG
- 8465 In Control 85. 11545 w/Dynadex 99.95
- ★ Baseline Publishing ... 30 day MBG
- 8881 Thunder 7 1.5.3 55.95
- ★ Best! Ware ... 30 day MBG
- 14187 M.Y.O.B. 55. 14188 w/Payroll 109.95
- ★ Cambridge Sci. Comp. ... 30 day MBG
- 15014 ChemOffice Plus 2.0 199.95
- ★ CheckMark ... 60 day MBG
- 5863 Multilegder 229. 5862 Payroll 169.
- ★ Claris ... 30 day MBG
- 3903 ClarisWorks 2.1 for Mac 199.95
- 3836 FileMaker Pro 265. 14732 MWrite Pro 95.
- Gold Disk
- 12279 Astound 249.
- ★ Inspiration ... 30 day MBG
- 11269 Inspiration 4.0 165.95
- ★ Intuit ... 30 day MBG
- 11845 Quicken 4.0 39.95
- ★ KnowledgePoint ... 60 day MBG
- 15195 Descriptions Now! 2.0 79.95
- 15194 Policies Now! 1.3..... 89.95
- ★ Lotus Development ... 60 day MBG
- 12715 Spec. 1-2-3 Mac & DeltaGraph Pro 107.
- ★ MECA ... 60 day MBG
- 2796 Managing Your Money 6.0..... 35.
- ★ Microsoft ... 30 day MBG
- 2884 Works 3.0 105. 4902 Word 5.1..... 295.
- 3669 Excel 4.0 295. 5454 MS Office 3.0 375.
- ★ Now Software ... 30 day MBG
- 1793 Now Up-to-Date 65. 2366 (10 pk.) 519.
- ★ Palo Alto ... 60 day MBG
- 6975 Bus. Plan 75. 4690 Mkt. Plan Tik. 75.
- ★ Paradygn Concepts ... 30 day MBG
- 15001 HomeWorks ClarisWorks (for Mac) 37.95
- 14978 HomeWorks MS Works (for Mac) 37.95
- ★ ProVUE ... 60 day MBG
- 4582 Panorama 249. 11540 PowerTeam 95.
- ★ Symantec ... 60 day MBG
- 7636 ACT!..... 169.
- ★ WordPerfect ... 30 day MBG
- 4268 WordPerf. 3.0 299.95 4711 Upgd. 74.95

GRAPHICS & DESIGN

- ★ Abracadata, Ltd. ... 30 day MBG
- 12083 Design Your Own Railroad..... 39.95
- Architect., Interiors or Landscape ea. 49.95

- Aldus
- 4145 Adobe Premiere 3.0 \$499.95
- 12435 Illustr. 389.95 12886 Photoshop 599.95
- ★ Aldus ... 30 day MBG
- 13711 Home Publisher 2.0.1 44.95
- 11548 PageMaker 579.95 10864 Upgd. 145.95
- 1330 FreeHand 389.95 4728 Upgd. 145.95
- Altisys
- 1195 Fontographer 258.95
- ★ Apple Computer ... 30 day MBG
- 3008 Apple Font Pack 45.95
- ★ Ares Software ... 30 day MBG
- 8878 FontMong. 94.95 8588 Chameleon 184.95
- Broderbund Software
- 13603 Print Shop Deluxe 49. 3572 Kid Pix 34.
- ★ Claris ... 30 day MBG
- 14158 Impact or 2518 MacDraw Pro ea. 269.
- ★ DeltaPoint ... 60 day MBG
- 12974 DeltaGraph Pro 3 139.95
- 15819 DeltaGraph Pro 3 Comp. Upgd. 79.95
- ★ Deneba Software ... 30 day MBG
- 11055 artWORKS 99. 3227 Canvas 3.5 259.
- Fractal Design
- 10402 Painter 2.0A 265. 1564 PainterX2 94.95
- Gryphon
- 4202 Morph 2.0 154.95
- ★ Harvard Systems Corp. ... 30 day MBG
- 11193 Kai's Power Tools for Photoshop..... 89.
- Imageline, Inc.
- 14438 Super Bundle EPS..... 94.95
- 14457 Value Pak 1 EPS..... 64.95
- 14444 Office Clips EPS..... 25.95
- ★ Manhattan Graphics ... 30 day MBG
- 4990 Ready, Set, Go! 6.0 219.95
- Quark
- 7612 QuarkXPress 3.2 589.
- ★ Ray Dream ... 30 day MBG
- 12264 JAG II..... 89. 4761 Designer 3.0 249.
- SoftMaker, Inc.
- 10556 Infini Type Plus 52.95
- ★ T/Maker ... 30 day MBG
- ClickArt (bitmapped) 34.95 (EPS) 55.95
- 3144 Incred. Images or 3147 CD-ROM ea. 89.95
- Virtus
- 3185 WalkThrough Pro..... 249.95
- 3189 Virtus VR 64.95

PROGRAMMING/UTILITIES

- ★ Abbott Systems ... 30 day MBG
- 5236 CanOpener 2.0 59. 9578 Kaleidoscope 25.
- ★ Aladdin Systems ... 30 day MBG
- 7410 StuffIt SpaceSav. 34.95 6740 Deluxe 69.
- ★ Apple Computer ... 30 day MBG
- 1206 At Ease 45.95 7072 QuickTime Kit 105.
- 1074 System 7.1 59.95 13047 S7 Pro..... 99.95
- 10478 System 7.1/Font Pack Bundle 62.
- ASD Software
- 15865 ASD Security Trio:
- FileGuard/TrashGuard/FileDuo 149.95
- ★ Berkeley Systems ... 30 day MBG
- 1502 The Disney Collection Screen Saver.. 29.
- 5737 After Dark 2.0x (30+ screens!)..... 29.
- 2198 More After Dark 25. 2196 Bundle 39.95
- 3392 Star Trek: The Screen Saver..... 29.



Call for our latest catalogs.



Paradygn Concepts

15001 HomeWorks 2.0 for ClarisWorks—A complete set of forms, documents, spreadsheets, and database files for use with ClarisWorks 2.0. Includes 75+ files and timesaving shortcuts. **\$37.95**
14978 HomeWorks 2.0 for MS Works..... 37.95

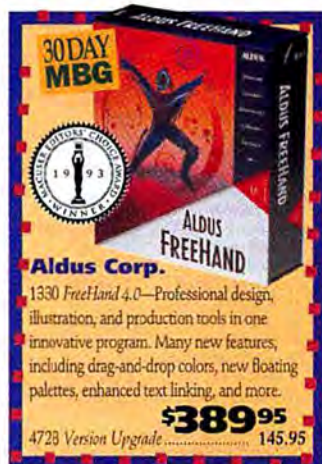


MacConnection®

800-800-4444

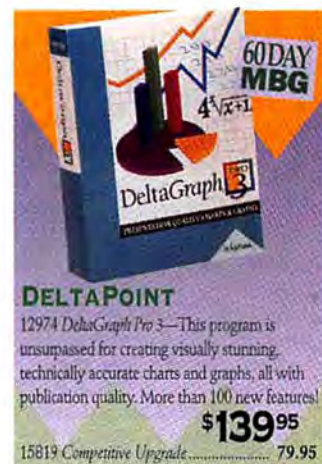
594MU

14 Mill Street, Marlow, NH 03456
SALES 603-446-4444 FAX 603-446-7791



Aldus Corp.

1330 FreeHand 4.0—Professional design, illustration, and production tools in one innovative program. Many new features, including drag-and-drop colors, new floating palettes, enhanced text linking, and more.
\$389.95
4728 Version Upgrade 145.95




DELTAPOINT

12974 DeltaGraph Pro 3—This program is unsurpassed for creating visually stunning, technically accurate charts and graphs, all with publication quality. More than 100 new features!
\$139.95
15819 Competitive Upgrade..... 79.95




BERKELEY SYSTEMS

1502 The Disney Collection Screen Saver—Over 15 Disney screen-saving displays. **\$29.**
3392 Star Trek: The Screen Saver..... 29.
5737 After Dark 2.0x (30+ screens!)..... 29.
2196 After Dark 2.0 More After Dark..... 39.95



FileGuard
FileDuo & Trash Guard for \$10 w/FileGuard purchase!



Wiz Tools
THE COMPLETE SET OF POWERBOOK UTILITIES

ASD Software
15865 ASD Security Trio—Fantastic bundle price! Protect files from unauthorized access with FileGuard, "shred" confidential files with TrashGuard, perform fast, automatic backups with FileDuo.
(Sold separately for \$277!) **\$149.95**

ASD Software **NEW!**
15864 Wiz Tools for PowerBook—A variety of utilities for PowerBook users, including PB Guard hard disk security and Connectivity, providing automatic connection to AppleTalk Remote Access. **\$59.95**



EXCLUSIVE!
FREE 128K
CACHE CARD!

MOBIUS TECHNOLOGIES
15189 Speedster O40 Accelerator 33MHz w/o FPU—Got a need for blazing processor speed? The Speedster O40 Accelerator gives you Quadra performance on your current Mac. Plug it in and get an instant speed increase of up to 700%! Enjoy lightning-fast speed in processor-intensive applications like PageMaker, FreeHand, QuarkXPress, Adobe Illustrator, Adobe Photoshop, and more. You also get a FREE 128K Cache for even faster acceleration! Supports Mac Ix, Iicx, IIsi, and Ili.
\$579.95
15191 33MHz w/FPU 779.95
15190 40MHz w/FPU 1149.

Bit Jugglers, Inc.

14676 Underware	\$29.95
★ CE Software ... 60 day MBG	
1727 CalendarMaker 39. 7927 QuickKeys 105.	
★ Central Point ... 30 day MBG	
5041 MacTools 3.0 85.95 11812 Upgd. 99.95	
★ Connectix ... 30 day MBG	
14789 RAM Doubler or 10765 Virtual ea. 55.	
★ Dantz Development ... 30 day MBG	
9115 DiskFit Direct 1.0 29. 3393 Pro... 72.	
5255 Retrospect 145. 7945 Remote 2.0 259.	
★ Datawatch ... 30 day MBG	
4803 Virex 5.0 65. 11486 SuperSet Util. 94.95	
FWB, Inc.	
2999 Hard Disk Toolkit 125. 7929 Pers. 49.	
★ Golden Triangle ... 30 day MBG	
11731 TimesTwo (1.44) 85.	
★ Inline Software ... 30 day MBG	
15850 TimesSquare 49.95	
7068 INITPicker or 1740 Redux Dlx 2.01 49.95	
★ Kent Marsh Ltd. ... 30 day MBG	
9513 FolderBolt 73. 1839 NightWatch II. 89.	
Metrowerks, Inc.	
15444 CodeWarrior Bronze 199.	
MicroMat Computer Systems	
3732 MacEKG II... 89. 2996 DriveTech... 42.	

★ **Now Software** ... 30 day MBG

12303 Now Compress \$46. 12304 FUN! \$29.95
6925 Now Utilities 4.0..... 84.
★ Symantec ... 60 day MBG
3955 Suitcase 53. 14244 SuperDoubler 79.95
5176 SAM..... 65. 6748 NUM..... 95.

LEARN & PLAY

Broderbund

13601 The Treehouse	36.
★ Callisto ... 30 day MBG	
11756 Super Maze Wars..... 39.95	
★ Davidson & Associates ... 30 day MBG	
2574 MathBlast. Plus or 1076 Zoo Keep. ea. 34.	
14848 Cruncher..... 34.	
★ Delta Tao ... 30 day MBG	
13714 Eric's Ultimate Solitaire..... 36.95	
★ Edmark Corporation ... 30 day MBG	
7155 Kid Desk 24. 7318 Millie's Math Hse. 29.	
1078 Bailey's Book House..... 29.	
12989 Thinkin' Things..... 39.	
Electronic Arts	
1907 PGA Golf 38.95 2805 Tour. Course 18.95	
GameTek	
13813 Jeopardy or 7433 Wheel of Fortune 24.95	
★ Great Wave ... 30 day MBG	
6693 KidsMath or 2276 Kid's Time Dlx... 27.95	
★ Inline Software ... 30 day MBG	
11188 Pax Imperia..... 36.95	
9792 Deliverance or 9797 Firefall Arcade 29.95	
Interplay Productions	
1615 Mario Teaches Typing..... 29.95	
Bridge Dlx or Out Of This World ea. 34.95	
★ Leister Productions ... 30 day MBG	
7126 Reunion 3.0..... 115.	
★ Maxis ... 30 day MBG	
14126 El-Fish 36.95 11627 A-Train Combo 44.95	
13818 SimCity 2000 39.95 5279 Classic 24.95	
★ MECC ... 30 day MBG	
3959 Word Munch 19. 3963 Oregon Trail 29.	
★ Microsoft ... 30 day MBG	
2868 Flight Simulator 4.0 (CP)..... 42.	
14214 Creative Writer..... 42.95	
Nordic Software	
7723 Lang. Explorer or 7767 ClockShop ea. 29.	
8260 Word Quest or 7470 Jungle Quest ea. 30.	
Psygnosis	
11562 Lemmings 35. 8720 Oh, No! More 29.	
Software Toolworks	
15815 Miracle Piano Software..... only 84.95	
5201 The Miracle Piano System..... 269.95	

VIDEO AND SOUND

Coda Music Technology

5604 Finale 3.0 549. 12307 Fin. Allegro. 259.
★ Great Wave ... 30 day MBG
1014 ConcertWare Pro 1.0..... 175.
Macromedia
7651 Action! 219.95. 5087 Director 3.1 849.95
Nova Development
11101 Kaboom! 29. 12278 w/More Kaboom 40.
Radius
1738 PrecisionColor Pivot (req. interface) 899.95
14597 PhotoBooster..... 849.95
RasterOps PaintBoard Series
14750 Lightning 849.95 12909 Turbo XL 1199.
Sony Multiscan Trinitron Monitors
10529 CPD-1730 17"..... 1099.
★ SuperMac/E-Machines ... 30 day MBG
12704 20"Color 1849. 10321 Col.Pg. T1611 1299.
10322 Presenter or 8028 Futura IISX... ea. 469
8005 Ultra LX 1199. 7985 EtherDock. 649.

CD-ROM

★ **Claris Clear Choice** ... 30 day MBG

13907 From Alice To Ocean (book w/CD) 46.95
Broderbund
13600 The Tortoise and the Hare..... 34.
13602 The New Kid on the Block..... 34.
FWB, Inc.
10198 CD Toolkit..... 49.
★ Microsoft ... 30 day MBG
1741 Musical Instruments on CD-ROM..... 55.
PhotoDisc, Inc.
Full line of great CD-ROM images..... call
★ Presto Studios ... 30 day MBG
11330 The Journeyman Project..... 44.95
Software Toolworks
12968 The Animals!..... 54.95
★ Spectrum Holobyte ... 30 day MBG
1485 Iron Helix..... 59.95
Time Warner
7454 Hell Cab 1.0 (CD-ROM)..... 64.95

COMMUNICATIONS

Apple Computer

7073 Mac PC Exchange..... 59.
10453 AppleShare 4.0 1469. 14576 Upgd. 539.
7101 AppleTalk Remote Access 1.0..... 149.
14231 Remote Access 2.0 Client for Mac 54.95
Asanté Technologies, Inc.
Asanté Lite Ethernet Cards..... ea. 125.
2775 10/T Hub-8 249. 2772 10/T Hub-12 499.
BOCA Research
11052 M1441 V.32bis FaxModem..... 159.95
Coactive Connectors
1184 Mac... 29.95 1189 Mac to PC... 164.95
CommForce
15862 4-Sight..... 599.95
★ CompuServe ... 60 day MBG
1676 Membership Kit..... 25.
1673 Navigator 3.2..... 49.
★ DataViz ... 60 day MBG
1823 MacLink Plus/PC Connect 7.5..... 129.
12613 MacLink Plus/Easy Open Translators. 69.
12093 MacLink Plus/Translators Pro 7.5..... 95.
★ Dayna ... 60 day MBG
11878 DOS Mounter Plus..... 54.95
8719 EtherPr. or 9888 (10BASE-T) ea. 339.95



Retrospect Remote
30 DAY MBG

DANTZ DEVELOPMENT
7945 Retrospect Remote 2.0—Powerful Mac network backup software. For automatic, centralized backup and archiving. Supports compression, encryption, & verification.
\$259.
3393 DiskFit Pro 1.1—A fast and efficient data backup solution..... 72.

Macintosh memory

Add all the memory you need to work in today's powerful applications. Our SIMM upgrades are available for virtually every Mac. Includes video & installation manual for most Macs.
Prices subject to change without notice.

SIMMS

14752 2-1MB (100ns)	\$89.95
8316 2-1MB (80ns)	99.95
9437 1-2MB (80ns)	98.95
7437 1-4MB (80ns)	189.

PowerBook Modules **\$449.95**

11654 PB165C 8MB	549.95
11653 PB165C 10MB	449.95
3742 PB100/140 2MB	99.95




SIMMS



TIME SQUARE
30 DAY MBG

Inline Design
15850 TimesSquare—Get your schedule in line! This easy-to-use, multi-user scheduler has an integrated to-do list, a fast Find function, color labels, support for Speech Manager, and more.
\$49.95



GCC TECHNOLOGIES
14247 WriteMove II Portable Printer—Small enough to fit in a briefcase, weighing just 2 pounds! Thermal fusion printhead for laser-quality, 360 dpi output on plain paper. Measures less than 12"x4"x2".
\$399.95



CommForce
15862 4-Sight—A simple but powerful faxing solution for up to 10 networked Macs. Schedule automatic faxing, transmit multiple documents to multiple locations, and more. Includes FaxModem.
\$599.95



SOFTWARE VENTURES

3455 MicroPhone Pro Version 2—Complete communications for the Mac. Internet Mail and News, MacSLIP, Telnet, and MacTCP. Multiple concurrent sessions. Intelligent scripting capabilities for graphical communications. Wyse-50. PowerDriver. Fax. **\$139⁹⁵**

★ Delrina Technology ... 60 day MBG	2467	90MB Gold Std. Rem. Cart. (3)	\$289.95																																																																																																																																																																
10080 FaxPRO for Macintosh 1.5 ... \$79.95	7871	Mac Transportable 90 PRO	369.95																																																																																																																																																																
★ Farallon Computing ... 30 day MBG	10499	Transportable MultiDisk 150	479.																																																																																																																																																																
11696 Etherthin Mac/PB ... 309.	★ MDS Drives ... 30 day MBG																																																																																																																																																																		
11499 EtherWave AAUI Transceiver ... 109.	See feature boxes on this page.																																																																																																																																																																		
14545 Timbaktu Pro 135, 4866 Remote 129.	AC4331 33MHz w/128K Cache ... 579.95			9516 PowerPath 105, 9518 LocalPath, 139.	15191 AC4331 33MHz FPU w/128K Cache 779.95			6922 ReplicaMac 69.95 7407 (10 user) 499.95	15190 AC4401 40MHz FPU w/128K Cache 1149.			★ Freesoft ... 30 day MBG	Peripheral Land (PLI) full line available			6115 White Knight 11 ... 85.	11470 Infinity 88/RW 44 ... 549.			14804 Second Sight ... 119.95				★ Global Village ... 30 day MBG				7889 TelePort/Bronze II 95, 2179 Gold 299.				Hayes				10822 ACCURA 2400 74.95 11422 96 Fax 159.95				11419 ACCURA 144+Fax144 ... 169.95				2300 Smartcom II 84.95 5971 OPTIMA 24 119.				Insignia Solutions				7557 AccessPC 3.0 ... 79.				4089 SoftPC... 109, 10554 SoftPC Pro ... 215.				★ Practical Peripherals ... 30 day MBG				8063 PM14400FX FaxModem ... 429.95				11045 PM14400FXT FaxModem ... 209.95				★ Shiva ... 30 day MBG				6555 LanRover/L ... 599.				14837 NetModem/E ... ea. 1479.				★ Software Ventures ... 30 day MBG				1964 MicroPhone II 109, 3455 Pro 139.95				Sonic Systems				Ethernet Adapters ... call				★ STF Technologies ... 30 day MBG				7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95			
9516 PowerPath 105, 9518 LocalPath, 139.	15191 AC4331 33MHz FPU w/128K Cache 779.95			6922 ReplicaMac 69.95 7407 (10 user) 499.95	15190 AC4401 40MHz FPU w/128K Cache 1149.			★ Freesoft ... 30 day MBG	Peripheral Land (PLI) full line available			6115 White Knight 11 ... 85.	11470 Infinity 88/RW 44 ... 549.			14804 Second Sight ... 119.95				★ Global Village ... 30 day MBG				7889 TelePort/Bronze II 95, 2179 Gold 299.				Hayes				10822 ACCURA 2400 74.95 11422 96 Fax 159.95				11419 ACCURA 144+Fax144 ... 169.95				2300 Smartcom II 84.95 5971 OPTIMA 24 119.				Insignia Solutions				7557 AccessPC 3.0 ... 79.				4089 SoftPC... 109, 10554 SoftPC Pro ... 215.				★ Practical Peripherals ... 30 day MBG				8063 PM14400FX FaxModem ... 429.95				11045 PM14400FXT FaxModem ... 209.95				★ Shiva ... 30 day MBG				6555 LanRover/L ... 599.				14837 NetModem/E ... ea. 1479.				★ Software Ventures ... 30 day MBG				1964 MicroPhone II 109, 3455 Pro 139.95				Sonic Systems				Ethernet Adapters ... call				★ STF Technologies ... 30 day MBG				7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95							
6922 ReplicaMac 69.95 7407 (10 user) 499.95	15190 AC4401 40MHz FPU w/128K Cache 1149.			★ Freesoft ... 30 day MBG	Peripheral Land (PLI) full line available			6115 White Knight 11 ... 85.	11470 Infinity 88/RW 44 ... 549.			14804 Second Sight ... 119.95				★ Global Village ... 30 day MBG				7889 TelePort/Bronze II 95, 2179 Gold 299.				Hayes				10822 ACCURA 2400 74.95 11422 96 Fax 159.95				11419 ACCURA 144+Fax144 ... 169.95				2300 Smartcom II 84.95 5971 OPTIMA 24 119.				Insignia Solutions				7557 AccessPC 3.0 ... 79.				4089 SoftPC... 109, 10554 SoftPC Pro ... 215.				★ Practical Peripherals ... 30 day MBG				8063 PM14400FX FaxModem ... 429.95				11045 PM14400FXT FaxModem ... 209.95				★ Shiva ... 30 day MBG				6555 LanRover/L ... 599.				14837 NetModem/E ... ea. 1479.				★ Software Ventures ... 30 day MBG				1964 MicroPhone II 109, 3455 Pro 139.95				Sonic Systems				Ethernet Adapters ... call				★ STF Technologies ... 30 day MBG				7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95											
★ Freesoft ... 30 day MBG	Peripheral Land (PLI) full line available			6115 White Knight 11 ... 85.	11470 Infinity 88/RW 44 ... 549.			14804 Second Sight ... 119.95				★ Global Village ... 30 day MBG				7889 TelePort/Bronze II 95, 2179 Gold 299.				Hayes				10822 ACCURA 2400 74.95 11422 96 Fax 159.95				11419 ACCURA 144+Fax144 ... 169.95				2300 Smartcom II 84.95 5971 OPTIMA 24 119.				Insignia Solutions				7557 AccessPC 3.0 ... 79.				4089 SoftPC... 109, 10554 SoftPC Pro ... 215.				★ Practical Peripherals ... 30 day MBG				8063 PM14400FX FaxModem ... 429.95				11045 PM14400FXT FaxModem ... 209.95				★ Shiva ... 30 day MBG				6555 LanRover/L ... 599.				14837 NetModem/E ... ea. 1479.				★ Software Ventures ... 30 day MBG				1964 MicroPhone II 109, 3455 Pro 139.95				Sonic Systems				Ethernet Adapters ... call				★ STF Technologies ... 30 day MBG				7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95															
6115 White Knight 11 ... 85.	11470 Infinity 88/RW 44 ... 549.			14804 Second Sight ... 119.95				★ Global Village ... 30 day MBG				7889 TelePort/Bronze II 95, 2179 Gold 299.				Hayes				10822 ACCURA 2400 74.95 11422 96 Fax 159.95				11419 ACCURA 144+Fax144 ... 169.95				2300 Smartcom II 84.95 5971 OPTIMA 24 119.				Insignia Solutions				7557 AccessPC 3.0 ... 79.				4089 SoftPC... 109, 10554 SoftPC Pro ... 215.				★ Practical Peripherals ... 30 day MBG				8063 PM14400FX FaxModem ... 429.95				11045 PM14400FXT FaxModem ... 209.95				★ Shiva ... 30 day MBG				6555 LanRover/L ... 599.				14837 NetModem/E ... ea. 1479.				★ Software Ventures ... 30 day MBG				1964 MicroPhone II 109, 3455 Pro 139.95				Sonic Systems				Ethernet Adapters ... call				★ STF Technologies ... 30 day MBG				7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																			
14804 Second Sight ... 119.95				★ Global Village ... 30 day MBG				7889 TelePort/Bronze II 95, 2179 Gold 299.				Hayes				10822 ACCURA 2400 74.95 11422 96 Fax 159.95				11419 ACCURA 144+Fax144 ... 169.95				2300 Smartcom II 84.95 5971 OPTIMA 24 119.				Insignia Solutions				7557 AccessPC 3.0 ... 79.				4089 SoftPC... 109, 10554 SoftPC Pro ... 215.				★ Practical Peripherals ... 30 day MBG				8063 PM14400FX FaxModem ... 429.95				11045 PM14400FXT FaxModem ... 209.95				★ Shiva ... 30 day MBG				6555 LanRover/L ... 599.				14837 NetModem/E ... ea. 1479.				★ Software Ventures ... 30 day MBG				1964 MicroPhone II 109, 3455 Pro 139.95				Sonic Systems				Ethernet Adapters ... call				★ STF Technologies ... 30 day MBG				7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																							
★ Global Village ... 30 day MBG				7889 TelePort/Bronze II 95, 2179 Gold 299.				Hayes				10822 ACCURA 2400 74.95 11422 96 Fax 159.95				11419 ACCURA 144+Fax144 ... 169.95				2300 Smartcom II 84.95 5971 OPTIMA 24 119.				Insignia Solutions				7557 AccessPC 3.0 ... 79.				4089 SoftPC... 109, 10554 SoftPC Pro ... 215.				★ Practical Peripherals ... 30 day MBG				8063 PM14400FX FaxModem ... 429.95				11045 PM14400FXT FaxModem ... 209.95				★ Shiva ... 30 day MBG				6555 LanRover/L ... 599.				14837 NetModem/E ... ea. 1479.				★ Software Ventures ... 30 day MBG				1964 MicroPhone II 109, 3455 Pro 139.95				Sonic Systems				Ethernet Adapters ... call				★ STF Technologies ... 30 day MBG				7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																											
7889 TelePort/Bronze II 95, 2179 Gold 299.				Hayes				10822 ACCURA 2400 74.95 11422 96 Fax 159.95				11419 ACCURA 144+Fax144 ... 169.95				2300 Smartcom II 84.95 5971 OPTIMA 24 119.				Insignia Solutions				7557 AccessPC 3.0 ... 79.				4089 SoftPC... 109, 10554 SoftPC Pro ... 215.				★ Practical Peripherals ... 30 day MBG				8063 PM14400FX FaxModem ... 429.95				11045 PM14400FXT FaxModem ... 209.95				★ Shiva ... 30 day MBG				6555 LanRover/L ... 599.				14837 NetModem/E ... ea. 1479.				★ Software Ventures ... 30 day MBG				1964 MicroPhone II 109, 3455 Pro 139.95				Sonic Systems				Ethernet Adapters ... call				★ STF Technologies ... 30 day MBG				7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																															
Hayes				10822 ACCURA 2400 74.95 11422 96 Fax 159.95				11419 ACCURA 144+Fax144 ... 169.95				2300 Smartcom II 84.95 5971 OPTIMA 24 119.				Insignia Solutions				7557 AccessPC 3.0 ... 79.				4089 SoftPC... 109, 10554 SoftPC Pro ... 215.				★ Practical Peripherals ... 30 day MBG				8063 PM14400FX FaxModem ... 429.95				11045 PM14400FXT FaxModem ... 209.95				★ Shiva ... 30 day MBG				6555 LanRover/L ... 599.				14837 NetModem/E ... ea. 1479.				★ Software Ventures ... 30 day MBG				1964 MicroPhone II 109, 3455 Pro 139.95				Sonic Systems				Ethernet Adapters ... call				★ STF Technologies ... 30 day MBG				7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																			
10822 ACCURA 2400 74.95 11422 96 Fax 159.95				11419 ACCURA 144+Fax144 ... 169.95				2300 Smartcom II 84.95 5971 OPTIMA 24 119.				Insignia Solutions				7557 AccessPC 3.0 ... 79.				4089 SoftPC... 109, 10554 SoftPC Pro ... 215.				★ Practical Peripherals ... 30 day MBG				8063 PM14400FX FaxModem ... 429.95				11045 PM14400FXT FaxModem ... 209.95				★ Shiva ... 30 day MBG				6555 LanRover/L ... 599.				14837 NetModem/E ... ea. 1479.				★ Software Ventures ... 30 day MBG				1964 MicroPhone II 109, 3455 Pro 139.95				Sonic Systems				Ethernet Adapters ... call				★ STF Technologies ... 30 day MBG				7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																							
11419 ACCURA 144+Fax144 ... 169.95				2300 Smartcom II 84.95 5971 OPTIMA 24 119.				Insignia Solutions				7557 AccessPC 3.0 ... 79.				4089 SoftPC... 109, 10554 SoftPC Pro ... 215.				★ Practical Peripherals ... 30 day MBG				8063 PM14400FX FaxModem ... 429.95				11045 PM14400FXT FaxModem ... 209.95				★ Shiva ... 30 day MBG				6555 LanRover/L ... 599.				14837 NetModem/E ... ea. 1479.				★ Software Ventures ... 30 day MBG				1964 MicroPhone II 109, 3455 Pro 139.95				Sonic Systems				Ethernet Adapters ... call				★ STF Technologies ... 30 day MBG				7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																											
2300 Smartcom II 84.95 5971 OPTIMA 24 119.				Insignia Solutions				7557 AccessPC 3.0 ... 79.				4089 SoftPC... 109, 10554 SoftPC Pro ... 215.				★ Practical Peripherals ... 30 day MBG				8063 PM14400FX FaxModem ... 429.95				11045 PM14400FXT FaxModem ... 209.95				★ Shiva ... 30 day MBG				6555 LanRover/L ... 599.				14837 NetModem/E ... ea. 1479.				★ Software Ventures ... 30 day MBG				1964 MicroPhone II 109, 3455 Pro 139.95				Sonic Systems				Ethernet Adapters ... call				★ STF Technologies ... 30 day MBG				7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																															
Insignia Solutions				7557 AccessPC 3.0 ... 79.				4089 SoftPC... 109, 10554 SoftPC Pro ... 215.				★ Practical Peripherals ... 30 day MBG				8063 PM14400FX FaxModem ... 429.95				11045 PM14400FXT FaxModem ... 209.95				★ Shiva ... 30 day MBG				6555 LanRover/L ... 599.				14837 NetModem/E ... ea. 1479.				★ Software Ventures ... 30 day MBG				1964 MicroPhone II 109, 3455 Pro 139.95				Sonic Systems				Ethernet Adapters ... call				★ STF Technologies ... 30 day MBG				7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																			
7557 AccessPC 3.0 ... 79.				4089 SoftPC... 109, 10554 SoftPC Pro ... 215.				★ Practical Peripherals ... 30 day MBG				8063 PM14400FX FaxModem ... 429.95				11045 PM14400FXT FaxModem ... 209.95				★ Shiva ... 30 day MBG				6555 LanRover/L ... 599.				14837 NetModem/E ... ea. 1479.				★ Software Ventures ... 30 day MBG				1964 MicroPhone II 109, 3455 Pro 139.95				Sonic Systems				Ethernet Adapters ... call				★ STF Technologies ... 30 day MBG				7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																							
4089 SoftPC... 109, 10554 SoftPC Pro ... 215.				★ Practical Peripherals ... 30 day MBG				8063 PM14400FX FaxModem ... 429.95				11045 PM14400FXT FaxModem ... 209.95				★ Shiva ... 30 day MBG				6555 LanRover/L ... 599.				14837 NetModem/E ... ea. 1479.				★ Software Ventures ... 30 day MBG				1964 MicroPhone II 109, 3455 Pro 139.95				Sonic Systems				Ethernet Adapters ... call				★ STF Technologies ... 30 day MBG				7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																											
★ Practical Peripherals ... 30 day MBG				8063 PM14400FX FaxModem ... 429.95				11045 PM14400FXT FaxModem ... 209.95				★ Shiva ... 30 day MBG				6555 LanRover/L ... 599.				14837 NetModem/E ... ea. 1479.				★ Software Ventures ... 30 day MBG				1964 MicroPhone II 109, 3455 Pro 139.95				Sonic Systems				Ethernet Adapters ... call				★ STF Technologies ... 30 day MBG				7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																															
8063 PM14400FX FaxModem ... 429.95				11045 PM14400FXT FaxModem ... 209.95				★ Shiva ... 30 day MBG				6555 LanRover/L ... 599.				14837 NetModem/E ... ea. 1479.				★ Software Ventures ... 30 day MBG				1964 MicroPhone II 109, 3455 Pro 139.95				Sonic Systems				Ethernet Adapters ... call				★ STF Technologies ... 30 day MBG				7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																																			
11045 PM14400FXT FaxModem ... 209.95				★ Shiva ... 30 day MBG				6555 LanRover/L ... 599.				14837 NetModem/E ... ea. 1479.				★ Software Ventures ... 30 day MBG				1964 MicroPhone II 109, 3455 Pro 139.95				Sonic Systems				Ethernet Adapters ... call				★ STF Technologies ... 30 day MBG				7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																																							
★ Shiva ... 30 day MBG				6555 LanRover/L ... 599.				14837 NetModem/E ... ea. 1479.				★ Software Ventures ... 30 day MBG				1964 MicroPhone II 109, 3455 Pro 139.95				Sonic Systems				Ethernet Adapters ... call				★ STF Technologies ... 30 day MBG				7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																																											
6555 LanRover/L ... 599.				14837 NetModem/E ... ea. 1479.				★ Software Ventures ... 30 day MBG				1964 MicroPhone II 109, 3455 Pro 139.95				Sonic Systems				Ethernet Adapters ... call				★ STF Technologies ... 30 day MBG				7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																																															
14837 NetModem/E ... ea. 1479.				★ Software Ventures ... 30 day MBG				1964 MicroPhone II 109, 3455 Pro 139.95				Sonic Systems				Ethernet Adapters ... call				★ STF Technologies ... 30 day MBG				7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																																																			
★ Software Ventures ... 30 day MBG				1964 MicroPhone II 109, 3455 Pro 139.95				Sonic Systems				Ethernet Adapters ... call				★ STF Technologies ... 30 day MBG				7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																																																							
1964 MicroPhone II 109, 3455 Pro 139.95				Sonic Systems				Ethernet Adapters ... call				★ STF Technologies ... 30 day MBG				7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																																																											
Sonic Systems				Ethernet Adapters ... call				★ STF Technologies ... 30 day MBG				7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																																																															
Ethernet Adapters ... call				★ STF Technologies ... 30 day MBG				7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																																																																			
★ STF Technologies ... 30 day MBG				7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																																																																							
7639 FaxSTF 3.0 ... 39.95				SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																																																																											
SupraFAXModems				11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																																																																															
11223 V.32bis 14400 ... 234.95				5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																																																																																			
5337 14400LC ... 164.95				★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																																																																																							
★ Synergy ... 30 day MBG				6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																																																																																											
6618 VersaTerm 5.0 109.95 6619 PRO 169.95				Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																																																																																															
Technology Works				1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																																																																																																			
1582 GraceLAN ... 449.				U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																																																																																																							
U.S. Robotics				11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																																																																																																											
11842 Sportster 14.4 Mac & Fax ... 229.				★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																																																																																																															
★ Zoom Telephonics ... 30 day MBG				7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																																																																																																																			
7757 FaxModem AFX ... 69.95				3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																																																																																																																							
3553 FaxModem VFX V.32bis ... 164.95				14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																																																																																																																											
14152 FaxModem VFX 14.4V for Mac ... 174.95				7917 FaxModem PKT (pocket) ... 79.95																																																																																																																																																															
7917 FaxModem PKT (pocket) ... 79.95																																																																																																																																																																			

UPGRADES & DRIVES

★ Applied Engineering ... 30 day MBG	8361	1.44MB HD Drv. 229, 5290 Pls. Drv. 299.
10282 TransWarp 4300 (40MHz, no FPU) ... 399.	★ DayStar Digital ... 30 day MBG	
11987 FC 040 (Quadra 700, 800, 900, 950) 319.95	1312	040i 20MHz 599.95 1302 33MHz 799.95
1670 PowerCache 50MHz (no FPU) ... 459.95	FWB, Inc.	
9529 PocketHammer 170 ... 459.95	14322	PE 340 FMF ... 579.95
14322 PE 340 FMF ... 579.95	14318	PocketHammer1000FMF ... 1349.95
14318 PocketHammer1000FMF ... 1349.95	IOMEGA	
6499 90MB Transp. (reqs. interface) ... 479.95		



MDS Drives

MDS Removable Drives (20ms average access time) includes FVB's Hard Disk Toolkit PE, and DayMaker Organizer 3.0 Free! **\$239⁹⁵**
 15097 MDS 44 (without cartridge) ... 299.
 8141 MDS 44 (with cartridge) ... 299.
 10590 MDS 88 (also RAW 44, w/cart.) ... 489.

2467	90MB Gold Std. Rem. Cart. (3)	\$289.95
7871	Mac Transportable 90 PRO	369.95
10499	Transportable MultiDisk 150	479.
★ MDS Drives ... 30 day MBG		
See feature boxes on this page.		
Mobius Speedster 040 Accelerators		
15189	AC4331 33MHz w/128K Cache ...	579.95
15191	AC4331 33MHz FPU w/128K Cache	779.95
15190	AC4401 40MHz FPU w/128K Cache	1149.
Peripheral Land (PLI) full line available		
11470	Infinity 88/RW 44 ...	549.

INPUT/OUTPUT

Advanced Gravis		
1482	Game Pad 39, 9963 MouseStick II 69.	
★ Appointment ... 30 day MBG		
Mac Crayon (red, blu, grn or yel) ea. 32.		
Caere		
4930	OmniPage Pro 489, 7705 Direct ...	189.
7925	OmniScan ...	399.
CoStar		
1885	Stingray ADB ...	79.95
★ Datadesk ... 30 day MBG		
9830	MAC101E 129, 2384 w/QuickKeys 159.	
Epson		
8194	Action Scanner (ES-600C SCSI) ...	899.95
8219	ES-800C Pro Mac ...	1399.95
GCC		
15339	SelectPress 600/600 Pro Printer	3749.95
★ GDT Softworks ... 30 day MBG		
2499	PowerPrint 99, 12717 PP. NW. 329.	
Hewlett-Packard LaserJets		
8368	LJ 4M 2079.95 4312 4ML 1129.95	
Interex Computer Products		
12862	105 Key Deluxe Keyboard ...	99.
★ Kensington ... 30 day MBG		
2547	Turbo Mouse 4.0 ADB ...	107.
Key Tronics		
6974	Mac Pro-Keybd 135, 1070 TrakPro 219.	
★ Microtek Labs, Inc. ... 30 day MBG		
13815	ScanM. IIG 499.95 13814 IISF 779.95	
★ Mouse Systems ... 30 day MBG		
7520	Litt. Mouse ADB or 8001 Plus ea. 69.95	
★ Soph. Circuits ... 30 day MBG		
8009	PowerKey 75, 8008 Remote ...	32.
★ TI microLaser Pro 600 ... 30 day MBG		
13658	PS23 ... 1399, 13659 PS65 ...	1599.
UMAX		
13748	UC630 719.95 13751 UC1260 1469.95	

ACCESSORIES

Apple Computer		
11663	StyleWrit. II Cart. 23, 11669 (3 pk.) 63.	
LaserWriter Toners: Pers. 65, LW II 85.		
Disk/Carts.: BASF, Fuji, 3M, Sony		
★ I/O Design Cases ... 30 day MBG		
8812	Ultimate Class. 62.95 1941 Ult. LC 89.95	
13549	PowerBook Leather Satchel (black) 77.95	
★ Targus Cases ... 60 day MBG		
7369	Noteapc ...	35.95
13941	Business Commuter Case ...	114.95



15002 HP DeskWriter 310 Inkjet Printer—1993 Eddy Award Winner and perfect companion to your PowerBook! Delivers crisp 300 dpi output, 3 pages per minute. Folds for easy transport. **\$329⁹⁵**

8368 HP LaserJet 4M Printer—Prints up to 8 ppm at 600x600 dpi. RISC-based processor, 6MB memory, Adobe PostScript Level 2 & PCL 5. Three active I/O ports allow for easy printer sharing. **\$2079⁹⁵**
 7970 LaserJet 4 Toner Cartridge ... 109.95

MDS Drives

MDS Zero Footprint Hard Drives—Add storage and performance to your Mac with a compact, reliable MDS Zero Footprint (ZFP) Hard Drive. They give you acres of data storage without taking up valuable acreage on your desk! And they're easy to install, with no jumpers or DIP switches to set. Features include a sturdy metal case, two SCSI ports (for daisy chaining), two switched AC outlets, and a 2-year warranty. Includes a SCSI cable and FREE Hard Disk Toolkit Personal Edition formatting software. **\$289⁹⁵**

As low as **83¢ a MB!**

30 DAY MBG

11880	210MB ZFP Hard Drive	429.95
11863	540MB ZFP Hard Drive	799.95
15117	1.2GB (Fujitsu) ZFP HD	999.95
2219	1GB (Quantum) ZFP HD	1089.95



\$60 rebate on the PS23 through June!

30 DAY MBG

Texas Instruments

13658 TI microLaser Pro 600 PS23—Photo-quality, 600 dpi with 8ppm RISC power, 500-sheet capacity, 6MB, Adobe PostScript level 2 w/25 fonts, PCL5, Mac/PC ready. **\$1339.**
 13659 microLaser Pro 600 PS65 ... 1599.

OUR POLICY

- We accept VISA and MASTERCARD.
- No surcharge added for credit card orders.
- Your card is not charged until we ship.
- If we must ship a partial order, we never charge freight on the shipment(s) that complete the order (in the U.S.).
- No sales tax, except Ohio residents (please add applicable tax).
- All U.S. shipments insured, no additional charge.
- APO/FPD orders shipped First Class Mail.
- International orders: U.S. 100 minimum, add 2% surcharge and \$2.30 insurance. Manufacturer support and upgrade eligibility may be limited outside the U.S.A. Some products not available for export, call or fax information.
- Upon receipt and approval, personal and company checks clear the same day for immediate shipment of your order.
- Corporate P.O.s & bids accepted. Call for info.
- COD maximum \$1000. Cash or certified check. COD orders require an additional \$4.50 charge, ship via UPS and may require add'l UPS charges.
- 120 day limited warranty on all products. Defective software replaced immediately. Defective hardware repaired or replaced at our discretion. All items subject to availability. Prices and promotions subject to change without notice.
- We are not responsible for typographical errors.
- Hours: 8 a.m. Monday continuous thru 5 p.m. Sunday ET. Business offices: 603-446-7711 Monday through Friday 9 a.m. to 5:30 p.m. ET.

SHIPPING

Continental U.S.: Total shipping charge on any order is \$3. Barring events beyond our control, all credit card orders (no CODs) phoned in weekdays by 3:15 a.m. ET will ship Airborne Express for delivery the next business day. That's same day del. for orders placed btwn. midnight and 3:15 a.m. ET (Some orders ship UPS Ground for next day delivery). Saturday delivery available to many areas upon request at no additional charge. Order all day Saturday thru noon Sunday for Monday delivery. Some areas req. an extra day delivery. Hawaii, Alaska, Canada, Puerto Rico & U.S. Virgin Islands: Shipping may require additional time and charges. Call 800-800-4444 for information. All other areas: Please call 603-446-4444 or FAX 603-446-7791 for information.

MacConnection®

800-800-4444

594MU



14 Mill Street, Marlow, NH 03456
 SALES 603-446-4444 FAX 603-446-7791

© Copyright 1994 PC Connection, Inc. MacConnection is a division and registered trademark of PC Connection, Inc., Marlow, NH. MacTV is a trademark of PC Connection, Inc.



Magic 1GB RAID \$1,899

Transfer Rates up to 10 Megs a Second

Magic 2GB Tape \$699

The Magic RAID System is a Nubus SCSI 2 card based array system. RAID levels 0 and 1 and/or levels 0,1,4, and 5 with access times down to 4ms and transfer rates up to 10 MB/Sec at RAID level 0 can be configured from

software. The system is compatible with SCSI 1 and 2, SCSI Manager 4.3. RAID drives are all metal construction complete with all cables and software.

Magic 1.0 GB RAID.....\$1,899
Magic 2.0 GB RAID.....\$2,699

**6X faster
than the
APS Pro DAT**

The Magic 2Gb compression tape drive will backup your data at amazing speeds over 68MB / Minute. It is the only tape drive fast enough to keep up with a RAID drive. You can do a full 1GB backup in only 15 minutes. Retrospect 2.0 included.

RailGun Dual Screen

Accelerators For Plus, SE, and Classic.

	RailGun	Pro
68030 RailGun 16MHz	\$279	\$299
68030 RailGun 25MHz	\$299	\$399
68030 RailGun 33MHz	\$399	\$499
19" Two Page Monitor		\$349

*All prices quoted for SE version. Call for pricing on Classic or Plus version

Magic Memory

Memory upgrades available for all PowerBooks. Call for best pricing.

PowerBook RAM	Call
Newton 1MB / 2 MB	From \$159
1MB / 2MB SIMMs	From \$25
4MB / 8MB SIMMs	Call

All Magic memory has a 30 day money back guarantee and a lifetime warranty

16MB / 32MB SIMMs	Call
LC/Quadra VRAM	\$49/19
ColorBlaster LC™	\$179

Blazing high end color graphics for LC & Performa. Faster, larger QuickTime movies.

Magic Network

Magic Net Adapter	\$14
Manufactured under license from Farallon.	
Magic 10BaseT Adapter	\$49
Magic ThinNet Adapter	\$49
Magic 8 Port 10BaseT Hub	\$149

Magic Modems

All FaxModems come with full feature Fax STFT™, Microphone®, America Online, and CompuServe Startup Kit.

Magic Hard Drives



Quantum 240 Ext. for \$299

Custom configurations available. Call for current pricing and warranty information.

Manufacturer	Size Available in Mega.
Maxtor.....	345 540 1200 1240
Micropolis.....	1200 1700 2400 3000
Quantum ELS.....	127 170
Quantum Go.....	85 127 170 256
Quantum LPS.....	240 270 340 525
Quantum PRO.....	700 1225 1800
Empire.....	580 1080
Seagate.....	1200 2500 3400 9.0
Barracuda.....	1900 2500
SyQuest.....	44 88 105 270
Fujitsu.....	240 520 1200 2400

Precision

- A premium optical cartridge
- Free data recovery
- Lifetime warranty

Magic Optical

2 Year Warranty

Magic 256MB Optical**	\$999
Magic 128 / 256MB Cart.	\$34/\$65
Precision 128 Carts / 10 Pack ^e	\$290
Magic 650MB Cartridge	\$99

Magic SyQuest

Magic 45R SyQuest**	\$299
Magic 88C SyQuest**	\$489
Magic 105C SyQuest*	\$539
Imomega 150 Transportable*	\$579
SyQuest 45/88/105 Cartridge	\$59/89/64
150 Transportable Cartridge	\$99

* One Year Warranty ** Three Year Warranty
** Two Year Warranty †† Five Year Warranty

PowerBook Accelerators



MacProducts USA can transform your Powerbook 140 or 145 into a 170, your 160 into a 180, or your DUO 210 into 230.

140 Upgraded to 170	
25mhz (68030/68882)	\$329
33mhz (68030/68882)	\$399
145 Upgraded to 170	
25mhz (68882)	\$129
160 Upgraded to 180	
33mhz (68030/68882)	\$399
210 Upgraded to 230	
33mhz (68030)	\$299

24 hour turn around backed with 1 year warranty.



Magic V Fast Class

28,800bps modem. 14400bps send & receive fax, V.42bis/V.32bis hardware & MNP-1-10 protocols. 2 year warranty, 30 day money back guarantee.

Magic PowerBook Modems

24/96 Data/FaxModem	\$79
2400bps modem. 9600bps send & 4800bps receive fax. V.42bis/V.32bis, MNP 1-5.	
14400 bps Data/FaxModem	\$199
57,600 Data 14400 Fax, V.32bis, V.42bis, MNP 1-5.	

Magic FaxModems

14,400 Data/FaxModem	
57,600 bps data. 14400bps S/R fax, V.42bis/V.32bis, MNP-1-5 protocols.	
57,600 Data / 14,400 Fax Modem	\$149
With VoiceMail	\$189
High Speed Modem Cable	\$15
Hardware Handshaking	



MacProducts USA

800 624 9307

CIRCLE 144 ON READER SERVICE CARD

International Sales 512-476-5295 Fax 512-499-0888

Magic. Hard Working Tools For Your Macintosh Since 1985.

Corporate & Educational purchase orders accepted. MasterCard, Visa, Discover, American Express & COD accepted. Prices subject to change & availability. Texas residents add 8% sales tax. MacProducts cannot be responsible for errors in typography or photography. MacProducts

offers a 30-Day Money Back Guarantee on all Magic™ Products, excluding Original Shipping. Call for RMA before returning merchandise. Returns subject to a restocking fee. All brands & product names are trademarks of their respective holders.



MT9307

Still Faster Than Fujitsu for \$749

Magic 128 Optical With 3 Free Cartridges

- Faster than the Fujitsu 128
- Twice the warranty
- Three times the cartridges
- Authorized Repair Center

The Olympus 128 mechanism used in the Magic 128 Magneto-Optical was rated in

MacWorld December 93 as being 15% faster overall than the Fujitsu 128. The Magic 128 Optical has a max transfer rate of 3.3 MB/Sec using a split head laser design.

Magic 128 Optical **\$749

Magic CD-ROM

Absolute CD-ROM Compatibility and Blazing Speed. The AllCache™ driver software replaces your CD-ROM drive's original driver software, allowing drive access functions to be sped up significantly.

Magic CD Pro 410T Toshiba\$349
 Magic CD Pro 340T Toshiba\$499
 Magic CD Pro 6 Quadraspin™\$1399

CDs

CD-ROM Multimedia Encyclopedia\$49
 W/purchase of CD Drive

6 CD Bundle\$49

Call for CD-ROM Catalogue ♦



Jet Inc. Ink Refills

Two Pack Black\$15.99
 High Capacity Black\$19.99
 Two Pack Color\$22.99
 Single Blue\$9.99
 Single Red\$9.99



Radius Color Pivot LE With Card
 From \$699.00



Diimo 50MHz
 \$413.00
Diimo 50MHz
 With FPU
 \$518.00



TI Microlaser Pro
 PRO 600 PS23\$1339.00
Microwriter Pro
 \$679.00



Umax 630 LE
 \$710.00
Umax 1260
 \$1449.00



Wacom ArtZ and 12 x 12
 6x9\$279
 UD1212RM\$509



Apple PowerBook 180c 4/160
 \$2599.00



SyQuest Cartridges
 44MB\$59.00
 88MB\$89.00
 105MB\$64.00



Quark Express 3.2
 \$549.00

SYSTEMS

Custom Configurations Available

PowerPC MacsCall
 Quadra 840av\$2,650.00
 Quadra 800\$1,999.00
 Quadra 660av\$1,529.00
 Quadra 650\$1,899.00
 Quadra 610\$1,349.00
 Quadra 605\$849.00
 Duos/PowerBooks/NewtonsCall

COMMUNICATIONS

Asante 10T Hub/12\$459.00
 Asante 10T Friendlynet\$59.00
 Asante 10T Hub/8\$219.00
 Starnet Ethernet Card\$97.00
 MagicNet 8 Port 10BT Hub\$149.00
 Dayna Etherprint Plus\$399.00
 Dayna Pathfinder\$575.00
 Farallon Etherwave\$99.00
 Farallon Timbuktu 5.0\$119.00

INPUT

Abacus Keypad\$89.00
 Apple Extended Keyboard\$158.00
 Mac Pro Keyboard\$115.00
 DGR Extended Keyboard\$79.00
 Kensington Turbo Mouse\$99.00
 Wacom ArtZ\$279.00
 Wacom UD1212R\$509.00

MODEMS & FAXES

Supra 14.4 Mac Package\$215.00
 Global Village Teleport Gold\$277.00
 Global Village Mercury\$319.00
 Supra 14.4 LC Package\$159.00
 Supra 14.4 PB Package\$219.00

PRINTERS

Stylewriter II\$349.00
 Apple Laser Pro 630\$2,075.00
 Apple Laser Pro 810\$4,599.00
 TI Pro 600 PS23\$1,349.00
 HP Deskwriter\$340.00
 HP 4MP\$1,475.00
 DEC Laser 1152\$649.00
 Kodak Color Ease PS\$6,599.00
 Kodak 450 GL\$1,545.00

VIDEO SOLUTIONS

Supermatch 20TXL\$2,479.00
 Supermatch HiRes\$2,699.00
 Supermac 17T Trinitron\$1,045.00
 Thunder II\$2,299.00
 Thunder II GX\$2,699.00
 Digital Film\$2,849.00
 E-Machines T-16II\$1,149.00
 E-Machines T-20\$2,499.00
 Futura II SX\$425.00
 Ultra LX\$1,119.00
 Radius 20i Intellicolor\$2,199.00

Radius TPD 20GS Display\$799.00
 Precision Color Pro 24x\$1,245.00
 Precision Color Pro 24xp\$419.00
 PhotoBooster\$769.00
 VideoVision Studio\$3,349.00
 Rasterops 20 Trinitron\$2,399.00
 Rasterops 2020c\$1,499.00
 Moviepack w/Premier 3.0\$1,149.00
 24XLI\$899.00
 Paintboard Turbo/Pro\$1095/1299.00
 Apple 14 RGB\$319.00
 Apple Audiovision Monitor\$599.00
 Sony 14\$589.00
 Sony 1730\$1,049.00
 Nec 3/4/5/6Call

ACCELERATORS

Daystar 040 33Mhz Ili\$739.00
 FastCache Turbo\$165.00
 Daystar 50 PowerCache\$430.00
 Daystar 040i 33Mhz\$739.00
 Radius Rocket 33\$949.00
 Radius Rocketshare\$299.00

DRIVES

Magic/TW DAT 2GB\$999.00
 Magic/TW DAT 8GB\$1,199.00
 NEW! TW DAT 16GB\$1,399.00
 Fujitsu 1.2GB\$999.00
 Quantum 540MB\$499.00

Quantum 1.2GB\$999.00
 PLI 40R/88 Syquest\$329/469.00
 PLI105 /270 Syquest\$429/629.00
 PLIDAT 4GB\$1,399.00

SCANNERS

Microtek IIXE\$1,080.00
 Microtek IISP\$759.00
 Microtek 35T\$1349.00
 Umax 630LE\$849.00
 HP ScanJet IICX\$939.00
 Tamarak 1200\$1,564.00
 Nikon CoolScan\$1,920.00

SOFTWARE

Adobe Illustrator 5.0\$369.00
 Adobe Photoshop 2.5.1\$499.00
 Aldus Pagemaker 5.0\$498.00
 Canvas 3.5\$269.00
 Filemaker Pro 2.1\$235.00
 Fractal Painter\$249.00
 Fractal x2\$79.00
 Freehand 4.0\$369.00
 Macromind Director 3.1.3\$679.00
 MiniCad+ 4.0\$499.00
 MS Excel 4.0\$279.00
 MS Word 5.1\$279.00
 Quickeys 3.0\$103.00
 Suitcase 2.1\$49.00
 System 7.1 Pro\$99.00

MacProducts USA

THIRD WAVE

800 624 9307

608 West 22nd Street Austin, Texas 78705 USA Tel 512 476 5295 Customer Service 512 472 8881 ext 403 Fax 512 499 0889 Canada 512 622 8721

CIRCLE 147 ON READER SERVICE CARD

MT9307



radius™

Precision Color 17"

For the Best Price Call BottomLine



Color PivotLE with Purchase of Card	\$349
IntelliColor Display 20i	2199
LeMans GT	2299
Precision Color 20V	1675
★ Precision Color Pro 24X	1245
Precision Color Pro 24XP	419
VideoVision Studio	3349



12x12 UD + Painter	\$689
12X18 Electrostatic	999
ArtZ	279
ArtZ Bundle	469
Painter v2.0 w/Tablet	199
Painter X2	71
Two Handed Input	115



15" Portrait	\$399
20" 20/20c Mulliscan	1499
20T" Multi-Scan Trinitron	2399
DuoMate	399
MoviePak w/Adobe Premier	1149
★ PaintBoard Turbo	1095
PaintBoard Professional	1299



128 IBM Optical	\$1049
1.3GB Tahiti II Optical	3175
Infinity 40 R	329
Infinity 105/1270 SyQuest	426/619
MiniArray 1.0GB	2100
PLI CD ROM	569
Quick SCSI	309

StageTwo Rocket \$1499

SYSTEMS

Custom Configuration Available	
Duos/PowerBooks/Newtons	Call
PowerPC Macs	Call
Quadra 605	\$849
Quadra 610	1349
Quadra 650	1899
Quadra 660AV	1529
Quadra 800	1999
Quadra 840AV	2650
Extended Keyboard w/Purchase	79

SCANNERS

HP ScanJet IICX	\$949
Leaf Scanner 35 / 45	7499/Call
Microtek 35T/45T	1349/Call
Mirror 600dpi	699
Nikon Coolscan Ext. 35mm Color	1920
ScanMaker II XE / SP	975/ 729
Tamarak 600c w/Photoshop	799
Tamarak 1200	1564

PRINTERS

3M Rainbow Dyesub	Best Price
-------------------	------------

UD1212RM Tablet \$509

DataProducts LZR1580	\$3069
DEC Laser 1152/5100	649/Call
Deskwriter 550C/310	539/350
Fargo Primera	880
GCC	Call
HP 4ML/4MP	1099/1475
LaserWriter Pro 630/810	2075/4599
LaserWriter Select 360	1525
★ Proof Positive	6695
QMS 860 Plus	5299

INPUT DEVICES

DGR 105 keyboard	\$99
Gravis GamePad Mac	29
MacPro Plus 105	115
Other Language Keyboards	109
PowerKey Remote	35
Turbo Mouse ADB V4.0	99

NETWORKING

★ 8 Port Hub 10BaseT	\$149
Asante EN/SC 10BaseT	238
Dayna Mini Hub	234
Ethernet for IIsi, Nubus, LC, & SE	99
Ether Wave	Call

Horizon 24 \$2333

MacCon + ILET64	148
SE30 10BaseT and AUI	99
Starnet 8 10BT Hub	199
★ Thin/10BaseT Transceiver Adapter	49

DRIVES & TAPES

1.9/ 2.5GB Barracuda Drive	\$1569/1919
DGR 128/256 Optical	Call
Fujitsu 2.4 GB	1659
Granite Active Terminator	39/59
PMO 650 Mac Ext.	2597
Quantum 540/ 1080 Empire	499/899
Quantum 1.8GB	1399
Seagate Elite 3.4GB	2249
Tahoe 128 Optical	920
Toshiba 340 PowerBook	669
Transportable 150 Multidisk	549

SOFTWARE

Business Software	
Colleague v3.4	\$549
In Control v2.0	80
M.Y.O.B. v3.0	104
Now Contact/Compress	59
Now Up To Date v2.0	59

PLI Infinity 88RW44 \$469

Quicken 4.0	41
Touchbase Pro	42
Database Development	
4TH Dimension v3.0	\$559
MS FoxPro	95
FileMaker Pro 2.1	235
★ Retrospect	139
Times Two v2.0	85
Games	
Hellcats Over the Pacific	\$37
Where in USA is Carmen San Diego?	27
World Atlas v3.0 CD ROM	47
Presentation/Education	
★ MacAcademy Tapes	36
★ Macromind Director v3.1	\$679
MS Powerpoint v3.0	299
Personal Training Systems	44
Persuasion v2.12	318
Graphics/Word Processing	
Aldus Freehand v4.0	\$369
Collage	189
Color It! CD ROM	79
Debabeizer	275
DesignCad 2D/3D v3.0	143

Sony Monitors



CPD 1430	\$575
CPD 1730	1025

Supra Fax Modem



V.32bis MacPac	\$215
V.32bis PB	219

Global Village



Gold	\$277
Mercury	319

SyQuest Cartridges



44mb Cart.	\$59/55
88mb Cart.	89/80
105/270mb Cart.	55/97

BOTTOM LINE

DISTRIBUTION

1-512-472-4956

24-Hour Fax 1-512-476-6399 • 1219 West 6th Street • Austin, Texas 78703 USA

CIRCLE 21 ON READER SERVICE CARD



1MB TI Memory	\$40	630LE Flatbed	\$675
57 Font Upgrade for TI	55	630 Flatbed	1039
MicroWriter PS23	679	840 Flatbed	939
MicroWriter PS65	989	1240SE 3000dpi	2799
★ MicroLaser Pro 600 PS65	1525	Auto Document Feeder	399
PowerStep 40 MHz Upgrade	325	Transparency Adapter	675

TI Pro 600 PS23 \$1299*
includes \$60 enduser rebate until 3/31/94

1260 Flatbed \$1399



50MHz PowerCache SE/30	\$568	Spectrum Power 1152	\$Call
50MHz PowerCache	430	SuperMatch 20 TXL	2479
FastCache Quadra	335	SuperMatch Hi Res 20" Trin.	2699
PowerPC 66/80MHz	Call	Spectrum/24 PDQ Plus	1249
Quadra 040	1390	★ Thunder II/GX	2299/2699
★ Turbo 040 40	1092	Thunder 24	1789
Turbo 040i 33MHz	739	ThunderStorm Deluxe	619

Turbo 040 33MHz \$975

Supermatch 17-T \$1045

Fontographer v4.0	249	Suitcase v2.1	49
Illustrator v5.0	369	Super ATM	92
★ Kai's Power Tools 2	95	DISPLAYS	
Kid Pix v1.2	34	★ 16"/17" Trinitron	\$699/749
★ MacDraw Pro	235	Apple 14"/16"	319/1199
★ MS Excel V4.0/Word 5.1	279	Apple AudioVision	699
★ Pagemaker v5.0	499	Futura II SX	419
Painter v2.0	249	Lapis Full Page	365
Photoshop v2.51	499	NEC 3FGE 15"/NEC 4FGE 15"	625/715
Quark XPress 3.3	539	Sony GDM 17SE1/2036S	1199/2099
Showplace/Renderman v2.0	369	Sony 1604S	925
StudioPro	1099	T16II E Machines	1149
Summascript Fx	419	ACCELERATORS	
Utilities		★ DiimoCache 50mhz/FPU	\$415/519
AutoDoubler v2.0	\$56	Newer Tech. Variable Overdrive	259
Disk Doubler v3.7	49	Radius Rocket 33MHz	935
Disney Collection Screen Savers	32	TransWarp 4340 68030-128K 40MHz	379
FontoMatic	39	TokaMac 40MHz 040 FX	1449
MacLink Plus/PC v7.0	119	MODEMS & FAX MODEMS	
MacTools 3.0	86	Datalink PB 14.4 int. V.32 bis	\$439
Norton Utilities v2.0	89	GlobalFax Duo Software	79
Quickkeys v3.0	102	Hayes	Call
★ RamDoubler	50	Magic 14.4 V.32 bis Datafax	149
Sam 3.5.8	65	Power/TelePort Bronze II	95
SoftPC /Pro/Windows	95/185/285	Power/TelePort Silver	259
Star Trek The Screen Saver	32	Supra V.32bis LC Mac Package	155
Stuffit Deluxe v3.0	63		

Call Now For Our Free Catalog



TO ORDER FROM BOTTOM LINE: CALL 512-472-4956. PAYMENT: VISA, MASTERCARD, DISCOVER. **TAX:** TEXAS RESIDENTS ADD 8% SALES TAX. **PRICES** AND ITEMS SUBJECT TO CHANGE AND AVAILABILITY. **MAIL IN/FAX ORDERS ACCEPTED. TERMS:** NO CHARGES UNTIL ORDER IS SHIPPED. **SHIPPING:** MINIMUM \$5-UPS GROUND, BLUE, RED, FEDERAL EXPRESS. **RETURNS** MUST BE IN ORIGINAL CONDITION AND PACKAGE AND REQUIRE AN RMA#. SEAL MUST NOT BE OPENED ON SOFTWARE. RETURNS MAY BE SUBJECT TO A RESTOCKING FEE. BOTTOM LINE DISTRIBUTION CANNOT BE RESPONSIBLE FOR ERRORS IN TYPOGRAPHY OR PHOTOGRAPHY. ORIGINAL SHIPPING IS NON-REFUNDABLE. ALL BRANDS, AND PRODUCT NAMES ARE TRADE MARKS OF THEIR RESPECTIVE HOLDERS.

INTERNATIONAL ORDERS: BOTTOM LINE PROVIDES THE EXTRA LEVEL OF SUPPORT INTERNATIONAL CLIENTS REQUIRE. 24-HOUR INTERNATIONAL FAX LINE. 220-VOLT VERSIONS OF MOST HARDWARE. DHL, UPS, FEDERAL EXPRESS DISCOUNT RATES AND CUSTOMS BROKERAGE. 2-3 DAYS DELIVERY TO MOST COUNTRIES.

B54MW

DGR Technologies



DGR MULTI MAX AND LC MAX

Upgrade your LC, LCII, LCIII and Performa 400 with the LC MAX. Increase the single expansion slot to four, add another hard drive and supplement your LC with an additional 40 watt power supply. Conflicting cards can be easily switched on or off as needed. Enter the world of Multi-Media with the Multi MAX! Equipped with a multi-session, double spin CD-ROM, and amplified stereo speakers, you can access the vast library of CD-ROMs available or listen to your favorite music.

Multi MAX \$849.00 LC MAX \$349.00

DGR POWER RAID STORAGE SYSTEM



High speed RAID technology at a real world price.

The DGR Power Raid Storage System is a RAID level 0 and 1 and/or level 0,1,4, and 5 array system. Access time is 4ms with transfer rates up to 10 MB/Sec (Sync) at RAID levels 0 and 1 using a 1.0 GB array on a 840av. The system is compatible with SCSI 1 and 2, SCSI Manager 4.3 (Async), and will work with all Power PC and Mac AV platforms. RAID enclosures are all metal construction complete with all cables and software. The Power Raid Storage System provides its own SCSI chain via a Nubus SCSI 2 card, allowing you to add more RAID enclosures as you need them.

1.0 GB \$1,899.00 2.0 GB \$2,699.00

DGR OPTICAL DRIVES

DGR Technologies is committed to the excellence that has made us the industry leader. Each drive is shipped in an all-steel case with a universal 40 watt power supply, double-shielded SCSI cable, external terminator and three free cartridges*. (Also for PC's!)

128REMe*	\$849.00	128REMf	\$999.00
256REM	\$1099.00	650REM	\$2099.00
External PC Adapter	\$199.00	Internal PC Card	\$199.00



JETINC. INK JET REFILLS

JetInc is the most economical way to refill your ink jet printers. It provides over 50% savings, and incorporates recycled materials that are environmentally conscious. (For IBM & Macintosh-Enough to refill two



Two Pack Black	\$15.99	High Capacity Black	\$19.99
Two Pack Color	\$22.99	550C Six Pack (6 refills)	\$74.99

Shipping and handling not included.

COLORBLASTER LC

Blazing 16-bit color graphics on monitors up to 14" using the VRAM slot of the LC, LC II and the Performa 400,405,430. Bundled with ColorIT! **\$189.00**

COLLEAGUE BUSINESS SOFTWARE



Colleague Business Software has functions such as appointment calendar; client/prospect file invoicing; job tracking, checkbooks; general ledger; sales, expense, and accounts receivable reports. MacWorld Editor's Choice award and 4 1/2 mice in MacUser. **\$599.00**

800-235-9748

Monday-Friday 8am to 7pm CST DGR Technologies accepts MC, Visa, Discover, Pre-Paid & COD orders
1219 West Sixth, Suite 205 Austin, Texas 78703 Tel. 512/476-9855 Fax 512/476-9551 AppleLink: DGR
CIRCLE 143 ON READER SERVICE CARD

MacWAREHOUSE

SPECTACULAR SUPER SAVERS!

DayStar 20 MHz Universal Turbo 040i

Plug in DayStar Power and Performance! If you want peak performance from your Mac for the minimum amount of real-dollar investment let DayStar take you to a higher level. The Universal Turbo is perfect for advanced users—20 MHz 68040 Processor Upgrade without math chip.

Manufacturer: DayStar Digital
DRI 0806

\$649⁹⁵

QuarkXPress 3.3

Unequaled design flexibility and more color & graphics support than before make QuarkXPress the page-layout application favored by publishers. Create innovative, design-intensive publications! You can create variable-shaped text boxes, undo multiple-item deletions, and much more!

Publisher: Quark
DTP 0110

\$589

ASD Security Trio

Take FileGuard, TrashGuard & FileDuo together and save!

Publisher: ASD Software
UTI 0423

Also available:
FileGuard 2.7—It's sleek, fast and safe. I highly recommend it. *MacUser. Protect your hard drive, applications, files, and folders (including System Folder) from erasure, unauthorized access, deletion, and illegal copying.
UTI 0135

\$159⁹⁵

\$139

TrashGuard—Delete files forever, with TrashGuard. Using the Trash Can to delete a file only makes the

space available, but does not erase data. TrashGuard not only deletes files, it actually removes them from your hard disk.
UTI 0322

\$49

FileDuo—Backup your important files quickly and automatically! FileDuo creates backups any time you want: every 5 minutes, at a specific time, or when you shut down your Mac.
UTI 0323

\$89

Power User Pro 3X CD-ROM Drive

This triple speed CD-ROM drive is the fastest available! Its 200 msec access time and 450KB/sec transfer rate deliver superior performance. Other features include: automatic lens cleaning, shielded optical pick-up, SCSI-2 interface, audio playback capability and more.

CDR 0089

\$499

BrushStrokes

BrushStrokes combines a sophisticated 32-bit paint program with a clear, fully illustrated How To Paint Guide. This rich collection of customizable tools, filters, and special effects allow you to translate your ideas from your imagination to finished output.

Publisher: Clairis/ClearChoice
GRA 0435

\$49

Special low price expires: 5/31/94

4th Dimension Competitive Upgrade

...4D 3.0...empowers you with the ability to produce efficient, truly elegant Mac applications...ACI's support system is topnotch...Version 3.0 greatly enhances the designer's options and speeds development time...MacWeek: You've tried the rest, now step up to the best!

Publisher: ACI US Inc.
SID 0057

\$299

Sketch! Bundle

Now, when you buy Sketch!, you get Photoshop—the premier image processing and touch-up program or Illustrator—the pioneering illustration and graphic design program at a special low price!

Publisher: Alias and Adobe
Sketch/Illustrator
GRA 0523

\$779

Sketch!/Photoshop
GRA 0524

\$859

SoftPC Professional 3.1

SoftPC's award-winning emulation technology lets you run more than 50,000 DOS and NetWare applications on your Mac. Copy and paste from DOS to Mac. Includes MS-DOS 5.0 pre-installed, SoftNode and CD-ROM extensions!

Publisher: Insignia Solutions
COM 0186

\$219⁹⁵

Aldus Super Bundle

Get Aldus SuperPaint 3.5, the most versatile graphics toolkit in the business. And Aldus HomePublisher, the complete home or office publishing solution, for one low price! Order now and get Hellcats Over the Pacific FREE!

Publisher: Aldus
BND 0319

\$99

Simply TV

Simply TV lets you see anything you can see on your Mac on your TV—only bigger! Watch CD-ROMs, tutorials, games and educational presentation on your TV, record them on your VCR, or project the images on a wall with a video projector. Easy to use—just plug it in!

Manufacturer: E-Machines
GRA 0696

\$399

Corkboard

A revolutionary idea management and organizational tool! Using index cards literally tacked on your screen, Corkboard lets you mix text, pictures and Quicktime movies to view and organize your thoughts visually. Seamlessly integrated is a full-function, multi-level outline which provides a traditional, top-to-bottom view of your entire project.

Publisher: MacToolKit
BUS 0320

\$109

Kid's Studio

Produce, direct and star in your own multimedia productions. Kid's Studio makes it easier than ever to create your own brilliant stories using a Treasure Chest of images, a paint box, fancy text controls, sound recording, and dazzling special effects. Kid's Studio provides the tools—you provide the imagination.

Publisher: Maxis/Cyberpuppy
EDU 0555

\$35

Retrospect Remote

Powerful Mac network backup software for centralized backup and archiving. Create scripts with multiple sources, destinations, and file-selection criteria with ease. Then schedule the scripts so your backups run automatically on any day and at any time. Supports compression, encryption and verification.

Publisher: Dantz Development
UTI 0196

\$259

Jeopardy! Sports

If you're an armchair athlete or a sports trivia buff, this edition of Jeopardy! is just for you! Delve into past and current trivia in football, baseball, basketball, and hockey. Explore categories like boxing, bowl games, college standouts, Olympic events, and many others! Over 3,500 challenging questions!

Publisher: GameTek
ENT 0672

\$24⁹⁵

White Knight

11 award-winning telecommunications program—perfect, low-cost solution to every Mac telecommunicator's needs. Offers power associated with products costing hundreds more, yet far more flexible and easier to learn. Proclaimed as a precision communications tool by MacWorld.

Publisher: FreeSoft
COM 0060

\$85

Home Office

The Prometheus Home Office is a data modem, fax modem, answering machine, and line switching device, all in 1! A 2400 bps external data modem with V.42bis/MX-5 support, plus 9600 bps send/receive fax capability and voice mail.

Manufacturer: Prometheus
MOD 0084

\$129⁹⁵

Marvel Comics Screen Posters

Join Spider-Man, Wolverine, the X-Men, and your favorite Marvel Comics super heroes in the fight against villainous computer boredom! Includes still images of classic confrontations, milestone covers, original artwork and more! Images work both as screen savers and desktop art.

Publisher: Berkeley Systems
UTI 0476

\$19⁹⁵

VST ThinPack Complete

The battery for the PowerBook 100-180c runs for 5-9 continuous hours, (3-4 on color models). Only 1.5 lbs. & 1/4" thin, it recharges in 4 hours. Ships with ThinPack Utilities battery management software.

Manufacturer: VST Power Systems
ACC 1286

\$199⁹⁵

First Things First Proactive

The first true time management software. FIT Pro integrates outlining, multiple calendar views, flexible reminders, customizable printing, and networking for sharing calendars and delegating task lists. FIT Pro helps you get the right things done!

Publisher: Visionary Software
BUS 0391

\$99⁹⁵

1-800-255-6227
Overnight Delivery—Only \$3.00!

PowerCD-Only \$199!

Order your Apple PowerCD now for only \$199

and, for only \$4.95 more, we'll include your

choice of any ONE of these popular
chart-topping CDs: *The Bodyguard*

soundtrack with Whitney Houston;

Billy Joel's *River of Dreams*; Sting's *Ten Summoner's Tales*; or *Music Box* by Mariah Carey!

HURRY, quantities are limited!

Your
Choice Only

\$4.95*

Get the entire 21-volume Grolier Encyclopedia
on ONE CD-ROM!

PLUS...
for only

\$99!

Buy now and also get
**2 BONUS
CD-ROMs FREE!**

Apple PowerCD 3-in-1 CD Player

Ask for item# DRI 0919 **\$199**

*PLUS, for only \$4.95, choose ONE of the following
music CDs (limit 1 per customer):

☐ Item# AAP 0002 Whitney Houston-The Bodyguard

☐ Item# AAP 0003 Billy Joel-River of Dreams

☐ Item# AAP 0004 Sting-Ten Summoner's Tales

☐ Item# AAP 0005 Mariah Carey-Music Box

The New Grolier Multimedia Encyclopedia PLUS The Animals! FREE
and Atlas Pack FREE! Ask for item# BBD 0007

Total Suggested Retail: **\$583.95** **\$99***

*When you order the Apple PowerCD CD Player at the same time.

THE **Mac** SUPERSTORE

BUSINESS & PRESENTATION

A LASTING IMPRESSION	
ResumExpert (Full line available)	ea. 59.
ALBUS	
BUS0298 DateBook Pro	49.
DAT0104 TouchBASE Pro	49.
CLARIS	
DAT0112 FileMaker Pro. 2.1	269.
INTUIT	
FIN0201 Quicken 4.0	44.95
LOTUS DEVELOPMENT CORPORATION	
BUS0188 Lotus 1-2-3 for Macintosh 1.1	299.
MICROSOFT	
BUS0223 Excel 4.0	295.
BUS0181 Project 3.0	445.
BUS0285 Office 3.0	475.
BUS0269 PowerPoint 3.0	295.
WRD0059 Word 5.1	295.
BESTWARE	
FIN0212 M.Y.O.B. 4.0 w/o Payroll	59.95
DAT0213 M.Y.O.B. 4.0 w/ Payroll	109.95
WORDPERFECT CORPORATION	
WRD0068 WordPerfect 3.0 w/FREE Grammatik	299.95

COMMUNICATIONS & NETWORKING

ADOBE	
COM0171 Adobe Acrobat Starter Kit	669.
APPLE COMPUTER, INC.	
NET0250 AppleShare 3.0.1	969.
COM0211 Apple Remote Access	189.
COM0126 Macintosh PC Exchange	59.95
DAYNA COMMUNICATIONS, INC.	
NET0358 EtherPrint-3 Plus	449.
FARALLON™ COMPUTING	
NET0007 PhoneNET® Plus, SE & II	29.95

GLOBAL VILLAGE (FULL LINE AVAILABLE)

PowerPorts	Call.
HAYES	
MOD0130 ACCURA 144+Fax 144	239.95
MOD0129 ACCURA 96+Fax96	209.95
INSIGNIA (FULL LINE AVAILABLE)	
UTI0433 AccessPC 3.0	89.95
POWERUSER®	
MOD0116 14.4 Send/Receive Fax Modem	189.95
SHIVA	
NET0246 LANRouter/L	599.
ZOOM TELEPHONICS	
MOD0109 VFX V.32bis MacPack	169.95

EDUCATIONAL & ENTERTAINMENT

BRODERBUND	
GRA0268 Kid Pix 1.2	35.
NORDIC SOFTWARE	
EDU0051 MacKids Turbo Math Facts 2.0	25.
PERSONAL TRAINING SYS.(FULL LINE AVAILABLE)	
Excel 4.0, Word 5.1, Filemaker Pro 2.0	ea. 49.
THE SOFTWARE TOOLWORKS	
BND0169 Miracle Piano Bundle	269.

GRAPHICS & DESIGN

ADOBE SYSTEMS, INC. (FULL LINE AVAILABLE)	
GRA0657 Illustrator 5.0 w/ FREE Streamline	389.
GRA0430 Photoshop 2.5.1	579.
ALBUS	
GRA0654 FreeHand 4.0	389.95
BND0319 SuperPaint SUPER BUNDLE	99.
DTP0088 PageMaker 5.0	579.
UPG0032 PageMaker 5.0 Upgrade	149.

APPLE COMPUTER, INC.	
GRA0347 QuickTime Starter Kit	109.
CLARIS	
GRA0350 MacDraw Pro 1.5	269.95
ELECTRONICS FOR IMAGING (EFI)	
GRA0432 Cachet	299.
QUARK, INC.	
DTP0110 XPress 3.3	589.
SOFTKEY SOFTWARE	
FON0480 KeyFonts	49.

INPUT & OUTPUT

CAERE	
INP0289 OmniScan	399.
KENNINGTON	
INP0231 Turbo Mouse (SE or II) 4.0	109.
MICROTEK (FULL LINE AVAILABLE)	
INP0246 Microtek ScanMaker II	699.
MOUSE SYSTEMS	
INP0132 Little Mouse ADB	74.
SUPERMAC	
MON0053 SuperMatch 20+ Color Display	1799.

POWERBOOK PRODUCTS

BATTERY TECHNOLOGY INC.	
ACC0840 Battery for Powerbook	59.95
KENNINGTON	
INP0221 Notebook Keypad	79.

SOPHISTICATED CIRCUITS	
INP0232 Powerpad	69.95

UPGRADES & DRIVES

DAYSTAR DIGITAL	
DRD469 Universal PowerCache 33 MHz	299.95
DRD806 20 MHz Turbo 040i Accelerator	649.95
PERIPHERAL LAND, INC.	
DRD615 Infinity 88/RW44	559.95
POWERUSERS®	
CHP0011 4 Meg SIMMS 80ns	Call.
CHP0013 1 Meg SIMMS 100ns	Call.
BND0176 44/88C MB SyQuest Removable	449.95
BND0094 44MB SyQuest Removable	299.95

UTILITIES & PROGRAMMING

ALADDIN SYSTEMS	
UTI0302 StuffIt Deluxe 3.0	69.
APPLE COMPUTER, INC.	
SYSD004 System 7.1 Personal Upgrade Kit	59.95
SYSD010 AI Ease 2.0	45.95
CAERE	
UTI0293 OmniPage Direct	199.95
MICROMAT COMPUTER SYSTEMS	
UTI0285 MacEKG 2.0	89.
SYMANTEC CORPORATION	
UTI0151 Norton Utilities for the Mac 2.0	95.
UTI0334 Symantec Antivirus 3.5 (SAM)	65.95

MacWAREHOUSE®

1720 Oak Street, P.O. Box 3031, Lakewood, NJ 08701
©1994 Micro Warehouse Inc.

- All major credit cards accepted. No surcharge.
- Your credit card will not be charged until your order is shipped.
- If we ship a partial order, we pay the freight on the remaining portion.
- All U.S. shipments are insured at no extra charge.
- C.O.D. orders accepted (add \$6.00 including shipping) - \$1,000 maximum.
- All products are covered by a 120-day limited warranty. Defective software replaced immediately. Hardware replaced or repaired at our discretion.
- Some products may have system requirements. Call for details.
- Sales tax: CT residents add 6%, NJ residents add 7%, Ohio residents add appropriate tax.

SHIPPING

- All orders add \$3.00 per order. We ship Airplane Express overnight unless UPS Ground delivers overnight. (Some rural areas require an extra day.)
- Orders placed by 12:00 MIDNIGHT (EST) (weekdays) for "in-stock" items ship same day (barring system failure, etc.) for overnight delivery.
- C.O.D. orders ship via UPS (Blue Label) if you are more than 2 days from us via UPS Ground. Charge is \$6.00 including shipping.
- Alaska, Hawaii, outside continental U.S. APO/FPO call 908-367-0440 for information. Some products are not available outside the U.S.

- We regret that we cannot be responsible for typographical errors.
- For faster service, list existing customers, list changes, recognize incoming calls by this telephone number and carefully locate your records.

Copyright 1994 Micro Warehouse, Inc. MacWAREHOUSE® is a division of Micro Warehouse, Inc. MacWAREHOUSE® and Micro Warehouse® are registered trademarks of Micro Warehouse, Inc. Item availability and price subject to change without notice. Apple, the Apple logo, Mac and Macintosh are registered trademarks of Apple Computer, Inc.

CIRCLE 156 ON READER SERVICE CARD

I'm Kerry, call me at:

1-800-255-6227

(1-800-ALL-MACS)

Call 24 hours a day, 7 days a week.

Inquiries: 908-367-0440 FAX Your Order to: 908-905-9279

Compuserve Code: GOMW

NEW! Express Customer Service Number:

1-800-925-6227

FREE CATALOG SUBSCRIPTION

MU0594

Check the appropriate box(es) to receive your FREE 1-year subscription and mail this coupon to:
1720 Oak Street, P.O. Box 3031, Lakewood, NJ 08701

Name _____

Address _____

Apt. _____

City _____

State _____

Zip _____

(Expect to receive your first issue within 4-6 weeks.)

MacWAREHOUSE®

Data Comm WAREHOUSE™

MicroWAREHOUSE®

CD-ROM WAREHOUSE™

Quantum

**ClubMac
30 DAY
MONEY BACK
GUARANTEE**



A ClubMac Quantum Drive is the best "plug-and-play" storage solution for your Macintosh computer. All Quantum drives are backed by ClubMac's 30-Day Money Back Guarantee and TWO Year Warranty (Go-Drives include ONE Year Warranty).

GO-DRIVE SERIES 2.5" POWERBOOK DRIVES

Capacity	Access	Internal	External
85mb	17ms	\$199	\$319
127mb	17ms	\$235	\$355
170mb	17ms	\$259	\$379
256mb	17ms	\$339	\$459

External Go-Drives come in battery powered case as shown

POWERBOOK DRIVES



**BATTERY POWERED
PORTABLE DRIVE**

GO-DRIVE SERIES

The Quantum Go-Drive Series are fast, lightweight, advanced 2.5-inch hard disk drives. Go-Drives are perfect for use with Apple PowerBooks with available capacities from 85MB to 256MB.

QUANTUM DRIVES 3.5" LOW PROFILE, LOW POWER

Capacity	Access	Internal	External
170mb	17ms	\$185	\$245
240mb	11ms	\$239	\$299
340mb	11ms	\$289	\$349
540mb	10ms	\$479	\$539
1080mb	11ms	\$829	\$889
1800mb	10ms	\$1099	\$1159

3.5" HALF HEIGHT

ELS, LPS AND PRODRIVE SERIES

The Quantum 3.5-inch hard disk drives are the optimal storage solution for entry level Macintosh systems to arrays of high-end workstations and network file servers. Available capacities from 127mb up to 1800mb. Quantum drives offer average seek times as low as 10ms, transfer rates up to 10 MB/sec, and SCSI-1/SCSI-2 interface. Performance enhancements include Quantum's Proprietary DisCache and WriteCache firmware.



**ClubMac
30 DAY
MONEY BACK
GUARANTEE**

**FIVE YEAR
WARRANTY**



Unformatted Capacity	Model	Description	Access Time	Actual MAC Capacity	Internal	External
520mb	M2624	3.5" Half Height	9ms	496mb	\$489	\$549
1.2GIG	M2694	3.5" Half Height	8.5ms	995mb	\$899	\$959
2.4GIG	M2654	5.25" Full Height	11.5ms	2000mb	\$1389	\$1489



**ClubMac
30 DAY
MONEY BACK
GUARANTEE**

Seagate 5.25-inch full height drives are available in capacities ranging from 1.6 gigabytes to 3.4 gigabytes. These drives feature an ave. seek time as low as 11ms, 256KB cache buffer, rotational speed up to 5,400 RPM, SCSI-2 interface, 200,000 hour MTBF and ONE Year Warranty

Unformatted Capacity	Model	Description	Access Time	Actual MAC Capacity	Internal	External
3.5" LOW PROFILE						
1.2GIG	ST31200N		10ms	1000mb	\$889	\$949
3.5" HALF HEIGHT						
1.2GIG	ST11200N		10.5ms	1000mb	\$869	\$929
1.9GIG	ST11900N		9ms	1600mb	\$1199	\$1259
2.4GIG	ST12400N		9ms	2000mb	\$1599	\$1659
1.9GIG	ST11950N	Barracuda 1	8ms	1650mb	\$1549	\$1609
2.4GIG	ST12550N	Barracuda 2	8ms	2050mb	\$1829	\$1889
5.25" FULL HEIGHT						
2.4GIG	ST42400N	Elite-2	11ms	2050mb	\$1739	\$1839
3.4GIG	ST43400N	Elite-3	11ms	2750mb	\$2159	\$2259

FEATURING



**SyQuest®
REMOVABLE
TECHNOLOGY**

**ClubMac
30 DAY
MONEY BACK
GUARANTEE**



**NEW CLUBMAC
270MB REMOVABLE**

	Internal	External		
ClubMac 44mb	\$259	\$299	3.5" DUAL REMOVABLES	
ClubMac 88c	\$385	\$425	Dual 105mb	\$729
ClubMac 105mb	\$359	\$399	Dual 270mb	\$1179
ClubMac 270mb	\$619	\$659	Dual Combo 105/270*	\$1029
CARTRIDGES				
44mb/105mb		\$59	5.25" DUAL REMOVABLES	
88mb		\$89	Dual 44mb	\$549
270mb		\$99	Dual 88c	\$649
			Dual Combo 44/88c*	\$729

All SyQuest drives include a TWO Year Warranty, SCSI Director formatting software, and necessary cables for "plug-and-play". All SyQuest cartridges include a ONE Year Warranty.

DAT BACKUP by CLUBMAC

CLUBMAC DAT DDS & DDS-DC DRIVES

provide up to 5.0 gigabytes of cost effective and highly reliable data storage on a pocket size Digital Audio Tape (DAT) cassette. Available in 2 models: ClubMac DAT using the DDS tape format and the ClubMac DAT/DC with the efficient DDS-DC compression format. They are ideal for hard disk backup, archival storage, data file distribution.

• 20 sec average data access time (60m tape)

• 14mb/min backup rate, 180KB/sec transfer rate

• MTBF of 60,000 hours • TWO Year Warranty

• Includes Retrospect v.2.0 Backup Software and ONE 90m Tape Cassette



**FREE
RETROSPECT V2.0
BACKUP SOFTWARE
(\$139 VALUE)**



Capacity	Model	Format	Media	Internal	External
2.0GIG	ClubMac DAT	DDS	60m, 90m	\$749	\$799
2.4GIG	ClubMac DAT/DC	DDS-DC	60m, 90m	\$999	\$1049

CLUBMAC DAT/2 DDS-2 DRIVE

provides up to 8.0 gigabytes of high performance, cost effective and reliable data storage on a pocket size Digital Audio Tape (DAT) cassette. The ClubMac DAT/2 has a significant number of key features which make it adaptable to a wide range of user environments and system applications, including:

• 20 sec average data access time (60m tape)

• 28mb/min backup rate, 366KB/sec transfer rate

• MTBF of 180,000 hours

• ONE Year Warranty

Includes Retrospect Remote v.2.0

(3 pack) Network Backup Software

and ONE 120m Tape Cassette



**FREE
RETROSPECT
REMOTE V2.0
BACKUP
SOFTWARE
(\$249 VALUE)**



4-8GIG	ClubMac DAT/2	DDS-2	60m, 90m, 120m	\$1329	\$1379
--------	---------------	-------	----------------	--------	--------

Verbatim MEDIA PRODUCTS	DAT TAPES <small>as 10 pack</small>	OPTICAL MEDIA	
	4mm (60m).....	\$12/\$110	3.5" 128mb.....\$35
	4mm (90m).....	\$15/\$125	5.25" 594mb/652mb.....\$89
	4mm (120m).....	\$25/\$225	5.25" 1.2GIG/1.3GIG.....\$115

CLUBMAC OPTICAL DRIVES



CLUBMAC 3.5" 128MB OPTICAL

"Low price and all-around value characterize this 128mb rewritable drive."

-Macworld Editors' Choice December 1993

	Internal	External
ClubMac 3.5" 128mb Fujitsu Optical (M2511A)	\$839	\$869
Fujitsu 3.5" 128mb Dynamo		\$869
ClubMac 3.5" 128mb Epson Optical	\$759	\$789
ClubMac 5.25" 650mb Sharp Optical	\$1669	\$1699
Hewlett-Packard 5.25" 1.3GIG Optical External		\$2699

All ClubMac Opticals include ONE cartridge and ONE Year Warranty.



CLUBMAC 5.25" 650MB OPTICAL

"Without question the best bargain among 5.25" drives."

-Macworld Editors' Choice December 1993



E-Machines T16 II

- 640 x 480 up to 1024 x 768
- Comp. with on-board graphics on the Quadra and Centris

\$1139
E-Machines T16 II



E-MACHINES

E-MACHINES MONITORS

ColorPage T16 II	\$1139
E-Machines E20 Dual Mode Color	\$1589
E-Machines T20 Multi-Mode Color	\$2429
E-MACHINES GRAPHIC CARDS	
24-Bit Futura II SX / LX	\$419/775
24-Bit Ultra LX	\$1089
Simply TV	\$389

24-BIT GRAPHIC ACCELERATORS

Thunder/24 v.2.0 (G1130)	\$1699
Spectrum Power • 1152 (G3430)	\$1189
Spectrum/24 Series IV (G2230)	\$799
ThunderStorm (G2930)	\$429

LARGE SCREEN DISPLAYS

SuperMatch Hi-Res 20 Trin (STD9745)	\$2679
SuperMatch 20-T XL (STD9752-XL)	\$2499
Platinum 21 Two-Page GS (STD9761)	\$999
Platinum 21 Full Page GS (STD9725)	\$839

MULTIMEDIA SOLUTIONS

Digital Film (DV2050)	\$3249
Video Spigot NuBus (DV1030)	\$369
Video Spigot LC (DV1050)	\$249

MONITORS

20"/20T Multiscan (2075R0)	\$2489
20"/20 Multiscan Color (2070C)	\$1519
21" Mono/GrayScale (2110)	\$995
15" ClearVue/15 Portrait (1510)	\$399

DUOMATES

DuoMate 8/16sc	\$329/519
----------------	-----------

GRAPHIC CARDS

PaintBoard Lightning	\$779
Horizon 24	Starting at \$2259
PaintBoard Turbo XL	\$1129
PaintBoard Professional Starting at	\$1799
PaintBoard 8Li	\$319

MULTIMEDIA

MoviePak Presenter	\$1399
MoviePak	\$519
MoviePak with Adobe Premiere	\$1129
MoviePak2	\$1549
24XLTV / 245TV	\$2529/719
Video Expander II	\$499

RASTEROPS CORPORATION



PaintBoard Lightning

The PaintBoard Lightning is a highly accelerated 24-bit NuBus graphics adapter. It delivers exceptional photo-realistic true color up to resolutions as high as 1024 x 768 making it ideal for imaging, color publishing and business productivity.

radius



\$1249
PrecisionColor Display/17

GRAPHIC CARDS MONITORS

PrecisionColor Pro 24X	\$1349
PrecisionColor Pro 24XK	\$785
PrecisionColor Pro 24XP	\$435
PrecisionColor 24X	\$959

PrecisionColor Display/17

- "On-the-fly" resolution switching, built-in video
- 640 x 480 up to 1152 x 870
- Digital Controls
- 0.25mm dot pitch

ASK ABOUT THE RADIUS WORRY-FREE SERVICE WARRANTY

IntelliColor Display/20	\$2349
PrecisionColor Display/20v	\$1799
PrecisionColor Display/17	\$1249
PrecisionColor Pivotal	\$819
Pivotal Display	\$565
Full Page Display (FPD)	\$445
Two Page Display/20gs	\$799
Two Page Display/21gs	\$1005

MULTIMEDIA

VideoVision Studio	\$3389
VideoVision Studio Upgrade	\$1529
VideoVision (Presentation)	\$1829
VideoVision (Basic)	\$1515
Rocket 33	\$965
RocketShare	\$389
PhotoBooster	\$759

NETWORKING

ASANTE

10THUB/12	10BT Hub w/12 10T, Thk & Thin ports	\$465
10THUB/8	10BT Hub w/8 10T, Thin port	\$229
Mini EN/SC	Thin/10BT SCSI Ether w/D18 PB cable	\$297
Mini EN/SC10T	10T SCSI Ethernet w/D1 & PB cable	\$237
FN10TA	10T FriendlyNet Media Adapter	\$65
FN1NA	Thin FriendlyNet Media Adapter	\$65
MC+11E64	Mac II & Perf 600, Thk/Thin, 64K	\$139
MC+11E164	Mac II & Perf 600, Thk, 10BT, 64K	\$139
MC3NB	Mac II & Perf 600, Thk/Thin/10BT, 64K	\$189
AP1001	AsantePrint, Thk/10BT or Thk/Thin	\$329

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.

MODEMS

GLOBAL VILLAGE POWERPORT (PWRBKS)

Mercury/Bronze/Silver/Gold	\$329/95/255/279
----------------------------	------------------

GLOBAL VILLAGE TELEPORT (Ext. Desktop)

Mercury/Bronze/Silver/Gold	\$329/95/255/279
----------------------------	------------------

SUPRA MODEMS

SupraFaxModem 14.4 LC	\$159
V.32bis, V.42bis w/FAXstf & Micro	
SupraFaxModem 14.4	\$225
V.32bis, V.42bis w/FAXstf & Micro	
SupraFaxModem PB 14.4	\$225
V.32bis, V.42 Internal for Powerbook	

NEC



\$1249
MultiSync 5FGp

NEC MULTISYNC MONITORS

15" MultiSync 3V	\$469
15" MultiSync 3FGe	\$569
15" MultiSync 4FGe	\$629
17" MultiSync 5FGe	\$989
17" MultiSync 5FGp	\$1099
21" MultiSync 6FGp	\$1999
MacFG 24X/24Xp	\$1199/479

NEC Monitors carry a THREE Year Warranty.
NEC MacFG cards carry a ONE Year Warranty.



October 1993
NEC MultiSync 5FGp



\$739
Silentwriter 640

NEC PRINTERS

Silentwriter 95f (6ppm, 300 dpi, PS Level 2, 35 fonts)	\$889
Silentwriter 640 (6ppm, 300 dpi, PS Level 2, 52 fonts)	\$739
Silentwriter 1097 (10ppm, up to 600 dpi, PS Level 2)	\$1379

NEC Silentwriter 640 carries a TWO Year Warranty. NEC Silentwriter 95f and 1097 carry a ONE Year Warranty.

NEC CD-ROM READERS

	w/o bundle	w/bundle
MultiSpin 3Xe (External, 195ms access time)	\$589	\$689
MultiSpin 3Xi (Internal, 195ms access time)	\$499	\$599
MultiSpin 3Xp (Portable, 250ms access time)	\$439	\$539
MultiSpin 4X Pro (External, 180ms access time)	\$935	\$1035



\$935
MultiSpin 4X Pro

ClubMac's CD Bundle includes: Mayo Clinic
• Toolworks Encyclopedia v6.0 • The Animals
• Atlas Pack (World & US) • Lucas Game Pak II
• Pair of Quickshot Speakers



\$299
HP DeskWriter 520

HP DeskWriter 520 Inkjet Printer

- Clear, sharp 600 x 300 dpi
- 3 ppm, 35 scalable fonts
- Light weight, only 4.3 lbs.
- Prints on plain paper, transparencies
- Standard LocalTalk/Serial interface
- EnergyStar Compliant

HP DeskWriter 310 carry a ONE Year Warranty
HP DeskWriters carry a THREE Year Warranty

HP DeskWriter 310

Optional Color Kit Available

HP DeskWriter 310

with Cutsheet Feeder (A4-sheet), Optional Color Kit Available

DeskWriter

300 dpi, 3ppm, 35 scalable fonts, LocalTalk/Serial interface

DeskWriter C

300 dpi color, 3ppm black, 4-7ppm color, 35 fonts, LocalTalk/Serial

DeskWriter 550C

300 dpi, Twin Cartridge, 3ppm, 4-7ppm color, 35 fonts, LocalTalk/Serial

DeskWriter Inkjet 520

600 x 300 dpi, 3ppm, 35 fonts, LocalTalk/Serial

DeskWriter Inkjet 560C

600 x 300 dpi color, 3ppm, 35 fonts, LocalTalk/Serial

SCANNERS MICROTEK



ScanMaker IIg with Fractal Design Sketcher 1.0

\$489

ScanMaker IISp with Photoshop 2.5 LE

\$799

ScanMaker II with Photoshop 2.5 LE

\$665

ScanMaker IIx with Photoshop 2.5

\$1049

EPSON



ScanTastic

ES-800C Pro-Mac

Scans up to 1600dpi, Photoshop 2.5, ScanTastic, KAI's PowerTools

ActionScanning-Mac

Scans up to 1200dpi, Photoshop 2.5 LE & ScanTastic

TURBO 040 ACCELERATORS

Turbo 040 (with FPU support)	
25 MHz Turbo 040	\$749
33 MHz Turbo 040	\$915
40 MHz Turbo 040	\$1085
FastCache Turbo (128K cache for Turbo 040 family)	\$165
Turbo 040i (w/o FPU support)	
20 MHz Turbo 040i	\$589
25 MHz Turbo 040i	\$665
33 MHz Turbo 040i	\$745

DAYSTAR DIGITAL



POWERCACHE

	w/o FPU	w/ FPU
33 MHz PowerCache	\$275	\$359
50 MHz PowerCache	\$415	\$539
PowerCache Adapter		\$99

* Req'd for non-Mac II, Ix, Ixv, Performa 600

CALL FOR FREE CATALOG



No Surcharge!

ClubMac

1-800-258-2622

Info (714)768-8130 • Tech Support (714)768-1490
Fax (714)768-9354 • 7 Hammond, Irvine, CA 92718

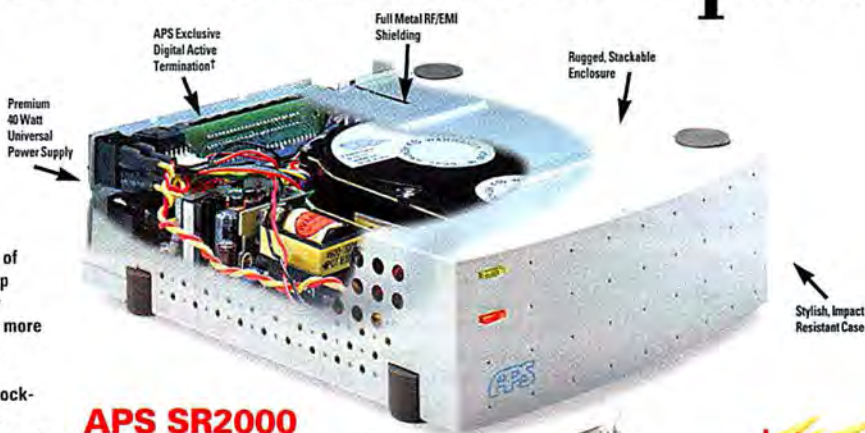
1-800-258-2622
1-800-CLUBMAC
1-800-258-2622

Marcher May 1994



"In the fiercely competitive world of the humble desktop hard drive, nobody sweats the details more than APS. Elegant design, quality components, and rock-solid construction distinguish the compact APS SR 2000 Case."
— Editors of MacUser

All Drives Are Not Equal.



APS SR2000

The APS SR 2000, with built-in DATerm™, can stop "SCSI Voodoo" with its IC controlled digital active termination. DATerm's patent-pending technology eliminates SCSI line pulse fluctuations, as well as confusing signal and voltage reflections. Its unique impedance-matching characteristics provide superior signal-to-noise ratios. DATerm decreases SCSI retries, allows more reliable data transmission and improves SCSI chain stability. The SR 2000 is the best external 3.5" drive enclosure available on the market today.

SR 2000 StacKIT™ \$24





- End Cable Bondage Forever!
- Minimize SCSI Chain Length
- Heavy Metal Shielding Protects SCSI Signal
- StackIT Includes Four Concave Stacking Feet
- StackIT Includes Exclusive APS SCSI C "Connector"



APS HARD DRIVES

Model	Capacity	Internal	SR2000
--------------	-----------------	-----------------	---------------

122MB - 257MB

 APPS Q 127²	122MB	\$189	\$279
Quantum 127 mechanism			
 APPS Q 170²	163MB	199	289
Quantum 170 ELS mechanism			
 APPS MX 240²	234MB	259	349
Maxtor 7245 mechanism			
 APPS Q 270²	257MB	269	359
Quantum 18320 mechanism			

* Internal drives for Quadra 800 and Centris 610 available

324MB - 1029MB

APS MX 345²	324MB	\$379	\$469
Maxtor 7345 mechanism			
APS 340⁴	327MB	299	389
340 mechanism			
APS Q 540²	516MB	529	619
Quantum 540 mechanism			
APS MS 1.2AV⁵	965MB	999	1089
Micropolis 2210AV mechanism			
APS MS 1.2⁵	1001MB	899	989
Micropolis 2210 mechanism			
APS MS4110⁵	1002MB	999	1089
Micropolis 2210 mechanism			
APS Q 1080⁵	1029MB	859	949

* *Internal Price Listing*

Model	Capacity	Internal	SR2000
-------	----------	----------	--------

1611MB - 2845MB

APS ST 1.6⁵	1611MB	\$1499	\$1589
Seagate ST11950 Barracuda mech.			
APS MS 1.7AV⁵	1612MB	1399	1489
Micropolis 2217AV mechanism			
APS MS 1.7⁵	1682MB	1299	1389
Micropolis 2217S mechanism			
APS ST 2.0⁵	2040MB	1869	1959
Seagate ST 125500N Barracuda mech.			
APS MS 2.4G⁵	2100MB	1599	*1699
Micropolis 1926 mechanism			
APS MS 3.0G⁵	2845MB	2249	*2349
Micropolis 1936 mechanism			

1.5 Denotes length of manufacturer's warranty

✶ External Case is Special Full Height Only

POWERBOOK DRIVES

Model	Capacity	LW Pro 630	Internal	Composition II AC/DC
APS PB 85 ¹	80MB	\$249	—	—
APS PB 170 ¹	160MB	349	\$299	\$439
APS T 213 ¹	202MB	409	359	499
APS PB 250 ¹	240MB	449	399	539
APS T 340 ¹	324MB	579	529	649
APS T 520 ¹	500MB	949	899	1039

SCSI Sentry™

Now you can "stop SCSI Voodoo" on your SCSI Chain, even when you're not ready to buy a new drive. Our new SCSI Sentry™ gives you all the benefits of APS' acclaimed DaTerm technology in the form of an external SCSI performance monitoring instrument.

Benefits	SCSI Sentry
Optimizes Overall SCSI Performance	
Exclusive Digital Active Termination	✓
Provides Ideal Termination Power	✓
Drastically Reduces SCSI Retries	✓
Regulates SCSI Line Voltage	✓
Solves Bus Impedance Issues	✓
LED Activity Indicators Diagnostic Tool	✓
Easy Installation: Takes Seconds	

APS MS 1.2

The APS MS 1.2 provides the best mix of performance and price in its class. The 5400 RPM spindle speed of its Micropolis 2210 mechanism delivers spectacular sustained transfer rates and seek times averaging 9.1 ms.

\$899*



M-F 6AM-12Midnight CST.
SAT & SUN 9AM-9PM CST.

International: 1-816 483-6100 FAX: 1-816 483-3077 (24 Hours)

For a Free Catalog, call APS Sales: 1-800-233-7550

InfoFax: 1-800-374-5802

**APS Companion II
Drives Available in
the SR 1000 Case**

**4 Hour
Battery!**



APS Technologies

APS SyQuest is Best!

APS SyQuest Drives • NEW LOW PRICES!

Only APS brings you SyQuest with all the benefits of the SR 2000 & Digital Active Termination

APS SQ 5110c & SQ 3105

These removable cartridge drives are based on SyQuest's award-winning removable cartridge mechanisms. Available in 5.25" 44 and 88MB and 3.5" 105 and 270MB configurations, only APS SyQuest drives give you the great performance and exceptional economy of a time-proven removable cartridge drive system in our award-winning SR 2000 enclosure with DATerm.

SYQUEST

APS SQ 555 [†]	44MB	\$299
APS SQ 5110c [†]	44/88MB [†]	499
APS SQ 3105 [†]	105MB	429
APS SQ 3270 [†]	270MB	699

[†] Does not format 44MB cartridges
44MB cartridges — \$65 unformatted, \$70 formatted
88MB cartridges — \$100 unformatted, \$105 formatted
105MB cartridges — \$59 unformatted, \$64 formatted
270MB cartridges — \$95 unformatted, \$100 formatted
All SyQuest Drives Include 1 FREE Cartridge



CD ROM BUNDLE

Model	Without Bundle	B.Y.O.B.*
APS T 3401	\$499	\$399

*Build your own bundle! Buy any 3 CDs from our full line of CD titles and you can get the fastest CD ROM drive available - the APS T 3401 - for only \$399. Call our 24-hour InfoFax line today to receive a complete list of CD titles. Call 1-800-374-5802 and request document ID# 6001

Attention INTERNATIONAL CUSTOMERS! Contact APS' International Sales Department On parle Français. Se habla Español. Wir sprechen Deutsch. International fax response in less than 24 hours, during business hours. Guaranteed!!
何卒迅速な日本語でファクスでも申し込みして下さい。
International Sales

New International phone numbers are:

Français (816) 920-4135 Español (816) 920-4136
Italiano (816) 920-4137 Deutsch (816) 920-4138



Same day shipping for personal checks (Restrictions apply)



Visa, MasterCard, Discover, American Express: No Surcharge.

* Order money back guarantee: Excluding special orders. Your risk is the cost of shipping.
* Drive the Drive Right or Replacement Warranty: The money back is limited to the original purchase price of the drive. APS will, at its discretion, replace a defective product with a new one or a replacement drive. APS will not be responsible for any loss of data or other damages.
* All prices and specifications are subject to change without notice.
* Return policy: 30-day money back guarantee.
* Hard drives include brackets, cables, and SCSI connectors for operation with the specified Macintosh models where applicable. All hard drive units are tested and formatted with Apple's System 7.5.5 software, at least 100 of compressed, publicly distributed software, and APS Technology's APS/POWERLINK SCSI format. APS/POWERLINK SCSI format is not supported by all software.
* All external drive products include a 2.5" x 3.5" SCSI cable. Companion 5.0 drives (not shown) include a 5" x 10" PowerBook SCSI cable.
* International customers must pay for all shipping charges.
* All drive returns are subject to inspection. Regular returns are \$4.95 for 1 year warranty from Friday, 8:00 am to 1:00 pm Saturday. Limited Time.

APS SQ 3105

\$429



APS 44MB SQ555

\$299

1993/94 Macworld Magazine World Class Award - APS Hard Drive Series Readers' Choice



MAGNETO OPTICAL

Model	Internal*	SR 2000
APS 128MB MO [†]	\$769	\$799

Mechanism is Epson Magneto-Optical OMD-5010
All MO Drives Include 1 FREE Cartridge
128 MO cartridge — \$49 unformatted, \$55 formatted

TAPE DRIVES

APS T 155 MB Tape Backup*	\$479
---------------------------	-------

155MB Backup Tapes — \$19, 10 Pack \$170
*Only Available in ZFP Case.

POWERBOOK STUFF

APS SCSI DOC w/PowerMerge	\$39
---------------------------	------

Palm-Sized 25-30 PowerBook SCSI Adapter that includes a docking adapter for PowerBook and termination power indicator. Receive Power-Merge Lite Free with every APS SCSI DOC!

APS SCSI BOY	\$29
--------------	------

Rugged Palm-Sized 25-30 PowerBook SCSI Adapters

APS PowerBalls	\$9.99
----------------	--------

Brighten up that dull granite with a colorful APS PowerBall. Manufactured to the same exacting specifications as the Apple original, the APS PowerBall lets you customize your PowerBook® environment.

APS Technologies 6131 Deramus
Kansas City, MO 64120



APS PowerBalls



THE APS ADVANTAGE

30-Day MBG

Toll-Free Support

Awesome Warranties

Factory Direct Quality

Rapid Repair Return

24-Hour Product InfoFax



APS DAT \$799

DAT

Model	Capacity*	Internal	SR 2000
APS DAT [†]	1.8-26 on 90m tape	\$749	\$799
APS ProDAT [†]	4-56 on 90m tape	949	999
APS Turbo DAT [†]	4-56 on 90m tape	1149	1199
APS HyperDAT [†]	8-106 on 120m tape	1449	1499

*Actual data compression and tape capacity vary greatly depending on the type of data recorded, other system parameters and environment.
60 meter DAT Tape — \$12, 10 Pack — \$110
90 meter DAT Tape — \$16, 10 Pack — \$130
120 meter DAT Tape — \$35, 10 Pack — \$300
All APS DAT Drives Include Retrospect by Dantz & 1 FREE DAT Tape



Great Products. Priceless Support!

I-800 235-3707

CIRCLE 146 ON READER SERVICE CARD

- Our 8th year selling quality drives at incredible prices.
- 30 Day money back guarantee.
- Fast, friendly, and smart service.
- Lifetime technical support.
- 24 Hour turnaround, 1 year replacement policy.
- Thank you for your business!



Syquest

INCREDIBLE SALE!

Complete External Subsystem Includes:
 • Syquest drive in an external enclosure.
 • 2 year warranty on drive & case.
 • 1 Cartridge (1 year warranty)
 • 2 SCSI cables (25 to 50 & 50 to 50)
 • External plug in SCSI terminator.
 • Anubis (by Charismatic) formatting software

105MB \$369 270MB \$625

BUSLOGIC

HOT PRODUCT!

NuBus SCSI Accelerator
 • Allows your FAST SCSI, and SCSI-2 drives to run at full speed.
 • 32-bit bus master DMA transfers up to 20MB/sec across the NuBus.
 • Bus master DMA reduces interrupts to computer thus increasing speed.

\$399 With any drive purchase. (Also available separately)



TOP RATED SPEAKERS!

Save \$10 with the purchase of any drive.
 ACS-50 Pair with 4.5Watt/ch. \$80
 ACS-100 Pair with 6Watt/ch. \$133
 ACS-3 Pair with Subwoofer (30Watt total) \$181
 ACS-300 Pair with Subwoofer (36Watt total) \$279

MICROPOLIS NEW PRODUCT!

• Hard Drives specifically designed for enhanced digital video and audio performance in applications such as multimedia, desktop publishing, and video editing.

Capacity	Model	Internal	External
1000MB	MC2210AV	\$919	\$999
1700MB	MC2217AV	\$1229	\$1269
3000MB	MC1936AV	\$2199	\$2299

HARD DRIVES

Quantum

WE HAVE THE DRIVE YOU WANT AT AN UNBEATABLE PRICE!



Capacity	Model	Internal	External
170MB	ELS170S	\$179	\$239
270MB	LPS270S	\$238	\$298
341MB	LPS340S	\$275	\$335
540MB	LPS540S	\$444	\$504
1080MB	EMP1080S	\$799	\$859
1800MB	PD1800S	\$999	\$1059

Capacity	Speed	RPM	Buffer	Brand	Warranty	Internal	External
170MB	17ms	3600	32K	Quantum	2 Years	\$179	\$239
240MB	16ms	4306	256K	Quantum	2 Years	\$249	\$309
240MB	14ms	4500	256K	Fujitsu	1 Year	\$329 (2.5" for Powerbook)	
270MB	12ms	4500	128K	Quantum	2 Years	\$238	\$298
340MB	12ms	4500	128K	Quantum	2 Years	\$275	\$335
520MB	12ms	4400	256K	Fujitsu	5 Years	\$525	\$585
540MB	9.5ms	5400	128K	Quantum	2 Years	\$444	\$504
1052MB	8.5ms	5400	256K	Micropolis	5 Years	\$859	\$889
1080MB	9.5ms	5400	512K	Quantum	5 Years	\$799	\$859
1080MB	9.5ms	5400	256K	Fujitsu	5 Years	\$789	\$849
1225MB	10ms	4500	512K	Quantum	5 Years	\$965	\$1030
1690MB	8ms	7200	1024K	Seagate	5 Years	\$1459	\$1559
1750MB	10ms	5400	256K	Micropolis	5 Years	\$1169	\$1199
1800MB	10ms	4500	512K	Quantum	5 Years	\$999	\$1059
2060MB	12ms	5400	256K	Fujitsu	5 Years	\$1449	\$1549
2145MB	8ms	7200	1024K	Seagate	5 Years	\$1689	\$1769
2148MB	9ms	5400	512K	Seagate	5 Years	\$1429	\$1529
3020MB	11ms	5400	256K	Micropolis	5 Years	\$2139	\$2169
9100MB	12ms	5400	512K	Micropolis	5 Years	\$4099	\$4199

Includes formatting software and cables.

SYQUEST DRIVES

Capacity	Model	Speed	Buffer	Warranty	Internal	External
44 / 88MB	SQ5110C	20ms	32K	2 Years	\$379	\$445
105MB	SQ3105	14.5ms	64K	2 Years	\$309	\$369
270MB	SQ3270	13.5ms	128K	2 Years	\$579	\$635

Media Qty 1 / 5 88MB \$96 / \$89ea. 105MB \$58 / \$56ea. 270MB \$93 / \$89ea.

Includes 1 Cartridge, formatting software, and cables. Multiple Syquest drive towers in stock!

CD ROM DRIVES

Brand	Model	Speed	Transfer	Type	Internal	External
Teac	CD-50	265ms	335KB/sec	Single disk	\$309	\$379
Toshiba	XM3401	200ms	330KB/sec	Single disk	\$369	\$429
NEC	CDR510	195ms	450KB/sec	Single disk	\$459	\$529
Pioneer	DRM-602X	300ms	307KB/sec	6 Disc Changer	n/a	\$969
Pioneer	DRM-604X	300ms	614KB/sec	6 Disc Changer	n/a	\$1209
Pioneer	DRM-1804X	300ms	614KB/sec	18 Disc Changer	n/a	\$2169

Includes driver software with music play, \$25 Photo CD processing coupon, and cables. Multi Drive CD Towers in stock!

TAPE DRIVES

Capacity	Type	Brand	Speed	Internal	External
250MB	QIC 150	Archive	7MB/min	\$459	\$529
2Gig	DAT	Conner	11MB/min	\$829	\$899
2Gig	DAT	Hewlett Packard	12MB/min	\$959	\$1019
4-8Gig	DAT	Conner	88MB/min	\$1269	\$1329
4-8Gig	DAT	Hewlett Packard	42MB/min	\$1089	\$1109
4-10Gig	DDS-2 DAT	Sony	88MB/min	\$1269	\$1329
4-10Gig	DDS-2 DAT	HP (Fastest Tape!)	88MB/min	\$1449	\$1499

Includes Retrospect 2.0 (#1 backup software), 1 tape, and cables.

OPTICAL DRIVES

Capacity	Speed	Brand	Cache	Feature	Internal	External
1.3Gig	23ms	Hewlett Packard	512K	MultiFunction	N/A	\$2659
1.3Gig	19ms	Maxotix Tahiti III-4	4MB	MultiFunction	N/A	\$2799

Includes formatting software, 1 disk, and cables. 128MB and 650MB models also in stock.

MEGAHAUS
HARD DRIVES

1-800-786-1191
M-F 8-7 Sat 9-3 Central
Local (713)333-1910
Fax (713)333-3024

CODE UASI



1110 NASA Rd. 1 #306
Houston, Texas 77058

Prices and specifications subject to change. All trademarks are registered trademarks of their respective companies. Returns must be in new condition, and may be subject to restocking fee. Shipping is not refundable.

GREAT MINDS THINK ALIKE



See us at
MACWORLD Expo
May 10-12

That's why Macintosh® and ZyXEL Make an Intelligent Team

Two Minds Are Better Than One

Macintosh's® popular and friendly system and ZyXEL's intelligent, full featured fax/modem make a team destined for success. Put these two great minds together, and the possibilities are endless.

Quick Wit

ZyXEL's Ultra High Speed of 19.2Kbps/data and 14.4Kbps/Fax S/R (PLUS Series), with DTE speeds of up to 76.8Kbps, keep you connecting at lightning speeds. And soon you will be able to upgrade to the V.Fast advantage, starting at \$249*, which is sure to make your heart beat faster!

Intelligent Features

ZyXEL's full features are quite a catch for any Mac user: Digitized Voice Capability with Speech Compression, Distinctive Ring, Caller ID, Auto Fall-Forward, Auto Fall-Back, Call-Back Security with Password Protection and Remote Configuration – all of these set ZyXEL apart from other High Speed Fax/Modems and give Mac users the necessary resources and skills to combat the ever changing communications industry.

ZyCellular

ZyCellular gives you cellular capabilities allowing you to send and receive data and fax messages from anywhere, using a laptop and portable cellular phone. ZyCellular is available on all ZyXEL modems.**



The U-1496P Portable

The Powerbook Companion

ZyXEL's U-1496P, the new sturdy, light-weight and full featured portable fax/modem, includes high speed, effective data compression, and digitized voice and cellular capabilities. And ZyXEL's Portable is the perfect accessory for your powerbook, allowing you to communicate from almost anywhere.

Smart VoiceFax Software

With ZyXEL's VoiceFax Software for Macintosh®, you can have voice, fax and answering machine capabilities on one phone line. This allows you to have a voicemail system with up to a 1000 voice and fax mailboxes. Additional features include the automated attendant function which automatically detects between fax and voice.

Sophistication And Savings

ZyXEL's award winning V.32bis/V.32 and V.42bis/V.42 modems are guaranteed for 5 years*** for all parts and labor. And rest assured that ZyXEL's Mac specialized Technical Support Team is available to answer your ZyXEL questions.

A Wise Investment

ZyXEL's Intelligent modem is a wise investment for Mac users everywhere. Like attracts like, and ZyXEL looks to Macintosh® as an example of excellence. Let two great minds work together to change the way you communicate. Order your award winning ZyXEL modem today. **CALL 800-255-4101**



ZyXEL
The Intelligent Modem

4920 E. La Palma Ave., Anaheim, CA 92807 Tel: (714) 693 0808
FAX: (714) 693 0705 BBS: (714) 693 0762

*V.Fast Upgrade price depends upon the model purchased. This offer is valid in the USA and Canada only. **ZyCellular option available for E models from October 31st, 1993. ***2 year warranty on Rackmount models. Specifications and price are subject to change without prior notice. All trademarks are the property of their respective owners.

CIRCLE 115 ON READER SERVICE CARD

USA FLEX
For Great Mac
Peripherals



USA FLEX

**Brings You A Colorful Side
To Printing and Scanning
From Hewlett-Packard!**

COLOR
Starting At...

\$389

C2113A

HP Quality and Reliability

HP DeskWriter 520 Printer

- 600 dpi • Up to 3 ppm • 6 typefaces and 14 TrueType fonts • Water-resistant ink • 100-sheet sheet feeder
- 3 year limited warranty. C2170A \$289
- Black ink cartridge (For DW 520) 51626A \$25

HP DeskWriter C Printer - COLOR Inkjet

- 300 dpi • Up to 3 ppm in black/4ppm in color
- 35 built-in scalable fonts • 1 black & 1 color print cart.
- Sheet & env. feeder • 3 yr. limited warr. C2113A ... \$389

HP DeskWriter 550C Printer - COLOR Inkjet

- Same as the DeskWriter C with 128K buffer and built-in black & color ink cartridges. C2124A **New Lower Price** \$489

HP DeskWriter 560C Printer - COLOR Inkjet

- 600 dpi • 3 ppm in black/4 min. per page in color
- 6 typefaces and 14 TrueType fonts • 1 black & 1 color print cart. • Sheet & env. feeder • 3 yr. limited warr. C2168A \$579

- Black ink cartridge (For color DW models) 51625A \$25
- Color ink cartridge (For color DW models) 51625A \$29

**hp HEWLETT®
PACKARD**
Authorized Dealer

SPECIAL OFFER!

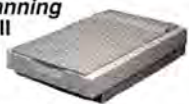
**HP DeskWriter 310 Printer
PLUS COLOR Kit All For...
AND Sheet Feeder \$349**

HP DeskWriter 310 Printer

- 300 dpi • Up to 3 ppm • Over 16 million colors capable with kit (depending on S/W) • 84 typeface, style & size combo • PCL Level 3 w/ extensions • 4.3 lbs • 12" x 2.5" x 7.75" • 1 year warranty

HP DeskWriter 310 Printer sold separately \$299

**COLOR Scanning
HP ScanJet II
CX Scanner**



- 1600 dpi, 16 million colors, 1 yr. warr. C2509A \$929
- Opt. document feeder C1751A \$469
- HP SupportPack H5470A \$135

- HP ScanJet II P Mono Scanning**
- 300 dpi, 256 grayscale C1799A \$689
- Opt. document feeder C1791A \$269
- HP SupportPack H5465A \$85

USA FLEX Carries A Full Line of Brand Name Macintosh Peripherals for Less!

MONITORS
E-MACHINES

- 16" ColorPage T16 II .25mm, 1152x870 \$1199
- 20" ColorPage T20 .25mm, 1152x870 \$2479

SONY

- 14" CPD-1430 .25mm, 1024x768 \$549
- 17" CPD-1730 .25mm, 1024x768 NI \$1079
- 20" GDM-2036S .30mm, 1280x1024 NI \$2069
- Cable adapter (specify model) \$17.95

NEC

- 15" 3FGe .28mm, 1024x768 NI \$559
- 15" 4FGe .28mm, 1024x768 NI \$619
- 17" 5FGe .28mm, 1280x1024 NI \$999
- 17" 5FGp .28mm, 1280x1024 NI \$1099
- 21" 6FGp .28mm, 1280x1024 NI \$1999

SUPERMAC

- SuperMatch 17T .26mm, 1024x768 \$1049
- SuperMatch 20+ 1024x768 \$1649
- SuperMatch 20TXL .25mm, 1024x768 \$2499
- SuperMatch 21 .28mm, 1152x870 \$2329

CD-ROM DRIVES

NEC

- New MultiSpin™ 3Xe External 195ms, 450KB transfer rate, 2 year warranty \$559
- New MultiSpin™ 3Xp Personal/Portable, 250ms, 450KB transfer, 2 year warranty, White or Grey \$429

NEC MAC V/F required, call for details and prices.

CD-ROM DRIVES (cont.)

TEXEL

- MAC Bundle DM-5028** 265ms, 64KB buffer, 300KB transfer, headphones, MAC Driver and cable, Titles: Nautilus, Animals, Groliers Ency., Sherlock Holmes \$629

PRINTERS

NEC

- Silentwriter Model 95f 6ppm, 2MB (exp. to 5MB), 300 dpi, 35 scalable fonts, PS level 2, LJ III w/HPGL emulation \$869
- Silentwriter Model 1097 8ppm, 7MB (exp. to 9MB), 600 dpi, 35 scalable fonts, PS \$1379

**TEXAS
INSTRUMENTS**

New 600 dpi Laser Printing

- microLaser™ Pro 600 Laser Printer** 6MB, (exp. to 22MB), 600 dpi, PS Level 2, PCL 5, AppleTalk, TI toll-free tech. support. PS23 23 scalable and 8 PCL 5 fonts \$1309*
- PS65 65 scalable and 8 PCL 5 fonts \$1529

- microWriter PS23 PostScript Laser Printer** 2MB RAM (exp. to 4MB), 23 PS fonts \$679
- microWriter PS65 PostScript Laser Printer** 2MB RAM (exp. to 4MB), 65 PS fonts \$939
- microWriter toner kit \$45
- * \$1369 Flex price - \$60 end user rebate = \$1309. Valid thru 6-30-94

**\$60 End User Rebate
on microLaser Pro
600 PS 23 model.
Valid thru 6-30-94.**

EXTERNAL MODEMS

Hayes

- Accura 144 + Fax144** 14,400bps data, 14,400bps S/R Group 3 Fax. V.32bis, V.42bis, Free Smartcom data/Fax S/W and 25-pin cable \$159

Robotics

- Sportster® 14,400 Mac&Fax** 14,400bps data, 14,400bps S/R Group 3 Fax. V.32bis V.42bis, Fax^{STF} & Microphone LT S/W & 25-pin cable \$239

Also Available through USA Flex:

CD-ROM Drives
GCC Technologies
PLI

Memory

Call for models and current pricing.

Modems

Global Village

Printers

GCC Technologies

Storage Devices

Iomega and PLI

Video Cards

E-Machine

NEC

SuperMac

ORDER INFORMATION: Minimum order \$80. Minimum shipping and handling per order \$11.95. MasterCard, Visa and Discover accepted for USA, Canada, APO, FPO and Puerto Rico. FLEXCARD accepted for continental USA only. A \$10 surcharge on credit card orders for APO, FPO and Puerto Rico. C.O.D. order under \$500.00, add \$5.00; over \$500.00, add \$10.00 check warranty charge. Call for special UPS Red Blue C.O.D. rates. APO/FPO, add 5% to cover additional shipping and handling. Call for PAL rates. CORPORATE GOVERNMENT ORDERS: Corporations rated 1A1 or better and government agencies accepted on Net 30 terms with receipt of a valid purchase order. Leasing Plans available for qualified businesses only. RETURN PRODUCT INFORMATION: All returns must have prior authorization from our Customer Service Department (1-800-955-1488 or 1-708-351-7172 Mon. - Fri. 7:30 a.m. to 6 p.m. & Sat. 9 a.m. to 2 p.m. est). All returns must be in as-shipped condition, with original packaging, including all warranty cards and manuals. Product Returns may be subject to a restocking charge. We will only accept returns on unopened and non-downloaded software. Software compatibility guaranteed only if we have down-loaded it on your new FLEX system. Thirty (30) day money back guarantee applies to FLEX system only (does not include printers or other non-installed peripherals). We will not accept returns on laser printers if toner cartridge has been installed. All prices and specifications subject to change, without notice. Not responsible for typographical or printing errors. All trademarks and registered trademarks are of their respective holders. ©1994 USA FLEX.

USA FLEX

TO ORDER, CALL...

1-800-950-0354

471 Brighton Drive,
Bloomington, IL 61013



(708) 582-6206 • FAX (708) 351-7204
Government 1-800-723-2260/Education 1-800-944-5588
Government/Education FAX (708) 351-9871
Habla Espanol 1-800-723-5500 • (708) 582-6142

Verhandlungen in deutsch (708) 924-6680
(7:00 Uhr bis 15:00 Uhr) (Midnight to 9 a.m. CT)
Customer Service 1-800-955-1488
(M-F 7:30 a.m. - 6 p.m. / Sat. 9 a.m. to 2 p.m. CT)

Code # MU0504

CIRCLE 145 ON READER SERVICE CARD

Product Index

ADVERTISER PAGE

Display Systems & Video

DGR Technologies 800-235-9748	183
Mirror Technologies 800-643-4143	42-43
Mitsubishi Display Products 800-843-2515	144
Radius Inc. 800-996-7360	153

Education

Educational Resources 800-624-2926	164
IVI Publishing 800-278-5533	162
MacAcademy 800-527-1914	68

Entertainment

Electronic Arts	47
-----------------	----

Financial Management

Aatrix Software 800-462-0854	14
CheckMark Software 800-444-9922	49

General Hardware & Accessories

Moustrak 800-221-6687	64
Orange Micro 714-779-2772	139
VST Power Systems, Inc. 508-287-4600	48

Graphics & Design

Adobe Systems Inc. 800-833-6687, Dept E, ext. 1106	115
ASDG 608-273-9240	50
Deneba Software 305-596-5644	13
Engineered Software 910-299-4843	18
Fractal Design, Corp. 408-688-8800	6
Graphsoft 410-290-5114	55
Letraset 800-343-TYPE	149
Macromedia 800-945-4058	100-101
RasterOps 800-SAY-COLOR	66, 159
Strata 800-869-6855	70
SuperMac 800-334-3005	132

Input Devices

CIC 800-888-9242 ext. 5005	5
----------------------------	---

Mail Order

Advance Business Center 800-723-8262	168
Bottom Line Distribution 512-472-4956	182-183
ClubMac 800-258-2622	186-187
Computer Discount Warehouse 800-291-4CDW	194-195
Direct Connections 800-572-4305	164
Dr. Mac 800-825-6227	199
Express Direct 800-765-0040	172-173
First Source International 800-251-9866	176
LLB Company, The 800-848-8967	174-175
Mac Zone, The 800-436-8000	32-35
Mac's Place 800-897-9009	67
MacCenter 800-950-3726	170
MacConnection 800-800-4444	177-179
MacLand 800-333-3353	169
MacMail 800-222-2808	165
MacProducts, USA 800-622-3475	180
MacWarehouse 800-255-6227	184-185
MegaHaus 800-786-1191	190
SuperMicro 800-352-3415	167
Syex Express 800-876-3467	171
Third Wave Computing 800-624-9307	181
USA Flex 800-950-0354	192

Networking & Connectivity

Apple Computer, Inc.	128-129
Asanté Technologies 800-662-9686	20
CE Software 800-SCESOFT	10
Dayna 801-269-7340	136, 137
Focus Enhancements 800-538-8862	117
SoftArc Inc. 416-299-4723	7
ZyXEL 800-255-4101	191

ADVERTISER PAGE

Organizational Tools

Attain Corp. 617-776-1110	12
Gold Disk, Inc. 800-465-3375	25, 155
Inspiration Software (Ceres Software) 800-877-4292	152
Microsoft	Covers 2-4, 1

Output Devices

Brother International Corporation 908-356-8880	16
Digital Equipment Corp 800-777-4343	122-123
NEC Technologies 800-NEC-INFO	26-27
Tektronix 800-835-6100	71
Texas Instruments 800-527-3500	57, 59
Texas Instruments 800-527-3500	60-61, 63
Xante Corporation 800-926-8839 ext. 2209	156

Performance Enhancers

DayStar Digital 800-962-2077	36
TechWorks 800-421-7758	92

Resources

CompuServe 800-848-8199	138
IVI Publishing 800-278-5533	162

Scanners

AGFA Div. - Scanner 800-685-4271	72
Epson 800-BUY-EPSON	8-9
MicroTek Labs, Inc. 800-654-4160	124
Mirror Technologies 800-643-4143	42-43

Spreadsheets & Numerical Analysis

Abacus Concepts, Inc. 800-666-STAT	18
------------------------------------	----

Storage Systems

APS Technologies 800-235-3707	188-189
FWB, Inc. 415-474-8055	160
Iomega 800-756-3959	51
La Cie Limited 800-999-1455	87-91
MegaHaus 800-786-1191	190
NEC Technologies 800-NEC-INFO	Covers 5-8
Pinnacle Micro 800-553-7070	41
PLI 800-288-8754	154
TDK 800-835-8273 ext. 203	65

Telecommunications

America On-Line	147-148
Hayes Microcomputer Products, Inc. (Smartcom II) 800-874-2937	19
PSI 800-236-6952	166
Supra Corp. 800-944-8772	146

Utilities

Aladdin Systems 408-761-6200	73
Berkeley Systems 510-540-5535	4
Central Point 800-277-3874	44
Charles River Analytics 800-913-3535	56
Connectix Corporation 800-950-5880	142
Dantz Development 510-849-0293	28
DataViz, Inc. 800-732-0030	130
Datawatch 919-549-0711	24
Insignia 800-848-7677 Dept. A	135
Now Software 800-237-2078	150
Teknosys 800-873-3494	62

Word Processing

WordPerfect 800-526-2296	74-75
--------------------------	-------

General

Apple Computer, Inc.	15, 17, 22
Apple Computer, Inc.	109-111
Apple Computer, Inc.	140
Intel 800-395-7009 ext. 111	30-31



COMPUTER DISCOUNT WAREHOUSE™

CDW® YOUR COMPLETE SOURCE FOR MACINTOSH SOFTWARE

Mac Deal\$™
says:
"Let me introduce
you to **CDW**"



**CDW
TOP SELLER**

Practical Peripherals 14.4K Data/Fax MiniTower Modem

- ✓ 14.4K bps data and fax
- ✓ V.42 error control, V.42bis data compression
- ✓ Group 3 send/receive fax
- ✓ Caller ID support
- ✓ Includes Macintosh serial cable and QuickLink II software
- ✓ Lifetime Warranty!

ONLY \$189.50 CDW 27958



**NEW
LOWER
PRICE**

Iomega Bernoulli Transportable 90MB Pro

- ▲ 19ms effective access time
- ▲ Reads 44MB disks
- ▲ SCSI-2 interface

ONLY \$349.65 CDW 36785

90MB Cartridge..\$89.90 CDW 19965



**Xtra
VALUE!**

Magnavox CM2080 14" .28mm Monitor

ONLY \$257.09 CDW 38179

CDW® =
✓ The premier direct
marketer of PC products
✓ 10 years in business
✓ Most orders ship the
same day
✓ Toll-free technical support
for CDW customers
**Total commitment to
customer satisfaction**

Adobe	
Acrobat Exchange 1 user	125.99
Dimensions	119.55
Illustrator V5.0	359.06
Illustrator V5.0 DLX CD	429.28
Photoshop V2.5.1	539.06
Photoshop V2.5.1 DLX CD	615.94
Premiere V3.0	444.38
Premiere V3.0 DLX CD	506.31
Streamline V3.0	95.19
Super ATM	63.06
Type Basics	119.03
Type Manager V3.6	39.86
Type on Call V3.0 CD	65.44
TypeSet Value Pk	38.76
Wild Type	38.63

Aldus	
Felch V1.2	185.73
Freehand V4.0	372.66
Gallery Effects Vol. 1	125.94
Home Publisher V1.0	44.53
IntelDraw V2.0	125.54
Pagemaker V5.0	339.23
Pagemaker V5.0 10 user	3548.24
Pagemaker V5.0 license	449.48
Personal Press V2.0	96.06
Persuasion V2.1	204.21
Persuasion V2.1 license	248.45
Pre-press V1.6	311.35
SuperCard V1.6	125.53
SuperPaint V3.5	92.27
Touchbase Pro V3.0	44.34

Adobe Photoshop V2.5.1	
ONLY \$539.06	CDW 33967

Altsys	
EPS Exchange V2.0	85.93
Fontographer	248.84
Metamorphosis Pro V2.04	85.94

Ares	
Font Chameleon V1.0	172.53
Font Hopper	39.24
Fontmonger V1.5	89.11

Broderbund	
Autopack Atlas	55.99
Bannermania	21.26
Business Graphics Collection	22.57
Carmen Sandiego USA DLX	39.24
Carmen Sandiego World	28.88
Carmen Sandiego World DLX	39.24
Carmen Sandiego World DLX CD-ROM	53.85
Might and Magic III	34.84
MYST CD-ROM	48.28
Patton Strikes Back	12.28
Playmaker Football	12.28
Prince of Persia	29.45
Royal Flush	29.14
The Print Shop	34.56
Typesetter V2.0	119.16

Caere	
OmniPage Direct	185.73
OmniPage Pro V2.0	458.25
OmniScan	375.87

Central Point	
Anti Virus	41.58
MacTools Deluxe	86.51
MacTools V3.0	86.50

Claris	
Brush Strokes	89.03
Brush Strokes Comp Upg.	71.21
ClarisWorks V2.1	185.72
FileMaker Pro V2.1	247.71
FileMaker Pro V2.1 Comp Upg.	111.22
Impact V1.0	247.71
MacDraw II V1.1	123.50
MacDraw Pro V1.5	248.51
MacPaint V2.0	79.08

CompuServe Membership Kit	
CompuServe Membership Kit	24.84
Corel SCSI	85.44

Connectix	
Desktop Utilities	56.72
Maxima V2.0	43.33
On the Road V1.0	55.72
PowerBook Utilities	55.72
RAM Doubler	55.72

Dantz	
DiskIt Direct V1.0	29.78
DiskIt Pro V1.1	69.50
Retrospect Remote V2.0	245.78
Retrospect V2.0	136.88

Datawatch	
Citadel w/Shareddr	55.69
ScreenLink V2.0 2 user	55.69
Supersite Utilities	81.10

Delrina	
DelrinaFax V1.5	79.62
Far Side Daily Planner	38.59
Intermission Screen Svr	26.30

Deneba	
Artworks V1.0	98.49
Canvas Design Tool Pack	34.51
Canvas Imaging Tool Pack	34.51
Canvas Utility Tool Pack	34.51
Canvas V3.5	255.61
Ultra Paint V1.03	53.80

Electronic Arts	
4-D Boxing	29.40
Chuck Yeager's Air Combat	21.66
Cyberplasm Formula CD	32.94
Deja Vu 1 & 2 CD	24.33
DeLuxe Music V3.0 CD	86.52
Harpwood II CD	41.60
PGA Tour Golf CD	35.56
Populous CD	29.40
Showdown Poker	29.40
Total Destruction CD	71.12
V for Victory II	41.60
Vampires Confidential	39.18
Victory at Sea	41.60

Entertainment	
Berkeley After Dark V2.0	28.29
Berkeley Disney Screen Svr	27.81
Berkeley More After Dark	23.88
Berkeley Star Trek Screen Svr	28.45
Compton's Budget Guide USA	16.57
Compton's Business Background	25.30
Compton's Consumer Info	25.31
Compton's Deep Voyage	25.30
Compton's Healing Foods	25.31
Compton's Home Remedies	25.30
LucasArts Indiana Jones Last Crusade	21.00
LucasArts Loom	18.00
LucasArts Secret of Monkey Island	21.00
Maxis A-Train w/Contract Set	39.95
Maxis DoodleMan V1.0	18.22
Maxis EL Fish	34.15
Maxis SimCity 2000	39.82
Maxis SimCity Classic	23.28
Maxis SimEarth	29.12
Maxis SimLife	29.12
Microprose Civilization	44.53
Microprose Command HQ	17.59
Microprose Railroad Tycoon	22.39
Microprose Rex Nebula	35.88
Paramount Busytown CD	28.74
Paramount Lynx CD	38.98
Paramount Move Select CD	34.19
Paramount Rock, Rap and Roll CD	38.98
Paramount Jump Raven CD	38.98
Passport Encore V3.0	346.19
Passport Master Trax Pro	229.05
Passport Trax	34.68
Pygnosis Lemmings	34.21
Pygnosis Lemmings II	34.21
Velocity Development Spectre	24.84
Velocity Development Spectre VR CD	34.21
Velocity Spectre Supreme	34.19
Velocity Spectre Supreme LAN 2 user	49.11
Virgin 7th Guest CD	49.11

Frame Technology	
FrameMaker V4.0	561.25
FrameMaker V4.0 license	499.06
FrameMaker	74.51

Insomnia	
FreeSoft White Knight 11	83.52
Gryphon Morph V2.0	135.50
Hayes Connect V3.1	69.77
Hayes Smartcom III V3.4	79.58
HSC Kai's PowerTools V2.0	96.20

Interplay	
Battlechess	17.91
Battlechess Enhanced	44.56
Checkmate	31.32
Dvorak on Typing	28.47
Mario Teaches Typing	27.67
Omar Sharif Bridge Deluxe	34.17
Out of This World	34.27
Peter Gabriel XPLORA 1	47.06
Star Trek 25th Anniversary	34.19

Kent Marsh	
IMS TurboCAD V1.0	75.69
Informix Wingz V1.1	241.66
Intuit Quicken V4.0	42.93

Lotus	
1-2-3 V1.1	276.77
1-2-3 V1.1 Comp Upg	98.56
1-2-3 V1.1 license	219.84
1-2-3 V1.1 Server	322.35
1-2-3 V1.1 Server Upg	98.56

Macromind	
Macromedia Action Bundle	269.46
Macromedia Director V3.1	804.88
Macromedia Director V3.1 Upg	252.82
Macromodel V1.5	652.13
Macromodel V1.5 Upg	94.84
SoundEdit Pro	189.16
Swivel 3D Professional	278.72

Microsoft	
Cinemania 1994	53.44
Excel V4.0	299.78
Excel V4.0 Upg	116.54

Microsoft Office V3.0	

950 Tower Lane, 18th Floor
Foster City, CA 94404
Phone (415) 378-5600
Fax (415) 378-6903

National

Janet Ryan, Publisher (415) 378-5600
Allen Kemmerer, Associate Publisher (415) 378-5640
Jeff Cohen, National Sales Director (415) 378-5692
Elizabeth McGinnis, Advertising Coordinator
(415) 378-5606

Northeast (MA, ME, NH, RI, VT, CT, east Canada)

Joseph Bigley, District Manager
Mystic Center, 10 President's Landing
Medford, MA 02155; (617) 393-3065
Ellen Skugstad, Account Representative (415) 378-5657
Julianne Roche, Sales Assistant (617) 393-3064

Mid-Atlantic/Southeast (NY, NJ, PA, DE, MD, DC, VA, WV, NC, SC, GA, FL)

John DeCesare, District Manager
One Park Ave.
New York, NY 10016; (212) 503-5416
Peter O'Sullivan, Account Representative (415) 378-5677
Tom Wan, Sales Assistant (212) 503-5144

South Central (ALAB, AZ, CO, IA, MS, NM, OK, TX, central Canada)

Stephen Shore, Central Ad Director
5956 Sherry Lane, Suite 625
Dallas, TX 75225; (214) 360-5785
Joann Casey, Account Representative (415) 378-5622
Molly Eastin, Sales Assistant (214) 360-5780

Midwest (IL, IN, IA, KS, KY, MI, MN, MO, NE, ND, OH, SD, TN, WI)

Pete Hoffman, District Manager
150 North Wacker Drive, Suite 2500
Chicago, IL 60606; (312) 214-7343
Joann Casey, Account Representative (415) 378-5622
Marceline Rogers, Sales Assistant (312) 214-7388

Northwest CA (San Francisco and north), NV, AK, OR, HI, MT, WA, ID, Canada (British Columbia, Alberta, and Saskatchewan)

Lynn Ingham, District Manager
950 Tower Lane, 18th Floor
Foster City, CA 94404; (415) 378-5628
Chris Marrow, Account Representative (415) 378-5658

Bay Area (Carmel to San Francisco)

Dennis Sanchez, District Manager
950 Tower Lane, 18th Floor
Foster City, CA 94404; (415) 378-5605
Nancy Romano, Account Representative (415) 378-5651
Colleen Dasher, Sales Assistant (415) 378-5634

Southwest CA (So Cal, UT, WY)

Dale Hansman, District Manager
11766 Wilshire Blvd., Suite 1550
Los Angeles, CA 90025; (310) 268-1376
Deborah Tyo, Account Representative (415) 378-5630
Margy Level-Green, Sales Assistant (310) 268-1375

Advertiser Index

RS#	ADVERTISER	PAGE	RS#	ADVERTISER	PAGE
48	Aatrix Software	14	154	Insignia	135
168	Abacus Concepts, Inc.	18	N/A	Inspiration Software	152
N/A	Adobe Systems Inc.	115	N/A	Intel	30-31
150	Advance Business Center	168	125	Iomega	51
52	AGFA Div. - Scanner	72	N/A	IVI Publishing	162
55	Aladdin Systems	73	47	La Cie Limited	87-91
N/A	America On-Line	147-148	65	Letraset	149
N/A	Apple Computer, Inc.	109-111	88	LLB Company, The	174-175
N/A	Apple Computer, Inc.	128-129	135	Mac Zone, The	32-35
N/A	Apple Computer, Inc.	140	167	Mac's Place	67
N/A	Apple Computer, Inc.	15	83	MacAcademy	68
N/A	Apple Computer, Inc.	17	1	MacCenter	170
N/A	Apple Computer, Inc.	22	N/A	MacConnection	177-179
146	APS Technologies	188-189	152	MacLand	169
86	Asanté Technologies	20	14	MacMall	165
6	ASDG	50	144	MacProducts, USA	180
60	Attain Corp.	12	110	Macromedia	100-101
N/A	Berkeley Systems	4	156	MacWarehouse	184-185
21	Bottom Line Distribution	182-183	160	MegaHaus	190
98	Brother International Corporation	16	N/A	Microsoft	C2-C4, 1
N/A	CE Software	10	159	MicroTek Labs, Inc.	124
N/A	Ceres Software	152	118	Mirror Technologies	42-43
69	Central Point	44	166	Mitsubishi Display Products	144
49	Charles River Analytics	56	94/95	Moustrak	64
38	CheckMark Software	49	116	NEC Technologies	26-27
N/A	CIC	5	104	NEC Technologies	C5-C8
121	ClubMac	186-187	142	Now Software	150
N/A	CompuServe	138	130	Orange Micro	139
136	Computer Discount Warehouse	194-195	141	Pinnacle Micro	41
62	Connectix Corporation	142	155	PLI	154
28	Dantz Development	28	75	PSI	166
162	DataViz, Inc.	130	68	Radius Inc.	153
163	DataViz, Inc.	130	58	RasterOps	159
3	Datawatch	24	63	RasterOps	66
33	Dayna	136	64	SoftArc Inc.	7
34	Dayna	137	45	Strata	70
93	DayStar Digital	36	74	SuperMac	132
165	Deneba Software	13	20	SuperMicro	167
143	DGR Technologies	183	76	Supra Corp.	146
78	Digital Equipment Corp.	122-123	39	Syex Express	171
41	Direct Connections	164	90	TDK	65
35	Dr. Mac	199	128	TechWorks	92
112	Educational Resources	164	36	Teknosys	62
56	Electronic Arts	47	122	Tektronix	71
73	Engineered Software	18	N/A	Texas Instruments	57
N/A	Epson	8-9	138	Texas Instruments	59
124	Express Direct	172-173	139	Texas Instruments	60-61
N/A	First Source International	176	140	Texas Instruments	63
127	Focus Enhancements	117	147	Third Wave Computing	181
24	Fractal Design, Corp.	6	145	USA Flex	192
71	FWB, Inc.	160	32	VST Power Systems, Inc.	48
26	Gold Disk, Inc.	155	N/A	WordPerfect	74-75
22	Gold Disk, Inc.	25	126	Xante Corporation	156
108	Graphsoft	55	25	Ziff-Davis Press	158
61	Hayes Microcomputer Products, Inc.	19	115	ZyXEL	191

Q: What's the best value
for your
marketing dollar?



A: Reprints, of course!

Dollar for dollar, you just can't beat a reprint of a great review; and there's never been a better time to order. Faster turnaround times and price incentives make this a great time to have your product review or advertisement reprinted. Why not call today? It really makes "cents!"

Contact: Carol Peters,
Reprints Manager (212) 503-5447

ZIFF-DAVIS REPRINTS

ONE PARK AVENUE 16th FLOOR NEW YORK NEW YORK 10016

Dr Mac

WE TAKE CARE OF YOU

Your Best Mail Order Source

Over 2,500 Items In Stock!

DELRINA FAXPRO

Conveniently send faxes directly from your Mac without running to your fax machine! Receive faxes directly into your computer, too. Quickly file, track, and find faxes.

ITEM #DELR12
Manufacturer: Delrina

NEW



FASTTRACK 2.1

The easy-to-use Gantt chart scheduling tool that allows users to create and update quality timeline schedules.

\$164

Add text blocks, logos, titles, and pictures for sharp looking schedules! ITEM# AEC11-53
Manufacturer: AEC Software

CD ALLCACHE

A simple, quick solution to force your CD-ROM drive to its

maximum potential, increasing performance of even the fastest drives on the market! Supports virtually all CD-ROM drives, mechanisms and formats including Kodak's Photo CD. ITEM #CHMA10

Manufacturer: CharisMac Engineering

NEW



Manufacturer:
PointTex

ACTION! MOUSE

The smart, multi-functional, ergonomically-designed two-button replacement mouse that is perfect for any Mac, from SE to Quadra.

\$48

ITEM# POINT10

Bundled with

MacWrite Pro 1.5

ITEM# POINT11 \$118

Bundled with

MacDraw Pro 1.5

ITEM# POINT12 \$248

- The Lowest Prices
- The Widest Selection
- \$3 Overnight Delivery
- International Accounts
- Corporate Accounts
- Gov't Accounts
- Educational Accounts

**Special
International
Dealer
Programs
818-504-1800**

CIRCLE 35 ON READER SERVICE CARD

1-800-825-6227

FAX 818-504-9380

MARKETPLACE

The cost-effective buying arena that provides sellers of Macintosh compatible products 3 advertising options: Premier, Classified and BusinessCard to meet their specific advertising goals - reaching 452,443 Macintosh Business Buyers. All sections are set up by product category and offer reader service

PREMIER

The four-color showcase that spotlights leading-edge products and services.

201-206

CLASSIFIED

Flexible-format display advertising that offers diverse sizes plus two and three color options. Section meets dynamic advertising needs for all Macintosh products and services.

207-227

BUSINESS CARD

A forum for innovative, unique, low-cost and hard-to-find Macintosh hardware, software and miscellaneous products and services.

228-229

PRODUCT CATEGORIES

	PREMIER	CLASSIFIED	BUSINESSCARD		PREMIER	CLASSIFIED	BUSINESS CARD
HARDWARE							
Accelerator Boards		207	228	Recreation			
Bar Coding	201	207		Religion			229
CD-ROM			228	Sales Marketing			
Communications				Scientific	206		
Computer Systems		207		Security			
Data Acquisition			228	Shareware			
Disk Drives	201,203			Statistics			
Diskettes				Utilities		223	
General		214		Adult Software		225	
Input Devices	201		228				
Memory Upgrades		214		MISCELLANEOUS			
Networking				Accessories		223	
Peripherals	202	218		Books/Catalogues			
Powerbook Products	203			Business Opportunities			
Power Supplies				Consulting/Programming			
Printers	204		228	Data Conversion Services		223	
Scanners		218		Data Recovery Services		223	
Security				Desktop Publishing Services	206	223	229
Tape Drives				Diskette Copy Services		224	
Used Equipment				Furniture			
				Insurance			229
SOFTWARE				Novelties			
Accounting			228	On-Line Services	206		
Back Up Systems				Repair Services			229
Bar Coding		218		Slide Imaging Services		224	
Business	204		228	Supplies		224	
Business Time Management				Training			229
CAD/CAM		219					
CD-ROM	204	219		ACCOUNT REPRESENTATIVES			
Communications/Networking		219	229	East Coast —CT, DC, DE, FL, GA, MA, MD, ME, NC, NH, NJ, NY, PA, RI, SC, VA, VT, WV			
Consulting/Programming			229	Ann Faustini 212-503-5043			
Desktop Publishing				Account Manager			
Educational				MidWest —AL, AR, AZ, IL, IN, KS, KY, LA, MI, MN, MO, MS, ND, NE, OH, OK, SD, TN, TX, WI, CANADA, OVERSEAS			
Engineering				Christine McGuinness			
Entertainment/Games	206		229	212-503-5941			
Financial				Account Representative			
Fonts		222		NorthWest —AK, CA (209, 408, 415, 510, 707, 916), ID, MT, OR, WA, WY			
Foreign Languages	205	222		Dennis Leavey 212-503-5111			
Genealogy				Account Representative			
General		222		Southwest —AZ, CA (213, 310, 619, 714, 805, 818), CO, HI, NM, NV, UT			
Government				Laura Salerno 212-503-5140			
Graphics		222		Sr. Account Representative			
Health							
Language Tools	206						
Legal							
Lottery							
Medical/Dental			229				
Music/MIDI	206	223					
Networking							
Personal Management							
Programming Tools			229				
Public Domain							
Real Estate			229				

CENTRAL ADVERTISING STAFF

Robert A. Bader
Vice President,
Central Advertising

Paul A. Fusco
Director, Sales & Marketing

Catherine Conway
Sales Manager

Nepreil Foster
Advertising Coordinator

Vicki Egan
Production Manager

Bessi Dion
Assistant Production Manager

AD SALES INFORMATION

One Park Avenue, Third Floor
New York, NY 10016
(212) 503-5115 or
(800) 825-4ADS

Thinking of Bar Codes ...



Think Videx!!

If you need a quality bar code reader small enough to fit in the palm of your hand, Videx has a bar code reader for you.

The TimeWand I offers credit-card sized portability, ideal in time and document tracking applications. The rugged DuraWand can take the punishment typically found in

delivery and security applications. The TimeWand II offers the durability and computing power necessary in applications ranging from hospital patient care to warehouse inventory.

Call today to receive a free information kit on Videx portable bar code readers.

1105 N.E. Circle Blvd., Corvallis, OR 97330
503-758-0521 • Fax 503-752-5285



Videx, TimeWand, and DuraWand are registered trademarks of Videx, Inc. GCO4628

CIRCLE 172 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 seven 5-1/4" HH.



WX2866C-FH



WX28350C



WX28525

CALL US FOR A PORTFOLIO TO ORDER 800-75-WETEX 93838

WETEX INTERNATIONAL (USA) CORP.

1122 W. Washington Blvd., Suite D, Montebello, CA 90640
Tel: 213-728-3119, Fax: 213-728-3203

CIRCLE 173 ON READER SERVICE CARD

PORTABLE

Battery, PS, & Charger all inside.

30 Series The worlds smallest self-contained, battery powered hard drive. Internal power supply, **No Power Bricks**, 4 hour batteries and charger (optional). 85, 120, & 250 MB available. Up to 500MB or unlimited storage with removable option.

50 Series



1.8"x4"x7"

50 Series Includes:
* 85 to 1000MB Hard Drives,
* 105 MB 3.5" Syquest cart. drive,
* Removable 128 Mag-Optical

70 Series



2"x5"x7"

70 Series Includes:
* 700 to 2.1 Gigabytes
* 2 to 16 Gbytes DAT
* 160 to 600MB Tape



Removable option

30 Series



1.7"x3"x5.3"

115 Series



1.8"x6.8"x9.5"

115 Series Includes:

* 128/256 MB Mag-Optical 3.5"
* 650 MB Mag-Optical 5.25"
* CD-ROM 200ms, Multi-session
* 150 MB remov. Bernoulli

(408) 983-1127

Fax (408) 243-2885

375A Saratoga Ave. San Jose, CA 95051



30 Day money Back



"The Brick" Liberty does NOT use this and our competitors won't show it in their ads.



SEEING IS BELIEVING!

Your four-color Premier ad gets out more than the word to Macintosh Business Buyers. It shows them—with full-color depth and dimension—your commitment to long-term business...your confidence in your products. Seeing is believing!

Call today for details on how you can target 452,443 primary readers with an affordable display in Premier!

MacUser Premier

800-825-4237

Bright color. Bright price.

\$2,299.

SPECIAL OFFER!



The BOXLIGHT 1280 ColorShow Projection Panel. Our Brightest true-color panel. And for \$700 off the list price, it's an unbeatable value.

- Compact, easy-travel panel
- 640 x 480 resolution
- PC and Mac compatible
- FREE remote and cables

Your direct source for all the bright answers.

- Widest selection
- Instant availability
- Overnight shipping
- 30-day guarantee



BOXLIGHT®

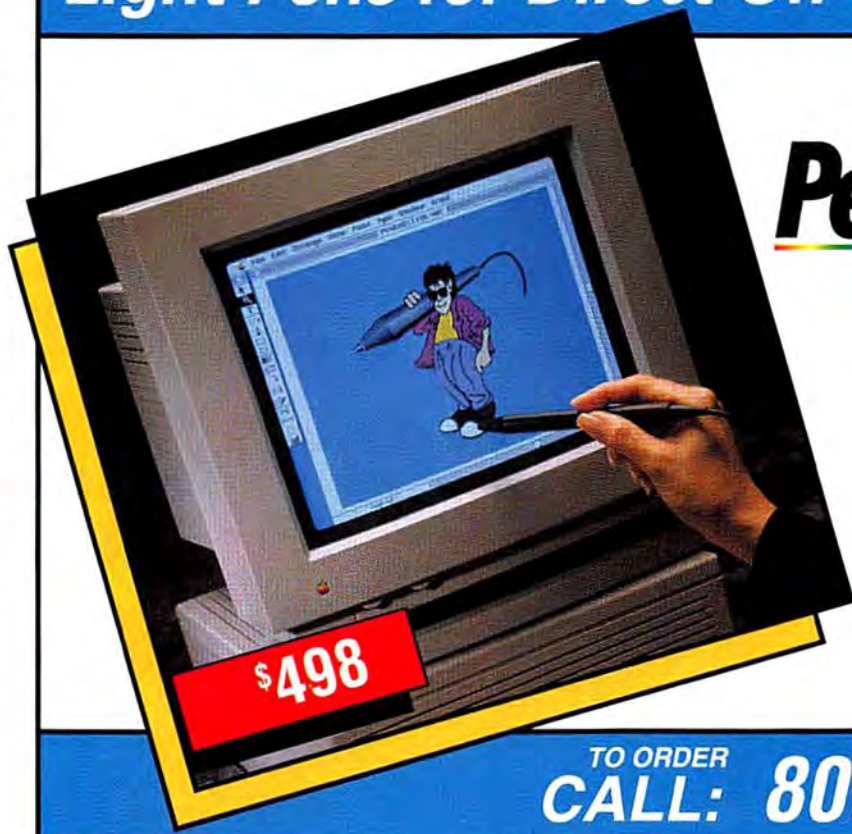
17771 Ford Dr. N.E., Poulsbo, WA 98370
206/779-7901 • Payment: Visa, MasterCard, American Express, COD and Purchase Order (some restrictions). Leasing and rental options available. 30-Day Money-Back Guarantee.

Call Today 1-800-497-4008

CIRCLE 174 ON READER SERVICE CARD

PREMIER

Light Pens for Direct On-Screen Input!


PenDirect[™] ADB
 for Macintosh_™

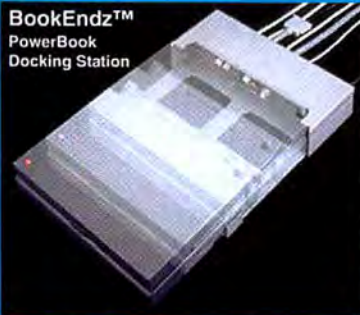
- **Easy to use** - drawing, pointing, clicking that's fast and natural!
- **Simple to install** - ADB port (No serial port required)
- Works with any program
- Works with any monitor
- 2-year limited warranty
- 30-day no-risk money-back guarantee
- See us in The Mac Zone

A product of

 FTG Data Systems
 (714) 995-3900

 TO ORDER
CALL: 800-962-3900

CIRCLE 176 ON READER SERVICE CARD

PowerBook[™] Enhancements
BookEndz[™]
 PowerBook
 Docking Station


- Specifically made for PowerBook 140-180c
- No cable confusion
- Dock/undock in 2 sec.
- Works with all ports
- Houses your cables
- Assembles in minutes
- Power cord ext. incl.
- Other cables available
- **BE148 \$129.00**

- Works with Duo's, PowerBooks, MSDOS & Windows notebooks
- Places monitor above notebook computer
- Works with or without BookEndz dock
- Slide-out tray tilts computer for comfortable typing
- View both screens or slide computer inside of stand and use with external keyboard
- Supports up to 100 lbs
- **MS1 \$59.95**

**Monitor
Stand**

PBPack Accessory Battery Case


- Combines PB 140-180c & VST ThinPack[™]
- Attach/detach case and PowerBook in 5 sec.
- No assembly required
- All ports are accessible
- Works with Kensington Microsaver[™]
- Adds only .72" to rear and .5" to bottom of PB
- Weighs less than 1 lb
- **PB48: case \$40**
- **PB48 Plus: case with ThinPack \$239.95**

- Modem and network connection travel kit for all computers with an RJ-11 modem port
- Includes 16' retractable cord, special triplex adaptor, travel bag, & How to Connect guide
- Avail. w/network conn.
- **\$19.95 - \$59.95**

PocketNet[™]


Pilot

Technologies, Inc. Major credit cards accepted. Dealer inquiries welcome

Order Line 800-682-4987

 10025 Valley View Road, #130
 Eden Prairie MN 55344
 Tel: 612-828-6002 FAX: 612-828-6806

Terminate SCSI Problems!**SCSI Vue™**
Terminator & Cables

patent pending



- Improves Performance
- Fixes Problems
- Fast & Fast Wide SCSI
- Diagnostic Analyzer
- Supports SCSI 1-2-3

Ph: 510-471-6442
Fax 510-471-6267**Granite**
D•J•G•I•T•A•L3101 Whipple Rd.
Union City, CA. 94587

CIRCLE 178 ON READER SERVICE CARD

**COST-EFFECTIVE FULL
COLOR ARRIVES!**

MacUser Marketplace Premier makes the power and panache of 4-color display advertising truly affordable. Let Premier launch your company to the "big time"—Over 452,443 primary readers every month!

Source: ABC, June 1993

MacUser Premier
800-825-4237**MacUser**
MARKETPLACE**Connect Your
Macintosh to
any TV...****The Compact Macintosh
Presentation Solution**

The Presenter Plus Mac/PC turns your Macintosh into an incredible presentation machine. Easy plug-and-play external hook-up makes group presentations much more efficient and certainly less expensive. Print to video tape so others can share your presentation. Forget carrying heavy equipment to your presentation, that's history. Why dim the lights? That's for overhead projectors, also history.

So with your PowerBook and The Presenter Plus in your briefcase use the available TV and you're ready for that Academy Award performance.

\$429**The Presenter Plus Mac/PC —**
When your presentations count!**800/356-3932****CONSUMER
TECHNOLOGY**

For questions and a dealer nearest you, call us at 800/356-3932
Fax 503/671-9066

© 1993 Consumer Technology Corporation. All rights reserved. All prices, terms and product names appearing in this ad are supplied in good faith, or to represent a best estimate of the respective values.

CIRCLE 187 ON READER SERVICE CARD

PREMIER**BTI Batteries and Chargers for PowerBooks****Everything you need to enhance
the power in your PowerBook.**

for all Macintosh PowerBooks (except 100 & Duos)

MC-SC100 PowerChargerPlus \$149.95

- Fast charging - Fully charge in approx 1.5 hrs.
- CMOS charging control • Battery conditioning
- Works with Apple AC power supply
- Comes with AC adapter and Auto lighter adapter

MC-180 Power Gage Battery \$89.95

- Long life • Built in LED charge indicator
- Integrated quick lock cover • Gold plated terminals

MC-AP100 Auto Power adapter \$99.95

- Powers PowerBook from auto lighter socket
- Optionally supplies power to PowerCharger simultaneously

Not shown: • MC-170 PowerBook battery \$69.95

• MC-CHR PowerCharger \$129.95

• MC-KIT Starter Kit - includes PowerCharger and MC-170 battery \$149.95



Dealers: BTI products available through Ingram Micro

To Order: Call Toll Free 800.982.8284

5700 Bandini Blvd., Commerce, CA 90040 Tel: (213)728 7874 Fax: (213)728 7996

BTI

BATTERY TECHNOLOGY, INC.

CIRCLE 180 ON READER SERVICE CARD

Virtual Tarot™

Multimedia for your Mind.™

With Virtual Tarot, anyone can immediately begin to understand the mystery of the Tarot.

- Ten different card layouts
- Cards dealt through your actions, not by computer's
- Personal Diary for logging divinations for future review
- Both traditional and contemporary card meanings
- Vocal descriptions of layouts, card positions and meanings
- Video Philosophy and Instruction sections
- Card Review for 21 groups of cards

Over 300 megabytes of breathtaking computer generated graphics and animations, original music, video and vocals.

New Edition

"Virtual Tarot is a beautiful title and even people skeptical about the mysticism surrounding the tarot will enjoy the introduction it inspires."
— NewMedia Magazine, December 1993

To order call 800-292-3157

Virtual Media Works Inc. P.O. Box 70030, Sunnyvale, CA 94086

\$49.95 CD-ROM only**\$64.95** CD-ROM plus

Rider Waite Tarot Deck

Visa/MC accepted

CIRCLE 181 ON READER SERVICE CARD

POWER BOOK PRODUCTS—SOFTWARE/CD-ROM**Big View for PowerBook! - Small Price!**

TV SCAN will turn your PowerBook into an incredible, powerful, multimedia Oscar winning presentation machine. View and record color presentations to big screen TV/monitors, LCD projectors and VCR's. Great for business and education classroom training. External device weighing less than 1 pound easily transported from site to site. Simple, fast no software interface. TV SCAN is packed with features. Including a superior quality color NTSC composite or S-Video signal. Real time

hardware proprietary flicker reduction. Underscan selection with vertical and horizontal positioning. Requires PowerBook 160, 165, 165c, 180, 180c, LC, Performa, Centris, Quadra family or PC/VGA Windows computer.

To Order call (603) 434-0800

Visa/MC, Purchase Orders Accepted

\$429.00

with 30 Day money back

COMPUTERVIDEO Enhancements, Inc. Bldg 46-B, Londonderry, NH 03053

CIRCLE 185 ON READER SERVICE CARD

AtmoSphere™ trackballs.. Change Your Trackball As Often As You Change Your Mood!

HAPPY FACE **EYEBALL** **8-BALL** **YING-YANG** **CRYSTAL BALL** **GLOBE***

Fun 3-Pack **NEW AGE 3-Pack**

Small size compatible with Macintosh PowerBook models 140-180c. Large size compatible with Kensington, MicroSpeed and Curtis trackball units for Apple and IBM.

Get In Touch With The AtmoSphere™

PowerBook: Singles = \$9.95 • 3-Packs = \$19.95
Kensington: Singles = \$14.95 • 3-Packs = \$29.95
please add \$4.25 for shipping & handling

USA MADE **CUSTOM LOGOS MAKE A PERFECT PROMOTION. INQUIRE WITHIN**

800-425-2200 Or Send Check or Money Order. Or Fax Us at (516) 868-1685

7 Days a Week, 24 Hours a Day

CompAesthetics, Inc., 3280 Sunrise Hwy, Suite 184, Wantagh, NY 11793

CIRCLE 182 ON READER SERVICE CARD

100 AWARD WINNER **DIGITAL GOURMET**

Award winning electronic cookbook series with over 5000 recipes from around the world. Add as many recipes as you wish, change serving size up or down. Print recipe, shopping lists, nutritional info and take it to the kitchen. Automatically calculates nutrition for recipes you add. Extensive search options let you find recipes fast. Incl. Japanese, Chinese, French, Italian, Greek, Russian, Kosher, Greek, Vegetarian, Lactose Free, Soups, Salads, Breads, Desserts, Empty Cookbook for creating your own book, Bartender has 500 alcoholic and non-alcoholic drinks. 100 photos. Bon Appétit! Also on 3.5" disks (as low as \$35).

NEW **TeleTypesetting • Books-On-Disk**

311 Harvard St., Brookline, MA 02146
(617) 734-9700, Fax: (617) 734-3974

TO ORDER CALL:
1-800-255-6227
1-800-800-3333

CIRCLE 186 ON READER SERVICE CARD

Now that we've got it just right, it's ready for Macintosh

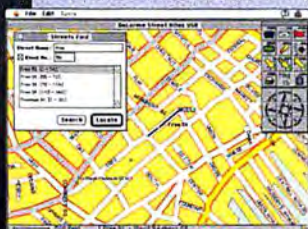
\$125
SUGGESTED RETAIL PRICE \$149

Introducing Street Atlas USA™

Street Atlas USA is a complete street map of the entire country on a single CD-ROM. You can zoom in on every city, town, or rural area in the country — right down to the tiniest backroads. The database gives you instant access to more than 12 million street segments and more than 1 million lakes, ponds, rivers, parks, railroads, and more! Whether you're traveling across town or across the country, Street Atlas USA gives you all the mapping information you'll ever need.

COMPREHENSIVE, SEAMLESS MAPS OF ALL 50 STATES

- Search by zip code, place name, or phone number
- Print maps directly or export them to other applications
- Zoom in and out with ease
- Search block ranges in metropolitan areas

**Order Today!****Call 1-800-452-5931****EXT. 8191****FAX: 207-865-9291****30-DAY MONEY-BACK GUARANTEE****AE, MC & VISA ACCEPTED**

SYSTEM REQUIREMENTS: Macintosh Color Classic or higher, CD-ROM drive, 4 MB RAM, 2 MB hard-disk space, System 7 operating system or higher

CIRCLE 184 ON READER SERVICE CARD

We Connect Any Printer!

Well, Almost! Our Grappler® Series connect over 1000 kinds of Non-Apple® printers to any Macintosh® that's ever been made. We're the experts, with over 13 years in the printer interface business. 9-Pin, 24-Pin, Bubblejets, and Laserjets. Call us, we want to help.

**Orange Micro Inc.**

"13 Years of Innovation and Excellence"
1400 N. Lakewood Ave., Anaheim CA 92807

(714) 779-2772

CIRCLE 183 ON READER SERVICE CARD

Protect Your Bottom Line

Complete Systems Start at

\$2599

Retailers need now more than ever, the ability to react to consumer buying trends to protect their bottom lines. Tracking past-performances, shrinkage, fast moving items, and customer histories is no child's play for the retailer of the Nineties. POS•IM is the tool you need to protect that bottom line.

POS•IM

Point of Sale • Inventory Management

Ensign Systems, Inc.
(801) 546-1616

**The One That Apple® Uses**

CIRCLE 197 ON READER SERVICE CARD

HEY, MAC. WE'VE GOT YOUR NUMBER And Ninety Million More!



Say farewell to 411. Sayonara, 555-1212. Hello, **PhoneDisc® USA**—the first nationwide CD-ROM telephone directory. It's the fastest way to find anyone, anywhere.

Top rated by the leading PC magazines; it's Mac ready right now.

RESIDENTIAL \$79 Find 80 million numbers,

addresses, even zip codes

in a fraction of the time, and at a fraction of the cost of directory assistance calls. Download, print and dial.

BUSINESS \$79 Identify 9.5 million business names from just a phone number or street address; business type or SIC code.

REVERSE \$249 The master investigative tool.™ Developed for government agencies. Features include search by number and address of every residential and business listing on five regional discs.

MAC VERSION SHIPPING NOW!

1-800-284-8353

PhoneDisc® USA

Digital Directory Assistance, Inc.
6931 Arlington Rd., Suite 405
Bethesda, MD 20814-5231

The fastest way to find anyone, anywhere!

CIRCLE 188 ON READER SERVICE CARD

Quantum Leap CD Software



Aesopolis™

Kids of all ages love Uncle Bits, your guide through Aesopolis, the Interactive World of Aesop's Fables. You'll love his crazy antics and colorful costumes.

★★★★½
MacUser



Game Collection™

An outstanding collection of more than 160 top-rated Macintosh games, puzzles and adventure programs. The Super-CD-ROM for game players of all ages.



Coral Collection™

FishEye View's Coral Collection™ offers a look at the mysterious world of living coral animals. From the Caribbean Islands to the Coral Sea and Pacific Ocean.



Fish Collection™

FishEye View's Fish Collection™ is a new-generation Portfolio Photo CD featuring 104 spectacular images of Caribbean Fish, Sharks, Rays, Eels; with narration.



CD7™

The System 7 Super-CD contains thousands of enhancements and utilities to super-charge your Macintosh system.



Macademic™

All educational software for teachers & students; includes art & music, math & sciences, plus foreign languages.



Mega-ROM™

A Super-Value CD! QuickTime™ movies, sounds, fonts, games, utilities, Hyper-Card stacks and more...



Giga-ROM™

Giga-ROM is the largest collection of Macintosh shareware you can buy. All files are archived and compressed.

Call 800-762-2877 for a free catalog.

Quantum Leap TECHNOLOGIES

Quantum Leap Technologies, Inc.
2916-B Ponce de Leon Boulevard
Coral Gables, FL 33134, USA
Phone: 305-446-4141 • Fax: 305-446-4074

CIRCLE 190 ON READER SERVICE CARD

The "Most Innovative" Software Of 1993 Is Also The Most Useful.

Plug in to **POWER TRANSLATOR™** **PROFESSIONAL** from Globalink®, the software package named "the most innovative of 1993" by *Discover Magazine*.

POWER TRANSLATOR PROFESSIONAL features speeds up to 100 times faster than human translators, easily-updated dictionaries of over 250,000 words and phrases, and a 90%-plus accuracy rate! Subject Dictionaries are also available, including computer, legal, business and finance.

Now, getting grammatically-correct translations of words, phrases or entire documents in Spanish,

French or German to/from English is as easy as the push of a button.

Find out about the software package that's got *Discover Magazine*—and a lot of other people—talking. Call Globalink today and ask about **POWER TRANSLATOR PROFESSIONAL**, your ticket to worldwide communication.



Globalink, Inc.

9302 Lee Highway
Fairfax, VA 22031-1208 USA
Int'l.: 1-703-273-5600
Fax: 1-703-273-3866

1-800-767-0035
U.S. and Canada

CIRCLE 189 ON READER SERVICE CARD

PINBALL


Crystal Caliburn™

"Best Arcade Game" of the year. -Inside Mac Games

From the developer of Tristan™ and Eight Ball Deluxe™ for Macintosh. Available through MacConnection, Mac's Place, MacWarehouse, MacZone, Dr. Mac, Babbages, Egghead, Software Etc., and many other fine retailers. List \$59.95

(303) 447-9562

StarPlay Productions, Inc. • Box 217 Greeley, CO 80632 • Fax (303) 447-2739



NOW WITH VIDEO.

LEARN TO SPEAK SPANISH 4.0

A complete first year language course with extensive Quicktime™ video and sound on CD. Thirty context-driven lessons and an intuitive interface make learning Spanish easy & fun!

VOCABULARY

A Great Way to Learn Spanish! This course covers the spoken language as well as grammar and usage. See and hear the native speakers! Ask about a competitive upgrade to Learn To Speak Spanish 4.0!

1-800-290-4568

To order or to receive a catalog call toll-free or write: P.O. Box 10746, Knoxville, TN 37939

Learn To Speak Spanish 4.0 is also available from most major software retailers.

HyperGlot™ the foreign language software company.

CIRCLE 101 ON READER SERVICE CARD

MUSIC FOR EVERYONE!

Both programs compatible with MIDI (but MIDI is not required.)

SONGWORKS
Notates your tune, suggests chords & melody ideas, plays, transposes, prints. \$125.00

PRACTICA MUSICA
Ear training and music theory instruction from beginning to advanced. \$125.00

ARS NOVA • 1-800-445-4866 • FAX 1-206-889-0359 • Box 637 • KIRKLAND, WA 98083




CIRCLE 192 ON READER SERVICE CARD

FREE CATALOG

Kodak Photo CD System

Photo CD's are the easiest, least expensive way of bringing great looking photographs into your desktop publishing applications. All you need is a CD ROM drive and pictures taken on any 35mm, 120, or 4"x 5" transparency or negative film. We do the rest ... scanning and digitizing your photo images into high resolution files (16-63MB) on Kodak compact discs.

Prices start at less than \$1 per scan.

For Free Information Call **(800) 327-1776**

DALE LABORATORIES
Hollywood, FL 33020-1579



CIRCLE 193 ON READER SERVICE CARD

HiQ®

Real-World Math for Macintosh

New Native-Mode PowerPC Version!

Notebook Interface

- Interactive analysis and graphics in a WYSIWYG notebook interface
- Insightful 2D and 3D graphics
- Annotation for technical reports, journals, and presentations
- Publication-quality output

Numerical Analysis Power

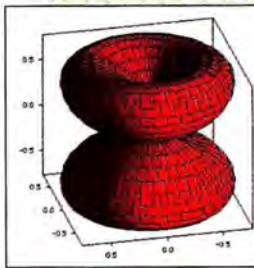
- More than 600 math, scientific, and engineering functions
- Efficient algorithms with optimal convergence
- User-defined error tolerances

Problem Solvers

- Intuitive GUIs for solving sophisticated problems
- Automatic code generation

HiQ-Script

- A language built for scientists, engineers, and mathematicians



Call for FREE demo, Tel: (512) 794-0100 (800) 433-3488 (U.S. and Canada)

NATIONAL INSTRUMENTS®
The Software is the Instrument®
6504 Bridge Point Parkway
Austin, TX 78730-5039
Fax: (512) 794-8411

© Copyright 1991 National Instruments Corporation. All rights reserved. Product and company names listed are trademarks or trade names of their respective companies.

CIRCLE 194 ON READER SERVICE CARD

Explore the Internet - FREE!

DELPHI, a leading international online service, now offers full access to the Internet. You can explore this incredible electronic network with no risk. You get 5 hours of evening/weekend access to try it out for free!

Use electronic mail to exchange messages with over 20 million people throughout the world. Download programs and files using "FTP," connect in real-time to other networks using "Telnet," and participate in "Usenet Newsgroups" the world's largest bulletin board with over 4500 topics. If you're not familiar with these terms, don't worry; DELPHI has expert online assistants and a large collection of help files, books, and other resources to help you get started.

After the free trial you can choose from two low-cost membership plans. With rates as low as \$1 per hour, no other online service offers so much for so little.

5-Hour Free Trial!

Dial by modem, 1-800-365-4636*
Press Return once or twice
At Username, enter JOINDELPHI
At Password, enter MCU45

*Current Internet users can Telnet to delphi.com instead. Offer applies to new members only. A valid credit card is required for immediate access. Complete details provided during the toll-free registration.

Questions? Call 1-800-695-4005 (voice)
Send e-mail to INFO@delphi.com



CIRCLE 195 ON READER SERVICE CARD

HARDWARE/ACCELERATOR BOARDS



ACCELERATION

Mercury 68030 for SE/PLUS Closeout...\$99
optional 25MHz Math Coprocessor (FPU)...\$59
Impact 030 32MHz 68030 for LC/LC II...\$299
Carrera 040 32MHz 68040 for Mac II...\$499

MacUpgrade Specialists (800) 266-3622
Fax: 714.362.5428

CIRCLE 221 ON READER SERVICE CARD

MEMORY

SIMMdouble for Mac II line
• double your SIMM capacity
• increase memory to 64MB
• easy 10-minute installation
• eliminate PAL SIMMs for Mac II and Ix...\$139
SIMMchanger for Centris, Quadra and Performa
convert four existing 30-pin 8-bit SIMMs
into one 72-pin 32-bit SIMM...\$99



BAR CODING

Bar Code Headquarters

BAR CODE READERS

- Top rated by Independent review!
- 1 or 2 scanners per reader
- For all Macintosh models.
- Complete with Cordless Wand - \$495
- Cordless Wand with Beeper - \$695
- Complete with Laser Scanner - \$1295
- Complete with Steel Wand - \$399
- European Keyboards Supported
- Attaches to ADB as 2nd Keyboard
- Wand, CCD or Laser input
- 2of5, UPC/EAN, 128, Code 39
- Same day shipping, Free UPS Blue
- 2 year warranty
- 30 day money back guarantee



PORTABLE READERS

WITH VOICE PROMPTS

- Battery Operated Reader
- 64K or 256K Memory
- 4 x 20 LCD, 35 Key Keyboard
- Optional voice messages tell operator what to do at specified errors and at data entry steps. Messages are pre-recorded by microphone and broadcast thru built-in speaker or earphone. EASY!
- Complete 64K Unit with Laser - \$1734
- Complete 64K Unit with Wand - \$799



Call for our Free Catalog

WORTHINGTON
DATA SOLUTIONS

Call Toll Free in the USA or Canada
800-345-4220

Or call 408-458-9938 • 408-458-9964 Fax

Bar Code & Magnetic Stripe Readers for all Macintosh Computers

- Connects through keyboard port (ADB)
- Requires no software drivers or power supply
- Does not affect performance of keyboard
- Industrial grade, heavy-duty units
- Lifetime Warranty* (UniScan 300 Series)
- Proven quality; in the industry since 1978!

Also available:
Integrated ADB Laser Scanners & CCD Scanners
Portable Bar Code Readers
Bar Code Label Printing Programs & Fonts
Products Available for Mac Plus & Earlier



2495 Old Middlefield Way
Mountain View, CA 94043
(800) 526-9820 or
(415) 588-0141
Fax (415) 988-0289
AppleLink BARCODE

*See factory for details

CIRCLE 222 ON READER SERVICE CARD

COMPUTER SYSTEMS

COMPUTER SYSTEMS



Everything	MACINTOSH
Quadra 605	4/80 \$ 899
Quadra 610	8/230 \$ 1599
Quadra 660AV	8/230/CD \$ 1999
Quadra 650	8/230/CD \$ 2199
Quadra 840AV	8/230/CD \$ 3049
*Quadra 800 / 950 / LC II's at blow out prices everyday. Call us & Save.	

Lowest Prices on New PowerBooks, Color Monitors, Laser Printers, Scanners

Call Now (800) 883-0040

FREE SHIPPING ON ALL ORDERS

6201 Middle Park Rd # 3102, Austin, TX 78752, USA

Int'l Tel: (512) 323-0040 Fax: (512) 323-5465

CIRCLE 223 ON READER SERVICE CARD

COMPUTER SYSTEMS

LOWEST PRICES GUARANTEED

BEST DEAL !!
Quadra 840av 8/230
\$2788

Memory & HD
Mac Quadra 605
Mac Quadra 610
Mac Quadra 650

SALE SALE
MicroNet 90
MB Rem. HD
\$449
Complete

SOFTWARE SPECIALS
CLARISWORKS
\$99

PowerBooks
PowerBook Duos
Apple Monitors
SuperMac Radius

Tel: (310) 421-5899 **MacExpress** U.S.A.
Mon-Fri 9-6 PST Fax (310) 421-2919 Since 1988

CIRCLE 225 ON READER SERVICE CARD

MAC PROFESSIONAL

We only sell brand new products. No tax outside CA. One year warranty.
19801 Ventura Blvd., Woodland Hills, CA 91364 Dealers & international orders welcome.
(818) 719-9200 We guarantee best pricing. FAX (818) 719-9115

QUADRA	POWERBOOK	PRINTERS
840 8/230 \$2777	NEW POWER BOOKS	HP DJ 1200 C/PS... \$1877
840 8/230-CD \$2977	ARE HERE!	HP DW 310/550 \$317/595
840 16/500-CD \$3597	165, 180, 180C	HP 4ML/4MP \$1027/1377
840 24/1000 \$3927	Duo 250 & 270	HP 4M \$1917
840 40/1.7 \$4677	Any Configuration - CALL!	Stylewriter II \$ 297
660 8/230 \$1777	Global Village Gold \$ 295	MONITORS
660 8/500 \$2297	Global Village Mercury \$ 367	14"/14" Plus \$417/307
660 16/500-CD \$2647	Memory Best Price	14"AV/16" \$697/Call
650 8/230 \$1897	SCANNERS	SuperMac 17T \$1047
650 8/230-CD \$2177	HP IICX \$ 977	Sony 1430/1730 \$599/1049
610 8/230 \$1627	Microtek II \$ 677	Sony 2036/2038 \$1997/2227
610 8/230-CD \$1877	Microtek IIIX \$ 1047	Super Mac 20TXL \$2497
605	Call Nikon Cool Scan \$1777	Radius Pivot Color \$ 867

CIRCLE 226 ON READER SERVICE CARD

In the next 12 months,
77% of MacUser subscribers will purchase
Macintosh products by
mail order
or phone.

Will they buy from you?

Get your share of the
business. Call your MacUser
Marketplace account representative today at:

800-825-4237

Source: MacUser Mail Order Report, 1991

DCS

1-800-770-0127
Buy & Sell

- New & Used Macs •
- All Apple monitors, scanners, hard drives, printers & periph.
- Service and repair all Mac logicboards, floppies and more..
- Third party hardware

4130 SW Dodgen LP.#J
Temple, TX 76504

(817) 742-2639

CIRCLE 228 ON READER SERVICE CARD

WE SELL THE FASTEST DRIVE SYSTEMS ON THE PLANET.

2.2 GB HAWK-1 ARRAY W/2 SEAGATE ST11200N's, FAST SCSI-2 W/10MB/SECOND
throughput & sub-2ms average access. Int'l Tel for Quadra 900 or 950 \$2089 / \$2189.
3.3 GB BARRACUDA-1 ARRAY W/2 SEAGATE ST11950N's, FAST SCSI-2 W/14MB/SECOND
throughput & sub-2ms average access. Int'l Tel for Quadra 900 or 950 \$3699 / \$3799.
4.3 GB BARRACUDA-2 ARRAY W/2 SEAGATE ST12550N's, FAST SCSI-2 W/14MB/SECOND
throughput & sub-2ms average access. Int'l Tel for Quadra 900 or 950 \$4299 / \$4399.
6 GB ELITE-3 ARRAY W/2 SEAGATE ST14300N's, FAST SCSI-2 W/12MB/SECOND THROUGHPUT
& sub-2ms average access. Int'l Tel for Quadra 900 or 950 \$4699 / \$4799.
9 GB SEAGATE ELITE-9 ST410800N \$2575 TH 10.5ms FAST SCSI-2 VERY LOW \$/MB \$4699.
Any Array Extender W/CacheCannon for PDS Macs add \$549. OR FWB Jashhammer for NUBUS Macs add \$599.

Advanced Digital Graphics Systems

8150 Brookriver, Suite 5-302

Dallas, Texas 75247

214-951-9364 / FAX 214-951-9368

1-800-273-ADGS

AND WE SELL MACS CHEAP TOO. Please call for the latest pricing on any Mac system or peripheral.

ALL PowerMac Models	CALL	Q640AV 24/1.2GB/CD	\$4343.	Q610 12/230/CD	\$2148.
Dynasty PowerPro 601	CALL	Q800 16/230	\$2481.	Q605 8/160	\$1217.
Q950 16/230	\$3167.	Q800 24/1.2GB/CD	\$3999.	FB 180C 10/160	\$2956.
Q950 16/525	\$3379.	Q660AV 16/230	\$2019.	FB 180 10/120	\$2599.
Q950 24/1.2GB	\$3898.	Q660AV 24/500/CD	\$3186.	FB 165 8/80	\$1841.
Q950 8/0	CALL	Q650 12/230	\$2105.	Duo 230 8/120	\$1690.
Q840AV 16/230	\$3163.	Q650 12/230/CD	\$2433.	Duo 250 10/200	\$2545.
Q840AV 16/230/CD	\$3399.	Q610 12/230	\$1825.	Duo 270C 12/240	\$3299.

CIRCLE 224 ON READER SERVICE CARD

COMPUTER SYSTEMS

MacLink
Tel (818) 785-2800 Fax (818) 785-3100

We pride ourselves in quality service, product availability & competitive pricing

5% ABOVE COST VERIFIED

800-858-4622
Dealers & Consultants Super Store
Volume Discounts Available • Worldwide Shipping

Corp. Leasing now available

MacLink 15500 Erwin St #2002 Van Nuys CA 91411

Quadra	NoteBooks	Displays	Printers/Scanners	Add On's
Quadra 840AV, 16-1000 w/CD \$4749	PowerBook 180C, 4-160 w/monitor \$2741	Apple 16" Color Display \$929	Apple LaserWriter Pro 810 \$3361	PowerPC Upgrades \$call
Quadra 840AV, 16-500 w/CD \$4141	PowerBook 180C, 4-160 \$2539	Apple 14" AV Color Display \$664	Apple LaserWriter Pro 630 \$1877	PowerBook Accessories \$call
Quadra 840AV, 8-230 w/CD \$3343	PowerBook 150C, 4-80 \$2304	Apple 14" Color Display \$473	Apple LaserWriter Select 360 \$1392	Duo Accessories \$call
Quadra 840AV, 8-230 \$3092	PowerBook 160, 4-120 w/monitor \$2429	Supermac 20" PressView \$1328	Hewlett Packard 4M \$1835	Apple GeoPort \$129
Quadra 800, 8-230 \$call	PowerBook 160, 4-120 \$2219	Supermac 20" TKL \$2380	Hewlett Packard 4MP \$1336	Apple Extended KB \$159
Quadra 800, 8-500 w/CD \$call	PowerBook 180, 4-80 \$1992	Supermac 17" \$1045	Hewlett Packard 4M \$976	Apple Adjustable KB \$159
Quadra 860AV, 8-500 w/CD \$2746	PowerBook 165, 4-160 w/monitor \$2066	RasterOps 20T \$2331	Hewlett Packard 1200C \$1446	Global Village Gold \$289
Quadra 860AV, 8-230 w/CD \$2229	PowerBook 165, 4-160 \$1856	RasterOps 20/21 \$1547	GOC SelectPress 1200 \$call	Global Village Platinum \$349
Quadra 860AV, 8-230 \$1982	PowerBook 155, 4-80 \$1554	RasterOps ClearVue/15 \$431	GOC SelectPress 600 \$3667	Supermac Thunder II/24 \$2992
Quadra 850, 8-500 w/CD \$2903	PowerBook 145B, 4-120 \$1463	Radius IntelliColor/23 \$2379	GOC BLP Elite \$789	Radius PrecisionColor/24 \$1929
Quadra 850, 8-230 w/CD \$2385	PowerBook 145B, 4-80 \$1260	Radius TPO/23 \$811	Supermac ProofPositive \$call	RasterOps 24XL \$1703
Quadra 850, 8-230 \$2083	ALL Unlisted Models \$call	E-Machines T1611 MR \$1149	All LaserMaster \$call	Radius Editing Aces Suite \$2929
Quadra 810, 8-230 w/CD \$1881	Duo 270C, 12-240 w/monitor \$3200	NEC 4FG \$728	All NewGen \$call	Radius Vision Studio \$call
Quadra 810, 8-230 \$1579	Duo 270C, 4-240 \$2741	NEC 5FG \$1398	ALL MIRROR SCANNERS \$call	E-Machines Futura SX (24bit) \$381
Quadra 810, 8-160 \$1252	Duo 250, 12-200 w/monitor \$call	ALL MIRROR Displays \$call	Apple Color OneScanner \$907	Seagate Barracuda HDs \$call
Quadra 805, 8-160 \$1125	Duo 250, 4-200 \$call	Sony 1730 \$989	Hewlett Packard 1100 \$976	DIGIDESIGN \$call
Quadra 805, 4-80 \$858	ALL New Powerbook Models \$call	ALL Unlisted Models \$call	UMAX, All Models \$call	AND MORE..... \$call

CIRCLE 230 ON READER SERVICE CARD

C.R.I. Inc. "Best Selection... Best Service!" 1-800-275-9924

Prices subject to change due to market conditions

PAGEMAKER 5.0	PRINTERS	SCANNERS	QUADRA	POWERBOOK
HP 4ML \$1009	Umax 630LE \$729	605 4/80 \$539	165 4/40 \$1549	
HP 4MP \$1299	Umax 840 \$875	605 8/160 \$1229	165 4/80 \$1549	
HP 4M \$1995	Umax 1000 \$1429	610 8/160 \$1350	165 4/160 \$1549	
4500X \$CALL	Scanmaker II SP \$829	610 8/230 \$1675	180 4/80 \$2150	
Deskwriter \$299	Scanmaker II G \$499	610 8/230 CD \$1990	180 4/120 \$2325	
1000C/PS \$CALL	MacroLink 35T \$call	650 8/230 \$CALL	180 4/80 \$2150	
1000C/PS \$CALL	HP Scanjet 100A \$995	650 8/500 \$2550	180 4/160 \$2150	
FJ XL300PS \$CALL	HP Scanjet 1100 \$799	800 8/230 \$CALL	250 4/200 \$2275	
Stylewriter II \$299	PRO 630 \$1995	950 8/0 \$3200	270C 12/240 M \$3025	
PRO 810 \$CALL	PRO 810 \$CALL	660AV 8/230 \$CALL	PB 4090MB HD \$79149	
OM5 600 \$CALL	20 Plus \$1199	840AV/500CD \$CALL	PB 120/160MB HD \$215310	
	20 TXL \$CALL	RADIUS	PB 250/340MB HD \$305545	
	Thunder light \$CALL	Intelliook 20K \$CALL	Pocket External Case \$65	
	Thunder 24 \$1799	PC 24K \$CALL		
	Spectrum/PDQ-CAL			

ATTENTION ARTISTS NOW AVAILABLE PHASER III COLOR PRINT OUTPUT CALL FOR DETAILS!

NOVELL COMPAG
NEC IBM
TOSHIBA
SUN
HEWLETT PACKARD
MICROSOFT
COMPAG
radius

New and Used, Bought and Sold!
Call For Specials
ASK ABOUT OUR EXTENDED
Prices Represent Cash Discount!

CIRCLE 231 ON READER SERVICE CARD

MAC Touch
800-494-6666
DIVISION OF CRT COMPUTERS SINCE 1989
WE SELL ONLY NEW SYSTEMS WITH ONE YEAR WARRANTY
DEALERS & INTERNATIONAL ORDERS WELCOME
All prices reflect cash orders only & are subject to change without notice.

Quadra 840 AV	250 (Power Book Duo) 270 C	Power Book
8/230 2995 8/230/CD 3249	4/200 2199 4/240 2899	PB 165 Call PB 180 Call
8/500 3295 8/500/CD 3549	12/200/M 2659 12/240/M 3359	PB 165 C Call PB 180 C Call
Quadra 660 AV	Laser Printers	APPLE MONITORS
8/230 1795 8/230/CD 1949	Select 360 1529 Laser pro 630 1999	RGB 14" 495 RGB 16" 949
8/500 2095 8/500/CD 2299	HP 4MP 1359 HP4M 1859	RGB 14" AV 695 MAC 21" 2849
Quadra 650	Scanners	Sony NEC
8/230 1995 8/230/CD 2249	Scanmaker IIXE 995 Color One Scanner 959	1430 639 4 FGE 729
8/500 2295 8/500/CD 2549	UMAX 840 1149 HP IICX 959	1730 1069 5 FGE 1169
610 Quadra 800/950	OTHER APPLE PRODUCTS	RADIUS SuperMac
8/230 1695 Quadra 800 Call	Adjustable KB .145 EXTENDED KB II.155	INTELLI Cir 2469 17T 1029
8/230/CD 1995 Quadra 950 Call	MEMORY UPGRADES AVAILABLE	PRECISION Cir 1779 20T 2395

CIRCLE 232 ON READER SERVICE CARD

MacBYTE
22775 Pacific Coast Hwy, Malibu, CA 90265
Buy • Sell • Trade Macintosh Computers
Cash For Your Mac or Peripheral
Low & High End Custom Setups
Preworn Macs with Warranty
FAX 310-317-1583

800-432-2983
310-317-1588

CIRCLE 233 ON READER SERVICE CARD

1-800-334-KIWI
Call for lowest prices on NEW Mac systems.
Mac LC III • Quadra 605 • Quadra 610 • Quadra 650
Quadra 660AV & 840AV • Powerbook: All models.
Kiwi Computers, P.O. Box 67381, Los Angeles, CA 90067
Tel (310) 553-4507, Fax (310) 286-9667, Toll Free (800) 334-5494
Hours: Mon-Fri 7:30-6, Sat 9-2 PST. Visa & Mastercard no surcharge. Better Business Bureau member.
All products new with 1 year warranty. 15% restocking fee on returns. Not affiliated with Kiwi Software, Inc.

CIRCLE 234 ON READER SERVICE CARD



Computer Design & Graphic Systems™

Specialists in Graphic System Configurations

CDG CUSTOMERS...

THANK
YOU!

#1 Supplier to the Graphics Industry

FREE SHIPPING!...
call for details



CPU'S

CALL FOR UPDATED PRICING
Quadra 605 4/80 \$929
Quadra 610 8/160 \$1349
Quadra 650 8/230 \$1999
All PowerBook/Duos & Accs CALL
Quadra 660 AV 8/230 \$1749
Quadra 660 AV 8/230 CD \$1949
Quadra 840 AV 8/230 \$2929
Quadra 840 AV 8/500 CD CALL
Quadra 840 AV 16/One Gig CALL
Quadra 950 8/No HD \$2899
NEW MACS ARE IN !!!
CUSTOM CONFIGS AVAILABLE

IBM COMPATIBLES

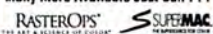
486SX/25 w/2 MEGS/130 HD
SVGA/DOS \$1000.00
486SX/33 w/4 MEGS/245 HD
1 MEG SVGA/DOS/WIN \$1350.00
486DX2/50 w/4 MEGS/245 HD
1 MEG SVGA/DOS/WIN \$1525.00
486DX2/66 w/4 MEGS/245 HD
1 MEG SVGA/DOS/WIN \$1700.00
CALL FOR MORE !!!



radius



NEW Radius Prec Color 17" \$1229
Radius Prec Color 15" Pivot \$799
Radius Precision Color 20" \$1789
Radius 20GS Dual Page Grey \$835
Radius Intellicolor 20" \$2599
Apple 14" RGB \$479
Apple AV Monitor \$699
Magnavox 2080 14" Color \$299
Full Page Gray Scale \$399
NEC 5FGa \$1149
Sony 17 SE1 \$1189
Sony 20" Trinitron \$2199
Sony 20" GDM-2036 \$1999
SuperMac 17T \$1049
SuperMac 20" Color Plus \$1599
SuperMac 21" XL \$2399
SuperMac 20T XL \$2559
RasterOps 20/20 Color \$1599
RasterOps 20" Trinitron \$2299
Many More Available Just Call !!!



PRINTERS

SuperMac Proof Positive dye-sub \$6100
GCC Colorstone dye-sub \$6399
Xante Accelawriter 1200X1200 \$5999
NewGen Imager Plus CALL
HP Laserjet 4m (600 dpi) \$1939
HP Laserjet 4ml \$1025
QMS 860 11x17 600dpi \$3899
QMS 420 600x600 \$1199
NEC Silentwriter 1097 CALL
NEC 640 \$819
Dataproducts 1580 \$3099
All dye sub printers now available
MUCH MUCH MORE !!!



DISPLAY CARDS

Radius Precision Color 24xp \$459
Radius Precision Color 24x \$599
Radius Precision Color 24x \$1949
Radius VideoVision Studio \$3299
SuperMac 8 • 24 PDD \$739
SuperMac Spectrum 24-IV \$789
SuperMac Thunder 24 \$1649
SuperMac Thunder II \$3059
ThunderStorm for Photoshop \$429
RasterOps Paintboard Turbo XL \$1399
RasterOps Paintboard Turbo \$1089
Lapis 8-16 Color Card \$369
Lapis Mac to TV card adapter CALL
E-Machines Furia SXII 24 bit \$449
E-Mach Futura MX 24 bit \$769
E-Mach Futura LX 24 bit \$1119



FWB PLI STORAGE/MISC
650 Optical Media \$99
128 Optical Media Special \$40
Storage Dimensions Digital Video Drives
Quantum 256 P8/HV \$369
Micropolis HD 2217 AV \$1229
PLI 128 Optical drive \$1059
Pinnacle Tahoe 128 Optical \$929
Pinnacle Sierra 1.3 gig Optical \$2599
Seagate Baracuda II 2.4 gig \$1749

SCANNERS



HIGH END SCANNERS CALL
UMAX UC840 (800 dpi) \$979
HP Scanjet CX \$949
UMAX true 1200 dpi \$1449
Nikon Cool Scan 2700 dpi \$1629
Microtek Scanmaker II \$879
Sharp JX-325 \$809



NEC
Apple 230 Hard Drive \$199
Quantum 1 gig. int. \$899
Hammer FMFs 3.5" 1 gig \$1399
Fujitsu 520 meg 3.5" int. \$549
Fujitsu 1.2 gig \$889
Micronet 1030R Array \$2089
Squest 88/44 \$459
Symm Chips Memory Call
MUCH MUCH MORE !!!

LOWEST Prices on GRAPHIC Software! OVER 20,700 products for the serious... GRAPHIC User!

Network Products

DAYNA • ASANTE • SONIC • NOVELL
Ethernet is better than Sneaker-Net.
Call one of our network specialists
for your complete network solutions.
New Asante! Lite card \$139
Dayna Etherprint-T \$339
Sonic Laserbridge software \$149
Asante 8 port 10baseT hub \$239

We Do Make Housecalls

Leasing available to approved credit; \$2,000 minimum lease amount. One day approval; one page short-form application.
Lease prices based on 36 month: \$1 Buy out. No minimum time in business. 48 month leases available.

NOW SUPPORTING IBM / PC PRODUCTS

MultiMedia MPC

Level 2 System
486SX/33 VESA Motherboard
4 MEGS, Soundblaster Pro with
Double Speed CD Rom, 1.44 Floppy
245 MEG HD, 101 SVGA VESA
SpeedStar PRO SVGA VESA
14" 28 Ni Monitor, Mouse, DOS 6
Windows 3.1 \$1675.00

MultiMedia Kits

SB Pro w/Double Speed CD \$375
SB 16 w/Double Speed CD \$450
CyberAudio w/2x CD Rom \$500
CyberAudio w/3d SRS Sound and
Toshiba SCSI 2x CD \$525
VideoBlaster \$349
VideoBlaster NTSC \$149
MegaMotion 30fps Card \$1100

MM/3d Software

StrataVision 3d \$495
Visual Reality \$595
Playmotion \$495
3d Studio R3 CALL
Adobe Premiere \$205
Image-Q \$275
Call for Complete Desktop Video,
MultiMedia and Animation Systems

DIGITAL VIDEO & MEDIA CENTER



Digital Video Solution

Substitutions Available
Call for Custom Packages
Mac Quadra 950 / 64 meg RAM
Storage Dimensions 2 gig Array
Apple Extended Keyboard
Apple 14" Color Display
Radius VideoVision Studio \$12,400

Nec 3XE CD ROM \$599
Apple 300 I CD ROM \$309
Apple CD Multimedia Kit \$609
Apple Design Speakers \$169
Macromedia Software Call
Adobe Auditions \$169
Radius VideoVision Studio \$3299
SuperMac Digital Film \$3329
Micropolis 3.6 gig AV Drive \$2240

Leasing

Desktop Video System

Mac Quadra 840 AV / CD ROM
Micronet 2 gig Raven Array
64 meg RAM Upgrade
Apple Extended Keyboard
RasterOps Movie Pak II Pro Suite
Audiovision 14" Color Display
\$12,499/36 Mo. Lease \$481.00

WE GET IT RIGHT THE FIRST TIME!

The CDG Service Commitment

- ▼ Toll Free Customer Service Line
- ▼ Highly Trained Sales Personnel
- ▼ Factory Fresh Products with Manufacturer's & CDG Warranty
- ▼ Expert Technical Support Staff
- ▼ Prompt Delivery of All in Stock Items
- ▼ 30 Day Premium Guarantee*
- ▼ Lowest price Commitment

* CDG Systems warrants that all products will perform satisfactorily or we will repair or replace (at our option) during the first 30 days after delivery. (This is in addition to the regular manufacturer's warranty). All customers must call our Customer Service Department and obtain a Return Merchandise Authorization number (RMA) before returning any items. All returned items are subject to a 20% restocking fee, inspection and must be returned in "new" condition with all original packing including any instructions, cables, software etc. Not responsible for incompatibility. Sorry no COD returns.



Prices reflect cash discount. All prices subject to change.
\$25 Charge on all cancelled orders. C.O.D. order refused without
cancellation prior to shipping will be billed full shipping charges.

6225 Presidential Court, Suite F • Fort Myers, Florida 33919

LOCAL: 813-489-4338 • SUPPORT: 800-741-6221 • FAX: 813-489-4694

800-741-6227

COMPUTER SYSTEMS



We Carry New Products Only!
All products have one year warranty

LOWEST prices on PowerBooks!

PowerBook 145B	PowerBook 180C
4Mb/80Mb 1388	4Mb/80Mb 2442
8Mb/80Mb 1555	8Mb/80Mb 2757
4Mb/160Mb 1550	8Mb/160Mb 2888
8Mb/160Mb 1699	14Mb/160Mb 3233

PowerBook 165	Duo 230
4Mb/80Mb 1666	4Mb/80Mb 1433
8Mb/80Mb 1833	8Mb/80Mb 1649
4Mb/160Mb 1995	4Mb/120Mb 1542
8Mb/160Mb 2199	8Mb/120Mb 1757
4Mb/240Mb 2018	4Mb/160Mb 1595
8Mb/240Mb 2199	8Mb/160Mb 1811
	8Mb/240Mb 1957

PowerBook 165C	Duo 250
4Mb/80Mb 1653	4Mb/80Mb 2364
8Mb/80Mb 1863	8Mb/80Mb 2580
4Mb/120Mb 1901	4Mb/200Mb 2526
8Mb/120Mb 2117	8Mb/200Mb 2742
14Mb/120Mb 2495	

PowerBook 180	Duo 270C
4Mb/80Mb 2149	4Mb/80Mb 2730
8Mb/80Mb 2404	8Mb/80Mb 2946
4Mb/160Mb 2350	4Mb/160Mb 2892
14Mb/80Mb 2728	8Mb/160Mb 3108
14Mb/160Mb 2885	4Mb/240Mb 3027
14Mb/240Mb 3035	8Mb/240Mb 3243

Battery & Full Cycle
Recharger 139

800-223-4-MAC
6924 Canby Ave. #104 Reseda CA. 91335

800-223-4622

FAX: 818-708-6399

SYSTEM SPECIAL
Quadra 605 040/25MHz / 8MB/230MB
Apple 14" Color Plus / Ext. Keyboard
\$1567

LOWEST PRICED BUNDLES ON HIGH END GRAPHIC STATIONS

Quadra 950

8Mb/0 2944	24Mb/1Gb 4384
8Mb/230 3144	64Mb/1Gb 5995
16Mb/500 4099	128Mb/1.9Gb 8895
128Mb/1.9Gb/88c Syquest/Supercard 20TXL 11795	

Video Editing Package

128Mb/230HD/Radius Video Vision &
2GB Macintosh Speed Array/2MB VRAM call

Quadra 840AV

0/0 2444	24/1Gb 4040
8Mb/230 2825	128Mb/1.9Gb 8888
8Mb/230/CD 3050	64/1Gb/CD 5775
16Mb/500 3395	16Mb/500/CD 3625
128Mb/2.4GigHD, 8 ms 8998	
40Mb/1Gig/Supercard 20TXL/88c Syquest 7425	

Quadra 650

8Mb/230 1895	24/500/CD 3125
8Mb/230/CD 2222	24Mb/1Gb 3135
16Mb/500 2499	40Mb/1Gb/CD 3995
40Mb/1Gb/88c Syquest/Supercard 17T 5195	

Quadra 660AV

8Mb/80 1565	16/500 2295
8Mb/230 1685	16/500/CD 2445
8Mb/230/CD 1849	24Mb/1Gb 2935
24Mb/500MB/CD/Supercard 17T/EXT KEY 3865	

Quadra 610

8Mb/160 1295	8Mb/230/FPU 1595
8Mb/230/FPU/CD 1845	
16Mb/500/CD/FPU 2435	
24Mb/500/FPU 2525	
8Mb/160/14" Mono/Stand. Key. 1535	
16Mb/500/CD/14" Color/Ext. Key. 2789	

Apple Monitor

16" Color 990	21" Color 2999
Color Plus 295	Color Display 498
Audiovision 14" Display 695	

Apple Printers

Select 300/Toner 755	Select 310/Toner 799
Select 360/Toner 1499	Pro 810/Toner 4650
Pro 630 W/Toner 1999	StyleWriter II 299
Apple Color Printer 999	Portable StyleWriter 405

SuperMac

Thunder IIGS 3595	PressView 21" 3295
Thunder II 2995	Hi-Res 20 2549
Thunder 24 1695	20T XL Color 2399
Spec Power 1152/1242	20" Color Plus 1499
I Spec 24 IV 753	SuperMatch 17T 1045
SpecB/Mono 385/266	Patinum 21 1095

E-Machines

Futura IILX 759	Futura II SX/DSP 844
Ultra LX 1055	Futura IILX/DSP 1163
Futura IISX 449	Ultra LX/DSP 1435

Radius

Intelcolor 20 2444	Precision Pivot 839
Precision 20V 1745	Pivot Mono 15" 569
Full page 15" 489	Two Page 21GS 995
Thunder 24x 909	Precision Pro 24x 1344
A Display 17 1195	PhotoBooster 769

PLI

Infinity 88/44 488	Infinity Optical 128 999
Infinity 105 429	DAT 10GB 1395
E Infinity 270 599	600MB Optical 1429
E 1.3 GB MaxOptical 4MB cache Ext. 3249	
N Laser 4M 1895	HP Laser 4MP 1395
Laser 4ML 995	Deskjet 1200c 1845

NEC

4FGE 15" 725	6FGP 21" 2395
5FGP 17" 1095	5FGP 17" 1395

Pinnacle Micro

PMO 650MB Optic. 2595	Recordable RCD 202 3295
Sierra 1.3 GB Ext Optical 2649	

- * Free Shipping in U.S. for all CPU Repairs
- * Free FWB ToolKit with every Mac. system
- * All Returns are subject to restocking fee, must be in original package, condition & needs an RMA#

WE install your memory....
Internal syquest.... Internal
optical.... Internal DAT....
and test all components
together before shipping
your custom configured
system.

International & Canada call:
818-708-6388
FAX: 818-708-6399

Daystar

Turbo 040 (68040 CPU accelerator)
IICI, IISI, IIVI, IIVX, II, IIX, IICX, & SE/30
40MHz Turbo 040 1044
33MHz 933
25MHz 745
Adaptor Universal 124
Fastcache 128K185

Microtek

Scanmaker II/G, 645/469	Scanmaker II XE 969
-------------------------	---------------------------

Umax

630 LE 795	1260 1444
840 965	1200SE 2844
Auto Feeder 435	UTA 666

Sony

1430 488	1730 1095
----------------	-----------------

WACOM

ARTZ-Z 6X8 289	12X12 UD 495
----------------------	--------------------

NewGen

1200B (11x17) 4295	660B (11x17) 3395
--------------------	-------------------

Sony Instruments

MicroWriter PS23 695	MicroWriter PS65 949
MicroLaser Pro 600, PS 23, 8PPM 1345	
MicroLaser Pro 600, PS 65, 8PPM 1549	

GCC

WriteMove II 399	BLP Eclipse 4PPM 939
BLP Elite 4PPM 777	PLP II 4PPM 565
SelectPress 600 3599	BLP Eclipse 8PPM 1295

NIKON

E COOLSCAN (Scanner 35mm Slide) .. 1828	
S COOLSCAN (Internal) 1590	

CIRCLE 236 ON READER SERVICE CARD

<p>QUADRA</p> <p>Work Group Servers CALL</p> <p>950 8/0 2849</p> <p>950 8/525, 1GB - 3299/3649</p> <p>840 av 8/230 2879</p> <p>840 av 16/500 CD 3799</p> <p>840 av 16/1GB CD 4249</p> <p>660 av 8/230 1679</p> <p>660 av 8/230 CD 1949</p> <p>660 av 8/500 CD 2299</p> <p>800 8/230, 500 - 2199/2549</p> <p>800 8/500 CD 2899</p> <p>800 8/1GB CD 3298</p> <p>650 8/230 1949</p> <p>650 8/230 CD 2229</p> <p>650 8/500 CD 2579</p> <p>610 8/160, 230 - 1319/1599</p>	<p>QUADRA</p> <p>610 8/230 CD 1899</p> <p>605 4/80 889</p> <p>605 8/160 1179</p> <p>*****</p> <p>Centris 610 4/80 899</p> <p>610 4/80 w/Eth. 999</p> <p>610 8/230 W/CD 1549</p> <p>610 8/230 CALL</p> <p>IISI 3/40, 230 CALL</p> <p>IXX 3/40,80 449/495</p> <p>CD 300/300 369/309</p> <p>CD 150/150 99/149</p> <p>*****</p> <p>40/80MB HD 3.5" 69/89</p> <p>160MB 3.5" 159</p> <p>230MB Quantum 189</p> <p>540/1.2 GB 429/850</p> <p>1.8/2.4 GB 1089/1575</p>	<p>NEW POWER PC In Stock!</p> <p>SPECIALS</p> <p>Color Printer 495</p> <p>LaserWriters</p> <p>LS 399</p> <p>Select 310 665</p> <p>11F/11F Board 875/299</p> <p>DUO 250 4/200 1795</p> <p>DUO Dock 425</p> <p>DUO Dock No Floppy 325</p>	<p>POWERBOOKS</p> <p>145 B 4/40, 80 1179/1295</p> <p>160 & 165C CALL</p> <p>165 4/80, 160 1495/1765</p> <p>180 4/80, 160 1850/2099</p> <p>180 C 4/80, 160 2150/2395</p> <p>Duo 210 CALL</p> <p>Duo 230 4/80 1245</p> <p>Duo 230 4/160 1449</p> <p>Duo 250 4/80 1679</p> <p>Duo 250 4/200 1795</p> <p>Duo 270 C 4/240 2795</p> <p>Duo 270 C 12/240 Modem 3289</p> <p>EXPRESS Modem 5199</p> <p>80/120MB HD 145/195</p> <p>220/340MB HD 289/449</p> <p>525MB HD 549</p>	<p>Printers & Scanners</p> <p>Pro 600 110/220V 1399</p> <p>Pro 630 110/220V 1929</p> <p>Pro 810 800dpi 4390</p> <p>Select 360/320 - 1469/CALL</p> <p>HP LaserJet 4ML 965</p> <p>HP LaserJet 4MP 1365</p> <p>4M/220V 1885/1985</p> <p>4SI MX 4250</p> <p>DeskWriter 500 295</p> <p>500C/550C 369/499</p> <p>300/310 285/325</p> <p>DeskJet 1200C PS 1835</p> <p>ScanJet IIC/NICX 745/935</p> <p>ScanMaker II/IIXE 695/995</p> <p>UMAX UC 840 979</p> <p>UMAX UC 1200SE - In Stock!</p> <p>220 Volt Printers Available</p>	<p>Monitors & Cards</p> <p>SONY 1730/SE 1009/1149</p> <p>NEC 3FGX/4FG 529/629</p> <p>NEC 5FG/6FG 1099/2399</p> <p>radius</p> <p>Intelcolor 20 2349</p> <p>Precision Color 20V 1745</p> <p>Precision Color Pro 24X 1399</p> <p>SuperMatch II/Res. 20 2525</p> <p>SuperMatch 21" Color 2209</p> <p>SuperMatch 20 T XL 2349</p> <p>SuperMatch 17T 985</p> <p>Spectrum 24 Ser. IV 749</p> <p>Spectrum Poper 1109</p> <p>Thunder II Light 1575</p>
---	---	---	--	---	---

Sales (818) 787-3282 • Orders 1-800-929-9333 • Fax (818) 787-5555

All prices reflect C.O.D. order only & are subject to change!

CIRCLE 237 ON READER SERVICE CARD

Free Catalog
Used Macintosh Computers

While all the others come and go, we keep doing what we do best. We've been refurbishing and selling used computers for ten years. Our quality control department assures you the best machine available for the money—or your money-back—guaranteed.

Call Anytime
1-800-821-3221

PO Box 4059
Logan, UT 84323-4059
Fax: (801) 755-3311

Sun
Remarketing, Inc.

Great Prices on Used Macs

Big Savings
CPUs
Drives
Monitor
Modem
Much More

Super Savings
Only \$395

Call 1-800-821-3221

CIRCLE 238 ON READER SERVICE CARD

LOWEST PRICES BEST SERVICE

QUADRAS POWERBOOKS
PRINTERS MONITORS

CALL FOR QUOTES

"Best Computer Source"
—Computer Magazine

310-358-9000
FAX 310-358-9100

Dealers & International Orders Welcome

COMPU AGE
THE SOURCE TO MACINTOSH WORLD

318 N. LA CIENEGA • LOS ANGELES, CA 90048

Same Day Shipping in USA
We Only Sell Brand New Systems
Full One-Year Warranty

CIRCLE 239 ON READER SERVICE CARD

COMPUTER SYSTEMS



LARGE SCREEN DISPLAYS

	YOUR PRICE	DEALER COST
RADIUS COLOR DISPLAY/21	\$1899	\$1989
•1152 x 870 resolution •True WYSIWIG mode •Compatible with Centris or Quadra built in video (16 bit on Quadra 950)		
PRECISION COLOR DISPLAY/19	\$1499	\$1749
•Multiple resolution switching 'on the fly' •Compatible with Centris or Quadra built in video (16 bit on Quadra 950)		
PRECISION COLOR DISPLAY/19 WITH 24 BIT VIDEO CARD	\$2298	\$2498
SONY 20 INCH TRINITRON	\$1899	\$2065
RADIUS 21 INCH GRAYSCALE	\$899	\$978
•Compatible w/Centris or Quadra built in video •Grayscale •Compatible with the Radius PrecisionColor Calibrator		

BELOW DEALER COST! RADIUS SPECIALS

Below Dealer Cost Clearance! All Radius products are **brand new** with full manufacturers one year warranty!

All quantities are extremely limited and will be sold on a first come first serve basis. Dealer cost prices are shown below for comparison.

POWerview \$199
DEALER COST \$435
Allows most PowerBooks and the Classic II to support color, grayscale, monochrome displays and projectors.
INTERNATIONAL VERSION \$349



Other Specials!

NEW! ImageWriter Compatible Dot Matrix Printer.
Standard Carriage. **\$149**
or Wide Carriage. from limited quantity available.

NEW! Apple IICI Cache Card \$99
up to a 40% speed increase
DEALER COST: \$306

COLOR PIVOT LE
WITH PURCHASE OF CARD.
We have cards for SE/30, LC, IISI, Nubus, Quadras.
\$399
DEALER COST \$860



	YOUR PRICE	DEALER COST
COLOR PIVOT 24 BIT	\$999	\$1440
•24-bit in landscape only •15" color display •Compatible with most Macs.		
GRAYSCALE PIVOT	\$499	\$535
•Portrait and landscape orientations •Built-in video compatible		
FULL PAGE DISPLAY	\$399	\$530
•640 x 870 resolution •75 Hz refresh •Grayscale •Built-in video compatible		

ROCKETS/ACCELERATORS

RADIUS ROCKET 68040 FROM \$599

•68040 processor •Supports up to 128 MB of standard RAM in 8 SIMM slots •QuickDraw acceleration w/Radius boards

	YOUR PRICE	DEALER COST
RADIUS Rocket 33 MHz	\$899	\$1248
RADIUS Rocket 25 MHz	\$699	\$999
RADIUS Rocket 25i MHz	\$599	\$830
RocketShare - Multiprocessing on your Mac	\$299	\$340
DOVE 68030 - Plus/SE	\$199	\$369
DOVE 68030 33 MHz - Mac II, Ix, SE/30	\$299	\$503
QUADRA 950, 900, 700 33MHz or 40MHz upgrade	\$349	

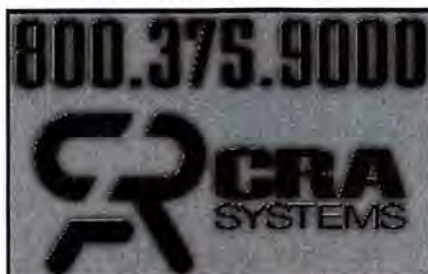


VIDEO BOARDS

•On-board QuickDraw acceleration •24-bit color
•Up to 1152 x 882 resolution •Compatible with virtually all monitors •Supports Nubus block transfer
•Multiple resolution switching 'on the fly'

	YOUR PRICE	DEALER COST
RADIUS UNIVERSAL 24XP	\$299	\$456
RADIUS UNIVERSAL 24XK	\$599	\$750
RADIUS PRECISION 24X	\$1099	\$1352
VIDEOVISION	\$1299	\$1428

CALL FOR ALL OTHER RADIUS VIDEO BOARDS!



WE BUY MACS!!

Please fax list when possible.
Corporate, Government, and University PO's welcome. Prices reflect cash discounts. Mastercard, Visa, AMEX, & Discover Card accepted. Lease/Purchase financing available.

Consultants/Dealers 817.754.2131

International Sales 817.754.2120

TeleFax 817.754.2345

CRA Systems

300 South 13th St.

Waco, TX 76701

CALL FOR MAC SYSTEMS & PARTS!

Quadra 950 - Below Dealer Cost!!

CPU's	INPUT/PRINT
Mac Plus 1/0 299	Mirrus Film Recorder 2999
Mac SE 1/20 399	Montage FR-1 3495
Mac II 0/0 399	Howtek ScanMaster III+ 4999
Mac Ix 0/0 599	HP Scanjet 449
Mac Ixi 0/0 899	Apple Scanner 449
PowerBook 170 (active matrix) 1399	Exabyte 8mm 5GB tape backup 1599
Apple Portable 699	Maxtor 800MB WORM drive 1499
Quadra 840AV, 900, 950, 800, 700 .CALL	600MB Read/Write Optical 1999
	QMS ColorScript 100 m30 11x17 4999
	QMS 4MB Upgrade, legal pack for ColorScript 100 (above) 499
UPGRADES	ImageWriter I/II 169/289
Quadra 900 to 950 999	ImageWriter Wide Carriage 269
Mac II to IIfx 999	ImageWriter LQ 449
Mac SE FDHD Upgrade 349	Apple LaserWriter 8ppm PS 499
Mac II FDHD Upgrade 399	
CARDS/MONITORS	
E-Machines ColorPage 15 w/8 bit 499	
Apple 12" monochrome 199	
Apple Token Talk 1/4-4/16 399/599	
Apple Serial Nubus Card 399	
Apple 8.24 GC 499	
Apple 8.24 399	
Apple 8 bit video card 199	
RasterOps 708+ 8 bit for 20" 299	
RasterOps 24 xl 1599	
RasterOps Editing Aces 2999	
RasterOps 24 XLTV 2399	
SuperMac Thunder 24 1699	
DCA Mac Irma 3270 499	
Ethernet boards for SE/SE 30 99	
Shiva FastPath 4 Gateway 999	
IISI NuBus adapter card 99	

PARTS

Mac Plus logic, No ROMs 99
Mac II logic Rev. B ROM 199
All Logic Boards .CALL
All Power Supplies .CALL
Mac Plus power supply 129
SE-Analog board 129
SE power supply 129
1.44 FDHD Floppy (NEW) 199
400K/800K Floppy Drive 49/99
Apple 5.25 External PC drive 49
Apple ADB mouse (NEW) 59
Iliac case and power supply 199
Mac II/IIfx case & power supply 199
Quadra 700 case & power supply 399
CRT and Yoke from 49
Apple 40MB 3.5" hard drive 49
Apple LQ cut sheet feeder 149
Apple Universal monitor stand 49

Over 20,000 items/parts in stock, if you don't see it — CALL US!

COMPUTER SYSTEMS

New-Used Macs/Parts/Upgrade

<p>SE 1/20</p>  <p>\$399.</p>	 <p>\$549.</p> <p>Apple Color Printer-360 dpi, up to 2-page per minute, 11" x 17"</p>
--	---

**New Macs
& Power
PC, Call!!**



Monitors

Apple 12" mono	\$149.
Apple Basic Color	169.
Apple 12" color	169.
Performa Plus (NEW)	299.
Apple Portrait	399.
Seiko CM1445 (NEW)	449.
Apple 16" color (NEW)	899.
ArtScan 17" color(NEW)	599.

(prices with purchase of CPU)

Clearance Sale!!

CD-SC w/Wayzata "Fun House"	\$149
20-Meg Super Supply	99
20-Meg External Hard Drive	179
20-Meg External Hard Drive	99
1.44 Floppy Bd.	129
1.44 FDHD floppy mech.	199
40-Meg Tape Back-up	129
LaserWriter Plus ROM upgrade	99
PowerBook 140/170 Battery	49
12" Monochrome monitor	109
12" Color Monitor	99
Mac IISI Power Supply & Case	149
ADB Mouse	49
40-Meg internal for Mac Portable	149
800k External Floppy	110
5.25 External PC Drive	25
20-Meg External Hard Drive	199
Portable Battery Recharger	49
2.5 20-Meg PowerBook Drive mech.	39
1200 Baud Personal Modem w/cable	29
40-Meg 5.25 (Internal Mac II/x/IIx)	49
Nubus Black & White Video Bd.	49
LC Ethernet Board	49
LC IIx Yoke Assy. (Plus & SE)	29
IISI Case	49
Mac Plus Keyboard	59
20-Meg Internal Hard Dr.	59
Portable 2400 Baud Internal Modem	99
40-Meg External Hard Drive	139
Case & Power Supply Mac II/x/IIx	99
Personal NT Log	179
Personal NT Log	199
Mac Portable Numeric Keypad	29
8-Bit Video Bd (nubus)	199
Personal SC Logic Board	199
SuperMac S/View (p-book video I/face)	199
Classic Logic Bd	129
LC IIx Yoke Assy	49
Mouse (Mac Plus)	49
Plus Power Supply	119
StyleWriter AC adaptor	99

UPGRADES

Ilx to Ilcl.....	\$599
Il to Ilfx.....	1299
Il FDHD ROM.....	1299
Laserwriter to L'writer Plus.....	99
Mac 512ke to plus.....	179
SE to SE30 logic board.....	99

PRINTERS

Imagewriter II	\$299
Stylewriter	239
Imagewriter LQ	449
Laserwriter IInt	849
Laserwriter Intx.....	999
Personal L'writer LS.....	499
Personal L'writer NT.....	649
Apple Color Printer	499

All equipment is used or demo unless otherwise stated. Equipment carries a 120-day warranty. Returns subject to a 15% restocking fee. Prices subject to change. Prices represent cash discount.

SYSTEMS

Plus	\$349
Classic 4/40	649
Classic II 4/80	749
Ilsi 3/40 (NEW)	599
Ilcx 0/0	699
Ilx 0/0	899
Ilvx 4/230 (NEW)	999
Portable 1/40	699
Ilici 0/0	899
Quadra 950 0/0 (NEW)	2699
Quadrax	Call

Cases

Mac II & power supply.....	\$199
Mac IIcx	199
Mac SE	39
Mac Classic.....	39
Mac LC	99
Mac IIcx.....	129

PowerBooks

100 2/20	\$699
100 4/40	899
140 2/20	899
140 4/40	1099
160 4/40 (NEW)	1399
140/170 battery	59

\$599.
World's most affordable Color Mac!!



LC 2/40, basic color, 800k floppy, keyboard, and mouse

Shreve Systems

1200 Marshall St Shreveport LA 71101
FAX 318-424-9771 Tech 318-424-7987

800-227-3971

CIRCLE 240 ON READER SERVICE CARD

MAC CITY		Quadra	Powerbook	Printer	Monitor	FUJITSU
COMPUTERS	Q650 16/500 CD CALL	Q540 8-230/CD 2899/1399	180c 4-804-160 2199/CALL	165c 480-4256 1599/call	Pro 3.0 1939	5year warranty 5.20MB 8mm 579
	Q650 8/230CD 1979/2299	Q540 16-500/CD 3499/3769	180c 4-213-47340	Call 145b 440-4256 1199/1249	Call Apple 14" RGB 489	12GB 8.5mm 899
	Q610 8-230/CD 1979	Q540 14-212G CD 4399	180 14-340	2949 Duo 230 12240 w/m	Call Raster 20" Multi 1379	2.4G 14" 1699
	Q510 8-830/1239/1299	Q590 8-0500/1.2G/CALL	180 4-480	Duo 250 12200 w/m	Raster 20" Triin 2379	85K4cd ext 479
	Q610 16-500/CD CALL	Q640 8-830/CD 2399	180 14-213	Duo 230 480 1250	398 Supermac 17/20" 299	88 ext 339
Q605 480	Q605 8-230/500 1699/2049	165 480-4160 1599/1799	4MB Powerbook	Call Sony 1302/1730 339/995	88 ext 349	
Q605 8/160	Q179 CENTRIS 650/610	165 14-213	Call 10MB Powerbook	1839 Nec 440/5EG Call	44 ext 349	
	160 440-8160	165 440-8160	CALL Internal fax modem	CALL		QUANTUM
	NO TAX OUTSIDE CALIFORNIA	ASK FOR LATEST PRICES	WE DON'T	WE CARRY FULL LINE MACINTOSH SYSTEMS		525MB/170 269/179
			WE SELL ONLY NEW	ALL SYSTEMS ARE NEW WITH ONE YEAR WARRANTY		4050MB/80 49/121
				INTERNATIONAL ORDERS / VISA-MC-AMEX OK		250/340/80 389/599

CIRCLE 241 ON READER SERVICE CARD

In business since 1985

MCP Systems

Complete solutions for your Macintosh needs

Look for us each week in MacWEEK

Quadra/PB	PowerPC \$CALL	MONITOR /OTHER
Q660AV 8/230.....\$1834.	LW Pro 630.....\$2349.	Apple AV Mon w/adpt.....\$719.
Q680AV 8/230.....\$3063.	LW 300/320/360/810.....\$Call.	Apple 14 HR CLR.....\$509.
Q605 4/80-8/160/\$959\$1259.	StyleWriter II.....\$299.	New Apple Cir Plus Disp.....\$299.
Q610 8/230.....\$1772.	QMS 86/117/1600DPI.....\$3989.	Apple 16" Color.....\$1249.
Q610 8/230/CD.....\$2125.	Apple II/HP/MS/ Sigma.....\$Call.	Sony 1304s/ 1730 w/ Adpt/\$Call.
Q650 8/230.....\$2077.		Radius/RasterOps/S/Mac/\$Call.
Q650 8/230/CD.....\$2417.		Supra 14.4C Fax.....\$169.
Duo 250 12/200/EM.....\$2769.		Asante/Shiva/.....\$Call.
Duo 27012/240/EM.....\$3468.		RAM/HD/Networks.....\$Call.

Hours • M-F 9am-6pm EST • Saturday, sometimes • Sunday, we rest.

800-378-9828 **813-378-4693**

SALES • SERVICE • SUPPORT Fax us 24hrs

©1993 MCP Systems All rights reserved Sarasota, Florida • MU 4/94

LOW-END		APPLE PRINTERS		RADIUS		UMAX			
LC III 8/160	Call	Stylewriter II	299	2 Pg 20GS	849	UC 630LE	695		
Color Classic 4/80	925	Port, Stylewriter 399		Precision Ctr 20V	Call	UC840	1095		
Quadra 605 4/80	899	Laser Select 320	Call	Intelliscan 20"	2495	UC1260	1595		
Quadra 605 8/160	1245	Laser Select 360	1479	Videovision studio	Call	UC1200SE	2895		
MID-RANGE		Laser Pro 630	1945	PhotoBooster	799	MICROTEK			
610 8/160	1345	Color Printer	Call	PC Pro 24x	1845	Scanmaker IIx	995		
610 12/230/CD	2045	Laser Select 810	4445	RasterOps		Scanmaker 35T	1295		
650 8/230	2045	POWERBOOKS		20/20 Color 20"	1595	Scanmaker II	695		
650 12/230/CD	2395	Call us for best prices on		20" Trinitron	2345	PLI			
650 32/1GB/CD	3775	all Powerbooks and Duo		Sweet 16 Display	1049	128MB MO	979		
660AV 82/320/CD	Call	H.P.		Paintbrd turbo xl	1399	Syquest 105MB	485		
HI-END		Deskwriter	299	Duo Mini Dock	399	Syquest 44	Call		
800 8/230	2275	Deskwriter C	399	Duo Dock 16sc	499	Syquest 88RW/44	479		
800 24/500	3125	Deskwriter 550C	499	Correctprint 300i	4099	600MB MO	2295		
800 24/500/CD	3425	Deskwriter 560 C	Call	SUPERMAC		5GB DAT ext.	1350		
800 136/2GB	Call	Laser 4ML	989	Platinum 20"	895	NEWGEN			
840 8/230	2995	Laser 4MP	1349	17" Multimode	1029	PS 440B 11*17	3075		
840 8/230/CD	3195	Laserjet 4M	1849	21" T-XL	2475	PS 660B	3795		
840 16/500/CD	3895	Deskjet 1200 P/5	1875	20" Plus Color	1599	PS 1200B	4595		
840 40/1GB/8C	4345	Laser 45i MC	4245	Thunder II 1360	3095	Call us for vendors not			
840 128/2GB/CD	9395	Scanjet HP	685	Pressview 21" sys	3145	listed. Dealers & Int'l			
950 16/500	3345	Scanjet IICx	950	Spectrum 24pdq+	1199	Sales Welcome.			
APPLE MONITORS		N.E.C		<h1>Mac Storm</h1> <p>(310)829-9780</p> <p>Fax Inquiry (800)Fax-9553</p> <p>Local & Int'l fax (310)315-1009</p>					
950 128/1.2GB	Call	3FGE	629						
950 256/2GB/CD	Call	4FGE	739						
APPLE MONITORS		5FGE	1149						
Color Plus 14"	299	5FGP	1395						
Apple14" Trinitron	489	6FG	2375	<h1>Mac Storm</h1> <p>(310)829-9780</p> <p>Fax Inquiry (800)Fax-9553</p> <p>Local & Int'l fax (310)315-1009</p>					
14" AV Monitor	689	6FGP	2445						
Apple 16" RGB	Call	SW MW1097	1445						
Apple 21" w/card	3795			<h1>Mac Storm</h1> <p>(310)829-9780</p> <p>Fax Inquiry (800)Fax-9553</p> <p>Local & Int'l fax (310)315-1009</p>					

CIRCLE 242 ON READER SERVICE CARD



HAWKE

BUSINESS SYSTEMS

A Division of the CPS Service Group
Flemington, NJ 08822

Fax - (908) 782-7027

Email - AOL - MACHAWKE

(800) 875-2610

We Buy, Sell and Trade

Macintosh Computers and Peripherals.

Wide Selection of Refurbished Equipment in Stock.

6 Month Parts and Labor Warranty.

We Buy Working and Non-working Equipment.

We Respond to Competitors' Pricing.

CIRCLE 244 ON READER SERVICE CARD

COMPUTER SYSTEMS

WE WELCOME INTERNATIONAL & DEALERS

QUADRA's

660AV 8/230	CALL	650 8/230	2045
660AV +CD SPECIAL		650 8/230/CD	2250
840AV 0/0	2545	610 8/160	1345
840AV 16/520	CALL	610 8/230/CD	1945
800 8/230	2165	605 4/80	935
800 8/520	2435	605 8/160	CALL
900 16/520	CALL	950 8/520	3415

POWERBOOKS

180C 4/120	CALL	NEWTON	CALL
180C 4/220	2595	165 10/160	2050
180 4/80	2099	180 4/120	CALL

**WE TRADE YOUR
OLD MAC
FOR A NEW MAC**

TRADE & UPGRADE

Q800 TO Q840CALL	Q840UPG	CALL
Q900 TO Q840 1899	Q700 TO Q840 1795	
CI TO Q650 1499	SI TO 660	CALL
CI TO Q660 1300	Q700 TO 660	875
LC UPGRADE CALL	CX TO Q800	CALL

PowerBook

PowerBook

170 TO 180	1199	170 TO 180	CALL
160 TO 180	CALL	160 TO 165	799
145 TO 165	999	140 TO 160	CALL

**Upgrade From
Cent. 650 / VX
to Quadra 650
\$1230/\$1395**

INTERNATIONAL COMPUTER & NETWORKING
TEL (310) 441-9181
FAX (310) 479-0124

10835 Santa Monica Blvd., Suite 102, LA. CA 90025
PRICES ARE SUBJECT TO CHANGE W/O NOTICE

CIRCLE 245 ON READER SERVICE CARD

QUADRA'S

605 4/80	889	840AV 8/12	4085
605 8/160	1152	840AV 8/12	5335
610 8/160	1295	NEW Power PC CALL	

QUADRA'S

610 8/230CD	1875	PowerBook's	
650 8/230	1885	145B 4/40	1225
650 8/230CD	2152	160 4/80	CALL

660AV 8/230	1675	165g 4/80	CALL
660AV 8/500CD	2345	180 4/80	CALL
800 8/230	2149	180c 4/80	CALL

800 8/500CD	2799	180c 14/120	CALL
840AV 8/230	2799	Duo 270c 4/240	CALL
840AV 8/230CD	3052	Duo Dock station	533

950 8/230	3195	BTI Built-in-charg	181
950 16/1GB	3790	UMAX	
950 8/425	3095	UC630LE	659

PRINTERS

Apple Color printer	159	UC1260	1528
StyleWriter II	268	UC1200SE	2680
Portable Styl	377	Transparenc	892

Pro 630	1947	MICROTEK	
Pro 810	CALL	ScanMaker II	675
Select 300	380	ScanMaker Ilex	995

Select 310	CALL	ScanMaker Ileg	775
Select 390	1445	ScanMaker IIG	464

DeskWriter 550c	465	SHARP	
D Writer 1800c	1877	JX-325	CALL
HP Laser 4M	1850	JX-610	CALL

HP Laser 4ML	965	SUPERMAC	
HP Laser 4MP	1375	16" E-Machine	895

NewGen		17T Trinitron	995
Imager Plus 6	CALL	20TXL	3395
Imager Plus 6L	CALL	Primeview 21"	3195

Imager Plus 12	CALL	Thunder II/GX	2587
WACOM		Thunder 24	1888

6x 9 Standard	489	RADIUS	
12x 12 Electric	680	Color Print	CALL
12x 18 Electric	889	Powerjet 24X	985

15" A Color printer	\$ 599.00		
20" MultiMode Color Trinitron	\$ 1595		
Apple Color Printer with Kit	\$ 495		

Classic II 440 \$ 750 / II V 4230 \$ 5 Call
Prices Subject To Change With Out Notice!

Dealers & International Sales Welcome!
Best Prices, Service, Delivery! No credit cards please.

DATA MICRO
For
Orders
Only!
800-345-1234

International & CA (310) 398-3300
24HR. Fax line (310) 391-2488

3847 Grand View Blvd. Los Angeles, CA 90066

CIRCLE 246 ON READER SERVICE CARD

WANTED: USED MAC's

WE BUY YOUR USED MAC EQUIPMENT FOR TOP DOLLAR. CASH! WE SELL REFURBISHED MAC's AT DISCOUNT! CALL FOR QUOTE. **RENTX INC.** (800) 545-2313, (617) 423-5567

CIRCLE 247 ON READER SERVICE CARD

SPECIALS

DUO 250 4/80	\$1575
DUO 250 4/200	\$1775
DUO Dock	\$395
DUO Dock 230	\$625
14" RGB Trinit. Monitor	\$429
12" RGB Monitor	\$195
Express Modem	\$195

UNIVERSAL COMPUTERS, Inc.

Tel: (818) 786-8150
Fax: (818) 786-8502

CIRCLE 248 ON READER SERVICE CARD

YOUR MAIL ORDER SOURCE

M.P. - COMPUTER

Micro Systems
408-481-9600
Fax: 408-481-9604

FULL SERVICE SOURCE FOR:
RasterOps • DayStar • SuperMac
Umax • Lapis • Sigma • NEC • GCC
& MANY OTHER MAJOR BRANDS

- MACINTOSH SYSTEMS -
BUY • SELL • TRADE
NEW • USED • OVERSTOCK

M.P. HAS THE LOWEST PRICES!!
International & Dealers Welcome

Major Credit Cards Accepted
3004 Lawrence Exp. Santa Clara CA. 95051

CIRCLE 249 ON READER SERVICE CARD

Reach those who count!
Advertise in MacUser and reach business buyers making Mac purchasing decisions. Nearly 8 in 10 MacUser subscribers are directly involved in their organizations' decisions to acquire Macintosh computer products. For information on how you can advertise, call your MacUser Marketplace account representative today at:

800-825-4237



MacAttack
(800) 299-MACS (800) 299-6227
409.690.0347 409.693.5756 (Fax)

We Attack High Prices!!

Prices subject to change — please call for latest pricing. We carry hundreds of items — call for availability.
Your satisfaction is our goal.
Prices are C.O.D. and subject to change. International Orders and Fax Orders Welcome!

New Macs

LC III 4/160	\$920
Color Classic	\$850
Centris 660av 8/500	\$2205
Centris 660av 8/500/CD	\$2425
Quadra 605 4/80	\$890
Quadra 605 8/160	\$1175
Quadra 610 8/160	\$1310
Quadra 610 8/230	\$1650
Quadra 610 8/230/CD	\$1965
Quadra 650 8/230	\$1935
Quadra 650 8/230/CD	\$2250
Quadra 650 8/500/CD	\$2790
Quadra 660av 8/60	\$1780
Quadra 660av 8/230	\$1780
Quadra 660av 8/230/CD	\$1965
Quadra 660av 8/500/CD	\$2505
Quadra 800 8/230	\$2105
Quadra 800 8/500	\$2655
Quadra 800 8/500/CD	\$2890
Quadra 800 8/1000	\$3265
Quadra 840av 8/230	\$2755
Quadra 840av 8/230/CD	\$3010
Quadra 840av 16/520/CD	\$3810
Quadra 840av 16/1000/CD	\$4420
Quadra 950 8/0	\$2715

One Year Warranty On New Macs!!
We sell only Apple original serial numbers.

Monitors

Apple Color Plus 14"	\$290
Mac 14" Trinitron	\$475
Audiocision 14"	\$675
Mac 16"	\$675
Sony 1430 14"	\$650
NEC 306 15"	\$650
NEC 306 17"	\$800
NEC 6P 21"	\$1400
RasterOps Sweet 16 16"	\$965
RasterOps 20/20	\$1580
RasterOps 21/24XII	\$2410
RasterOps 20t	\$2490

CDs

Apple CD 300	\$365
Apple CD 300i Kit	\$290
Apple Power CD	\$380
Apple CD Multimedia Kit	\$375

Includes Apple Design Power
Speakers, CD 300 External, & 4 CDs

Supermac

SuperMatch 17T	\$1050
SuperMatch 20 Txl	\$2575
Thunder 24	\$2230
Thunderstorm Pro	\$2745
Thunder II Light	\$2850
Spectrum 24 PDQ+	\$1285
T-16 II	\$1195
T-20	\$2485
Futura SX	\$345
Futura MX	\$600
Futura II LX	\$775

Powerbooks

145 4/80	\$2145
145B 4/80	\$1305
145B 4/120	\$1520
165 4/80	\$1610
165 4/120	\$1930
165 4/160 Modem	\$2145
165c 4/80	\$1555
180 4/80	\$2055
180c 4/120	\$2125
180 4/120 Modem	\$2510
180c 4/80	\$2370
180c 4/160	\$2610
180c 4/160 Modem	\$2830
Duo 230 4/120	\$1430
Duo 230 4/160 (Modem & Dock)	\$2200
Duo 250 4/200	\$2105
Duo 250 12/200 Modem	\$2580
Duo 270c 4/240	\$2870
Duo 270c Modem	\$3350
Duo Modem	\$4605
Duo Dock	\$475

We ship Airborne Express
international shipments
handled by DHL.
COD, Mastercard, and VISA
accepted.

Hours: M-F, 8-6 CST.
15% Restocking Fee For
Returned Merchandise.



FREE Mousepad With Every Order!!

CIRCLE 250 ON READER SERVICE CARD

Scanner

HP Scanjet IIx	\$730
HP Scanjet IIcx	\$340
Interface For Scanjet	\$265
One Scanner	\$705
Color One Scanner	\$940
Scanmaker II XE	\$1170
AGFA Transparency Module	\$690
AGFA Arcus Plus Scanner	\$2995

Modems

SupraFax Modem	\$225
GV PowerPort Bronze	\$90
GV PowerPort Silver	\$260
GV PowerPort Gold	\$280
GV PowerPort Mercury	\$280
Geoport Adapter	\$115

Keyboards

Apple Keyboard II	\$75
Apple Extended Keyboard II	\$160
Apple Adjustable Keyboard	\$130

We have Int'l Keyboards!

PLI (Syquest)

External	
Includes Formatting Software & 1 Cartridge	
Infinity 44	\$340
Infinity 44/88c	\$485
Infinity 105	\$510
Internal	\$CALL
Cartridge 44/88/105	\$60.90/60

Printers

StyleWriter II	\$290
ImagerWriter II	\$285
Portable StyleWriter II	\$285
LW Select 310	\$260
LW Select 320	\$260
LW Select 360	\$260
LW Pro 310	\$260
LW Pro 320	\$260
HP LaserJet 45i	\$190
HP LaserJet 45i MX	\$270
LaserJet Toner	\$120

Other Stuff

Turbo Mouse	\$105
Apple Power Sepakers	\$140
Memory	\$CALL
Software	\$CALL

FREE FREIGHT CALL FOR DETAILS

COMPUTER PROS
1-800-329-4MAC

LEASING PLANS AVAILABLE

"Over 18,000 products to choose from"

• Electronic Publishing • Multi Media • Government • Corporations
HARDWARE • STORAGE • SOFTWARE • MEMORY • SCANNERS

CPU

LC III 4/160	\$969
Quadra 605 4/80	\$950
Quadra 610 8/230	\$1729
Quadra 660 AV 8/230/CD	\$2080
Quadra 650 8/230/CD	\$2225
Quadra 800 8/230	\$2240
Quadra 840 AV 8/230/CD	\$3095
Quadra 840 AV 16/1GIG./CD	\$4630
Quadra 950 8/0	\$2925

Call for unlisted models.

POWERBOOKS

Powerbook 145 B 4/80	\$1370
Powerbook 165 4/80	\$1670
Powerbook 180 4/120	\$2400
Powerbook 180 C 4/160	\$2730
P.B. Duo 250 4/200	\$2220
P.B. Duo 250 12/200/Modem	\$2700
P.B. Duo 270 C 12/240/Modem	\$3500
Duo Dock/Superdrive/Mouse	\$525

All advertised prices subject to change.

MONITORS

Apple Color Plus 14"	\$319
Apple Color Display 14"	\$520
Apple 14" AV	\$635
Apple 16" Color Display	\$988
Supermac 17T Monitor	\$998
Thunder/24	\$1689
Supermac 20TXL Monitor	\$2549
Apple Extended KB	\$150
Apple Ergonomic KB	\$160

PRINTERS

Apple LW Select 300 w/Toner	\$489
Apple LW Select 320 w/Toner	\$915
Apple Stylewriter II w/cable	\$315
GCC	Call
Amex • Visa • MasterCard	
Español	
(305) 581-6004	
1-800-329-4622	
Ft. Lauderdale, Florida	



CIRCLE 251 ON READER SERVICE CARD

COMPUTER SYSTEMS

LATEST

Mac
S.A.L.E
INTERNATIONAL

SPECIALS

FREE SOFTWARE • OVER \$200.00

With The Purchase Of Any CPU
(Manufacturer's SRP, Limited Time Offer, While Supplies Last)

NEW

Mac LC 2/40 System **\$799.00**
Standard II Keyboard
14" Color Plus Monitor

New LC 2/40	\$449.00
New IICI 5/80 w/cache	\$1299.00
New Quadra 800	
8/500 w/CD	\$2799.00
New Personal LW NT	\$695.00
New Laserwriter Select 300	\$499.00
New Conner 543MB	
3.5" Int HD	\$499.00
New Apple PC 5 1/4"	
Floppy Drive	\$25.00

SPECIALS

Microsoft Word	\$149.00
Microsoft Excel	\$179.00
Microsoft Word Upgrade	\$70.00
Now Utilities	\$25.00
Snooper w/Norton Util.	\$49.00
Math Rabbit	\$10.00
Call For Additional Close-Out Software!!	
We Carry A Complete Line Of	
Macintosh Repair And Replacement	
Parts (Logic boards, Power Supplies,	
Drives, etc.)	

USED

Mac II	1/0	\$279.00
Mac IISI	3/40	\$429.00
Mac IISI	5/80	\$529.00
Mac LC II	4/40	\$549.00
Mac IICX	1/0	\$499.00
Mac IICI	5/0	\$899.00
Mac IIFX	4/0	\$1199.00
Quadra 700	4/0	\$1249.00
PBook 170	4/40	\$1299.00

System Special - \$799.00
Used Mac IISI 3/40
New Apple 14" Color Plus
Used Apple Std. II Keyboard

1-800-729-7031

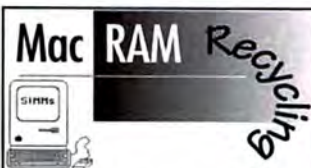
Prices represent "2% Cash Discount" - off Full Price.

Returns at discretion of Mgmt./15% Restocking fee.

WE WANT TO BUY YOUR NEW/USED MAC EQUIPMENT

CIRCLE 252 ON READER SERVICE CARD

MEMORY UPGRADES



SELL your old / used memory

• 256K / 512K / 1-MB+ SIMMS •

We also recycle dead / junk Macs

Paying 50c each for 256K 8-chip
SIMMS in any quantity.

Call (815) 332-3315

P.O. Box 497, Cherry Valley, IL 61016

CIRCLE 253 ON READER SERVICE CARD

Big Mac

Computers, Inc.
Division of WEN

POWER BOOKS

180C 8/80	2495
180C 8/160M	2795
180C 14/300	3495
165C 8/120	2120
165C 14/213	2695
165 4/80	1650
165 14/210	2895
180 8/80	2295
180 14/300	3295
250 4/80	1595
270C 12/240M	3495
AppleFax Mod.14.4	195

QUADRA'S

840AV 0/0	2695
840AV 16/500	3630
840AV 40/1.2	4995
840AV 64/2.0	6250
840AV 128/2.0	8695
800 8/230	2295
800 8/500CD	3050
950 8/400	3295
950 64/2.0	6295
605 8/160	1175
610 16/230	2050
610 16/500-CD	2695
650 16/500	2695
650 40/1.2	3995
650 8/500-CD	2795

MAC II Si 3/40 \$495
Apple CD-150 \$179

**CALL FOR NEW APPLE
POWER PC PRODUCTS**

10837 Santa Monica Blvd. Los Angeles, CA 90025
Tel: (310) 470-7099 • Fax: (310) 470-8099

We carry everything for MAC • Since 1987

SPECIALS

Duo 2504/80	1695
IIVX 4/230	1050
Laser IIF	895
LaserSelect 310	650
LaserSelect 300	525
Thunder/24	1450
Thunder II	2500
AppleColorPrint	495
Personal LaserLS	495
Seiko 20" Trin.	1195
660AV 8/80	1495
17G.B.H.D.	1199

EXCHANGE

ANY OLD MAC
TO A NEW MAC

LOGIC BOARDS

IIF/IIG	550/1195
IIFX/Ci	995/595
650/900	1200/1395
950/800	1995
NT/NTX	295/395

APPLE MONITOR

14" /Basic	435/195
16"/14" Plus	1025/325
14" AV Color	599

PRINTERS

600/630	1295/1995
300/310	525/650
360/810	1450/4495
4M/4ML	1895/1095
HP550C	495
HP1200C	1950
HammerHead	3950
GCCDyesub	CALL
Proof-Positive	CALL

SUPER MAC

Digital Film	2895
Thunder /24	1450
Thun. IIGS 1360	2695
20T/17T 3025/1039	
Pre-Press 20"	3295

RADIUS

StudioPro	3295
24XP/24X	499/1489
20SL/19" 2538/2249	

N E C/Rasterops

P L I	
-------	--

DEMO MAC'S

Mini Array	Best Price
Infinity 88/44	550
128MB Optical	1195
IICi 5/80	995
IIFX 8/80	1295
P.B.170 4/80	1150
IICX 8/230	1095

Call for APPLE 3rd party products • International Orders
VISA, MC & AmEx Welcome • Next Day Shipping for U.S.A. & International
Prices are subject to change w/o notice • All prices shown are G.D.D. Prices

CIRCLE 254 ON READER SERVICE CARD

GENERAL

Pre-Owned Electronics

INCORPORATED
THE Independent Provider, serving the Dealer, Professional, Corporate,
Government & Educational Buyer since 1985

Apple & Macintosh Systems,
Parts, and Exchange Repairs

**WE BUY
MACS!**

CALL FOR
A CATALOG **(800)274-5343** Int'l: (617)275-4600
FAX: (617)275-4848
205 BURLINGTON ROAD • BEDFORD • MA 01730

CIRCLE 255 ON READER SERVICE CARD

In the past 12 months, 8 in 10 MacUser
subscribers purchased products by
mail order; 91% of these purchased
software through mail order.

Did they buy from you?

PERIPHERAL 800 256-6581



Standard SIMMs

1 Megabyte	40.00
2 Megabyte	73.00
4 Megabyte	140.00
8 Megabyte	329.00
16 Megabyte	619.00

Video RAM

4 Bit to 8 Bit Upgrade (Mac II/IIx cards)	24.00
256K Quadra 700/900, Performa 46X VRAM	21.00
256K Quadras, LC 520 VRAM	25.00
256K Centris, LCIII, Performas VRAM	25.00
512K VRAM for LC, LCII, IIvx, IIvi, DuoDock, and Performas	39.00

68882 FPU Boards

25 MHz for Macintosh LC	55.00
20 MHz w/2 slots for Mac IIsi	119.00
25 MHz for Mac Classic II	55.00

Cache Cards, Etc.

128K Cache Card for LCIII and Performa 450	159.00
w/25 MHz FPU	239.00
IIsi 64K Cache Card	159.00
IIci 64K Cache Card	125.00
IIsi 2-slot Card and 68882	119.00

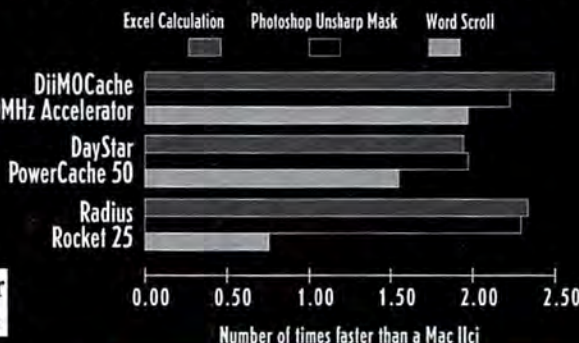
Math Coprocessors

68882 16 MHz FPU	39.00
68882 20 MHz FPU	45.00
68882 25 MHz FPU	49.00
68882 33 MHz FPU	59.00
68882 50 MHz FPU	99.00
68881 16 MHz FPU	45.00

Miscellaneous

LaserWriter Pro 810 4 MB upgrade	275.00
LaserWriter Pro 810 8 MB upgrade	549.00
T.I. MicroLaser 1 MB	39.00
Mac Classic 1 MB Board	75.00
68851 16MHz PMMU	89.00
if requested, MODE 32 software included free w/PMMU	
Mac Portable 3 MB Card	369.00
Mac Portable 4 MB Card	399.00
Mac Portable 5 MB Card	449.00

DiiMOCache 50MHz Accelerator \$545



72 Pin Memory for the new Macs!

	80ns	70ns	60ns
4 Megabyte	139.00	143.00	149.00
8 Megabyte	279.00	299.00	309.00
16 Megabyte	CALL	CALL	CALL
16 MB - Non Composite		625.00	659.00
32 MB - Non Composite		1249.00	1349.00

Newton PDA Upgrade Products

512K Static RAM Upgrade	125.00
1 Megabyte Static RAM Upgrade	169.00
2 Megabyte Static RAM Upgrade	289.00
2 Megabyte Flash Card Upgrade	259.00
4 Megabyte Flash Card Upgrade	425.00
8 Megabyte Flash Card Upgrade	749.00
16 Megabyte Flash Card Upgrade	1375.00



PowerBook Memory

	100	140/170	160/180	165c/180c	Duos
2 MB	95.00	95.00	---	---	---
4 MB	175.00	165.00	169.00	169.00	195.00
6 MB	279.00	239.00	245.00	249.00	235.00
8 MB	---	---	319.00	325.00	319.00
10 MB	---	---	399.00	419.00	---
14 MB	---	---	---	---	725.00
20/28	---	---	---	---	CALL

Speed up everything you do by up to 400% with this 50MHz 68030 accelerator by DiiMO Technologies.

Awarded 4 1/2 Mice in MacUser's April 93 Accelerator Review, the DiiMOCache 50MHz 68030 Accelerator outperformed not only DayStar's PowerCache 50MHz but also most of the 68040 25MHz accelerators.

And it costs less too! The DiiMOCache runs on the LC, LCII, LCIII, II, IIx, IIcx, IIci, IIvx, IIvi, IIsi, SE/30, the Performa 600 and 400 series. Call for adapter prices.

DiiMOCache 50MHz 68030 Accelerator

without FPU \$545.00 with FPU \$619.00

**68040
PROCESSOR
WITH FPU
\$299.00**

FOR THE
CENTRIS/QUADRA
605,610,650,660AV,
PERFORMA 475/476,
AND LC 475.

**TOLL FREE
TECH SUPPORT
LIFETIME
WARRANTY**

ON ALL MEMORY PRODUCTS
APPLELINK-PERIPHERAL

**ORDER BY 6:30 PM CST
FOR SAME DAY SHIPPING***

OVERNIGHT DELIVERY FROM \$8.00 *some restrictions apply
Due to volatility in the market all prices and availability are subject to change without notice.

PERIPHERAL OUTLET, Inc.

327 East 14th, PO Box 2329 • Ada, Oklahoma 74820
International ☎ 405/332-6581 FAX ☎ 405/436-2245

MEMORY UPGRADES

MAC Xtra! Delivering The Knockout Punch On High Prices!

POW! MEMORY UPGRADES

1x8x80.....	\$39
2x8x80.....	\$72
4x8x80.....	\$145
4x8x80 II/III.....	\$155
16x8x70 (Low Profile).....	\$619
1x8x80fx.....	\$42
4x8x80fx.....	\$144
16x8x80fx.....	\$621
4MB 72 pin (70NS/60NS).....	\$138/\$147
8MB 72 pin (70NS/60NS).....	\$289/\$295
16MB 72 pin (70NS/60NS).....	\$605/\$615
32MB 72 pin (60NS).....	\$1,344
Newton-2MB.....	\$289

POW! POWERBOOK MEMORY

PB 100-6MB.....	\$265
PB 140/170-4MB/6MB.....	\$165/\$259
PB 160/180-4MB/6MB.....	\$165/\$255
PB 160/180-8MB/10MB.....	\$325/\$415
PB 165C/180C-4MB/6MB.....	\$165/\$269
PB 165C-8MB/10MB.....	\$335/\$439
PBDOU 210/230-4MB/6MB.....	\$165/\$215
PBDOU 210/230-8MB/10MB.....	\$299/\$349
PBDOU 210/230-12MB/20MB.....	\$572/\$969
PBDOU 210/230-28MB.....	\$1,685

WHAM! MODEMS

Supra 5014LC 14.4 S/R Fax.....	\$165
Supra 2400.....	\$59
SupraV.32bis Powerbook Fax.....	\$229
Supra 14.4 S/R Fax (w/cable/software).....	\$225
Zoom AMX 2400 bps.....	\$68
Zoom FAX 2400/9600 S/R Fax.....	\$129
ZoomVFXV 14.4 v.32bis S/R.....	\$195



SOK! ACCELERATORS

DAYSTAR Universal Powercache	
030 33/33 w/FPU.....	\$289/\$379
030 50/50 w/FPU.....	\$439/\$565
Turbo 040 25/33.....	\$779/\$949
Turbo 040 40.....	\$1,129
128K Cache for Turbo 040 Accelerators ..	\$172
APPLIED ENGINEERING	
SE 25 mhz/ 25 mhz w-FPU.....	\$189/\$289
Classic 25 mhz/25 mhz w- FPU ..	\$189/\$289

POW! DRIVES

Rumi 1.2 Ext/Rumi 1.2 Int ..	\$1,109/\$1,089
Rumi 170 Ext/Rumi 170 Int	\$299/\$219
Rumi 85 Ext/Rumi 85 Int	\$279/\$209
Rumi 240 Ext/Rumi 240 Int	\$349/\$279
Rumi 525 Ext/Rumi 525 Int	\$699/\$609
Rumi CD-ROM.....	\$299
Rumi Optical 128 MB w/5 cartridges.....	\$995
Rumi 44MB SyQuest w/cartridge	\$289
Rumi 88MB SyQuest w/cartridge	\$445
Rumi 105MB/C SyQuest w/cartridge	\$529
Rumi 2GB DAT Drive.....	\$1,069
Rumi 8GB DAT Drive.....	\$1,219

POW! MISCELLANEOUS

256K / 512K VRAM.....	\$20/\$38
Tool Kit (Simms Inst. Kit)	\$7
PowerBook Tool Kit.....	\$6.50
SIMMdouble/SIMMchanger	\$137/\$98
LC / LC II FPU	\$55
LC III FPU	\$65
Classic II FPU/Color Classic FPU	\$55/\$48
Duo Dock/Performa 600 FPU	\$59
Centris FPU	\$315
TI Microlaser Upgrade.....	\$54
HP 4MB/HP 8MB	\$175/\$355

POW! SYQUEST CARTRIDGES

SyQuest 44MB Cartridge	\$59
SyQuest 44MB Preformatted	\$64
SyQuest 88MB Cartridge	\$93
SyQuest 88MB Preformatted	\$98
SyQuest 105MB Cartridge	\$79

SOK! MEDIA

Optical Cartridges	
128 MB (Samsung)	\$34
650 MB (Samsung)	\$85
1.2GB/512K (Verbatim)	\$112
1.3GB/1024K (Verbatim)	\$112
Bernoulli Cartridges	
44 MB	\$97
90 MB.....	\$105
150 MB (5 Pack)	\$459

WHAM! SHIPPING

Overnight Delivery.....	\$7
UPS	\$6
International Orders-24 Hours a Day	
Phone:.....	(206) 455-0786
Fax:.....	(206) 455-3448



MAC Xtra

1075 Bellevue Way N.E. Suite 114,
Bellevue, WA 98004
Phone: (206) 455-0786
Fax: (206) 455-3448

We accept MasterCard, VISA & Discover •
Returns subject to approval and restocking fee •
Prices subject to change
7:00 AM to 6:00 PM M-F 9:00 AM to 4:00 PM Sat. PST

CALL: 1-800-553-4230

CIRCLE 257 ON READER SERVICE CARD

MEMORY UPGRADES

King of the Memory Jungle!

30 PIN SIMMS

1x8 - 100	\$38	4x8 - 70	\$146
1x8 - 80	\$42	8x8 - 80	\$359
1x8 - 70	\$45	16x8 - 70	\$589
2x8 - 80	\$78	16x8 - 70nc	\$629
4x8 - 80	\$142		

72 PIN SIMMS 70ns/60

(4 mb) 1 x 32	\$144/\$149
(8 mb) 2 x 32	\$309/\$325
(16 mb) 4 x 32	\$625/\$668
(32 mb) 8 x 32	\$1269/\$1349

POWERBOOK MEMORY

140/170	160/180	1650/180c	Duos
4mb	172	174	169
6mb	259	269	279
8mb	—	367	378
10mb	—	459	478
18mb	—	—	729

7921 Professional Cir.,
Huntington Beach, CA 92648

Office 714-848-5958

Fax 714-842-9437

7AM to 6PM MONDAY
THRU FRIDAY P.S.T.

Same Day Shipping

P.O.'s, Educational & Corporate P.O.'s, Government
We accept: AMEX, VISA, MASTERCARD & DISCOVER

800-989-6348

HARD DRIVES

QUANTUM 2 yr. Warr.	INT/EXT
ELS 170mb	3.5" \$229/279
LPS 270mb	3.5" \$298/369
PRO 540mb	3.5" \$648/678
PRO 1050mb	3.5" \$949/998
PRO 1225mb	3.5" \$1049/1098

QUANTUM GO DRIVES

2.5 Powerbook Drives	INT/EXT
120mb	2.5" \$269/359
170mb	2.5" \$289/379
256mb	2.5" \$439/499

FUJITSU 5yr Warr.

520mb	3.5"	\$615/665
1.2mb	4.5"	\$869/719
2.4mb	5.25"	\$1769/1819

EXTERNAL DRIVE HOUSINGS

Complete w/ SCSI cable and power cable	
Half Height	\$85
Half Height Mini	\$89
Full Height	\$145

DAYSTAR DIGITAL

POWERCACHE	
33MHZ POWERCACHE	\$345
50MHZ POWERCACHE	\$565
POWERCACHE ADAPTER*	\$98

*Req'd for non Mac II, Ix, Ixv, Performa 600

TURBO 040 ACCELERATORS

TURBO 040 (with FPU support)	
25MHZ TURBO 040	\$849
33MHZ TURBO 040	\$1029
40MHZ TURBO 040	\$1259

TURBO 040i (w/o FPU support)	
20MHZ TURBO 040i	\$598
25MHZ TURBO 040i	\$679
33MHZ TURBO 040i	\$765
FASTCACHE TURBO (128 cache for turbo 040 family)	\$179

APPLICATION ACCELERATORS

Image 040 (Quadra/Centris)	\$2279
Quad 040 (Quadra/Centris)	\$1599
Charger (Photoshop Accelerator)	\$498
Charger Plus	\$649
Charger PFS	\$1839

SYQUEST Removable Technology

44mb Cart. \$62 88mb cart. \$94

Drives	INT/EXT
Memory Direct 44mb	\$299/349
Memory Direct 88mb	\$429/469
Memory Direct 88c	\$469/499
Memory Direct 105mb	\$429/469

MODEMS

Global Village Power Port
Bronze/Silver/Gold \$169/\$259/\$285

Global Village Tele Port
Bronze/Silver/Gold \$119/\$269/\$298

*New!
Global Village Mercury.....\$339

Other Available Products

RASTEROPS, SUPERMAC, ASANTE,

Call on

IBM Memory,
PC Clone Memory,
Compaq and AST Products

Lifetime Warranty.

Prices subject to change without prior notice.

International and local

714-848-5958

MEMORY DIRECT!

Terms & Conditions: RMA numbers are required for all returns. All unopened, refused, cancelled or non-defective returns will be subject to a 15% restocking fee.

CIRCLE 258 ON READER SERVICE CARD

MEMORY

Universal Type 30-pin 1MBx8 SIMM

Universal Type 30-pin 4MBx8 SIMM
(* Except Iltx)

Ilvi, Ilvx - 8MB SIMM

Ilvi, Ilvx - 16MB SIMM

Iltx - 16MB SIMM

SE/30, Quadra 700 - 16MB SIMM

Quadra 800 - 8MB SIMM

Quadra 800 - 16MB SIMM (Fits all slots)

Quadra 800 - 32MB SIMM (Fits all slots)

Ilci, Ilcx, Ilsi, Quadra 900, 950 - 16MB SIMM

LC III, Centris - 8MB SIMM

LC III, Centris - 16MB/32MB SIMM

CALL PowerBook 140, 170 - 4MB/6MB \$ 169.00/259.00

CALL PowerBook - 160, 180 - 4MB/10MB \$ 179.00/419.00

CALL PowerBook - 165C - 4MB/6MB \$ 179.00/269.00

CALL PowerBook - 165C - 8MB/10MB \$ 339.00/419.00

CALL PowerBook Duo 4MB/6MB \$ 169.00/249.00

CALL PowerBook Duo 8MB/10MB \$ 299.00/499.00

CALL PowerBook Duo 12MB/14MB \$ 599.00/699.00

CALL PowerBook Duo 16MB/20MB \$ 799.00/999.00

CALL PowerBook Duo 22MB/28MB \$ 1199.00/1599.00

CALL Quadra's, LC III, Centris VRAM - 256KB \$ 19.00

CALL LC, LC II, Ilvi, Ilvx VRAM - 512KB \$ 29.95

CALL Classic II, LC, LC III - 16/20MHZ FPU \$ 49.00/59.00

PRICES SUBJECT TO CHANGE WITHOUT NOTICE

Office Hours: Mon.-Fri. 9am to 5:30pm pst

CALL FOR UPDATED LOW PRICES AND NEW PRODUCTS

TEL. (818)855-5688 FAX (818)855-5687

TERMS: C.O.D. CASH, VISA OR MASTERCARD. COMPANY AND UNIVERSITY P.O.'S ACCEPTED UPON CREDIT APPROVAL.

414 CLOVERLEAF DR., UNIT B, BALDWIN PARK, CA 91706



MEMORY UPGRADES

Quadruple Your SIMM Capacity with **SimmStack™**

**30 PIN
TO 72 PIN
SIMM
CONVERTER**

Also Available:
72 PIN SIMM
Slot Doublers



SAVE Money on Memory!!!

- Use your existing 30 PIN SIMMs in your new 72 PIN Mac
- Add an additional 72 PIN SIMM slot to your new Mac

SimmStack™ System Availability:

- Apple LC III/LC 475
- Apple Performa 450/460/466/467/475/476
- Apple Quadra 605/610/650/660AV
- Apple Centris 610/650/660AV
- Apple LaserWriter Pro 600/630
- Apple Plus Many Other Systems

SAVINGS

Beat the high cost of memory by utilizing existing memory in your new system. Enables you to recycle your old memory.

Easy To Install

Simply plug old SIMMs into **SimmStack™** and plug into 72 PIN slot of your Mac. 100% Compatible.



Call Now To Order! (800) 209-7126

Guarantee: We Stand Behind Our Products! All products carry a 30 day money back guarantee. Sermax Technology, New York, NY • Tel: (212) 410-1597 Fax (212) 410-0452

CIRCLE 260 ON READER SERVICE CARD

MEMORY UPGRADES

CALL US LAST FOR LOWEST PRICES ON ALL MAC MEMORY, 1MB TO 32MB, ALL POWER BOOKS, DUOS & PRINTERS. ACCELERATOR BOARDS, FPU CARDS, FPU CHIPS, PMMU CHIPS & VRAM.

LIFE TIME WARRANTY

M.C., VISA & DISCOVER P.O.'S WELCOMED

1-800-662-SIMM (7466)

SERVING THE INDUSTRY SINCE 1963

**DATA MEMORY SYSTEMS INC. 15 UNION ST.
LAWRENCE MA 01840 508-683-2325 FAX 508-975-5232**

CIRCLE 261 ON READER SERVICE CARD

SOURCE INTERNATIONAL

*Silicon Valley's FIRST CHOICE
for COMPUTER MEMORY*

(415) 323-6059 Fax (415) 326-3552

CIRCLE 262 ON READER SERVICE CARD

Get your share of the business.

Call your MacUser Marketplace account representative today at

800-825-4237

PERIPHERALS

MASS Microsystems DataCart for Syquest Drives

**Lifetime Warranty
Money Back Guarantee
Special Offer**

DataCart 45

1 Pack\$58.00

10 Pack\$55.00

DataCart 88

1 Pack\$90.00

10 Pack\$87.00

Memory Merchants

Quality Removable Storage

(800) 799-DISK

(3 4 7 5)

4 Shratton Ave., San Carlos, CA

CIRCLE 263 ON READER SERVICE CARD

SCANNERS

PRE-PRESS

PRO PHOTO CD



♦ CUSTOM PCO SCANS (35mm to 4x5)

♦ KODAK & LEAF SCANNERS ♦ LEAF

DIGITAL CAMERA BACKS ♦ AGFA ARCUS

PLUS SCANNERS **800 735-1950**

PalmerPhotographic

2313 C Street Sacramento, CA 95816

CIRCLE 264 ON READER SERVICE CARD

Before You
Buy RAM, Get

OptiMem™
The Software
Memory Upgrade

"OptiMem is a lot cheaper than buying more memory. Even if you decide to add memory to your Mac, OptiMem will continue to be of value by allowing you to concurrently run more programs."

—Craig Crossman, Knight-Ridder

"It's hard to say what amount of 'real' memory OptiMem would compare with. Offhand, for most major apps, I'd say it's like having about twice the physical memory you really have."

—David Ramsey, Columnist/SysOp

"OptiMem automatically adjusts the memory in a Mac to allow more applications to run and prevent problems related to low memory conditions."

—Robert Hess, MacWEEK

Call 412-681-0544 for application guidelines. SRP \$129. Now \$79.98 from **The Mac Zone** at 1-800-248-0800, order code MW003. Satisfaction guaranteed. Requires System 7.

JUMP DEVELOPMENT GROUP

MacUser Marketplace

To place your ad, call your MacUser Marketplace account representative today!

800-825-4237

SOFTWARE/BAR CODING

*Creating precision bar codes
is as easy as using a font!*

*Scanning bar codes
is even easier!*

"This is the best product of its kind and it's reasonably priced too!"
—MacUser review

PRINTBAR™ BAR CODE FONTS

- PrintBar fonts available for:
 - Code 39 • UPC/EAN/ISBN
 - POSTNET/FIM • Interleaved 2 of 5
- Money back guarantee!
- Discount when bundled with bar code reader.

800 232-7625

4140 Mother Lodge Dr., Suite 100, Shingle Springs, CA 95682-8038
Phone 916 672-0244 Fax 916 672-1103



**CODESCAN 3000™
BAR CODE READER**
► 5 year warranty.



**Bear Rock
TECHNOLOGIES**

BAR CODE FONTS



- 60 PostScript Type 1 Bar Code Fonts — Just like using Times or Helvetica
- Use in any program with a font menu
- Code 39, UPC/EAN, 128, I 2of5, PostNet
- Not HyperCard Dependent
- Simple, Easy-to-Use, Plug & Play

WORTHINGTON
DATA SOLUTIONS

- Create 1,000 incremented bar codes in 5 seconds using Sequencer™ DA
- Generate film masters in Quark, etc.
- \$199 includes our DA & All Fonts
- 30 day money back guarantee
- Call Toll Free in the USA or Canada

800-345-4220 or 408-458-9938

BAR CODING

SYNEX

Bar Code Pro™

Desk accessories, Quark™ or PageMaker™ add-ons, or fonts create bar code graphics. Bar Code Pro™ is an easy-to-use solution for packaging design, labeling, libraries, inventory, or publishing. Versions: UPC, Code 39, EAN, ISSN, ISBN, POSTNET, FIM, 128, Codabar, MSI, ITF, Pharmacode

NOW IN COLOR



0 012345 7

Installs in 60 sec. and takes less than five minutes to master!
— MacWorld!

TEL: (800) 447-9639
FAX: (718) 768-3997

INTERNET CALL:
(718)
499-6293

CIRCLE 265 ON READER SERVICE CARD

CAD/CAM

CADMOVER® - Release 3.5

New Formats, New Features, & More User Control

- New Formats Include: ClarisCAD, Presenter Professional
- Read MicroStation, Schema & Pro Engineer via EPSF
- No more add-on modules - get DDES2, STL & more free
- Check your drawings with the new Pan & Zoom Feature

So many improvements...so little space...
so call for more information.

Call 703.532.0213

KANDU
Software Corporation



CIRCLE 268 ON READER SERVICE CARD

Barcode Generation

Mac BARCODA

With a color option that works

All the vital features for safe, high-quality barcodes.

The highest precision Mac barcoding package available.

Bar Code Readers

For Mac or PC. Works with any software package. All major bar codes supported.

Wand Reader \$255

Label Printing on Sheets

PostScript label printing: barcodes, text, graphics and numbers.

New features now including **Label Designer** industry standard label templates.

Label Printing on Reels

Text, graphics, and barcode label printing on Zebra reel-fed thermal printers.



Computalabel

Call Toll Free - 800-289-0993

28 Green Street, Newbury MA 01951 Fax 508-462-9198

CIRCLE 266 ON READER SERVICE CARD



A Design Breakthrough

- easy, fast, intuitive 3D CAD
- real 3D direct manipulation
- sketch in live 3D perspective
- solid modeling with object-based shadows, automatic poché
- fit, flip, snap-to objects

1993 MacUser Editors' Choice Award Finalist

Call 503-345-7421

Fax 503-346-3626



DesignWorkshop™

CIRCLE 269 ON READER SERVICE CARD

CD-ROM

ARCHITECTURAL PHOTOFILE

\$130.00 plus shipping

To Order or for Free Brochure Contact:

L
Loggia
1519 24th Street
Detroit, MI 48216
313-349-1508

1-800-8-LOGGIA
Loggia@aol.com

A CD-ROM collection of 75 images with nearly unlimited use. The images include: homes, factories, and more; at 150 and 300 dpi; 8 bit and 24 bit; grey-scale and color.

Visa & mastercard accepted

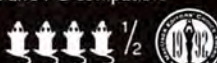
CIRCLE 270 ON READER SERVICE CARD

JUMPSTART YOUR IMAGINATION

PHOTODISC™

THE CANVAS FOR YOUR MIND'S EYE

- Stock Photography on CD-ROM
- Model & Photographer released. No additional fees!
- High resolution and color-corrected for CMYK separation or black & white reproduction
- Optimized for 150-line screen printing
- Nine volumes of quality images by award winning photographers: from nature to science, business to leisure and beyond
- Mac and PC compatible



Print photos straight from disc or use photo-manipulation software to explore the limits of your imagination

TO ORDER OUR STARTER KIT FOR ONLY \$69.00, OR REQUEST INFORMATION CALL 1-800-528-3472 OR FAX 1-206-441-9379

CIRCLE 267 ON READER SERVICE CARD

CD's Next to Wholesale!

Graiers Encyclopedia 6.0	\$45.00
Guiness Disc Records '93	\$23.00
Iron Helix	\$55.00
Lucas Game Pack	\$25.00
Hellcab	\$49.00
Journeyman Project	\$45.00
Mayo Clinic	\$24.00
MYST	Scall
Publish It! 2.0	\$19.00
Quicktoons	\$17.00
Rebel Assault	Scall
Seventh Guest	\$49.00
Sherlock Holmes Cont. Dec.	\$23.00
Space Shuttle	\$23.00
Storytime	\$19.00
Timetable/Science	\$19.00
Trade Opportunity	\$22.00
Wayzato World Factbook	\$19.00

Call for Free Catalog!

RACEWAY CD

1-800-240-0055

CIRCLE 271 ON READER SERVICE CARD

COMMUNICATIONS/NETWORKING

TeleFinder™ Bulletin Board System

GROUP EDITION BBS

The leading Macintosh BBS for business and education. First in quality and performance.

• "The best BBS available on any platform, at any price." MacUser (UK) ★★★★★

• "Best Communications Software 1992" - MacWorld Australia.

• Multi-user chat, E-mail, ZMODEM file transfer, conferences, find file, and graphic user interface.

• Supports Mac and PC users.

• TeleFinder is \$425 for unlimited users, includes host and user communication software. Call for free demo!

Spider Island Software

4790 Irvine Blvd #105-347 Irvine, CA 92720

tel (714)669-9260 fax (714)669-1383

bbs (714)730-5785

CIRCLE 272 ON READER SERVICE CARD

MacUser Marketplace

To place your ad, call your MacUser Marketplace account representative today!

800-825-4237

CD-ROM

Join the CD-ROM Revolution!

***FREE EXPRESS [2-DAY] SHIPPING!**

Free Express (2-Day) shipping only on products in this ad marked with *.

CD-ROM DRIVES

AT = Access Time, DTR = Data Transfer Rate

All drives are ready to run and are Kodak Photo CD multisession compatible. Includes driver software and choice of SCSI cable, except for NEC which come with Mac to SCSI cable. All drives except CD Tech come with AllCache driver software. Call 1-800-843-9497 for more info.

CD Tech-T3401.....\$479

#1824 — AT-200ms, DTR-327k/sec

Procom CD EX.....\$349

#5031 — AT-320ms, DTR-300k/sec

Procom CD MX.....\$549

#1833 — AT-200ms, DTR-327k/sec

Plextor DM5028.....\$429

#5028 — AT-245ms, DTR-335k/sec

NEC 3Xe (external).....\$597

#945 — AT-200ms, DTR-450k/sec

NEC 3Xp (portable).....\$469

#944 — AT-250ms, DTR-450k/sec

3 FREE CDs

FREE Lunicus, Mister X & EDUCORP CD Sampler with CD-ROM drive or drive bundle purchase from EDUCORP.

(May not be valid when price matching.)



CD-ROM Bundles

Educational Drive Bundle

Includes drive, Labtec speakers with A/C adapter, stereo headphones, choice of SCSI cable, driver software and power supply.

1. Grolier's Encyclopedia.....Retail \$395.00
2. World Atlas.....69.95
3. U.S. Atlas.....69.95
4. U.S. History.....395.00
5. Think for Yourself.....249.00
6. The View from Earth.....79.95
7. Dict/Living World 3.0.....149.00
8. Mayo Clinic Family Health Book.....69.95
9. Shakespeare.....29.99
10. Sherlock Holmes.....29.99
11. Audubon's Birds of America.....49.99
12. Audubon's Mammals.....49.99
13. EDUCORP CD Sampler.....9.95

Plextor DM5028, #E5028, \$649

Procom CD EX #E5031, \$589

Procom CD-MX #E1833, \$799

CD Tech T3401, #E1824, \$729

2 FREE multimedia titles with CD Tech.

NEC 3Xe, #E945, \$829

NEC 3Xp, #E944, \$679

Buy a CD-ROM drive or drive bundle from EDUCORP, and add a bundle up to 90 days after purchase.

Optional Bundles

You must purchase a CD-ROM drive or drive bundle from EDUCORP.



Reference Bundle \$79.95, #SB1

SAVE \$454.95 (Total retail value \$534.90)

1. Grolier MM Encyclopedia.....Retail \$395.00
2. World Atlas.....69.95
3. Mayo Clinic Family Health Book.....69.95



Learning Bundle \$59.95, #SB2

SAVE \$119.90 (Total retail value \$179.85)

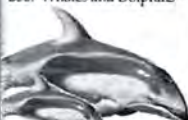
1. Amazing Space Shuttle.....Retail \$49.95
2. Multimedia CIA World Fact Book.....29.95
3. The Animals!.....99.95

Save a Bundle! 3 CDs for..

With CD-ROM drive/drive bundle purchase from EDUCORP.

• **3 CDs for \$39.95**

- Choose from 7 titles including:
- B36. Survey of Western Art
 - B40. Goferswink's Adventure
 - B37. 12 Roads to Gettysburg
 - B49. Animal Alphabet
 - B50. Whales and Dolphins**



• **3 CDs for \$49.95**

- Choose from 10 CDs including:
- B1. World Atlas
 - B4. Desert Storm
 - B7. World Fact Book
 - B13. U.S. Atlas
 - B26. The Orchestra**
 - B46. GraphTech Graphic Designs
 - B47. 1000 Fonts

• **3 CDs for \$69.95**

- Choose from 18 CDs including:
- B6. Beethoven's String Quartet
 - B14. Lucas Game Pack II
 - B25. Funny
 - B27. Sports Illustrated Sports Almanac
 - B28. Word Tales**
 - B29. View from Earth
 - B30. The Animals
 - B35. Dictionary of the Living World 3.0**
 - B41. Space Shuttle
 - B43. Encyclopedia of Life
 - B42. LOOPS: Music
 - B44. Pro Photo Collection - MR
 - B45. Lunicus**
 - B48. Best of Nature's Way
 - B52. Trick of Light
 - B53. Oceans Below

• **3 CDs for \$124.95**

- Choose from 9 CDs including:
- B2. Grolier MM Encyclopedia
 - B8. U.S. History
 - B31. Guinness Disc of Records
 - B32. Mayo Clinic Health Book
 - B34. Space Time and Art

Call or FAX for complete list of titles.

** These titles are excluded from the 90 day offer.

Over 600 CD-ROM Titles in Stock

Educational Multimedia

50110 Encyclopedia of Dinosaurs.....\$49.95
...tour de force of the prehistoric world. It's potential is wonderful, the ease of use is excellent, and above all it's fun to use!

—Sweetwater Union High School

100s of color illustrations and photos, animated diagrams, plus full motion video. Extensive information on over 400 known dinosaurs.

1280 Encyclopedia of Life.....64.95

Multimedia-rich reference to life. Over 3700 entries, 130 videos and 600 award-winning color photos. Info on any animal or plant species. Sourced from the Macmillan Concise Encyclopedia.

2078 Animal Alphabet.....29.95

QuickTime video, animation, colorful illustrations, narration and sound effects teach young children the ABCs.

The ZooGuides Series

Brings the Animal Kingdom to Your Mac!

"...a series of beautiful interactive zoo discs"

—MacUser Magazine

Each ZooGuide is filled with interactive video, award-winning photos, expert narration, animation, distribution maps and much more.

50300 The Rainforest.....\$39.95

ZooGuide v.4. Explore the mysterious rainforests and the animals, plants and people who live there.

1275 Mammals of Africa.....39.95

ZooGuide v.3. 100 species discussed.

1210 Whales and Dolphins.....39.95

ZooGuide v. 2. MacUser Top 50.

2081 Butterflies of the World.....39.95

ZooGuide v.1. Learn about over 250 species.

Entertaining Multimedia

50319 Freak Show.....\$48.95

Transform your Mac into an amazing 3D animated freak show and take a closer look behind the scenes of the big top.

2095 A Hard Day's Night.....27.95

50318 Short Attention Span Theater: It's All Relative.....\$39.95

50326 Short Attention Span Theater: Dating and Mating.....39.95



Stock Photography

Titles below are royalty-free and are in Kodak Photo CD format. At least 100 photographs per disc.



1297 Creative Bkgd/Txtures *.....79.95

200 photos. 2 CD set.

50328 Best of Swimsuit v.1.....64.95



50150 Essential Backgrounds *.....49.95

150 high quality photographic backgrounds for print, video and multimedia.

50132 Best of Nature's Way *.....64.95

1274 Trick of Light.....79.95

150 high quality photographic backgrounds for print, video and multimedia.

50073 Design Toolkit Pro *.....79.95

Over 3800 color & b/w EPS design elements — tiles, fonts, backgrounds, drop caps, borders and more.

50277 GraphicIMPACT *.....99.95

Over 695 professionally designed editable, color & b/w EPS design elements, backgrounds, art lettering and more.

1819 Funny Business *.....49.95

Boost readership and increase sales with 100 funny cartoons created by the world's top artists. Royalty-free.

1819 Funny Business *.....49.95

Boost readership and increase sales with 100 funny cartoons created by the world's top artists. Royalty-free.

1819 Funny Business *.....49.95

Boost readership and increase sales with 100 funny cartoons created by the world's top artists. Royalty-free.

1819 Funny Business *.....49.95

Boost readership and increase sales with 100 funny cartoons created by the world's top artists. Royalty-free.

Photo CD symbol is a trademark used under license.

CD-ROM Showcase

We'll beat any advertised price on CD-ROM products!

Please call for current prices.
(Some restrictions apply)

2090 Small Blue Planet.....\$59.95



1 1/2

— MacUser Magazine.
Small Blue Planet: The Real Picture Atlas integrates a collection of maps with striking images of how satellites see our planet. Features inset maps

and images located geographically within world maps. Includes the Chronosphere World Map and Times Globe; 100s of satellite images from the NASA Space Shuttle Earth Observation Project, USGS, and NOAA; almanac summaries, geography, environmental concerns and vital statistics on each country of the world, plus much more.

Published by Now What Software

1385 Right Images.....\$159.95



"The best and most comprehensive commercial collection..."

— Publish Magazine

STARS • PLANETS
ASTRONAUTS • NEBULAE
• SHUTTLES •

People naturally react to these dramatic images. Unlimited reproduction rights on over 160 photos saved in 24-bit and 8-bit color PICT and 8-bit grayscale PICT.

Published by Tsunami Press

50043 Madness of Roland.....\$44.95

1 1/2 — MacUser

Winner of the QuickTime Movie Festival. The world's first interactive multimedia novel. Based on the legend of the Paladin Roland, a knight in the service of Charlemagne. Roland's illicit love for the enchanting sorceress Angelica shatters his reason and propels him into a dark and raging world of madness and a struggle against death. Color graphics, animation, video, audio, narration and music.



Published by Hyperbole Studios

50225 CD AllCache Driver Software.....\$53.95

High performance CD-ROM drive acceleration software. CD drive acceleration software makes AllCache driver software makes your CD-ROM drive unbelievably fast. AllCache optimizes CD-ROM drive performance—searches, seeks and opens files and folders. Manually adjust cache sizes or automatically optimize the data cache settings with the click of a button. Enjoy with the click of a button. Corporate and site licenses available. Manufactured by CharisMac Engineering

1300 EDUCORP Shareware CD.....\$149.00

"I love my EDUCORP CD-ROM..." — Ken Harvey, City of Reno. A 2-disc set containing over 1 gigabyte of the best public domain and Shareware software available. Hundreds of new and updated programs! Comes with a browser, tutorials, a printed catalog and tech support. System 7 optimized. SAVE \$50 with the purchase of a CD-ROM drive from EDUCORP.

Published by EDUCORP

50316 Midnight Stranger.....\$59.95

"This is a landmark product that should be in the Smithsonian Institute." — Glenn J. Collier, SFSU

ADULTS only! The first interactive multimedia CD-ROM employing virtual intimacy! An interactive urban experience interacting with 18 characters as you freely roam 23 different locations. Each character speaks to you and invites a response. Events may turn bizarre, sensual, amusing or criminal. Interact with the actors and become part of the plot!



Published by Gazelle Technologies

1605 Japanese for Everyone 2.0.....\$279.00

"...certainly the best of the Japanese language learning CD-ROM programs available."

— MacUser Magazine, October 1992.

The fastest way to competence in spoken Japanese. An exciting interactive approach whose focus is based on the basic patterns of spoken Japanese and on situationally based dialogues with sound and animation. System 7 compatible.

Published by Butler Consulting

JAPANESE FOR EVERYONE



FREE CATALOGS!

Call for your:

- CD-ROM catalog
- 11th Edition Software Encyclopedia of Shareware and public domain software (Foreign customers send \$4.00 postage & handling)

50078 Calculated Beauty.....\$33.95

Create thousands of beautiful color images from over 600 MB of pre-calculated fractal data with the MandelDisplay program. Save customized, high resolution, 300 dpi/24-bit PICT files up to 4" x 3" for design or desktop publications. Make slide shows, listen to fractal sounds, animate or zoom images, view over 100 "paintings" and QuickTime movies. That's 6,000 feet of raw data. Royalty-free!

Published by Rocky Mountain Digital Peaks

1818 EDUCORP CD Sampler.....\$9.95

Shop the multimedia way!

View over 90 demos of the newest CD-ROM titles plus thumbnail catalogs from over 50 desktop publishing CDs. QuickTime 1.5 included. System 7 compatible.



50329 EDUCORP Clip Art Sampler.....9.95

View over 30,000 thumbnails of EPS clip art from over 15 CD-ROM titles! An inexpensive and comprehensive way to preview all the clip art images on a CD-ROM before you buy it. Double-clickable Kudo® catalogs.

50280 SuperToons.....\$24.95

It's a bird, it's a plane — it's on your desktop! Over 30 minutes of full color Superman cartoons! See classic Superman cartoons "Volcano," "Underground World," "Mechanical Monsters," & "Terror on the Midway."



streets, vehicles, landscapes and presentation backgrounds.

Published by Wayzata

50079 The Great Golf CD.....\$52.95

Legends, Links and Lore! This interactive multimedia CD-ROM gives a unique perspective on this compelling sport. The history, people, events, equipment and more. Video, audio, color photographs and much more. FREE video tape.

50074 Greg LeMond's Bicycle Adventure.....49.95

Winner 1993 New Media Invention Multimedia Award. Vibrant images, sensational sound, informational text, hundreds of interactive screens on topics such as cycling, history, racing, environmental impact, safety and more!

Published by Eden Interactive



Order toll-free in U.S. & Canada. Prices subject to change without notice. Dealer inquiries welcome.

The Multimedia PioneerSM
EDUCORP 1-800-843-9497

UR23

EDUCORP • 7434 Trade Street • San Diego, CA 92121
Info 619-536-9999 • FAX 619-536-2345

Fonts

ARCHITECT'S FONT PACK

Handlettered
Typeface and
Postscript
Fonts for
Architects
and Design
Professionals

MrHand
HeavyHand
Sketcher
Scribble
STAMPED
GLASGOW

ALL NEW
ONLY \$49.95

EPHRAIM
DESIGN STUDIOS
800-577-4900

RussianH

RussianH™

\$99.00
plus \$8H

FINALLY!
A Russian Font that is:

- System 7 Compatible
- Bilingual
- Crafted in Russia by Russian Fontographers
- Keyboard Translation Software
- Keyboard Layouts included!

Bersearch
Information Services
1-800-851-0289
(303) 674-8875
(303) 674-1850 FAX

CIRCLE 277 ON READER SERVICE CARD

General

STUDENT-TEACHER-SCHOOL DISCOUNTS!

"LATEST VERSIONS & FULL PACKAGES"

QUARK XPRESS V3.3 \$299
PAGEMAKER V5.0 \$249

4TH DIMENSION \$499	MINICAD +4 \$295
AUTOCAD 12 \$995	MORPH 2.0 \$125
CANVAS 3.5 \$175	MS EXCEL 4.0 \$179
CLARIS IMPACT \$175	MS WORD 5.1 \$149
CODA FINALE 3.0 \$249	MS OFFICE 3.0 CALL
FRACAL PAINTER 2.0 \$179	M.Y.O.B. 4.0 \$80
FRAMEMAKER 4.0 \$249	RAY DREAM DESIGNER \$185
FREEHAND 4.0 \$195	STRATAVISION 3-D 3.0 \$299
GENERIC CADD 2.0 \$169	WORD PERF 3.0 UPGRD \$99

CALL FOR FREE CATALOGUE 800-289-3275
THOUSANDS OF OTHER TITLES AVAILABLE!!
Products also available by Adobe, Symantec, Lotus & Word Perfect.

THE SOFTWARE SOURCE CO., INC.
2517 Hwy 35, Bldg N, Suite 201, Manasquan NJ 08736
Phone (908) 528-0030 Fax (908) 528-9378

CIRCLE 280 ON READER SERVICE CARD

Foreign Languages

ADOBE

New, Lower Prices

Adobe List	FF Price
\$275	\$187.50
\$205	\$142.50
\$145	\$96.50
\$105	\$72.50
\$80	\$52.50

All Fonts Ship Same Day

\$3 Overnight Delivery

Call for Free Catalog
Fonts in a Flash™
(800) 435-1303
9:30-4:00 Central, M-F
No Surcharge

CIRCLE 274 ON READER SERVICE CARD

What speaks, conjugates, tutors and tests foreign languages on a Macintosh?

MacFlash Cards 2.0
The most advanced language Software Program available

Call or write for a FREE brochure
The Language Quest Software Co.
101 First St. Suite 428
Los Altos, California 94022
Cyrillic & Czech fonts at low prices!
800-622-3574/415-941-6383
FAX 415-941-6119

CIRCLE 278 ON READER SERVICE CARD

FontSoftware

ADOBE · AGFA · BITSTREAM
FONT BUREAU · LETRASET
LINOTYPE-HELL · MONOTYPE
TREACYFACES · URW...

and over 30 other type foundries & font software manufacturers

LOW, DISCOUNT PRICES

264-page catalogue available for \$6.95 plus \$2.50 shipping (call for shipping costs outside USA)

800.248.3668

Precision Type

47 Mall Drive
Commack NY 11725
TELEPHONE: 516.864.0167
FACSIMILE 516.543.5721

CIRCLE 275 ON READER SERVICE CARD

MAPS!
CLIP-ART FOR MAC & PC

- Use with Desktop Publish and Graphics Programs
- EPS, PICT and MacPoint formats available
- Ready to use As Is or Easy to Customize
- USA Maps - Includes Every State, Shows Major Cities, Highways & Waterways—\$99.95
- World Maps - Includes Continents, Regions, Countries, & Shows Major Cities—\$99.95

To Order Or FREE Brochure Call
800-843-3873

BRUCE JONES DESIGN INC.
31 St. James Ave., Boston, MA 02116
MC/VISA/AMEX • (617) 350-6100 • FAX (617) 350-8764

CIRCLE 279 ON READER SERVICE CARD

Graphics

Graphics

Marbled Paper Textures

The classic beauty of hand marbled paper is now available on CD! Professionally drum-scanned TIFF images plus borders & more. Please call for info.

800-444-9392 or 503-863-4429
ARTBEATS, Box 1287, Myrtle Creek, OR 97457

MAPS!
CLIP-ART FOR MAC & PC

- Use with Desktop Publish and Graphics Programs
- EPS, PICT and MacPoint formats available
- Ready to use As Is or Easy to Customize
- USA Maps - Includes Every State, Shows Major Cities, Highways & Waterways—\$99.95
- World Maps - Includes Continents, Regions, Countries, & Shows Major Cities—\$99.95

To Order Or FREE Brochure Call
800-843-3873

BRUCE JONES DESIGN INC.
31 St. James Ave., Boston, MA 02116
MC/VISA/AMEX • (617) 350-6100 • FAX (617) 350-8764

CIRCLE 279 ON READER SERVICE CARD

Design With IMPACT!

IMAGES WITH Impact!

Products Available:

Accents & Borders 1	\$129.95
Accents & Borders 2	\$129.95
Business 1	\$99.95
Graphics & Symbols 1	\$99.95
People 1	\$129.95
Places & Faces 1	\$129.95
CD-ROM ver. 2	\$499.95

Call for a free brochure!

800-456-0234

3G Graphics, Inc.
114 Second Ave. S., #104
Edmonds, WA 98026
(206) 774-3278

CIRCLE 320 ON READER SERVICE CARD

NEW! MacGallery II

Over 500 beautifully detailed images and a **FREE** copy of Amazing Paint!

\$49.95

CALL FOR INFO!
800-876-5665

DREAM MAKER SOFTWARE
925 W. Kenyon Ave., #16 • Englewood, CO 80110
303-762-1001 • FAX 303-762-0762

CIRCLE 281 ON READER SERVICE CARD

"...technically and artistically superior..."

LifeART™ Super Anatomy

Professional Medical Clip Art

★★★★★
"In value and quality!"

- Over 500 Images
- 100% Compatible in all Mac Software
- Editable in Illustrator and MacDraw Pro!

FREE Catalog
800-777-8930

TechPool Studios
Cleveland, Ohio
Tel: 216-291-1922
Fax: 216-382-1915

CIRCLE 282 ON READER SERVICE CARD

CLIP ART ANNOGLYPHS COLLECTION

- Recycling - \$69
- Pollution - \$69
- The Living Planet - \$69
- Save \$58.1 buy all 3 sets: Environment 1 - \$149
- Energy! - \$69
- Wildlife - \$69
- Wildlife Accents - \$69

Available in one of these formats: EPS, TIFF, PICT

Pictographic font upon registration

Credit Card orders: **800-243-1515 (ext. 485)**
Free brochure call **201-746-9620** • FAX **201-509-0728**
Send check/Money Order/Purchase Order to:
ARRO International P.O. BOX 167, Montclair, NJ 07042

CIRCLE 283 ON READER SERVICE CARD

Perfect Body Parts. 99¢ Each.

MediClip... the first complete medical anatomy and art library for your MAC or IBM.

- Available in high quality EPS and all major formats
- 3 volumes of 100 images for only \$99 each

1-800-998-8705
MediClip™

Outside continental U.S. call 216-277-4889

CIRCLE 284 ON READER SERVICE CARD

GRAPHICS

MAPART™ MAPS FOR GRAPHIC DESIGN!

World • Continents • Countries • 25 Major US Cities
US States with Interstates, Counties & 3-digit ZIPs
Globes • Detailed Coastlines, Islands, Lakes, Rivers



Fully Editable!
Each line, area, and
name is an object
that can be
individually selected
and modified!

Call for Your FREE
Info By Mail or FAX:

800-334-4291

CARTESIA
Box 157, Lumberton, NJ 08030
609-367-1611 • 2619 FAX: 609-367-5242

CIRCLE 285 ON READER SERVICE CARD

To place your ad, call your
MacUser Marketplace account
representative today!
800-825-4237

MUSIC/MIDI

Music For The Mac The full scale of Products

- From instructional music software, like our own Compose Yourself; to the intricacies of Hard Disk recording.
- Authorized dealer for Coda, Digidesign, E-MU, Mark of the Unicorn, Opcode, Panasonic, Ramo, Roland, Steinberg-Jones and more.

Expert advice before you buy, and full tech support after you purchase!

MacBeAT

1314 Rufina Circle A4
Santa Fe NM 87501

Call the Experts at:
1-800-MAC-BEAT or
505-473-4929 fax: 505-473-4647
Free Catalog Available!

CIRCLE 287 ON READER SERVICE CARD

MISCELLANEOUS/ACCESSORIES

PowerBook Security PORTABLE SECURITY • CARRY HANDLE • ADJUSTABLE SHOULDER STRAP



PowerStrap

Ong Engineering
2305 Cherrystone Drive
San Jose CA 95128
Phone: (800) 995-9121
Fax: (408) 249-3647

CIRCLE 288 ON READER SERVICE CARD

Protect Your Mac with ALL FABRIC DUST COVERS

Finest Quality, Custom-Fit! ALL FABRIC

- Heat Resistant, will not shrink or
deteriorate with age! • Machine
Wash & Dry! • All makes & models!
- Custom ordered! • Tan, Navy, Royal,
Ivory, Maroon, Gray, Brown or Black.
- 100% Satisfaction Guaranteed!
- Outstanding service since 1983!
- Don't settle for lesser quality, call us!

8 Color Choices!
Choose Monogramming or Heat Transfer of your Favorite Photo!

11-30 Classic & Kryo 1200	\$24.95	11-39 Apple Keyboard & Mouse 1200	\$11.95
11-34 Color Classic & Kryo	24.95	11-40 Mac Keyboard & Mouse	9.95
11-34 LC Mac 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-35 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-36 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-37 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-38 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-39 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-40 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-41 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-42 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-43 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-44 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-45 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-46 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-47 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-48 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-49 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-50 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-51 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-52 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-53 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-54 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-55 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-56 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-57 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-58 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-59 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-60 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-61 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-62 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-63 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-64 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-65 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-66 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-67 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-68 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-69 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-70 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-71 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-72 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-73 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-74 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-75 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-76 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-77 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-78 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-79 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-80 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-81 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-82 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-83 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-84 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-85 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-86 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-87 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-88 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-89 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-90 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-91 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-92 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-93 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-94 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-95 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-96 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-97 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-98 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
11-99 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95
12-00 Gemini 14" & Kryo 1200	29.95	11-40 Mac Keyboard & Mouse	9.95

CO-DO Computer Dust Covers
800-735-1584 414-476-1584 • 476-9329 FAX

CIRCLE 289 ON READER SERVICE CARD

Pack your Powerbook in seconds!



1236 N.W. Flanders, Portland, OR 97209
CALL TOLL FREE! 1-800-548-0053

CIRCLE 290 ON READER SERVICE CARD

UTILITIES



Continuum Software Inc.

Only **\$49**

+ \$4.50 S&H
Shipped with VirtualDisk™
EasyLabels™
DiskDup™

VirtualDisk™

Know where **every file** is
on **every disk** you own
with **no effort** on your part!

- Your Macintosh catalogs all disks and removable media automatically.
- Your catalog is always available in compact alias form on your desktop.
- Search, view, open any file on any off-line disk with Finder commands.

1-800-603-7446

International: 206-260-2805

Fax: 206-260-2804

Satisfaction Guaranteed or Money Back!

CIRCLE 286 ON READER SERVICE CARD

DATA RECOVERY SERVICES

**"If it hadn't been for DriveSavers, our
information would have been lost forever."**

-S.S., Sebastopol CA



As the only all-Mac data recovery company,
we've saved more megabytes of Mac data
than anyone else in the world. We're certified
by every Mac drive manufacturer. Our
proprietary techniques are so advanced we
can rescue data others might simply abandon.

1-800-440-1904

400 BEL MARIN KEYS BL. NOVATO, CA 94949 FAX: 415-883-0780 PH: 415-883-4232

CIRCLE 291 ON READER SERVICE CARD

Don't Panic!

The Data Recovery Experts™

- **Best Success Rate**
- **Fast Turnaround**
- **No Recovery—No Fee**

Absolute Data Recovery!

2440 Waynoka Rd. • Colorado Springs, CO 80915 • 719-380-1616

TOTAL RECALL™

800-743-0594

CIRCLE 292 ON READER SERVICE CARD

CPR & RS has been recognized in national
magazines for its data recovery techniques
and the ability to repair SCSI drives.

**Computer Peripheral Repair &
Recovery Services, Inc.**

11440 Okeechobee Rd., Suite 200
Royal Palm Beach, FL 33411

800-765-9292 407-795-7266

"Data Crash...We're Going In!!"

CIRCLE 293 ON READER SERVICE CARD

DATA CONVERSION SERVICES

DATA CONVERSION

More Formats Than Anyone Else!!
Quick • Reliable • Quality

NDC CONVERTS DATA/DOCUMENTS
TO/FROM THE MACINTOSH AND,
WORD PROCESSORS, MINIS, MICROS
DATABASES, SPREADSHEETS, MAIL LISTS

DISKS • TAPES • CARTRIDGES
CONVERSION/DUPLICATION/SCANNING

IBM, DEC, WANG
Apple, NBI, CPT,
Lanier, Unix, Xerox

NATIONAL DATA CONVERSION
5 East 16th Street, New York, NY 10003

(212) 463-7511

AMERICA'S LEADERS IN DATA CONVERSION

CIRCLE 294 ON READER SERVICE CARD

DESKTOP PUBLISHING SERVICES

COLOR SEPARATIONS

SCANNED

TO YOUR DISK

CMYK SCREEN™ Drum Scans

\$19.95
up to 4" x 5"

First Two Scans Free
Free Return Shipping
Call for Prices on Other Sizes
Satisfaction Guaranteed

VIZION 1-800-487-9662

Call for details and restrictions.

CIRCLE 295 ON READER SERVICE CARD

Get your share of the business.

Call your MacUser Marketplace
account representative today at
800-825-4237.

In the next 12 months, 77% of MacUser subscribers will
purchase Macintosh products by mail order or phone.

Will they buy from you?

Get your share of the business. Call your
MacUser Marketplace account representative
today at:

800-825-4237

Source: MacUser Mail Order Report, 1991

DISKETTE COPY SERVICES

DUPLICATION FROM \$.80

HIGHEST QUALITY MEDIA

From \$.49 (5.25") and \$.80 (3.50")

- All Diskette Formats
- Custom Labels
- Diskette Mailers / Accessories
- Assembly Services
- Generous Volume Discounts

FORMATTED DISKETTES

FORMATTED	QTY 250	BLANK
\$.69	3.50" DS/HD	\$.59
\$.56	3.50" DS/DD	\$.49

- **FREE FORMATTING** on First Order
- **BASF, MEMOREX, VERBATIM**
- **SONY AVAILABLE** for Small Upcharge
- **COLORED MEDIA** Please Add \$.05

800-255-3142

Diversified Systems Group, Inc.
PO Box 1114, Issaquah WA 98027

SLIDE IMAGING SERVICES

We can scan your 35MM slides & negs onto Photo CD

24 Hr Turnaround



as low as
60¢
an image

**1-800 WRITE
CD**

800-974-8323

CIRCLE 299 ON READER SERVICE CARD

FOUND A BARGAIN?

Let Your Source Know
You Found it in

**MacUser
Marketplace**

SUPPLIES

TONER



THROWING AWAY
EMPTY TONER
CARTRIDGES
WE BUY THEM

REMANUFACTURED CARTRIDGES
GUARANTEED TO WORK LIKE NEW

FROM **\$36**

FREE U.P.S. PICK-UP & DELIVERY

National Toner

Recycling & Supply, Inc.

(800) 676-0749

CIRCLE 300 ON READER SERVICE CARD

TONER!

New & Remanufactured
toner cartridges & other
supplies for laser printers!

RIBBONS!

New and Reloaded
ribbon cartridges for
impact printers!

ink jet refills!

- RECYCLE & SAVE up to 70% on printer supplies!
- Friendly service & great products for over 20 years.

CALL FOR FREE
SUPPLIES CATALOG

800-426-8196

We buy empty toner cartridges



CIRCLE 301 ON READER SERVICE CARD

SlideImagers®

- Slides & Overheads
- Kodak PortFolio Services
- Dye-Sub Output
- Large Color Posters
- Canon Fiery Lasers
- Slide Duplication
- 4x5 Neg/Pos/B&W
- Data Transfer to CD-ROM
- 48 Hour, \$3.00 a slide

**Overnight
\$4.95
Slides &
Canons
Digital Output**



Scans \$.90

(800) 232-5411

22-7th St. • Atlanta, GA 30308 • 404-873-5353

CIRCLE 296 ON READER SERVICE CARD

**Professional
Slides**

from your Macintosh and PC files
Authorized Aldus Imaging Center

35mm Color Slides Color Prints
Transparencies Posters
Quick turnaround 16 million colors
Great Quality 24 hour bbs

1-800-866-BYTE

COPY-CAD IMAGING INC.

Over 60 packages, and 30 other
graphic file formats supported!

Fax: 312-419-1390 BBS: 312-201-9308

CIRCLE 297 ON READER SERVICE CARD

Chromascript & Forte

NOW AVAILABLE!
Iris & 3-M Rainbow Prints
Overnight and Economy Service

**Starting at
\$3.50
per slide**

Free Shipping

**NEXT WAVE
PRODUCTIONS™**

24 hr BBS
24/72 hr service
Volume discounts
3-5 hr immediate svc.
High volume slide duplication
Scanning and production services
*Call for info

212/989-2727 800/445-9002

CIRCLE 298 ON READER SERVICE CARD

**SAVE BIG \$\$\$ IN
PRINTING COSTS**

Jet-Master™

Re-usable jet
printer recharge
kit. Buy kit once
and then just buy
ink as needed.



Environmentally
correct.

- **WATERPROOF INKS**
- Simple, trouble-free operation
- Lowest cost per recharge than any other system!
- Most jet-printers supported, single and multicolor
- Brilliant color inks available.

Jet-Master Kits from \$29.95

MacInker™

Re-ink your printer ribbon
for less than

5¢

Beautiful printing and longer printhead
life. Call for complete information.

Imagewriter MacInker.....49.95

Universal Cartridge Model.....79.95

MultiColor Adapter.....40.00

Computer Friends, Inc.

14250 NW Science Park Drive-Portland, OR 97229

To Order **1-800-547-3303**

Fax (503) 643-5379

CIRCLE 302 ON READER SERVICE CARD



**Great
Performances
Demand an Encore**

To find out how you can
have your article or review
elegantly reprinted**
call or write today:

Claudia Crichlow
Reprints Manager
Ziff-Davis
Publishing Company
One Park Avenue
New York, NY 10016,
212-503-5447

**Minimum quantity 500 reprints.

Reach those who count!

Advertise in MacUser and reach business buyers making Mac purchasing decisions. Nearly 8 in 10 MacUser subscribers are directly involved in their organizations' decisions to acquire Macintosh computer products. For information on how you can advertise, call your MacUser Marketplace account representative today at:

800-825-4237

ADULT

Let Us Blow Your Hardware!

Teri Weigel • Traci Lords • Savannah

Taylor Wayne • Blanca Trump • Ashlyn Gere • Tianna Taylor • Fallen
Jeanna Fine • Zara • Lulu Devine • Chessie Moore • Ashley Nicole • Selena Steele
Alicia Rio • Tracy West • Tawny Peaks • Crystal Storm
Madison • Ashley Sinclair • Devon Shire • Pandora

PHOTO CD'S

952.....Wicked (w/Kodak Access Software).....	\$69.88
961.....Mark of Zoro.....	\$49.88
962.....Cat & Mouse.....	\$49.88
965.....H*ster Heaven.....	\$49.88
966.....Double Play I.....	\$49.88
967.....Double Play II.....	\$49.88

INTERACTIVE CD'S

963.....Penthouse Interactive.....	\$129.88
974.....Adult Movie Almanac.....	\$99.88
958.....Seymour Butts.....	\$69.88
969.....Scissors-n-Stones.....	\$69.88
957.....Paradise Club Interactive.....	\$49.88
959.....Digital Dancing.....	\$59.88
950.....Nightwatch Interactive.....	\$59.88
968.....Dream Machine.....	\$69.88
971.....After Midnight Screen Saver.....	\$59.88

MULTI-MEDIA MOVIES

976.....The Other Side of Chelsea.....	\$49.88
977.....Deception.....	\$49.88
980.....Hidden Agenda.....	\$49.88
975.....Beverly Hills 90269.....	\$49.88
978.....Murphy's Brown.....	\$49.88
979.....The Fisherman's Wife.....	\$49.88
954.....Wicked.....	\$39.88
955.....Betrayal.....	\$39.88
956.....Cat & Mouse.....	\$39.88
947.....The House of Sleeping Beauties.....	\$49.88
960.....Legends of Pkrm 2.....	\$29.88
972.....Traci, I Love You.....	\$29.88
973.....New Wave H*sters.....	\$29.88
985.....Secrets.....	\$29.88
986.....Hidden Obsessions.....	\$29.88

Adult CD-ROM's As Low As \$29.88

GUARANTEED LOWEST PRICE! WE MATCH ANY ADVERTISED PRICE!!

ALSO AVAILABLE:

- **FREE Color Catalog**
- Free Tech Support
- The Cyberotica BBS (305) 428-0012
- Year-Round Contests and Discounts (Win Free CD's!)
- 3-Some & 4-Way Bundles with Special Pricing
- Usage Free Photo CD's

MUST BE 21 TO ORDER

TOLL FREE: **800-354-5353**
ORDER FAX LINE: **305-426-9801**
FOREIGN ORDERS & DEALERS: **(305) 426-4552**

ALL FAX & MAIL ORDERS RECEIVE FREE 2ND DAY UPGRADE
P.O. Box 4188 Deerfield Beach, FL 33442



CIRCLE 303 ON READER SERVICE CARD

HUSTLER Online

The Best Reason Yet To Own A Modem

Introducing the premium adult bulletin board service. Hustler Online is an electronic library of Hustler Magazine's vast archives including material that was never published.

Hustler Online is extremely easy to use. In fact, you already know how to use it because we use the same interface you're used to whether it is Windows or Macintosh.

Our state-of-the-art system is continuously updated with the highest quality, most provocative images you've ever seen on your computer. And to ensure that you only get the images you want, we've incorporated lightning fast 256 color previews.

To sign up simply set your communications software to 8-N-1 and call:

(816) 472-4648

Or call (816) 472-4646 for a free color brochure

Material is of an adult nature. Must be over 18 years of age. Don't drink and drive. Hustler is a registered trademark of HGI Publications, Inc.

CIRCLE 307 ON READER SERVICE CARD

HOT!

ADULT CD'S

Erogenous Zones V. I	\$ 59.99
Erogenous Zones V. II	\$ 59.99
Erogenous Zones V. III	\$ 59.99
Any two CD's	\$109.99
Any three	\$149.99

Each CD contains over 3500 gifs.

BBS# 318-742-9193

Send check or money order to:

X-tronic Connections

P.O. Box 5213

Bossier City, La 71171-5213

Please state over 21.

C.O.D. add \$5.00

CIRCLE 308 ON READER SERVICE CARD

More than three quarters of MacUser subscribers will purchase Macintosh products through mail order in the next 12 months; 85% of these will be purchasing software.

Will they buy from you?

Call **800-825-4237**

and speak to your MacUser Marketplace account representative about advertising today!

Source: MacUser Mail Order Report, 1991

SEXY MODEM

• The Ultimate BBS •

- Sexy Chat with Singles/Couples
- 100,000 Shareware & Adult GIF, Windows and DOS files
- USA Today Online
- FREE ACCESS
- Unlimited Downloads
- 14.4k on all 60 Lines
- New GIF's posted daily by our photographers

1-217-792-3663

Must be over 21 to access

Customer Support Voice Line 415-281-4429

CIRCLE 304 ON READER SERVICE CARD

FREE!

Download the HOTTEST & SEXIEST Images from our ADULT On-Line Magazine - FREE!

LACE is an Adult On-Line Magazine that offers you:

- ORIGINAL Adult GIF Images not available on any other BBS!
- GORGEOUS, Sexy & Exotic Models both Amateur and Professional!
- QUALITY Adult GIF Images and VGA Movies produced by professionals!
- HIGH SPEED access available on ALL lines (14.4k down to 1200 baud).

Set your Modem to 8-N-1 and dial:

(818) 709 - 4275

Questions? Call our voice line at (818) 709-3795.

LACE

the on-line adult magazine

Must be 18 Years of Age or Older • Limited Offer

CIRCLE 305 ON READER SERVICE CARD

FOR ADULTS ONLY
You must be over 21 to access

LIFESTYLE

Meet sexy singles/couples on the world's hottest adult chat system—Lifestyle BBS.
Less than .30 per hour.
Log on: 516-689-5390

AND

GRAFIX

Computer pictures so hot they could melt your modem.
Log on: 516-689-2853

SUPER CHEAP • 100% PRIVATE
Local access from 500+ cities

CIRCLE 306 ON READER SERVICE CARD

ADULT

MISSION CONTROL

As Seen On CNN!

The Leader in Adult CD Rom

■ BY NEW MACHINE

Adventures of Seymore Butts
Follow the adventures of Seymore Butts and his camera and help him meet and mate with the girl of his dreams. This full length interactive quicktime adventure features over 90 minutes of digital video. **\$69.**

Dream Machine

The most innovative CD ever! Navigate through a 3D world where your ultimate fantasies come alive. The Dream Machine's beautiful hostess will lead you on an interactive journey through your sexual imagination. **\$69.**

Adult Movie Almanac

All the information you will ever need! Stars, directors, studios, fetishes, all at your fingertips. Over 750 adult reviews, 250 adult star biographies. **\$69.**

■ BY PIXIS INTERACTIVE

Scissor's N Stones

Scissors N Stones is the first interactive erotic game that features full motion video merged with 3D generated animation that adds an extra dimension of realism. **\$69.**

NeuroDancer

Roam the NeuroNET by hacking into the forbidden worlds of dark mysteries, danger, and sexuality. Featuring 3D animation, interactive game-play, TFUI Interface and live motion video. **\$69.**

Virtual Vixens

Save your friend from the evil Crystal, who has imprisoned him in a VR Pleasure World, for his failure to please her. A Virtual Reality science fiction adventure with 3D animation and graphics combined with high quality live motion video and a virtual realistic interface. **\$99.**

■ BY VIVID

101 Sexual Positions

The first ever professionally produced adult education oriented CD identifying each position with its proper name and demonstrated with full Vivid color visual presentation. **\$49.**

Winner Takes All

A fascinating interactive adult video game of chance. You score the points and a host of Vivid megastars like Racquel, Justine Lenay, Ginger, Nikki Dial, Ashlyn Gere will pay off in exciting visuals that will leave you breathless! Round and round you go, risking it all for a host of sizzling beauties and they're worth it! **\$49.**

The Legend of the Kama Sutra

A beautifully filmed period documentary. Peacefully narrated in a story type setting. Watch for your favorite selection as our prince of affection explores the seemingly endless possibilities of love with some of Vivid's most beautiful women. **\$49.**

**NEW MACHINE
CD SAMPLER \$14.**

WHOLESALE INQUIRIES INVITED

Call (800) 999-7995 • (201) 677-1400 • Fax (201) 677-9484

CIRCLE 309 ON READER SERVICE CARD

■ BY ARTWORX

Strip Poker Professional

Combines the strategic play action of 5 Card Draw Poker with some very different table stakes. Laura, Kami and Greta are three gorgeous opponents who are willing and able to bet it all for the chance to "beat the pants off you". **\$35 (3.5 disk only). Data Disks 1 thru 8 \$22, each**

Photo CD's	Insatiable	29
American Girls	39	Legends of P'm 2 29
Asian Palate	29	Mystique of Orient 49
Double Play 1	49	Rain Women 59
Girls of Vivid	49	Raquel Released 49
		Secrets 29
		Traci I Love You 29

Movies	Interactive
Bare Assets	49
Barlow Affair	59
Best of Vivid	49
Erotic Cafe	69
Hidden Obsessions	29
House of Beauties	39
	Best of Inferno 59
	Buttman's Vacation 39
	Maddam's Family 49
	NightWatch 49

CALL OUR FAXBACK LINE

CALL (201) 676-7454 from your fax machine for a complete listing of Adult Titles.

SEND ORDERS TO: Mission Control Software • 356 Glenwood Avenue • Dept. MAC0594 • E. Orange, NJ 07017 (You must be over 21 to order) We accept Master Card, Visa, Discover, Checks & Money Orders. Personal checks held 14 days. Please include phone number. Shipping \$5. UPS Ground, \$7. UPS 2 Day, International Shipping \$25 Minimum.

CIRCLE 312 ON READER SERVICE CARD

BodyCello

FREE* ADULTS ONLY
CD SAMPLER

Sample
20 demos of the
finest in adult entertain-
ment software. See new
interactive titles, beautiful
nudes and artwork.
MAC/MPC CD-ROM #555
Must be 21 to order. Dealer
Inquiries Welcome.

*Send \$4.75 for postage/handling in U.S.
(Outside the U.S. & Canada send \$15)

CALL FOR A FREE COLOR CATALOG!
BodyCello • P.O. Box 910531 Sorrento Valley,
CA 92091 • 619-578-6969 • FAX: 619-536-2397

1-800-922-3556

BU1

CIRCLE 311 ON READER SERVICE CARD

San Francisco's Premier Adult Gay Men's Online Service has NOW gone Nationwide!

- ▼ Local access from over 1,000 US cities!
- ▼ Live uncensored group & private chat!
- ▼ Online, interactive, multi-player games!
- ▼ Lively salon style public forums!
- ▼ Over 20,000 Adult rated GIFS & files!
- ▼ MatchMaker online databases!
- ▼ 50+ lines available 24 hours a day!
- ▼ Gay owned and operated, your privacy assured!
- ▼ Much, much more!

For your local access number,
information, & sign-up, CALL:

(415) 703-8200

Set modem to 8/N/1. You must be 18 or older.
Finally...a national adult Gay men's BBS!

EYE CONTACT

Glamour Movies & Photos on CD ROM

Fantasy Show Bar \$79 Mac #400 PC #401

New Jersey's hottest men's club.

ErotiCafé \$69 Mac #300 PC #301

Sample the international cuisine...

Bare Assets \$59 Mac #100 PC #101

See the models dance on the beach, play in the pool, and pose in the studio.

Glamour Girls of 1943 \$49 Mac #200 PC #201

Nostalgic movies and photos of "pin-ups"
from the 1940's.

3-floppy sampler sets/ All titles except FSB/ \$29

Space Coast Software **Orders 800-940-2040**

Inquires 407-768-2442/ Fax 407-768-2221

1250 s. Harbor City Blvd. Suite #8, Melbourne, FL 32901

Visa/MC Adults Only Must be 21 to order

CIRCLE 310 ON READER SERVICE CARD

Where Adults Come To Play!

ODYSSEY BBS
• HOT CHAT Live W/Thousands of Ladies & Gents In Groups & Private!
• Tons Of Sizzling Hot Message Areas, Shareware Files and Adult GIFs!
• Matchmaker With DATING-BASE! • Straight & Gay Sections!
• Live Tournament Gaming! • Local Numbers In Over 800 Cities!
• Unlimited Connect At One Low Price!
• Plus Much Much More!

The World's Choice For HOT MODEM FUN!

For Signup Or More Info Call

818 358-6968

8 N/1 Must Be Over 18

In the past 12 months, 8 in 10 MacUser
subscribers purchased products by
mail order; 91% of these purchased
software through mail order.

Did they buy from you?

ADULT

Great Performances



Demand an Encore

Let us take your article to its highest level of marketing potential with a reprint!

To find out how you can have your article or review elegantly reprinted** on 80 lb. paper stock, in 4-color, 2-color or 1-color, call or write today:

Claudia Crichlow—
Reprints Manager;
Ziff-Davis Publishing
Company, One Park
Avenue, New York, NY
10016, 212-503-5447.

**Minimum quantity 500 reprints.

CD-ROM THE LATEST RELEASES AND JUICIEST CLASSICS! LARGEST SELECTION

LOWEST PRICES **FREE DEMO CD WITH EVERY ORDER!**

INTERACTIVES	ADULT MOVIE	PHOTO DISCS	
<p>◇ CD 100 DIRTY TALK (PC) 4 INDIVIDUAL EROTIC PERFORMANCES.....\$79.95</p> <p>◇ CD 101 DOORS OF PASSION (PC) EXPLORE THE DOORS OF PASSION MANSION.....\$99.95</p> <p>◇ CD 107 DUNGEON OF DOMINANCE (PC) MEET MISTRESS JACQUELINE & FRIENDS.....\$79.95</p> <p>◇ CD9911 ADULT MOVIE ALMANAC* (PC/MAC) MEET MISTRESS JACQUELINE & FRIENDS.....\$99.95</p> <p>◇ CD20121 THE DREAM MACHINE* (PC/MAC) DREAM GIRL ADAPTS TO YOUR FANTASY.....\$99.95</p> <p>◇ CD2002 ADV. OF SEYMORE BUTTS (PC/MAC) FOLLOW SEYMORE & HIS QUICKTIME CAMERA.....\$99.95</p> <p>◇ CD7052 NIGHTWATCH* (PC/MAC) SEXY SECURITY GUARD MAKES THE ROUNDS.....\$99.95</p> <p>◇ CD7053 NIGHTWATCH 2* (PC/MAC) SEXY SECURITY MAKES HER ROUNDS AGAIN.....\$99.95</p> <p>◇ CD4002 DIGITAL DANCING* (PC/MAC) DANCER OF YOUR CHOICE TAKES IT ALL OFF.....\$99.95</p>	<p>◇ CD7001 HIDDEN OBSESSIONS (PC/MAC) PENTHOUSE PET JANNIE UNDERMULDER.....\$99.95</p> <p>◇ CD9009 HOUSE OF DREAMS (PC/MAC) FULL LENGTH RELEASED DEC. 1993.....\$59.95</p> <p>◇ CD9012 SECRETS (PC/MAC) ASHLYN DERE, SAMANTHA STRONG, JEANNA FINE.....\$59.95</p> <p>◇ CD9022 NIGHT TRIPS (PC/MAC) ANDREW BLAKE MASTERPIECE, TORI WELLS.....\$69.95</p>	<p>◇ CD102 EXTREME DELIGHTS (PC) WOMEN & MEN GET EXTREME & SEXY.....\$69.95</p> <p>◇ CD104 PUBLIC FANTASIES (PC) A SEXY VARIETY WITH PRINT OPTIONS.....\$99.95</p> <p>◇ CD800 J. STEPHENS HICKS #1 (PC/MAC) 100 PROFESSIONAL PHOTOS OF SEXY WOMEN.....\$39.95</p> <p>◇ CD8003 AMERICAN GIRLS* (TOPLESS) (PC/MAC) 250 PHOTOS OF AMERICAN'S SEXIEST WOMEN.....\$39.95</p> <p>◇ CD9002 ADULT PALATE VOL. 1 (xx) (PC/MAC) 100" HIGH RES. ADULT MOVIE STILLS.....\$39.95</p> <p>◇ CD9003 ADULT PALATE VOL. 2 (xx) (PC/MAC) 100" HIGH RES. ADULT MOVIE STILLS.....\$39.95</p> <p>◇ CD8002 HIGH VOLUME NUDES (PC/MAC) HIGH RES. HIGH VOLUME.....\$39.95</p>	
CLASSIC MOVIES			
<p>◇ CD8001 LEGENDS OF PORN II (PC/MAC) FULL LENGTH CLASSIC.....\$69.95</p> <p>◇ CD1002 NEW WAVE H.Y. KERS (PC/MAC) CLASSIC SERIES STARRING GINGER LYNN.....\$49.95</p> <p>◇ CD1003 NEW WAVE H.Y. KERS II (PC/MAC) THE SECOND WAVE STARS SIZZLING SAVANNAH.....\$49.95</p> <p>◇ CD1004 TRACI I LOVE YOU (PC/MAC) EURO-LOCATIONS & LUSCIOUS TRACI LORDS.....\$49.95</p> <p>◇ CD1005 INSATIABLE (PC/MAC) EROTICA LEGEND MARILYN CHAMBERS.....\$49.95</p> <p>◇ CD8001 CAFE FLESH (PC/MAC) SERVED UP HOT & FULL LENGTH.....\$49.95</p>	<th>COMBO PACKS</th>		COMBO PACKS
	<p>◇ CD105 DIRTY TALK <i>Plus</i> EXTREME DELIGHTS (PC/MAC) DOUBLE DEAL <i>And</i> FREE CD STORAGE RACK.....\$99.95</p>		
<p>PLEASE SPECIFY ◇PC OR ◇MAC MUST BE 21 OR ORDER</p>			
<p>* SPECIAL EDITION AVAILABLE FOR ASIA</p>			

PHONE ORDERS: 1-800-696-9292	VISA
<p>AMX - CASH - CHECK - MONEY ORDER NEXT DAY DELIVERY...\$16.00 2ND DAY DELIVERY...\$9.00 UPS DELIVERY...\$4.00 FOREIGN ORDER *100 MINIMUM AIR REGISTERED...\$50.00 EXPRESS MAIL...\$35.00</p> <p>U.S. CURRENCY ONLY MAIL TO: TM PUBLISHING 2609 S.HIGHLAND MCR494 LAS VEGAS, NV 89109</p>	<p>VIEW AND INTERACT with your favorite stars: Ashlyn Gere, Jeanna Fine, Ginger Lynn, Savannah, Traci Lords, Melissa Mounds, Kimberly Kupps, Tori Welles, & Marilyn Chambers.</p>
<p>FAX ORDER 1-702-796-5655 MUST BE 21 TO ORDER</p>	

MAGICAL escapes BBS

This BBS is so **Hot...** it causes **MONITOR MELTDOWN!!**

ORIGINAL GIFS NOT AVAILABLE ON ANY OTHER BBS. **New** exclusive On-Line Shopping with our Magical Escapes® shopping guide. Hard to find books and magazines, Videos and more!

SHEILA'S COMPUTER MATCHMAKER **Special** 1 month access to basic services plus 4 hours of sizzling action on our all adult BBS!

HOT TALK WITH OUR 1000s OF SUBSCRIBERS

ACCESS TO SIX SWINGER CONTACT MAGAZINES!

Just \$45⁰⁰ VISA/MC/AMX **TO ORDER BY PHONE: 702-796-9966**
or mail to: TM Publishing Inc. PO Box 17070 Dept MCR594 Las Vegas, NV 89109

Must Be Over 21 To Order **TO LOG ON: (702) 796-7300**

Sell

your products in the section that's read by Macintosh Business Buyers...
MacUser Marketplace.

3 in 4 MacUser subscribers know Marketplace. They ...

- Use it to make purchasing decisions:** These subscribers rate Marketplace as an extremely/very helpful source for comparing prices, for looking for the best value, and for helping them to find products or services they can't find elsewhere.
- Respond to Marketplace advertising:** Nearly 8 in 10 took specific action after seeing an ad in the section in the last 12 months, including 44% who either purchased, or decided to purchase an advertised product in the near future.
- Buy from Marketplace:** 94% have purchased a product or service in the past 12 months, or would consider doing so, after seeing an ad in the section.
- Buy repeatedly:** 72% of those who have ever purchased from the section, are repeat buyers.

Call **800-825-4237** today for details on how you can target 444,161 primary readers in MacUser Marketplace Classified.

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-\$515, 3 issues-\$495, 6 issues-\$485, 12 issues-\$465.

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: Cathy Conway
For more information, call Cathy Conway at 800-825-4237 or 212-503-5965, FAX: 212-503-5860.

HARDWARE/ACCELERATOR BOARDS

Ilfx Ilci Ilfx Ilci Ilfx

Accelerate your Mac Ilfx and Ilci with Fusion Data's TOKAMAC accelerators*20-50% faster than a Quadra 950*Super low factory prices*30 day MBG *Lifetime warranty*Toll free tech support* MacUser Editor's Choice *Best accelerator of the year!

Fusion Data Systems TokaMac

8920 Business Park Drive, Austin, Texas 78759
(800) 285-8313/512-338-5326 fax 512-338-1276

CIRCLE 351 ON READER SERVICE CARD

INPUT DEVICES

PDA GOLD STYLUS

Enjoy the feel of a fine writing instrument. Solid-brass Newton MP stylus. Hand-polished, gold-plated. Screen-safe plastic tip. Only \$59.95 + S&H/\$5 US, \$9 Int'l. Other fine styli available, call for details.

PDA Panache

PO Box 49, Lake Grove, NY 11755-0049
Tel: (516) 467-4042 Fax: (516) 467-6329

CIRCLE 356 ON READER SERVICE CARD

BUSINESS

INVENTORY • POS • UPS

Take control of your inventory! Largest POS Mac base USA. A/R billing, GST, bar code/cash drwr receipt printers, auto vendor orders, custom forms, taxes, customers, labels, reports, G/L links... UPS-US/Intl. EASY for clerks. US/Can Demos.

SHOPKEEPER Publ. Intn'l, Inc.

3711 Shamrock W-Suite 110A Tallahassee, FL 32308 904-222-8808 or FAX 904-668-9916

CIRCLE 361 ON READER SERVICE CARD

PRINTERS

HEWLETT- PACKARD DEMO PRINTERS

All Macintosh/Apple Compatible Laser Printers, DeskWriter Inkjet Printers, PaintWriter Color Printers Pen Plotters, DesignJet Inkjet Plotters
Specials: PaintJet XL 300, LaserJet 4M, 4SiMX

TED DASHER & ASSOCIATES

4117 Second Ave. South, Birmingham, AL 35222
(800) 638-4833 Fax (205) 591-1108

CIRCLE 357 ON READER SERVICE CARD

ADD SERIAL PORTS

Hurdler™ Nubus 2 & 4 port serial boards provide Mac II users w/additional ports that are CTB/System 7.0 compatible. \$299 (2 ports-HDS) \$379 (4 ports -HQS). New SCSI/Serial version adds 4 serial ports via SCSI port ON ALL MACS. \$595 Intro.

CREATIVE SOLUTIONS, INC.

4701 Randolph Rd, #12, Rockville, MD 20852
1-800-367-8465/301-984-0262 Fax: 770-1675

CIRCLE 352 ON READER SERVICE CARD

MANUFACTURING QUESTIONS?

•ManuFacts™ provides the answers!
•Complete manufacturing Inventory Control
•Cost Tracking • Work in Process • Cost of Sales •
•and much more! •Dealers/Distributors Needed!
•Single-Multi-User Test Drive: \$45.00 C.O.D.

2CS, Incorporated

4523 Water Oak Dr., Lake Wylie SC 29710
(803) 831-1900 Fax (803) 831-9340

CIRCLE 362 ON READER SERVICE CARD

SOFTWARE/ACCOUNTING

MAC LC POWER SUPPLY \$99.00

High Power (38 Watt Output)
•5.25" Drive for MAC LC 1 yr warranty \$129.00
•Mac Cables from \$9.95
•We carry apple IIE & GS Peripherals
•Dealer Inquiries invited

Memory Plus Distributors, Inc.

7902 E. Pierce St., Scottsdale, AZ. 85257
(602) 820-8819 (602) 968-3211

CIRCLE 353 ON READER SERVICE CARD

Computer Checks \$24.95

Why Waste Money? Quicken compatible, also MYM, Money, Business Sense, 1200 more! Continuous or laser. Our checks ship in one week and are fully guaranteed. 100 Free Envelopes With First Order!

Designer Checks, Inc.

Box 12966E, Birmingham, AL 35202
800-239-9222 Ext 78 Fax 205-328-3815

CIRCLE 358 ON READER SERVICE CARD

SerMan™ Service Management

•The best Macintosh® based Service Management software available on the market.
•Developed in association with Apple Computer®
•Endorsed by Intelligent Electronics.
•Call for a full working demo.

ENSIGN SYSTEMS, INC.

26 North Main, Layton, UT 84041
(801) 546-1616 FAX: (801) 546-6490

CIRCLE 363 ON READER SERVICE CARD

CD-ROM

CUSTOM CD-ROM SERVICE!

•660 MB Capacity! •Less \$ than floppies or hard discs •Macintosh HFS or ISO 9660 formats
•Safest archive for any type of file or application
•Perfect format for mastering & preproduction
•Ideal for unique applications

Northeastern Digital Recording

2 Hidden Meadow Lane, Southborough, MA 01772
(508) 481-9322 FAX: (508) 624-6437

CIRCLE 354 ON READER SERVICE CARD

Print Checks On Plain Paper!

Eliminate costly pre-printed checks forever! Print 100% bank compatible checks on plain paper, using your laser printer. Print any style business, payroll, or personal check. Use with your existing accounting or payroll software.

AATRIX SOFTWARE INC.

523 N. Washington St., Grand Forks, ND 58203
1-800-426-0854

CIRCLE 359 ON READER SERVICE CARD

ONE-STOP ACCOUNTING SOFTWARE

We carry nearly every accounting program on the market for small & medium sized business. Point of Sale; Inventory/Asset Management; Modular Systems; Integrated Packages. Call for our free catalog. Inquire about that program you've been looking for.

MAX COMPUTERS

1506 25th St., San Francisco, CA 94107
(800) 656-MAXX

CIRCLE 364 ON READER SERVICE CARD

DATA ACQUISITION

CHROMATOGRAPHY DATA SYS.

Hardware • works with APLC, GC, etc • 2 or 4 channels
• connects to any Mac • 8 digital I/O • Easy setup software • 100% Mac interface • Real-time data display • Automatic/manual peak integration •
• Standards • Many features • Dealer enq. welcome

MORGAN KENNEDY RESEARCH

255 New England Road, Guilford CT 06437
Ph/F: 203/458-2164 email: mkres@aol.com

CIRCLE 355 ON READER SERVICE CARD

4TH Dimension Accounting®

A4™ includes AP, AR, GL, PR Links, Invoicing, Quotes, Inventory, PO's, Job Costing, Contacts, and Call History. Financial reporting, graphing and searching. Source code available. Single user - \$995. Client/Server - \$3995.

Softek Design, Inc.

Telluride, Colorado
(303) 728-5252 Fax (303) 728-6767

CIRCLE 360 ON READER SERVICE CARD

Professional Amortization

AMORT PRO™ Features • Attractive Reports
• Change ANY aspect of your loan at ANY time.
• Modify date/amount/interest • Balloon Payments
• Calc's for term/payment/interest/loan amount
• Fiscal Month • Log payments • And more...

CAMPBELL PROGRAMMING

PO Box 843 Grand Forks, ND 58206-0843
800-279-7764 • FAX 701-772-1033

CIRCLE 365 ON READER SERVICE CARD

BUSINESSCARD

BUSINESS

Manufacturing Tools

•Inventory Control •Bill of Materials•Purchasing Inquire/Mac is a full featured material management system for the small manufacturing company. Designed to work with your accounting software! Call for a free demo. 1-800-782-5682

OnBase Technology, Inc.

14 Hughes, #B105, Irvine, CA 92718
714-830-5682 Fax: 714-830-5691

CIRCLE 366 ON READER SERVICE CARD

PROGRAMMING TOOLS

C++ PROGRAMMING LIBRARY!

Dialog Maker is the easiest and fastest way to make applications on the Mac. It's a true C++ object-oriented library that uses resources to control dialog behavior. \$10 demo disk. MPW and Symantec C++ versions \$149+sh.

Electric Software Corporation

P.O. Box 279, Hazelwood, MO 63042-0279
(310) 575-4343 (314) 447-6665

CIRCLE 372 ON READER SERVICE CARD

Insures Your Computer

The COMPUTEROWNERS insurance policy repairs or replaces hardware, media and purchased software. As little as \$49 a year covers theft, accidents, fire, power surge and more! Call for immediate coverage or information 1-800-800-1492.

Safeware, The Insurance Agency Inc.

2929 N. High St., PO Box 02211, Columbus, Ohio 43202 1-800-SAFEWARE

CIRCLE 378 ON READER SERVICE CARD

COMMUNICATIONS/NETWORKING

Put Your Voice to Work

You don't need speech recognition to be productive. Voice Processor™ turns your Mac® into a digital tape recorder with transcription assistant. AOCE® Edition adds e-mail, security. \$179.95 (AOCE Edition \$259.95) MC/VISA/AMEX accepted.

Useful Software Corp.

12 Page Street, Danvers, MA 01923
(800) 666-9828 FAX: (508) 774-3918

CIRCLE 367 ON READER SERVICE CARD

FORTRAN 77 • System 7

LS FORTRAN is an ANSI/ISO standard FORTRAN 77 compiler with System 7 features. Includes VAX and Cray extensions, built-in debugging, 2D or 3D graphics support, and optimized code generation for all Macintoshes.

LANGUAGE SYSTEMS CORP.

100 Carpenter Drive, Sterling, VA 20164
(800) 252-6479 / (703) 689-9593 FAX

CIRCLE 374 ON READER SERVICE CARD

DESKTOP PUBLISHING SERVICES

Desktop Photography

*Mac,DOS, Apple Disks Floppy to 128 Optical
*Slides as low as \$2, AGFA Alto - 16K 4X5, 2 1/4Neg/Pos/B&W *Dye-Sub Prints as low as \$10
*Full Color Quick Printing, 1200 dpi Laser, Plates for Offset

MouseWorks Printing & Photography

105 N. Jackson, Athens, TN 37303
Phone: Voice (615) 744-7898 Fax (615) 745-0233

CIRCLE 379 ON READER SERVICE CARD

CONSULTING/PROGRAMMING

4th DIMENSION Consulting

•Specializing in 4D and Client-server Apps.
•Expert in 4D 3.0 and 4D Server
•Network Design and Custom Applications
•Troubleshooting and Technical Support
•Documentation and Training

Natural Intelligence, Inc.

2067 Mass. Ave., Cambridge, MA 02140
(617) 876-4876 Fax: (617) 492-7425

CIRCLE 368 ON READER SERVICE CARD

REAL ESTATE

RATED FIVE MICE BY MACUSER

Real Estate Edge, Tracks clients, sends letters, envelopes, \$395.00, PROANALYSIS, produces comprehensive reports for clients, banks, and investors. \$295. PROPERTY MGR., keeps books, print reports & checks, notices...\$495/995.

Business Edge

20250 Acacia St., Suite 160, Santa Ana Hts., CA 92707 Call (800)386-EDGE FAX: (714)476-9119

CIRCLE 374 ON READER SERVICE CARD

REPAIR SERVICES

APPLE/MAC REPAIR, EXCHANGE

•ONE YEAR WARRANTY ON LOGIC BOARDS
•COMPONENT LEVEL REPAIR
•ROCK BOTTOM PRICING
•FLOPPY 800K AND FDHD
•POWER SUPPLIES

SOLUTRONIX, INC.

7255 Flying Cloud Drive, Minneapolis, MN 55344
Phone 800-875-2580 FAX (612) 943-1309

CIRCLE 380 ON READER SERVICE CARD

ENTERTAINMENT/GAMES

MAGIC TRICKS ON YOUR MAC!

Here's a program that can perform magic! Amaze your friends with 6 stunning tricks. Perform at home, school, office or a friend's house! It's mind-boggling! Just \$25 or send for a free brochure

MICROMAGIC PRODUCTIONS

175 5th Ave., Suite 2625, New York, NY 10010
212-969-0220

CIRCLE 369 ON READER SERVICE CARD

RELIGION

BIBLE MASTER v3 - NASB, NIV

and more! Great computer Bible software. Uses a standard MAC interface. Fast, flexible, and easy to use. Transfer verses to your word processor. 30 Day money back Guarantee! Great discount prices! Free information!

AMERICAN BIBLE SALES

870 S. Anaheim Blvd., Anaheim, CA 92805
1-800-535-5131 or 714-449-9681

CIRCLE 375 ON READER SERVICE CARD

!!! REPAIRS BY MAIL !!!

Low cost repairs at fastest possible rate! Call for quotes now! Warranty to two years. Best in the business. School orders welcomed! We buy dead Apple 5 PC Macs.

Arminius Pubs and Prods

8519 Orchard Ave., Merchantville, NJ 08109
609-662-3420

CIRCLE 381 ON READER SERVICE CARD

MEDICAL/DENTAL

DENTAL OFFICE SOFTWARE

dMax™ offers 3 levels of dental practice management. Patient records, insurance claims, recall, statements, aged receivables, prod/coll spreadsheets & more. Starting at \$995. Easy to Use! •Call for free 30 page brochure•

dMax™ - BEAL SYSTEMS, INC.

23 Altair Rd. #103, Orinda, CA 94563
800-MAC-7796

CIRCLE 370 ON READER SERVICE CARD

Bible Book Store on Disk

Full Featured. Fast and Friendly Bible study software. As the leader in Bible Study software since 1981 we have continued to listen to our customers and provide them with the tools they need. Call for FREE catalog.

Bible Research Systems

2013 Wells Branch Pkwy #304, Austin, TX 78728
(800) 423-1228 (512)251-7541

CIRCLE 377 ON READER SERVICE CARD

TRAINING

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.

CareerTAPES® Enterprises

PO Box 309 Center Harbor, NH 03226
(603) 253-7470

CIRCLE 382 ON READER SERVICE CARD

MISC./COMPUTER INSURANCE

"INSURANCE TO GO!"

On the go with your PowerBook? Now, there's insurance protection for your Macs at home, the office or on the go. Covers theft, fire, accidents, power surges and natural disasters even earthquake! Rates start at \$60 p/year. Call NOW!

The ComputerInsurance Agency, Inc.

6150 Old Millersport Rd, Pleasantville, OH 43148
1-800-722-0385 1-614-263-5100

CIRCLE 377 ON READER SERVICE CARD

COMPUTER GRAPHICS CAREERS

Animation, Desktop Publishing, Illustration, Multi-Media, Painting Accredited. State-of-the-art labs with expert instruction. Two year Associate of Arts Degree Program. Financial aid, scholarships & housing available.

International Fine Arts College

1737 North Bayshore Drive, Miami, Florida 33132
1-800-225-9023 FAX (305) 374-7946

CIRCLE 383 ON READER SERVICE CARD

Practice Management Systems

Front Office™ is the most comprehensive and flexible system for all medical billing needs. Integrate to clinical information: electronic claims direct to Medicare/Medicaid & ETS. Full support and customization. Call for free Demo.

Systec Computer Services

P.O. Box 7533 San Jose, CA 95150-7533
800-762-7149 408-723-2264 Fax 408-978-6096

CIRCLE 371 ON READER SERVICE CARD

You'll Do Windows

DON'T BLAME ME AS Mac developers bail out for the larger Windows market.

It's those Mac turncoats, who are threatening the Mac's future, that you should condemn, not me. Because of them, you'll end up using a Windows machine — whether you like it or not.

Even as greedy developers rewrite applications for Windows, the Mac still holds an edge with the creative community of artists and writers. Graphical applications still feel and work better on the Mac, and so does typesetting. But although Power Macs are upping the speed ante, will the Mac ever be the only machine you'll ever need? I hate to say it, but the answer is no.

I've been searching for a one-platform solution to my computing needs for years. I've always had more than one machine, except for the few moments in the '70s when I used a SOL-20 8080 computer exclusively.

More recently, with the advent of OS/2 — which more closely resembles a Mac than Windows does — and its powerful multitasking, I thought I'd found the answer. With OS/2 you can format a disk while downloading a file and sorting a massive database. Try that with a Mac.

Unfortunately, OS/2 is enslaved by the poor architecture of the PC itself. The original PC was released in 1981 and based on the machines of the late '70s. Suppose the Mac

had been based on the Apple II, for example. Can you imagine how horrible and limited it would be? Because the Mac stole from the high end of the spectrum, taking its ideas from the Xerox Star, it

wasn't hampered by the designs and thinking of '70s microcomputing. Although fun, the computers of the '70s were amateurish in every way. But they were *for* amateurs, so nobody cared.

Back in the present, with Intel stuck in the rut of success and Microsoft unable to resist the lure of an installed base of 100 million DOS and Windows machines, there's little chance of improving the architecture. In an attempt to modernize the PC, Microsoft has invented something called Microsoft at Work, a set of parameters designed to restandardize interfaces, from machines to peripherals. You know, kind of like the Apple SCSI we've had for a decade.

Anyway, the whole PC scene is as out of control as ever. I was amused the other night, when someone said that Apple could have owned the world if it had just opened up its architecture and licensed its operating system. I think not. Tightly controlling the architecture is essential for plug-and-play to work. And now that Apple is offering to license its design, I don't see anyone flocking to do a Mac clone. Some will say too little was offered too late. Maybe, but the Mac market is bigger than ever. Seems like a good time to me.

Unfortunately, the range of applications available requires serious users to consider using multiple computers, especially in a home office. I use four machines. I thought I could get away with two — a Mac and a PC — but I got involved in video and had to get an Amiga for a Video Toaster. Then along came OS/2, which I preferred to Windows. Before long, OS/2's limitations forced me to get a dedicated Windows machine to look at products that worked poorly under the OS/2

version of Windows. There weren't many of these programs, but there were enough to be a nuisance. Will it be much longer before I need five computers?

I can't figure out where to put the fifth one. It's ridiculous. I'm sure that over the next year or so, many Mac users will have to buy a Windows machine to run some oddball application that should have been developed for the Mac in the first place. Your competition will be using the application and will have an edge on you if you don't get on board. You'll call the developers and ask when they are going to port to the Mac, and the developers will say that they plan to but can't say when. That means "never!" in developerspeak, by the way.



Sure, Power Macs can run Windows, but they can't run it as fast as Pentium machines do. It doesn't matter how many times Apple says SoftWindows on Power Macs is "fast enough" for most applications. Users always want the fastest machine for the money. Besides, many Windows applications are incompatible with SoftWindows, because it doesn't support 386 Enhanced mode. Even if you can run Windows faster than anybody else, it won't do you much good if you can't run your favorite app.

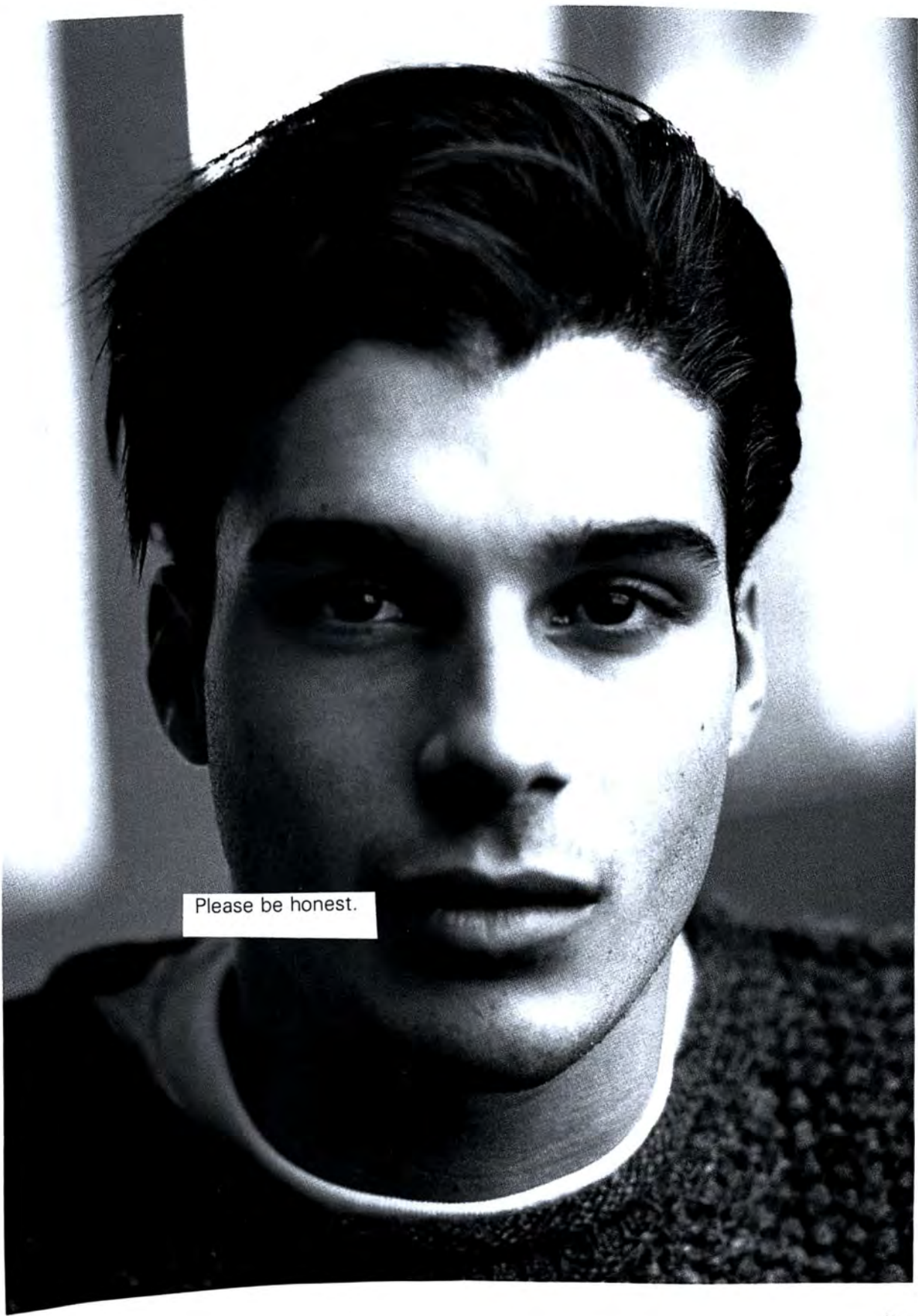
I don't want you to give up your beloved Mac. But don't expect to run Windows software on it. Get out your wallet. Make room for another computer.

And, by the way, you won't like it. ☹



←

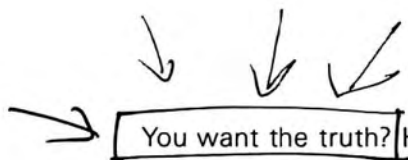
×



Please be honest.

✓

×



You want the truth? Here it is. NEC's new MultiSpin® 3X CD-ROM readers are the best-performing readers on the market.

Notice, there is no asterisk to qualify that statement. No special connections are required to make our readers run at triple speed. And, you don't have to have an NEC computer or monitor. (Although it would be nice if you did.)

We were the first to introduce double speed. And now we improved our data transfer rate to 450 Kbytes/sec. and made a triple-speed reader. (Because that's what you wanted.) We also cut our access time to less than 200 milliseconds, added a 256-Kbyte continuous-flow cache, a SCSI 2 interface, and a full 16-bit SCSI card.

OK, so now we've done what every true computer ad must do. We've filled your head

with a long list of numbers and specs. But, what does it all mean?

Well, it means you can get your information three times faster than you can with standard readers, see smoother animation and video.

And then there are the really important questions. Like is our CD-ROM reader easy to use;

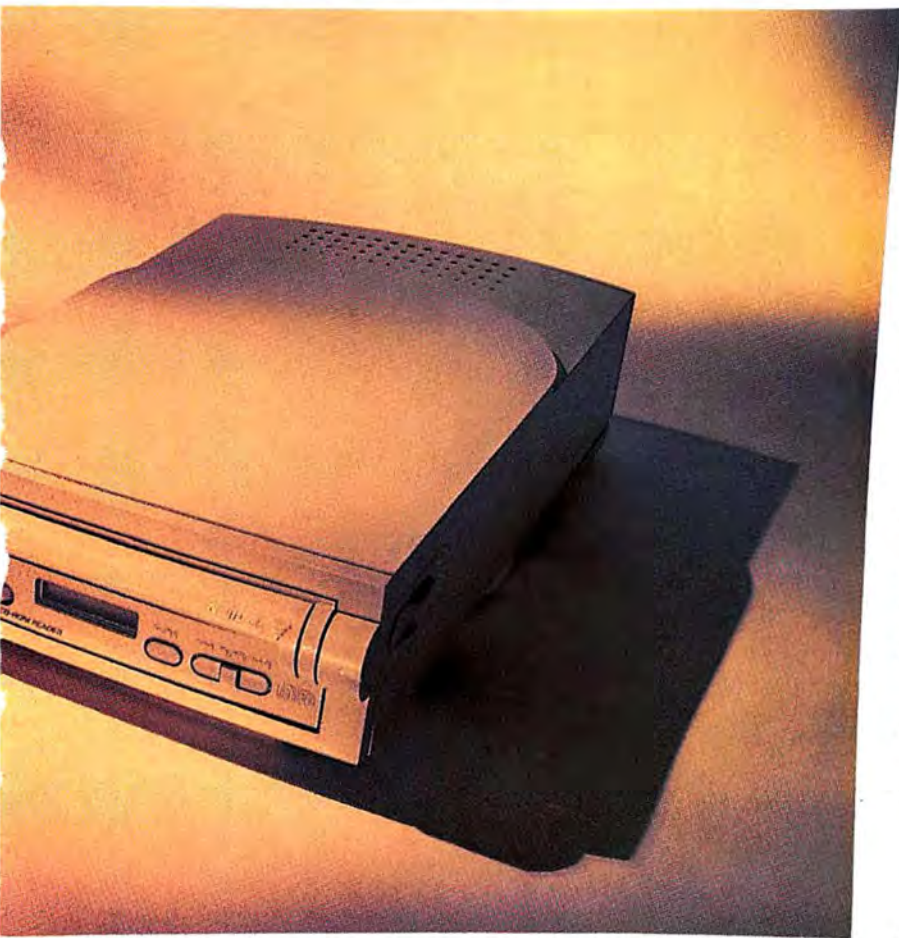


NEC MultiSpin 3Xp and 3Xe

← Ok. It's fine print but it's just trademark stuff. Honest.

how much is it going to cost me; and, will it look good on my desk? The answers are: Yes; around the same that it will cost you for a 2X; and you'd better believe it.

Our new MultiSpin CD-ROM readers are not only fast but interactive and intuitive to your needs, with control and display features on the front panel that tell you exactly what's going on (or not going on) at all times. They also have stand-alone audio controls so you can play music CDs without a com-



puter. And there's a complete line of NEC interfaces, which include easy-to-use installation software. So you won't spend half your life trying to hook your reader up.

They're compatible with Macs and PCs, as well as Kodak Multisession Photo CDs. And they come with the longest commitment in the industry – a 2-year limited warranty.

For more information on our new MultiSpin 3X

CD-ROM readers, call 1-800-NEC-INFO now. Or, for immediate details via fax, call NEC FastFacts™ at 1-800-366-0476, request document #23768.

We'll answer any questions you may still have about CD-ROM. And (this is the best part) you'll actually get to have an honest conversation for a change.

NEC

