Your complete guide to 1500 of the best (and worst) Macintosh hardware and software products

HOW TO BUY:

- Hard-Disk Drives
- Word Processors
- Memory
- Spreadsheets
- Input Devices
- Utilities
- CD-ROM Drives
- Games
- Fax Modems
- Databases
- Scanners
- Graphics Software
- Monitors
  ... and more
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Works is powerful enough to grow with your business. To see how far, call (800) 541-1261, Department X43, for the closest Macintosh® reseller.
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Macintosh technology is getting really cool these days. That means difficult choices and tough decisions. We may not have all the answers, but we can definitely point you in the right direction.

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And that's our Bottom Line.
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Bottom Line understands the special needs of the international Macintosh user and reseller, and we extend the extra level of support international clients require. We have a 24-hour international fax line, and we stock 220-volt versions of most hardware. Bottom Line offers discounted rates with DHL, UPS and Federal Express, and customs brokerage through the courier. Delivery time to most countries is two to three days.

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Ad Code: BG01
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- Asante EN/SCS EtherET $302
- CE Software QuickMail 10 User V.2.5 $359
- Datamation MailReader 12-Port $657
- Familiar Pro Ethemet Serial Copier $840
- Familiar Pro Ethernet Card EN $165

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| $225 | $249 |
| SUPRA FAX MODEMS | $1525 | $1699 |
| AS/AT E | ENS C SCSI | rNF II/ It's |
| $530 | $539 |
| SHARP \TWISL\ARE\PT S | 849 |

**Printers**

| $339 | $1675 |
| APPLE StyleWriter | APPLE Personal LaserWriter NTR |
| $2199 |
| APPLE LaserWriter II |

**Supra Fax Modems**

| 14,400 V.32b $285 |

**MODEMS & FAXES**

| $175 | $225 |
| DoxFax & DoxFax Plus |
| Hayes Ultra 9600 SC II |
| LogiCom Quickie Xtra 9696 V.42bis |
| Practical Peripherals PM9600SA |
| Prometheus 24/96 S/F Sx R/Fx |
| PROMUS 96/96 S/F Sx R/Fx |
| ZOM ATN EXTERNAL $449 S/F R/Fx |

**Printers**

| $188 | $1265 |
| PRONET 10-Pack |
| SHIVA EtherGATE |

**Software**

| $232 | $383 |
| ACT! CONTACT MANAGER v.1.0 |
| ACT! Ilustrator v.3.2 w/ATM |
| Adobe Photoshop 499 |
| Adobe Type Alist |
| Adobe Type Movement |
| Adobe Streamline v.2.0 |
| AfterDark & More After Dark Bundle |
| Aldus Freehand v.3.1 |
| Aldus PhotoShop v.499 |
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| Aldus Freehand v.3.1 |
| Aldus PhotoShop v.499 |
| Aldus successfully v.2.0 |
| Aldus Gallery Effects v.1.0 |
| Aldus Persuasion v.2.1 |
| At O.G. v.1.2 |
| AutoDweller v.2.0 |
| Claris Works v.1.0 |
| Color Encore (FULL VERSION) |
| CONNECT PRO BUCK Utilities |
| Dick Doubling v.2.7 |
| EP Gadget |
| Fix Side Calendar v.2.0 |
| FileMaker Pro v.2.0 |
| FontMonger v.1.0 |

**Supra Fax Modems**

| $302 |
| CD-ROM |

| $205 | $335 |
| CD-RW ONLINE | CD-ROM |
| EMAC CD-ROM Drive |
| Toshiba CD-ROM XM 2021A |
| Microsoft Office CD ROM |
| TYPE/GRAPH IS | $229 |
| NEC Cup A+3.0 | $221 |
| NEC CD-ROM 3 Door $491 |

**Printers**

| $275 | $1179 |
| APPLE LaserWriter lllS |
| GCC BLP II /IlS |
| GCC BLP II /IlS |
| GCC WtE Write 380 |
| GENERATION SYSTEMS GSX99 |
| GENERATION SYSTEMS GSX15 |
| HENLEY Pack 300KX |
| HENLEY Pack 300KX |
| HENLEY Pack 300KX |
| HENLEY Pack 300KX |
| HENLEY Pack 300KX |
| HENLEY Pack 300KX |
| NewGen Printer Line |
| OMS PS - 410 |
| OMS PS - 410 |
| OMS ColorShift 210 |
| OMS ColorShift 230 |
| OMS ColorShift 230 |
| SICO ColorPoint P - A - SIZE 6MB |
| TEXTKING Color Quick Write |
| TEXAS INSTRUMENTS MICROLASSER PS 17 |
| TEXAS INSTRUMENTS MICROLASSER PS 35 |
| TEXAS INSTRUMENTS MICROLASSER TURBO |
| DISPLAYS |
| Apple 12" RGB Display |
| Apple 13" RGB Display |
| Apple 14" RGB Display |
| Apple 16" RGB Portrait Display |
| Apple 18"/E-Machines SX bundle |
| Apple 21" RGB Display |

**Printers**

| $302 | $4299 |
| CD-RW ONLINE | CD-ROM |
| EMAC CD-ROM Drive |
| Toshiba CD-ROM XM 2021A |
| Microsoft Office CD ROM |
| TYPE/GRAPH IS | $229 |
| NEC Cup A+3.0 | $221 |
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| GCC WtE Write 380 |
| GENERATION SYSTEMS GSX99 |
| GENERATION SYSTEMS GSX15 |
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| HENLEY Pack 300KX |
| NewGen Printer Line |
| OMS PS - 410 |
| OMS PS - 410 |
| OMS ColorShift 210 |
| OMS ColorShift 230 |
| OMS ColorShift 230 |
| SICO ColorPoint P - A - SIZE 6MB |
| TEXTKING Color Quick Write |
| TEXAS INSTRUMENTS MICROLASSER PS 17 |
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Two-page, 18-inch Emoticon display
$1299

**COLORPAGE T-19 II**
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**FUTURA MX**
Accelerated 6-bit color interface for 16" display with 16-bit Macs
$879

**FUTURA SX**
Accelerated 6-bit color interface for 16" display with 16-bit Macs
$395

**FUTURA LX**
Accelerated 4-bit color interface for 19" display with 16-bit Macs
$999

**FUTURA**
Accelerated 4-bit color interface for 21" display with 16-bit Macs
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**DOUBLECOLOR LX**
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**DOUBLECOLOR SX**
8-bit color interface for 16" and 4-bit color for 19" display
$399

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Accelerated 4-bit color for 16" & 4-bit color for 19", with 10-base-T
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300dpi 24-bit Color Scanner
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**UMAX 630 AND 840**
600 & 6000dpi 24-bit Scanners
$1079 / $1599

**UMAX 1200**
1200dpi 24-bit Color Scanner
$2975

**MICROTOK 1850S**
1800dpi Color Slide Scanner
Incl. Photoshop 5.01
$1399

**MICROTOK II**
1200dpi 24-bit Color Scanner
Incl. Photoshop LE
$875

**MICROTOK IIXE**
1200dpi 24-bit Color Scanner
Photoshop 2.01 & ScanMatch
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**NETWORKING**

**DONGLE 10BASE T HUB**
10Base T Hub w/ 9 ports
$249

**DONGLE MAC/4 (4W)**
ThickNet Ethernet card w/ 4 MACs & 4W RAM buffer for Mac II
$159

**CAT5YAN GATONBOX CS**
Apptalk to Ethernet Gateway
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**DAYNA POINT ETI**
Thin Ethernet Hub for Mac II
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**DAYNA ETHERPRINT / PLUS**
Ethernet/ThickNet Interface connection for LocalTalk printer
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Network Hub with 100Base-T ports & one AUI port
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**FARALLON TIMBUKTU REMOTE ACCESS PACK**
3.5mm Jack Ethernet to 10Base-T Interface
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**SHIVA FASTPATH S**
LocalTalk to Ethernet Gateway
$1850

**SHIVA NETBRIDGE / TELEBRIDGE**
6 x 9 Standard Tablet
$649

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**COMMUNICATIONS**

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**PRATICAL PERIPHERALS PM14400 FXSA**
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**PRONTOMACH ULTIMA HOME OFFICE**
Prometheus Home Office
$459

**PSI COMMUNICATIONS FIVE**
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V.32/B send/receive fax data modem
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Connects Powerbook to large-screen displays, televisions, LCDs
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  DGR's MAX gives you three true PDS expansion slots. Now you can utilize any combination of accelerators, ethernet cards, multimedia boards and large screen video solutions — all at once.

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DGR's MAX transforms the Macintosh LC, LCII and Performa 400 into a powerhouse Macintosh workstation. In just seconds, the MAX snaps into place between the Macintosh CPU base and the LC lid, providing additional power, PDS expansion and internal real estate for hard drive expansion. No tools are needed, no parts discarded and the LC is in no way permanently altered - disassembly requires just seconds. Above all else, the MAX is an integrated solution designed to complement the aesthetic of Macintosh computing. As with all products from DGR Technologies, the MAX is backed by a 30-day money-back guarantee, a one-year warranty, and toll-free technical support.

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A Note to Subscribers

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CIRCLE 26 ON READER SERVICE CARD.
THE MOBIUS 030 DISPLAY SYSTEM is the simplest, most reliable, and most economical way to pump major new life into your trusty Mac SE: a combination 25 MHz 030 accelerator and video card, plus a top-rated Mobius One or Two Page Display. All starting at just $899, including tilt/swivel base, cabling, software, and a complete installation kit (which, by the way, is a snap).

It's no wonder MacWeek called it "THE BEST UPGRADE VALUE WE'VE SEEN YET FOR THE SE." The Mobius 030 Display System increases the speed of your SE sixfold, making it just as fast as the IIci, and for one third the cost of buying one. That means blazing recals on your spreadsheets, and speedy redraws on your page layouts. Your entire document will always appear razor-sharp and rock-solid on the "THE MOST VISUALLY APPEALING" display, according to MacWorld. The Mobius 030 Display System is a complete solution that not only comes with your choice of monitor, but can be expanded for even greater performance. Want more speed? Just add our math coprocessor. More memory? There's room on the card for up to 16 MB of memory*. At Mobius, we're dedicated to providing the best service and support in the industry. So give us a call now to place an order or to get more information. We'll give you all the ins and outs.

$399
MOBIUS 030 SE ACCELERATOR
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826x1024 pixels, 75 dpi, 75 Hz refresh, 30,000 hrs. MTBF

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MOBIUS ONE PAGE DISPLAY
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* With 16 MB virtual memory option.** Includes PAMU and Connectix™ Virtual 3.0™. Also available for the Macintosh Classic, add $100. In Canada call (416) 886-2326. ©1992 Mobius Technologies, Inc. Mobius 030 Display System is a trademark of Mobius Technologies, Inc. All other trademarks are property of their respective holders. Mobius Technologies, Inc., 5835 Doyle Street, Emeryville, CA 94608, Tel (510) 654-0556, Fax (510) 654-2834. Pricing subject to change without notice.

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It also uses familiar word processing style rulers for greater control of how text looks on a page.

And you can import PICT, PICT2, TIFF, EPSF and all MacDraw files, you name it. Yet for all these features, MacDraw Pro 1.5 remains as accessible as ever.

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Need more information? Call for our free guide, “Building a Macintosh Network,” 1-800-998-7761.

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Compuserve ID: TS430, 2103. Internet ID: farallon@farallon.com.

CIRCLE 178 ON READER SERVICE CARD.
Face it: Buying a Mac ain’t so easy anymore. Which Mac model should you buy? How do you choose the right hardware peripherals for your needs? What software can do the job you need done? The answers used to be obvious. Today they’re complex enough to fill a book — so we wrote it: *MacUser’s* ultimate buying guide.

It used to be easy: You bought the most powerful Mac you could afford, stuck with Apple-labeled peripherals, and got along just fine with the software that came bundled with your Mac.

But today’s universe of Mac products is mind-boggling. *MacUser’s* first-ever ultimate buying guide to Mac hardware and software is designed to help new Mac users get an instant education and to provide Mac veterans with a complete reference guide to virtually every type of Mac product — from the specs on all 19 current Mac models to concise reviews of 1,500 hardware and software products.

In this guide, you’ll find an overview of the entire Mac family, including the latest PowerBook and desktop models. *MacUser* has also developed an expert-system software tool to help you figure out which Mac model best suits your particular needs. (See the table of contents for information on how you can get this software from our online service, ZiffNet/Mac.)

Next, check out our collection of Shopping Lists for some one-minute primers on what to look for in all the major categories of hardware peripherals and add-ons.

Finally, you’ll be ready to consult the MiniFinders section, a database of 1,500 reviews of specific products. Each MiniFinders entry is based on thorough hands-on evaluations, and each contains the date of the most recent issue of *MacUser* in which you can find more details. (See the masthead for information on obtaining back issues or accessing them on-line.)

If the product’s review is more than a few months old, a newer version of the product may be available — or one of its competitors may have leapfrogged ahead. So stay tuned: As the market continues to change, you’ll find the ongoing information you need each month in *MacUser*. 

---

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You know all those things you wish your Mac did? Like let you get at files and applications immediately instead of digging through umpteen different folders, or load new extensions without making your entire system blow up. Well, contrary to popular belief, it can. With Now Utilities 4.0, an updated version of the software collection awarded best utility last year by the editors of both Macweek and MacUser, its seven components are designed, tested and guaranteed to work together. And it simplifies using your Mac in so many ways, it'd be downright impossible to mention them all in one ad. So here's the Reader's Digest Condensed Version.

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| Super Boomerang | saves time and
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frequently used files and folders. Then it
presents them to you in the 'open' and
'save' dialogs of every appli-
cation. And it finds your lost
files with just a partial name or
a shred of content to go on -
even if they've been compressed.

| NowSave | automatically
saves your work after a speci-
fied number of minutes, keystrokes or
mouse clicks. And if you want, it will record
every keystroke in a special back-up file,
just as you typed it. So even if your system
crashes, your work is saved. As is the hair
you would have torn out.

| WYSIWYG Menus | means what you see
is what you get. Will it let you see font
names in their actual typefaces? Yes. Will it
let you change the order, size and color of
fonts in their menus? Of course. Will it let
you group certain fonts with certain
applications and assign them hot keys?
Absolutely. Will it group font families
TOGETHER SO YOU DON'T HAVE TO SCROLL ALL
OVER KINGDOM COME TO FIND THEM? You betcha.

| StartUp Manager | controls the
loading of extensions and control panels.
It helps prevent crashes. It disables
extensions that do crash. It even links
together extensions that require each
other and keeps disagreeable extensions
apart so they won't bloody each others'
proverbial noses.

| Now Scrapbook | grew out of the 5-
mouse-rated Picturebook+. It helps you
organize graphics, text, sounds
and Quicktime movies and stores
them in multiple catalogs that
can all be open simultaneously.
It also shows you 'thumbnail'
views and lets you sort, zoom,
scale, resize
AND DROP IMAGES JUST LIKE A REAL, LIVE ART
DIRECTOR. EVEN IF YOU DON'T HAVE A PONYTAIL.

| Now Profile | is not glamorous. It's
not exciting. But it does provide a detailed
analysis of your system, its configuration,
the whole ball of wax. That way, if you ever
run into trouble, all the info is right there.

Sexy, no. Smart, yes.

So there it is. Now Utilities 4.0. Or at
least as much of it as we can fit in one ad.
To get the rest of the details, call us
at 1-800-237-3611. Or talk to a dealer.

Oh, and just in case you're still
wondering, Palatino looks like THIS.
How to Buy the Right Mac

With more than 30 models of new and old Macs to choose from, today's buyer needs the right facts to make the right choice. Here's (almost) everything you need to buy a Mac (you still have to come up with the cash yourself).

In the beginning, one young rebel flung her sledgehammer at IBM's dominance and announced a single computer with a single name: Macintosh. Apple's mythic ad not only distracted 1984's Super Bowl viewers from their Bud and Pringles but it also kicked off a nine-year spiral of development and diversity.

Thirty-two models have followed that original Macintosh. Worldwide, eight million Macs now compete with ten times as many DOS-based machines. Despite the advent of Microsoft Windows, the superiority of the Mac's interface remains clear to all but the most ardent DOSophiles. For those who are searching for the perfect personal computer, the question isn't, Should I buy a Mac or a PC clone? but Which Mac should I buy?

BY RIK MYSLEWSKI
Classic II
$1,079

Mac IIci
$2,719
Macintosh CPUs

A Brave New World

Fortunately, you have more choices, and are offered much better values, today than at any time since the Mac first appeared. What was once a single line of Macs has blossomed into six distinct series: low-cost and consumer Macs for entry-level users and less demanding applications, notebook and dockable Macs for users on the move, modular Macs for business and DTP users, and Motorola 68040-based Quadra powerhouses for users who demand the pinnacle of Mac performance. Choosing a Mac is no longer a simple matter of calling your accountant and buying as much power as your budget allows: Price-versus-performance is no longer the sole shopping criterion, because several models now list for roughly the same price.

Sifting through the growing Mac family isn’t as daunting as it might sound. Your first step is to write down what applications you plan to run, including those you may add in the foreseeable future. Then, as you continue reading through this article, you can see what hardware is best for these applications. Once you know what you need from your Mac, you’ll have to decide whether to get everything from Apple or whether to buy the minimum configuration and spruce it up with third-party add-ins, upgrades, and peripherals.

The Basics

Today’s choices demand an understanding of today’s Macs and of the most basic component of any Mac, its microprocessor, the silicon chip that manages the whole show. Apple Computer uses microprocessors from the 68000 series, manufactured by Motorola. IBM PCs and their clones use microprocessors from another giant of the silicon world, Intel. This use of different microprocessors is a core reason for the compatibility challenges between the DOS and the Mac clans.

Mac microprocessors come in three distinct, although related, types (see Figure 2). Generally speaking, the farther up the chip is on the evolutionary scale, the higher its performance. The original 68000 is now used only in the Classic and the PowerBook 100, but it appeared in all Macs released before the Mac I1, including the popular SE. Apple debuted the 68030 in 1988, and it has now become the flagship of the Mac line: No less than the Classic II, LC II, IIlS, IIvx, IICl, and all the current Performas and PowerBooks use this chip. Finally, the Quadra 700 and 950 use the 68040, a true thoroughbred chip, with more than 17 times the transistors and 10 times the raw horsepower—measured in MFIs, or millions of instructions per second—of the original 68000. (The Mac II was the first Mac to use a fourth Motorola microprocessor, the now-extinct 68020; the last Mac to feature the 68020 was the original LC.)

There are dozens of important differences among these microprocessors, but none causes more confusion than their clock speed—the number of times per second the chip cycles from process to process. Clock speed is measured in megahertz (millions of cycles per second), often abbreviated as MHz. But don’t jump to the conclusion that clock speed equals the number of tasks, or useful duties, a chip can accomplish per second. Most tasks require multiple clock cycles, but the more powerful the chip, the more it can do per cycle—one reason

Figure 1: The first Macintosh (left) had a paltry 128K of memory and no SCSI port for attaching a hard drive. Eight years later, the Quadra (right) can accommodate multiple high-speed storage devices and more than 2,000 times the memory.

Mac 2000

What will tomorrow’s Macs be like? Well, for one thing, they won’t be Macs. Apple is hard at work on two futuristic efforts that will turn your Mac into a museum piece by the turn of the century. Personal digital assistants (PDAs), based on Apple’s Newton technology, will revolutionize mobile computing (see “Newton’s World,” August ’92, page 45). RISC-based Macs running a new and highly efficient operating system will transform desktop computing into a new era of limitless communication, seamless multimedia, and raw computational power (see “PowerPC: Where No Mac Has Gone Before,” September ’92, page 142).

Not that there won’t be some familiar aspects to your new Mac 2000. You’ll still have icons on your computer screen, for those occasions when you insist on manipulating data manually. But voice commands will be more common. For graphics work, you’ll have a pressure-sensitive pen.

Networks will be pervasive, but wires will be antiquities. Future Macs will communicate by radio waves, so you’ll be connected wherever you go. Your computer will also function as a telephone, fax machine, pager, mailbox, and interactive cable-ready television.
You won’t buy applications for your Mac either. You’ll buy functional modules. You’ll be able to assemble them as you do Lego building blocks, to perform precisely the tasks you require. You will train them by performing a task once and telling your Mac to remember how you did it.

You won’t have to worry about document formats either. Format translators, when necessary, will automatically ensure that the information you need will be presented properly.

“Out of memory” messages will be a thing of the past. Base configurations will contain 128 megabytes of RAM. For additional storage, you’ll use removable solid-state RAM cartridges, the size of a credit card, that will hold as much as a gigabyte of data.

You’ll be able to use your Mac at your desk if you need to, but you’ll be more likely to carry it in your shirt pocket. Some models will hang on the wall of your conference room, where the white board lives today.

Your computer display will be a full-color flat-panel LCD with a resolution of 150 dpi (dots per inch) or greater. Images will have the clarity of high-definition TV. Printing will become a special-purpose task; most information will be transferred electronically.

And price? You’ll be able to get a device with this “basic” capability for less than $1,000, allowing, of course, for inflation adjustments — but you’ll have to pay a bit more for the Holodeck option.

— Henry Bertman

why a IIvx with a 32-megahertz 68030 is left in the dust by a Quadra 700 with a 25-megahertz 68040. A 16-megahertz 68000 certainly performs better than an 8-megahertz 68000, but don’t expect it to keep up with a 16-megahertz 68030.

Even though the original Classic’s 68000 is beginning to show its age, don’t count it out. It’s more than adequate for most day-to-day computing duties, such as word-processing, telecommunications, and simple spreadsheet work. When you’re typing, for example, your Mac’s microprocessor is simply spinning its wheels, waiting for each keystroke. Remember, a microprocessor’s world is measured in millions of cycles per second, not words per minute, as is a typist’s. Except for its slow scrolling, a Mac Classic is as effective a word-processing platform as a 68040-based Quadra — if you limit your use of special word-processing features.

Whenever your word-processing application needs to redefine how your page will be formatted — in Microsoft Word’s Page View or Tables mode, for example — it’s up to your microprocessor to get the job done. In such cases, a faster microprocessor is a big help. If you often use your word processor’s more complex functions or if page layout is your game, you’ll save yourself a great deal of time and aggravation by choosing a 68030-based Mac.

The same advice holds true for spreadsheet and database-management applications: If you use only simple, nontaxing functions on small files — and let’s face it, we’re not all power users, nor do we need to be — a low-powered Macintosh will suit you just fine. But if you build complex financial models or if your relational database contains thousands of records, a 68000-based Classic or a low-powered 68030-based machine such as an LC II or Classic II will soon turn you either suicidal or homicidal. Do yourself — and your coworkers — a favor: Buy a faster Mac for your spreadsheet work and a faster hard drive for your database needs. And if you’re into severely processor-intensive tasks such as 3-D color modeling and rendering, engineering, or serious scientific number crunching or if your software-development business requires you to frequently perform long compiles, by all means, take out a second mortgage and buy yourself a Quadra with a ton of RAM.

Remember also that you’re not necessarily stuck with the microprocessor that’s in the Mac you buy. Apple offers several upgrade options: One especially attractive route is swapping an outdated IIcx or IIci motherboard for a Quadra 700 motherboard; you can quadruple your Mac’s overall performance for a mere $3,499. Also, third-party manufacturers...
The new generation HP LaserJet 4M printer.

At last, Hewlett-Packard introduces a laser printer built specifically for the Mac from the ground up—the new LaserJet 4M. A laser printer for Mac users with everything you expect. And, more importantly, everything you need. From built-in PostScript Level 2 software from Adobe and 6 MB of memory, to standard LocalTalk and optional EtherTalk. Features which make certain this new generation in laser printing is ready-made just for you.

The finest print quality in its class. In addition to complete Macintosh compatibility, the LaserJet 4M printer also delivers the finest print quality of any 600 dpi machine available—thanks to...
HP's microfine toner, Resolution Enhancement technology, and an advanced engine expressly engineered for 600x600 dpi.

New generation features mean you will lose no time getting your work onto the page. A new RISC processor and 6 MB of standard memory accelerate formatting and I/O speeds, so complex PostScript language and graphics files are rendered faster and more clearly than ever before.

Greater flexibility.
But this wouldn't be an HP-caliber breakthrough if the innovations weren't across the board. That's why, even though the new generation LaserJet 4M printer is built for the Macintosh, it will perform for DOS and Windows users as well... automatically. Automatic language switching (between PCL 5 and PostScript) and three hot I/O ports (serial, parallel, and LocalTalk) make sure users are able to share the printer simultaneously. Without waiting.

Also, because of the LaserJet 4M printer's two integrated paper trays (total capacity 350 sheets) and optional 500-sheet tray and power envelope feeder, you will save time, avoid paper-handling hassles, and gain flexibility.

HP quality and reliability.
The new generation LaserJet 4M printer lets you enjoy the one particular no other Macintosh laser printer can offer—the renowned quality and reliability which comes with owning an HP peripheral. Not to mention our outstanding customer support, where information about how to get the most from your printer is never more than a phone call away.

Surprisingly affordable.
Perhaps the most remarkable attribute of the new LaserJet 4M printer is the price—$2,999.* A breakthrough in its own right. So call 1-800-LASERJET (1-800-527-3753), Ext. 7135 to receive a print sample** and comparison disk to see the quality for yourself. Or visit your nearest authorized HP dealer and see the printer built to add some polish to your Apple.

**To have a LaserJet 4M printer data sheet sent immediately via fax machine, call 1-866-044-1676 from your touch-tone phone. In Canada call 1-800-852-9992, Ext. 7135. Adobe and PostScript are trademarks of Adobe Systems Incorporated which may be registered in certain jurisdictions.
Macintosh CPUs

offer a wide variety of accelerators — cards that slip into a Mac's PDS (processor-direct slot) or NuBus slot or that clip directly over the existing microprocessor in slotless Macs. The Performa 600 and 600 CD have a slot expressly dedicated for future acceleration, called, appropriately enough, the Accelerator Slot. Most accelerators replace the Mac's existing microprocessor with a faster version, thus adding performance without requiring you to replace the entire Mac, drives and all.

Memory Matters

Speed is not the only reason to step up to a newer microprocessor. The 68030 and 68040 are not just more powerful than their predecessors; they also contain the MMU (memory-management unit) necessary to use System 7's virtual-memory feature, which lets you designate a portion of your hard disk as RAM (random-access memory, the microprocessor's work space). If you have an old Mac II, you can pair a 68851 PMMU (paged-memory-management unit) chip with the Mac II's 68020 microprocessor to gain the same advantage. If you own an original LC (also a 68020-based Mac), however, you're out of luck; the LC has no socket for a 68851. If you have a 68000-based Mac, you're also locked out of virtual memory; the 68000 has no MMU and supports no PMMU chip.

But remember that Apple's implementation of virtual memory is slow — very slow. Because of virtual memory's performance limitations, buy as much real RAM as you can. Fortunately, RAM is cheap these days — around $30 for a 1-megabyte SIMM (single in-line memory module, the standard form for Mac RAM), $100 for a 4-megabyte SIMM, and $500 for a 16-megabyte SIMM. But before visions of unlimited RAM overwhelm you, remember that each Mac has a built-in limit and that RAM must be added in groups of SIMMs — or, in the case of PowerBooks, on special daughtercards containing costly pseudostatic RAM (see the "RAM Rules" sidebar).

Also, to access more than 16 megabytes of RAM, your Mac must be 32-bit clean, and only the Mac IIci and later models come with 32-bit-clean ROMs. There is a fix, however. A system extension called MODE32 removes the 16-megabyte barrier and lets your pre-IIci 68020- or 68030-based Mac access the same amount of RAM (or virtual memory) as the newer models: a whopping 4 gigabytes (billions of bytes, or thousands of megabytes) — although no current Mac can be stuffed with that much RAM. Developed by Connectix, MODE32 is distributed free by Apple, conscientious dealers, user groups, and ZiffNet/Mac (MacUser's CompuServe-based on-line service). If you plan to use multiple memory-intensive applications — especially graphics, sound, or multimedia programs that produce enormous files — get a Mac with 32-bit-clean ROMs or get MODE32.

An abundance of RAM is valuable not just for running memory-hungry programs such as Adobe Photoshop and MacroMind Director. Perhaps more important, with a pile of RAM, you can open multiple applications and leave them open, either in MultiFinder under System 6 or in the standard multiapplication environment of System 7. It's a tremendous productivity booster to switch back and forth among tasks — revising a spreadsheet in Claris Resolve, jotting down some text in Microsoft Word, touching up an illustration in Aldus FreeHand, and then importing it all into a QuarkXPress layout — without launching or closing applications.
Color Considerations

All the RAM in the world can’t help you improve the appearance—or performance—of your Mac’s monitor, but picking a Mac with the right microprocessor can. All 68000-based Macs have one common feature, a monochrome screen. This is not simply a matter of economy; it’s also a question of performance. Every pixel on a monochrome screen corresponds to 1 bit of information, which is either on (black) or off (white). A Mac that uses 32-bit Color QuickDraw to display a 24-bit-color image, on the other hand, uses a full 4 bytes (32 bits) of information for each pixel. (The missing 8 bits—the alpha channel—can be used by applications for special effects such as transparency.)

The power required to process and display a 24-bit-color image is enormous compared with that needed for a black-and-white 1-bit image. A 1-bit Mac Classic must process only 175,000 bits to display one screen. At the other extreme, a Mac processing a screenful of 24-bit color to display on the Macintosh 21-inch Color Display System must crunch well over 30,000,000 bits of color information—more than 175 times the work.

No wonder that even the entry-level

Figure 2: All Macs are based on the same family of Motorola microprocessors: the 68000 series, an ever-improving progression of chips named after the number of transistors inside the first. The 68040, used by the Quadra 700 and 950, contains 1,200,000 transistors within its dime-sized dimensions. It also holds a commanding lead over its predecessors in MIPS (millions of instructions per second) and MFLOPS (millions of floating-point operations per second).

Figure 3: When the Mac was introduced in 1984, you were limited to a single choice: the slow, memory-starved floppy-drive-only model. A scant eight years later, 19 Macs vie for your attention.

We compared 19 of the current Macs with 5 popular, although discontinued, ancestors. We ran each—with its monitor set to monochrome and, when possible, to 8-bit color or 4-bit gray scale—through a battery of processor- and disk-intensive tests involving an Adobe Illustrator 3.0 preview, a complex financial recalculation in Microsoft Excel 4.0, an extensive search-and-replace chore in Microsoft Word 5.0, a scroll through a ten-page Word document, and a sort of a 2,000-record Claris FileMaker Pro database.

After we’d normalized and plotted the results of these tests, we discovered that the most powerful Mac—the Quadra 950—is more than 12 times as fast as today’s slowest Mac, the Classic. We also discovered that the on-board video of the IIsi and the IICl hampers their performance when these two otherwise-speedy Macs are set to their standard display mode of 8-bit color and that the IICl is fastest when only 1 megabyte of RAM is in its first bank of SIMMs (in our tests, the second bank was filled with four 1-megabyte SIMMs).
Even in today's economic climate, the new Apple Macintosh IIvx personal computer is ideal.

It's fast. It's powerful. And it costs a lot less than you'd think. But equally important, it's prepared for the next economic expansion, when you'll want to add onto its already vast capabilities.

Inside its sleek exterior resides a 5½" expansion bay — room for an internal CD-ROM drive, SyQuest drive or other mass storage devices — as well as a standard 3½" bay for either an

In these times when every budget dollar is precious, the new Apple Macintosh IIvx personal computer is ideal.

It's fast. It's powerful. And it costs a lot less than you'd think. But equally important, it's prepared for the next economic expansion, when you'll want to add onto its already vast capabilities.

Inside its sleek exterior resides a 5½" expansion bay — room for an internal CD-ROM drive, SyQuest drive or other mass storage devices — as well as a standard 3½" bay for either an

A whole new generation of CD-ROM player, the AppleCD 3000 retrieves data twice as fast as ordinary players. It also supports Kodak Photo CD.

While 4 megabytes of memory are standard, you can add up to 68 megabytes of RAM to help you zip through even the most complicated projects.

The new Macintosh IIvx (shown here with our new 14-inch Macintosh Color Display) is the most flexible Macintosh II available. It's also fast, powerful and extremely affordable.

In these times when every budget dollar is precious, the new Apple Macintosh IIvx personal computer is ideal.

It's fast. It's powerful. And it costs a lot less than you'd think. But equally important, it's prepared for the next economic expansion, when you'll want to add onto its already vast capabilities.

Inside its sleek exterior resides a 5½" expansion bay — room for an internal CD-ROM drive, SyQuest drive or other mass storage devices — as well as a standard 3½" bay for either an
my, one can still find opportunities.

An option is to buy an 88-megabyteQUEST drive that uses removable cartridges for archiving or transferring large projects.

Out of the box, the Macintosh IItx supports up to a 14" monitor and 256 colors. Add a card and some VRAM, and it can handle up to a 21" monitor and millions of colors.

Another option is the 51/4" bay — a 44- or an 88-megabyte QUEST drive that uses removable cartridges for archiving or transferring large projects.

80-megabyte or a 230-megabyte internal hard disk drive. It also gives you three NuBus' slots and an accelerator slot so you can add even more power and performance.

To see the new Macintosh IItx for yourself, visit an authorized Apple reseller today. For the power you need most of all. The power of Macintosh. The power to be your best.

Introducing the Macintosh IItx.
When deciding how much RAM (random-access memory) you need, you should follow one simple rule: The more, the merrier. Fortunately, when you install higher-capacity RAM SIMMs (single in-line memory modules) in your office's high-end Mac, you can distribute the leftover lower-capacity RAM to your office mates. Swapping RAM between Macs is, almost literally, a snap.

There are exceptions, however. Even though all Macs from the Plus onward — except for the PowerBooks, the PowerBook Duos, and the Portable — use SIMMs, the llfx requires a special variety that doesn't work in other Macs. But with the exception of rare SIMMs required in some government-bound machines, all Macs use standard 8-bit SIMMs — that is, SIMMs that hold and transfer information 8 bits, or 1 byte, at a time. A Mac has either a 16- or a 32-bit data path — that is, it transfers information from memory to the microprocessor 16 or 32 bits at a time, depending on the Mac model. To fill this path evenly, SIMMs are installed either in pairs (16 bits) or in quartets (32 bits) of the same capacity.

The key to knowing which SIMMs work in which Macs is in the product codes stamped on RAM chips; they tell you how big and how fast the chips are. RAM chips often have a part number stamped on them that indicates their size — for example 256, 1000, or 4000, for 256 kilobits, 1 megabit, or 4 megabits, respectively. Another number, usually in the 70-to-150 range, indicates the speed of the chip — how quickly it can load or unload 1 byte of data — in nanoseconds. If the part numbers on your SIMMs don't decode easily, simply ask your friendly SIMM manufacturer to decode them for you.

Multiply the number of chips by the capacity of each, and you get the total capacity of the SIMM. For example, a 1-megabyte SIMM usually contains eight 1-megabit chips, for a total of 8 megabits, or 1 megabyte. (Remember, 1 megabyte is 1,048,576 bytes, not 1,000,000 bytes.)

Unless you're using SIMMs that are larger than 1 megabyte, you need concern yourself only with how fast the memory is and whether or not it will physically fit in the spaces inside the Macintosh. In compact Macs, such as the SE and SE/30, "tall" RAM made from older DIP (dual in-line package) chips doesn't fit; you need newer SIMMs. RAM made from low-profile surface-mount chips. In general, RAM that works in faster Macs also works in slower Macs.

The Mac Classic II and the LC II have 2 and 4 megabytes of RAM on the motherboard respectively, and one 16-bit bank of two SIMM sockets, which can accept 1-, 2-, or 4-megabyte SIMMs.

The Mac Classic II has one megabyte on the motherboard and one 32-bit bank of four SIMM sockets, which each accept a SIMM as large as 16 megabytes, for a maximum total RAM configuration of 65 megabytes.

The SE/30, ll, llx, llcx, llsl, llvx, and lIci can also accept SIMMs with a capacity as large as 16 megabytes. With the exception of the Macintosh II and lIsi, all these Macs have 32-bit, four-slot SIMM banks and can support between 1 and 4 megabytes of RAM, plus 1 megabyte for the on-board ROM.

### Table A: You can never have too much RAM. Depending on the type of SIMM you use, you can load a maximum of 4 megabytes into your Classic or 256 megabytes into your Quadra. Remember: If you have a Mac with a 16-bit data path, you must install pairs of SIMMs; a Mac with a 32-bit data path requires SIMMs in groups of four.

<table>
<thead>
<tr>
<th>Memory Type</th>
<th>Data path</th>
<th>Minimum RAM speed (nanoseconds)</th>
<th>Number of SIMM slots</th>
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</thead>
<tbody>
<tr>
<td>Consumer</td>
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<tr>
<td>Performa 200</td>
<td>16 bits</td>
<td>100 ns</td>
<td>2</td>
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<tr>
<td>Performa 400</td>
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<td>80 ns</td>
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<tr>
<td>Performa 600 CD</td>
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<td>Low-cost</td>
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<td>Notebook</td>
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<tr>
<td>PowerBook 100</td>
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<td>100 ns</td>
<td>0</td>
</tr>
<tr>
<td>PowerBook 145</td>
<td>32 bits</td>
<td>100 ns</td>
<td>0</td>
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<td>PowerBook 160</td>
<td>32 bits</td>
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<td>PowerBook 170</td>
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<tr>
<td>PowerBook Duo 230</td>
<td>32 bits</td>
<td>100 ns</td>
<td>0</td>
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<tr>
<td>68040-based</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Quadra 700</td>
<td>32 bits</td>
<td>80 ns</td>
<td>4</td>
</tr>
<tr>
<td>Quadra 950</td>
<td>32 bits</td>
<td>80 ns</td>
<td>16</td>
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</table>
64 and 128 megabytes of RAM. The Mac II is limited to 68 megabytes until you install an FDHD (floppy disk, high density) upgrade, which comes with the newer ROMs that are required to support 128 megabytes.

The Quadra 700 has 4 megabytes of RAM soldered onto the motherboard; the Quadra 950 has no RAM on the motherboard itself but comes with 4 megabytes of RAM in slots. The Quadra 700 has one 32-bit, four-slot SIMM bank; the Quadra 950 has four. When fully loaded with 16-megabyte SIMMs, these machines support 68 and 256 megabytes, respectively.

The PowerBooks and the PowerBook Duos include a single connector for a special RAM daughter card. Currently, daughter cards containing as much as 6 megabytes of low-power pseudostatic RAM are supported on the 145 and the 170, as much as 12 megabytes on the 160 and the 180, and as much as 20 megabytes on the PowerBook Duo 210 and 230.

— Jeff Pittelkau

<table>
<thead>
<tr>
<th>RAM on motherboard</th>
<th>Maximum RAM when all SIMM slots are filled with SIMMs of this type:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>256K</td>
</tr>
<tr>
<td>2 MB</td>
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<td>2 MB</td>
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</tr>
<tr>
<td>none</td>
<td>NA</td>
</tr>
</tbody>
</table>

*Although 16-megabyte SIMMs can be used in 68030- and 68040-based Macs, Apple has not yet defined their physical (heat and size) properties.

1The Classic's RAM expansion capacity assumes use of Apple's memory expansion card, which has 1 megabyte soldered on board and two SIMM slots.

This PowerBook has a single socket for a daughter card containing 2, 4, or 6 megabytes of pseudostatic RAM; it does not have a SIMM slot.

This PowerBook can be upgraded to a maximum of 12 megabytes; upgrade information and pricing were not available at press time.

**This PowerBook can be upgraded to a maximum of 20 megabytes; upgrade information and pricing were not available at press time.

1The Mac II can support 128 megabytes of RAM after installation of an FDHD upgrade, which includes new ROM chips.
color Macs — the LC II and the Performa 400 — use a 68030 microprocessor, which is much more powerful than the 68000 of the monochrome Classic. Also, unlike the Classic, the LC II (like the Quadras) contains circuitry that offloads much of the screen-processing duties from the microprocessor and has separate VRAM (video random-access memory) to store the information to be displayed on-screen. Both the Classic and the Classic II require the microprocessor to manage the screen and use main memory (RAM) to store screen information.

Like the LC II and the Quadras, the IIsi and the IICl include plug-and-play video, but RAM, rather than VRAM, is used to store video information. While the video circuitry is updating the screen, the CPU waits and performance suffers. Also, when 4 megabytes or more of RAM is installed in the first of the IICl’s two SIMM banks, a larger portion of system software and applications are forced to share RAM space with video, further slowing performance. Thus, an 8-megabyte IICl (with 4 megabytes of RAM in each of the two banks of SIMMs) is slower than a 5-megabyte IICl (with 1 megabyte of RAM in the first bank and 4 megabytes in the second). Because the IIsi’s first SIMM bank consists of 1 megabyte of RAM permanently soldered on the motherboard, video and applications are less likely to share the same SIMM bank — thus the degradation of performance is minimized although not eliminated.

If you choose a IIsi or an IICl, we recommend that you not rely on the machine’s internal video. Spend a few extra dollars on an add-in video card — the improvement in performance will be well worth it. If you can’t afford the card, increase the size of the Memory-control-panel cache that will push system software and applications up into the second SIMM bank, improving performance when built-in video is used.

Although you can also achieve an increase in performance simply by

<table>
<thead>
<tr>
<th>Table 1: Video Variety</th>
<th>Color QuickDraw</th>
<th>Video Interface</th>
<th>Built-in 9.8-inch LCD panel</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Consumer</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performa 200</td>
<td>32-bit</td>
<td>internal CRT</td>
<td>NA</td>
</tr>
<tr>
<td>Performa 400</td>
<td>32-bit</td>
<td>built-in video</td>
<td>NA</td>
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<tr>
<td>Performa 600</td>
<td>32-bit</td>
<td>built-in video</td>
<td>NA</td>
</tr>
<tr>
<td>Performa 600 CD</td>
<td>32-bit</td>
<td>built-in video</td>
<td>NA</td>
</tr>
<tr>
<td><strong>Low-cost</strong></td>
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<td></td>
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</tr>
<tr>
<td>Classic</td>
<td>none</td>
<td>internal CRT</td>
<td>NA</td>
</tr>
<tr>
<td>Classic II</td>
<td>32-bit</td>
<td>internal CRT</td>
<td>NA</td>
</tr>
<tr>
<td>LC II</td>
<td>32-bit</td>
<td>built-in video</td>
<td>NA</td>
</tr>
<tr>
<td><strong>Modular</strong></td>
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</tr>
<tr>
<td>IIsi</td>
<td>32-bit</td>
<td>built-in video</td>
<td>NA</td>
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<td>IICl</td>
<td>32-bit</td>
<td>built-in video</td>
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<tr>
<td><strong>Notebook</strong></td>
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<tr>
<td>PowerBook 100</td>
<td>none</td>
<td>internal LCD panel</td>
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</tr>
<tr>
<td>PowerBook 145</td>
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<td>internal LCD panel</td>
<td>1 bit</td>
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<td>PowerBook 160</td>
<td>32-bit</td>
<td>internal LCD panel</td>
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<td>PowerBook 170</td>
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<td>PowerBook 180</td>
<td>32-bit</td>
<td>internal LCD panel</td>
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<td>PowerBook Duo 210</td>
<td>32-bit</td>
<td>internal LCD panel</td>
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<td>PowerBook Duo 230</td>
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<tr>
<td><strong>68040-based</strong></td>
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<tr>
<td>Quadra 700</td>
<td>32-bit</td>
<td>built-in video</td>
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<tr>
<td>II</td>
<td>8-bit**</td>
<td>8x24 NuBus card</td>
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<td>IICl</td>
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<td>8x24 NuBus card</td>
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<tr>
<td>Quadra 900</td>
<td>32-bit</td>
<td>built-in video</td>
<td>NA</td>
</tr>
</tbody>
</table>

*All Performa 600, LC, and IICl bit depths are with optional 512K VRAM installed.

1The PowerBook 100's LCD panel has a diagonal measurement of 9 inches.

All PowerBook Duo bit depths are with optional 512K VRAM installed.

All Quadra bit depths are with optional 2-megabyte VRAM installed.

** Requires 32-bit QuickDraw system extension for color more than 8 bits deep.

The Apple 8x24 NuBus card can support 16-bit color with new ROM and software.
color itself is also an excellent organizational tool.

Different Macs have different color capabilities, depending on their internal video circuitry (see Table 1). When deciding on a color Mac, don't be too quickly seduced by 24-bit color. In most cases — even if you're preparing complex presentations with charts and graphs — 8-bit color should be plenty for your needs. The 256 colors it provides may not sound like much compared with the 16,772,216 provided by 24-bit color, but only specialized applications such as image retouching and high-end graphics really require the broad range of hues and tones provided by high-end color.

<table>
<thead>
<tr>
<th>Built-in 9-inch CRT (512 x 342 pixels)</th>
<th>12-inch color display (512 x 384 pixels)</th>
<th>12-inch monochrome 13-inch color display 14-inch color display (640 x 480 pixels)</th>
<th>Portrait display (640 x 870 pixels)</th>
<th>16-inch color display (832 x 624 pixels)</th>
<th>21-inch monochrome 21-inch color display (1,152 x 870 pixels)</th>
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<td>8 bits</td>
<td>24 bits</td>
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</tr>
</tbody>
</table>
| Table 1: All the currently shipping Macs include an internal video controller that drives either an external monitor or an internal CRT or an LCD panel. Many discontinued Macs, such as the II, IIX, IICX, and IITX, require drop-in NuBus video cards. The internal video (or the video card or third-party equivalent in discontinued Macs that require them) of each Mac can provide a variety of video resolutions, depending on the pixel dimensions of the monitor to which it is attached. Only Apple display systems are listed here; third-party equivalents may differ slightly.
Shared PostScript Printing... Without Compromise
The newest member of the DEClaser family, the DEClaser 1152 offers superb price/performance. Greater versatility, advanced power, and low cost make it the premier print companion for PC, Macintosh® and Digital desktops — whether directly connected or shared. It's also an economical solution for small PC networks.

The DEClaser 1152 is one of the lowest cost desktop PostScript® laser printers available in the marketplace today. Yet you compromise none of the performance features you need. Four-page-per-minute print speed... 300 dpi resolution... up to three simultaneously active I/O ports... and support for Adobe® PostScript Level 2 and Hewlett-Packard® LaserJet® II (HP® PCL® 4) emulation protocols.

Based on the industry-standard Canon print engine, the DEClaser 1152 offers a number of advantages: reliability, superb paper handling, high print quality, and a single cartridge for all printer supplies. For all its power, the DEClaser 1152 features the same small footprint as previous DEClaser 1100 models — preserving precious space on the desktop.
Highlights

- Superb performance at low cost. The ideal print solution for PCs, Macintosh systems, and workstations.
- Support for PostScript Level 2 and HP LaserJet II (HP PCL 4) industry-standard protocols. Backward compatibility with PostScript 1 ensures application investment protection.
- Up to three active ports: Serial, Parallel, and AppleTalk. One printer serves multiple hosts.
- Sharper images. Incorporates DECimage, a patented image rendering technology for crisper edges and finer detail.
- PostScript Level 2. Offers data compression and decompression, font and forms caching, better memory management, and more.
- Complete network capability. Supports PC and Macintosh LANs. With LATprint server attached, connects to VAX and UNIX hosts.
- Memory and font upgradability. As need demands, upgrade from the standard 2 MB to 4 MB memory. And from the built-in standard 17 Adobe PostScript fonts up to a total of 43. That's more than twice the number of scalable fonts built into the LaserJet IIIP.
- Quality, economy, and user-friendliness. Printer technology is based on the industry-leading Canon engine. You get reliability, superb paper handling, high print quality, and a single cartridge for all printer supplies.

The Printer That Keeps Pace

In business today, the definition of the word "document" is far broader than ever before. Integrated graphics, digitized images, and varied fonts make the printed page a more powerful statement — and the "desktop" user a more effective communicator. Such power, however, calls for printers that can keep pace. The DEClaser 1152 answers the call with a cost-effective solution.

Support for All Your Desktop Devices

Your knowledge workers want to work with familiar applications, on the desktop device of their choice. Yet you want to minimize the number of printers you need to purchase. To answer both sets of needs, the DEClaser 1152 supports PostScript Level 2 and Hewlett-Packard LaserJet II (HP PCL 4). Both are industry standards, supported on more than 5,000 and 20,000 applications respectively.

Powerful, flexible, programmable—PostScript Level 2 introduces features that make document handling and printing even more efficient.

- For faster printing time, PostScript Level 2 supports industry-standard formats for compression and decompression.
- Font and forms caching makes more efficient use of resident or downloadable fonts.
- Better memory management permits you to print more jobs and perform more functions.

PostScript Level 2 is compatible with PostScript 1, which is supported by PCs, Macintosh systems, UNIX workstations, and environments such as Windows, OS/2, Novell, SCO UNIX, and OSF. You gain investment protection, and assured compatibility for operating systems of the future. In the same fashion, the DEClaser 1152 will support new PostScript Level 2 applications when they become available.

To manage multiple protocols, VAX system users can purchase DECprint Supervisor for Base VMS (DCPS), an optional software package available under two licenses: DCPS-Base for PostScript and simple ASCII files, and DCPS Plus for a full range of printer language translators, including PPL3 (LNO3). DCPS Plus also includes such value-added features as lay-up and number-up for more flexible, economical page management.

Three Active Ports

With its three interface ports (Serial, Parallel, and AppleTalk), the DEClaser 1152 offers flexibility in an environment of shared computing. The printer can be configured with two serial ports and one parallel port — or the AppleTalk and Parallel ports — active simultaneously. Auto Port Sensing allows users to print from any port, without leaving their desks.

The DEClaser 1152 can be a shared printer among multiple Macintosh systems via the AppleTalk port. With an inexpensive two-port LATprint terminal server connected via ThinWire to the serial port, it can also link to the larger network world of PATHWORKS, VAX, and UNIX hosts.
Superior Image Rendering

For higher-quality output, the DEClaser 1152 includes DEClmage, a patented image-rendering technology that produces crisper edges and finer detail—without added hardware.

The software’s programmable controls permit adjustment of dynamic range, rendering resolution, and black-and-white punch factors—all with a simple command. Best of all, you can change these parameters without modifying your applications or critical data files.

Other Powerful Features

As your needs grow, so can the DEClaser 1152. Resident memory can be doubled to 4 MB to manage more demanding documents. For more visual impact in your documents, you can download additional fonts from the host system—or install an optional 26-font cartridge.

In word processing environments, addition of an optional paper tray offers greater flexibility. Load one tray with letterhead sheets, for example, and the other with plain paper for the rest of the document. Or if the call is for overhead presentations, one tray can be loaded with transparencies.

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Printer</td>
<td>PostScript Level 2, 4 ppm, with 10-foot MMJ cable</td>
</tr>
<tr>
<td>LNOTC-CA</td>
<td>Denmark Country Kit: power cord, 220 V</td>
</tr>
<tr>
<td>LNOTC-AD</td>
<td>UK/Ireland Country Kit: power cord, 240 V</td>
</tr>
<tr>
<td>LNOTC-AE</td>
<td>Italy Country Kit: power cord, 220 V</td>
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<tr>
<td>LNOTC-AI</td>
<td>Germany/Austrian Country Kit: power cord, 220 V</td>
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<td>LNOTC-AZ</td>
<td>Switzerland Country Kit: power cord, 220 V</td>
</tr>
<tr>
<td>LNOTC-CC</td>
<td>Sweden, Finland, Norway, Portugal Country Kit: power cord, 220 V</td>
</tr>
<tr>
<td>LNOTC-CD</td>
<td>Belgium, Holland, France Country Kit: power cord, 220 V</td>
</tr>
<tr>
<td>Memory Upgrade</td>
<td>2 MB memory board</td>
</tr>
<tr>
<td>LNOTX-UF</td>
<td></td>
</tr>
<tr>
<td>Optional PostScript Font Cartridges/Kits</td>
<td>26 PS Font Cartridge Only</td>
</tr>
<tr>
<td>LNOTX-PF</td>
<td>26 PS Font w/ATM, 43 Screen Fonts for Macintosh</td>
</tr>
<tr>
<td>LNOTX-PM</td>
<td>26 PS Font w/ATM, 43 Screen Fonts for Windows</td>
</tr>
<tr>
<td>Toner Cartridge</td>
<td>Toner</td>
</tr>
<tr>
<td>LNOTX-AA</td>
<td></td>
</tr>
<tr>
<td>Paper Cassettes</td>
<td></td>
</tr>
<tr>
<td>A4</td>
<td>LNOTX-TA 250 sheet</td>
</tr>
<tr>
<td>Legal</td>
<td>LNOTX-TB 250 sheet</td>
</tr>
<tr>
<td>Executive</td>
<td>LNOTX-TE 250 sheet</td>
</tr>
<tr>
<td>Letter</td>
<td>LNOTX-TF 250 sheet</td>
</tr>
<tr>
<td>Envelope</td>
<td>LNOTX-TD 20 envelope</td>
</tr>
<tr>
<td>Parallel Cable</td>
<td></td>
</tr>
<tr>
<td>BC19M-06</td>
<td>6-foot cable</td>
</tr>
<tr>
<td>BC19M-10</td>
<td>10-foot cable</td>
</tr>
<tr>
<td>Macintosh Cable</td>
<td></td>
</tr>
<tr>
<td>BCC46-06</td>
<td>6-foot cable</td>
</tr>
<tr>
<td>LATprint Server</td>
<td></td>
</tr>
<tr>
<td>LNXXD-AA</td>
<td>2-port Ethernet connection for OpenVMS, ULTRIX</td>
</tr>
<tr>
<td>Licenses</td>
<td></td>
</tr>
<tr>
<td>DCPS-Base</td>
<td>QL-09FA9-AA Optional for DECansi VAX users</td>
</tr>
<tr>
<td>DCPS-Plus</td>
<td>QL-09LA9-AA Optional for DECansi VAX users</td>
</tr>
<tr>
<td>DCPS Media Kit</td>
<td></td>
</tr>
<tr>
<td>QA-09NAA-H</td>
<td>Software media</td>
</tr>
<tr>
<td>DCPS Documentation Kit</td>
<td></td>
</tr>
<tr>
<td>QA-09NAA-GZ</td>
<td>For VAX and Alpha AXP Systems</td>
</tr>
<tr>
<td>PostScript Level 2 Programmers Supplement</td>
<td>PostScript Programming Manual</td>
</tr>
<tr>
<td>EK-PSPTR-8M,A01</td>
<td></td>
</tr>
</tbody>
</table>

* North American Ordering Number
OpenVMS Environment Specifications

Requirements

To use the DEClaser 1152 in PostScript mode in an OpenVMS environment, DCPS-Base must be installed. This software requires OpenVMS V5.3 or higher. In a non-OpenVMS environment, or when the printer is set in HP PCL 4 emulation mode, DCPS is not required.

For More Information

To learn more about the DEClaser 1152, contact your local Digital sales representative or Authorized Digital Reseller.

---

Specifications

<table>
<thead>
<tr>
<th>Function</th>
<th>DEClaser 1152</th>
</tr>
</thead>
<tbody>
<tr>
<td>Print Technology</td>
<td>Canon Laser Xerography</td>
</tr>
<tr>
<td>Print Resolution</td>
<td>300 x 300 dots per inch (enhanced by DECimage)</td>
</tr>
<tr>
<td>Speed</td>
<td>4 pages per minute</td>
</tr>
<tr>
<td>Monthly Usage</td>
<td>Up to 6,000 pages</td>
</tr>
<tr>
<td>Paper Types</td>
<td>Cutsheet (Standard, European A4, Executive, Legal) labels, transparencies, envelopes</td>
</tr>
<tr>
<td>Paper Trays</td>
<td>Input: Standard 70 sheets, Optional 250 sheets, Output: Face Up 20 sheets, Face Down 30 sheets</td>
</tr>
<tr>
<td>Resident Memory</td>
<td>2 MB (upgradable to 4 MB)</td>
</tr>
<tr>
<td>Data Interfaces</td>
<td>EIA-232 (DB25), EIA-423 (MMJ), Micro-Pin (AppleTalk or Serial), Centronics* Parallel (36-pin). Printer can be configured to support either 2 Serial and 1 Parallel, or 1 AppleTalk and Parallel.</td>
</tr>
<tr>
<td>Protocols Supported</td>
<td>PostScript Level 2, HP LaserJet 2 (HP PCL-4, and DECansi/Sixel)</td>
</tr>
<tr>
<td>Fonts</td>
<td>Resident 17 Adobe PostScript (upgradable to 43), Optional Downloadable or font cartridges</td>
</tr>
<tr>
<td>Baud rate</td>
<td>EIA-232/EIA-423: 300 to 384 KB, Serial: 300 to 384 KB, AppleTalk: 230 KB</td>
</tr>
<tr>
<td>Physical Characteristics</td>
<td>Width 350 mm (13.8 in), Height 204 mm (8.0 in) 259 mm (10.2 in) (with optional feeder), Depth 405 mm (15.9 in), Weight 11.5 kg (25 lb)</td>
</tr>
<tr>
<td>Noise Level</td>
<td>53 dB (maximum when printing), 43 dB (maximum when idle)</td>
</tr>
</tbody>
</table>

Note: Printer is shipped with MMJ serial cable and toner cartridge. Parallel and Macintosh cables not included.
Macintosh CPUs

Those 24 bits don’t come cheap, and they require a lot of processing muscle — an accelerated 24-bit-video card is well worth the $2,000 or so you have to pay. And you need a NuBus slot for that card, so don’t think about 24-bit color if you’re planning to buy an LC II. Apple offers a compromise, however: an optional 512K VRAM SIMM for the LC II that provides 16-bit color on an Apple 12-inch RGB monitor (see Table I). A 16-bit-color system gives you 32,768 colors — you’ll be hard-pressed to detect the difference between it and a 24-bit-color system, unless you’re involved in highly demanding color-graphics work such as rendering and photo retouching.

Also, remember that Apple’s Video compression setting for QuickTime is based on a 16-bit imaging model. If you play a QuickTime movie on a Mac that’s limited to 8-bit color, the playback will suffer in two ways: First, the Mac must transform each frame from 16- to 8-bit color, slowing playback considerably. Second, the movie will be dithered. That is, instead of smooth, seamless 16-bit color, you’ll see grainy images as the Mac tries to compensate for its limited palette by combining pixels in its 256-color range into groups designed to fool the eye into seeing colors that really aren’t there — much as the four colors of the

### Table 2: The Current Mac Family

<table>
<thead>
<tr>
<th>Pros</th>
<th>Cons</th>
<th>Ideal Users</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Consumer</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Performa 200</td>
<td>Inexpensive 68030 Mac.</td>
<td>Slow 16-bit data path.</td>
</tr>
<tr>
<td></td>
<td>Bundled software.</td>
<td>Small monochrome display.</td>
</tr>
<tr>
<td></td>
<td>One-year on-site service.</td>
<td>No slots or FPU.</td>
</tr>
<tr>
<td>Performa 400</td>
<td>Inexpensive color Mac.</td>
<td>No 24-bit color.</td>
</tr>
<tr>
<td></td>
<td>Bundled software.</td>
<td>Limited expansion.</td>
</tr>
<tr>
<td></td>
<td>One-year on-site service.</td>
<td>No FPU.</td>
</tr>
<tr>
<td>Performa 600</td>
<td>32-MHz 68030.</td>
<td>Mediocre performance.</td>
</tr>
<tr>
<td></td>
<td>Bundled software.</td>
<td>Bundled with mediocre monitor.</td>
</tr>
<tr>
<td></td>
<td>One-year on-site service.</td>
<td>FPU optional.</td>
</tr>
<tr>
<td></td>
<td>Bundled software.</td>
<td>Bundled with mediocre monitor.</td>
</tr>
<tr>
<td></td>
<td>One-year on-site service.</td>
<td>FPU optional.</td>
</tr>
<tr>
<td><strong>Low-cost</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Classic</strong></td>
<td>Least expensive Mac.</td>
<td>Slowest current Mac.</td>
</tr>
<tr>
<td></td>
<td>Compact and transportable.</td>
<td>Small monochrome display.</td>
</tr>
<tr>
<td></td>
<td>Rugged power supply.</td>
<td>No slots or PMMU.</td>
</tr>
<tr>
<td><strong>Classic II</strong></td>
<td>Least expensive 68030 Mac.</td>
<td>Slow 16-bit data path.</td>
</tr>
<tr>
<td></td>
<td>Compact and transportable.</td>
<td>Small monochrome display.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No slots or FPU.</td>
</tr>
<tr>
<td><strong>LC II</strong></td>
<td>Lowest-cost color Mac.</td>
<td>No 24-bit color.</td>
</tr>
<tr>
<td></td>
<td>Apple Ile-emulation-card option.</td>
<td>Limited expansion.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No FPU.</td>
</tr>
<tr>
<td><strong>Modular</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Ilti</strong></td>
<td>Good price and performance.</td>
<td>Slow on-board video uses RAM.</td>
</tr>
<tr>
<td></td>
<td>SE/30 PDS or NuBus slot.</td>
<td>FPU optional.</td>
</tr>
<tr>
<td></td>
<td>Sound input.</td>
<td>Limited expansion.</td>
</tr>
<tr>
<td><strong>Ivx</strong></td>
<td>32-MHz 68030.</td>
<td>No EtherTalk port.</td>
</tr>
<tr>
<td></td>
<td>RAM cache on motherboard.</td>
<td>No built-in support for two-page Mac display.</td>
</tr>
<tr>
<td></td>
<td>Optional CD-ROM drive.</td>
<td></td>
</tr>
<tr>
<td><strong>Ilti</strong></td>
<td>Three NuBus slots.</td>
<td>Slow on-board video uses RAM.</td>
</tr>
<tr>
<td></td>
<td>RAM-cache card included.</td>
<td>Oldest Mac now shipping.</td>
</tr>
</tbody>
</table>

34 MacUser
It looks like a floppy...

It feels like a floppy...

It tastes like a floppy...

but it's a PLI floptical®

21MB diskette!

Still spending hours every week backing up your hard drive onto regular floppies?

Let us introduce you to a solution you can really sink your teeth into.

The PLI floptical.

On the surface, the floptical looks like a regular 3.5" floppy. And because it's downward compatible, it reads and writes ordinary 720K and 1.44MB floppy disks. So you can renew your system instead of redoing it.

Unique embossed optical servo tracks give the floptical highly accurate positioning of the read/write head, allowing track densities of 1245 tracks per inch (compared to 135 tpi for ordinary floppies).

Even better, these servo tracks can't be erased or damaged, making floptical disks safer than any other servo-based media.

The floptical is also superbly convenient for performing backups or transferring files across the office or the world.

And floptical disks are coated with barium ferrite, effectively removing corrosion concerns. This ultra-reliable media easily allows an increase in bit densities to 24,000 bits per inch, so each floptical disk can hold 21MB of text, graphics or spreadsheets—and access it nearly three times faster than a standard floppy.

PLI floptical. Technology worth inspecting.

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510-657-2211 or Fax 510-683-9713

CIRCLE 62 ON READER SERVICE CARD.
Macintosh CPUs

printing press combine to form the broad range of colors you see in this article. A printing press avoids graininess by using dots so small that your eyes can’t discern them, but the pixels on your Mac’s screen are far too large to blend seamlessly.

Storage Solutions

If you’re thinking about color, you’ll need a large-capacity hard drive. Color images are large: A 24-bit image can easily gobble up 10 to 20 megabytes of disk space. Apple recognizes this and offers its biggest drives — with a capacity of 400 megabytes — in the Quadras, the Macs most likely to be used for sophisticated image processing. In general, the hard-drive rule is akin to the RAM rule: Get the most storage space you can afford, even if all you’re buying is a Mac Classic. You’ll be surprised at how fast a hard disk can fill up, and the time you spend swapping files to and from your hard disk from a floppy archive is time wasted.

Remember also that the performance of your hard drive — or any SCSI device — depends on the speed of your Mac’s SCSI port (see the “SCSI Secrets” sidebar). If you regularly use large graphics, sound, or video files or if you need to equip a file server or database server, hard-disk access is a consideration. Buy a

---

Table 2: The Current Mac Family, continued

| Notebook       | Pros                                                                 | Cones                                                           | Ideal Users                                                                 |
|----------------|----------------------------------------------------------------------|                                                                |                                                                             |
| PowerBook 100  | • Inexpensive.                                                        | • No internal floppy drive.                                    | • This light, low-performance Mac is designed for word-processing travelers. |
|                | • Light.                                                             | • 20-MB hard drive only.                                        |                                                                             |
|                | • Twice as fast as a Classic.                                        | • No video port, FPU, or PMMU.                                  |                                                                             |
| PowerBook 145  | • As fast as a PowerBook 170.                                         | • Monochrome LCD screen.                                        | • Most business travelers will be satisfied with this powerful monochrome-display notebook. |
|                | • Good price for a speedy notebook.                                  | • No video port or FPU.                                        |                                                                             |
|                |                                                                     | • Short battery life at top speed.                              |                                                                             |
| PowerBook 160  | • Gray-scale display.                                                | • LCD screen.                                                   | • A gray-scale display and video port make this notebook ideal for travelers who make presentations. |
|                | • Video port.                                                        | • Slowest 68030 PowerBook.                                      |                                                                             |
|                | • Improved NiCad battery.                                            | • No FPU.                                                      |                                                                             |
| PowerBook 170  | • 140-class performance.                                             | • Expensive.                                                    | • A crisp monochrome display makes this powerful notebook ideal for travelling spreadsheet users. |
|                | • Active-matrix display.                                             | • No video port.                                               |                                                                             |
|                | • Sound input, FPU, and modem.                                       | • Short battery life at top speed.                              |                                                                             |
| PowerBook 180  | • Gray-scale active-matrix display.                                  | • Some screen shimmer at high angle.                            | • If you want a nondocking PowerBook as your primary Mac, this gray-scale beauty is for you. |
|                | • Video port.                                                        | • Expensive.                                                    |                                                                             |
|                | • Improved NiCad battery.                                            | • LCD screen.                                                   |                                                                             |
|                |                                                                     | • No internal floppy drive.                                    | • If portability and convenience are important to you, choose a dockable PowerBook Duo. |
| PowerBook Duo 210| • Docking capability.                                               | • Docking station contains most ports.                         |                                                                             |
|                | • Gray-scale display.                                                | • LCD screen.                                                   |                                                                             |
|                | • Small and light.                                                   | • No internal floppy drive.                                    | • If you need performance that’s surpassed only by a Quadra, choose this 4-pound dockable notebook. |
| PowerBook Duo 230| • Docking capability.                                               | • Docking station contains most ports.                         |                                                                             |
|                | • Gray-scale display.                                                | • LCD screen.                                                   |                                                                             |
|                | • Small and light.                                                   | • No internal floppy drive.                                    |                                                                             |
| 68040-based    | • Very fast and compact.                                             | • Docking station contains most ports.                         | • Users doing high-end DTP and complex number crunching need this Mac’s speed. |
| Quadra 700     | • LocalTalk and EtherTalk ports.                                      | • Expensive.                                                    |                                                                             |
|                | • 32-bit color with 2 MB of VRAM.                                    | • Some software incompatibility.                               |                                                                             |
|                |                                                                     | • Doesn’t support 2-MB SIMMs.                                   |                                                                             |
| Quadra 950     | • Very fast and expandable.                                          | • Expensive.                                                    | • With dual SCSI ports and room for as many as four hard drives, this is your best choice for a file server. |
|                | • LocalTalk and EtherTalk ports.                                      | • Some software incompatibility.                               |                                                                             |
|                | • 32-bit color with 2 MB of VRAM.                                    | • Doesn’t support 2-MB SIMMs.                                   |                                                                             |
It works like a hard drive...

It writes faster than an optical...

It moves like a floppy diskette...

but it's an Infinity 88 Turbo

removable drive from PLI.

88MB Removable Hard Disks

The PLI Infinity 88 Turbo uses time-proven Winchester technology. That's the same technology used by your hard disk drives! For years, it has set the standards of reliability and performance. But now you can have that trusted technology and the benefits of removable technology.

It's as fast as a hard drive!

That's because it is a hard drive. You get fast 20ms access times and world-class data transfer rates. In fact, these drives are faster than any other removable cartridge drive on the market. When you need speed, think PLI Infinity 88 Turbo.

Convenient, Removable Media!

Because the cartridges are removable, you can take your data from place to place, or lock it up for safekeeping. And since the PLI Infinity 88 Turbo is the standard for service bureaus throughout the world, the cartridges are a fast, convenient way to get those big DTP jobs done. For added convenience, the PLI Infinity 88 Turbo also reads the popular 44MB cartridges!

PLI, maker of the Infinity 88 Turbo, is the leader in removable storage. PLI has offered products of the highest quality and offered the best in service and support since the earliest days of the personal computers. For your convenience, PLI drives are available as internal or external units.

Removable storage you can rely on.

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510. 657. 2211 • Fax 510. 683. 9713

CIRCLE 63 ON READER SERVICE CARD.
Mac with fast SCSI — the Quadras are by far the fastest, but the IIci and the IIsi are also quite respectable — and you’ll never regret the cost. Time is money.

If you can avoid it, don’t buy a hard drive from Apple. Although Apple’s drives are consistently good performers and are exceedingly well built, they are also exceptionally costly. Apple’s 80-megabyte Hard Disk 80SC, for example, lists for $1,099. Compare that with a similarly priced 425-megabyte Quantum drive from APS, La Cie, MacLand, Club Mac, or one of the many other reputable direct-mail houses, and the little multicolored Apple logo begins to look mighty expensive.

And don’t limit yourself to hard drives. A large selection of removable-cartridge drives is available at good prices (see “Magnetic-Cartridge Drives: The Next Generation,” January ‘92, page 126, and “Storage Buyer’s Guide,” July ‘92, page 111). Removable-cartridge drives — such as magnetic-cartridge drives manufactured by SyQuest and Iomega and optical-cartridge drives offered by a variety of vendors — not only offer unlimited storage but are also ideal for quick and easy backup, effortless archiving, hassle-free security, and flexible startup options.

**On the Road Again**

One of the advantages of removable-cartridge drives is that you can pack multiple megabytes of work onto a cartridge, carry that cartridge to another Mac across town or across the country, slip it into a compatible drive, and resume your work. Although that’s a convenient way to transport files, how do you continue working while in transit? Simple: Get a PowerBook.

The 68000-based PowerBook 100 is more than adequate if writing is your on-the-road occupation, although its lack of an internal floppy drive makes us a bit nervous. Buyers seem to agree with us, and response to the PowerBook 100 has been tepid. As a result, you can find it discounted to around $700 — when you can find it at all.

The other two members of the first PowerBook generation — the 140 (since upgraded to the 145) and the 170, with its sharp active-matrix screen — met with enormous success. And they did it the old-fashioned way: They earned it. With the speed of a Mac IIci, an integrated trackball and palm rest, and Apple’s revolutionary AppleTalk Remote Access software, the PowerBooks are the perfect traveler’s companion.

The second-generation PowerBooks — the 160 and the 180 — each have screens that are capable of 16 levels of gray and include a video-out port that can drive color monitors as large as 16 inches at a depth of 8 bits (256 colors or levels of gray). With Apple’s new PowerBook Display control panel, the external monitor can function just like a second monitor on your desktop or can become a larger mirror image of the PowerBook screen — an attractive mode for those presenters who want to control a presentation from the PowerBook while sending the image out to a bigger screen.

For the ultimate in mobile computing, choose one of the new gray-scale-capable PowerBook Duos — either the Duo 210 or the top-of-the-line Duo 230. Weighing in at a little more than four pounds each, the Duos are not only the lightest, smallest portable

---

**SCSI Secrets**

Every Mac since the Plus uses SCSI (Small Computer Systems Interface), a popular method of connecting computers and peripherals, to communicate with hard drives, scanners, CD-ROM drives, optical drives, and other external devices. SCSI is your Mac’s fastest connection to the outside world, but not all SCSI ports are created equal. If your work calls for the frequent transfer of large files to and from your hard drive, pick a Mac with the fastest SCSI port you can afford. Surprisingly, the IIsi and IIci outpace the otherwise speedy IIfx, although the two Quadras are the hands-down winners.

SCSI, Macintosh style, was originally introduced to answer the prayers of those who had purchased Apple’s original hard drive for the Mac — the Hard Disk 20 — and found its serial-port interface abysmally slow. As Apple rushed to get the SCSI-equipped Plus ready for market, it chose to adopt only a subset of the full industry-accepted SCSI specification. Unfortunately, Apple’s deviations from the standard imposed a maximum speed limit on the Mac’s SCSI bus — a speed limit that wasn’t apparent at the time, because the modest processing power of the Mac Plus was a good match for early SCSI hard drives.

Macs as well as hard-disk drives have steadily improved, however, and the Mac’s SCSI implementation is now being pushed to the limit. All Macs prior to the Quadras use the 53C80 SCSI controller chip, which has a top speed of about 2 megabytes per second — far slower than that of some of the speedier hard-disk drives now entering the market.

Although the Quadras sport the more powerful 53C90 SCSI chip, they are still outpaced by the fastest SCSI drives available today. But don’t blame the hardware alone. The real obstacle to faster SCSI throughput is Apple’s SCSI Manager, system software that is due — long overdue, we believe — for the rewrite that Apple is now developing. The updated SCSI Manager will not only increase performance but will also allow for convenient features that have always been missing from the Mac, such as the ability to continue editing a document on one hard drive while formatting a separate hard drive off-line. Users of high-end Macs will finally see SCSI speeds and features long enjoyed by workstation users. The most dramatic effects of faster SCSI will be an increase in the performance of high-end graphics programs and network file servers.

An update of the SCSI standard, SCSI-2, has just been finalized. Two elements of this standard, dubbed Wide SCSI and Fast SCSI, theoretically have the capacity to raise SCSI throughput to as much as 40 megabytes per second. Not many drives will support this sustained transfer rate initially, but a few are already beginning to appear. As long as the SCSI standard can keep pace with the next generation of CPUs, SCSI will be with us for years to come.

— Jeffrey K. Milstead
It holds 128,000,000 bites...

it looks like a floppy diskette...

it moves with SneakerNet...

but it's an Optical 3.5" diskette.

128MB rewritable optical cartridges...

They're a perfect size for DTP and prepress applications. Load them up with fonts and QuickTime™ movies. Or use them for backup and archiving.

...but don't confuse them with floppy diskettes!

Not only do they store almost 100 times more data, the 3.5" optical cartridges are much faster and much more reliable. With access times as low as 35ms and transfer rates comparable to that of many other removable drives, the 3.5" magneto-optical drives are fast enough for almost every application. In fact, most people could use one as their main drive without any noticeable slowdown! And the technology is so secure, you never have to worry about losing data because of dropping a cartridge or bringing it through airport security checks.

The latest and best solution for transferring large amounts of data

A 3.5" optical disc is the only way that you can put dozens of Photoshop™ documents in your shirt pocket. And it's an ideal way to transport all kinds of data from one place to another. Or put it in a safe so it will stay in one place. Carry it by hand, send it by mail. You can have your data anywhere.

PLI, the leader in removable drive technology

Since the very beginning of the personal computer revolution, PLI has been providing high-quality storage products. Our removable drives are well-known in the industry for their excellent performance, good value and impeccable reliability. PLI is also a leader in service and support.

All products are trademarks or registered trademarks of their respective companies.

Optical technology you can really sink your teeth into.
Macintosh CPUs

Macs but they’re also the fastest. The Duo 230 is outperformed only by the Quadras; the Duo 210 is a Heidi-class machine.

But the real lure of the Duo series is not performance, it’s versatility. The Duo is designed not only to be a powerful notebook computer but, with the help of a docking station, to be a desktop Mac as well. Because the Duos achieve their low weight by eliminating all but the necessities — they have no SCSI, no floppy drive, no video port — they connect to the outside world through a single 152-pin PDS. Into this PDS, you can plug the Duo Floppy Adapter or the Duo MiniDock, which offers all the ports you normally expect: an RJ-11 for an internal modem, a security slot, audio in/out, an HDI-30 SCSI port, two serial ports (one for an external modem, one for LocalTalk), DB-15 video out, one ADB port, an HDI-20 floppy drive, an AC-adapter port, and an on/off switch.

The PDS is also the Duos’ interface with the desktop Duo Dock, which offers all the ports of the MiniDock — or of the back of any standard desktop Mac, for that matter. In addition, the Duo Dock includes a floppy drive; an optional hard-drive bay for a 3.5-inch, half-height hard drive; an optional hard-drive bay for an extra drive, and an AC-adapter port, and an on/off switch.

The Choice Is Yours

Whether your Mac slips into your briefcase or stands on the floor next to your desk, the choice of where to buy it — and the peripherals that accompany it — can be as important as the choice of which Mac to buy. Don’t assume that a traditional full-service dealer will give you the best value for your dollar. Dealers can help analyze your needs and recommend the appropriate system for the applications you choose, but you pay — in higher prices — for those niceties.

Two recent trends in computer sales are the so-called superstores — the CompUSA and Bizmart chains, for example — and regular consumer outlets such as Sears, Office Club, and Circuit City. The consumer outlets sell only Apple’s Performa series, ordinary Macs that have been specially configured with software and hardware bundles and with extra service and support to make them more attractive to “one stop” shoppers.

In superstores and consumer outlets, you can’t count on getting much expert advice from salespeople, but because you’re a MacUser reader who has just digested this article, you’re probably better informed and more up-to-date than most salespeople are. Before you go shopping, download Which Mac Should I Buy? (WCHMAC.SEA), a HyperCard-based summary of this article, from Library 7 (Reference) in the Download & Support Forum of ZiffNet/Mac (MacUser’s on-line service), and match your needs with its suggestions (see the “HyperHelp” sidebar). In fact, give a copy of the stack to the salesperson; it never hurts to be an ambassador of knowledge.

And as mentioned earlier, don’t neglect mail order — known in these euphemistic times as direct marketing — when you shop for hard drives, printers, and other peripherals. Great deals can be found, and the better outfits offer service and support that rival those of the best mom-and-pop computer dealers.

However and whatever you choose to buy, rest assured that your new Mac will be a well-built machine that will be useful for years. Mac models may come and go, but many a Macintosh — the full name of that original 128K 68000-based machine that took us all by storm in 1984 — is still providing its users with all the power they will ever need.

Rik Myselevski is MacUser’s executive editor. Jeff Pittelkau and Jeffrey K. Milstead contributed to this report.

HyperHelp

For more help in deciding which Mac is right for you, dial up ZiffNet/Mac on CompuServe and download Which Mac Should I Buy? This HyperCard decision stack will help match your needs to your ideal Mac. Developed by HyperCard expert Danny Goodman with the help of the MacUser Labs staff, Which Mac Should I Buy? leads you through the critical questions you need to answer before you step into a dealer’s showroom. The stack contains the complete technical specs of all current Mac CPUs, including the Quadras and the PowerBooks, and is available exclusively through ZiffNet/Mac — just download the file WCHMAC.SEA from Library 7 (Reference) of the Download & Support Forum.

— Ben Templin

<table>
<thead>
<tr>
<th>Processor</th>
<th>Clock Speed</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>68030 (Quadras)</td>
<td>23MHz</td>
<td>Good price vs. PDS or NuBus slot, audio in</td>
<td>Slow on-board video without RAM, no FPU, no SCSI</td>
</tr>
<tr>
<td>68040 (PowerBook)</td>
<td>50MHz</td>
<td>Very fast, no need for an external modem</td>
<td>Slow, no video out, external modem, no SCSI</td>
</tr>
</tbody>
</table>

Print Table

Glossary
PC To Mac File Exchange Without Translators Is Like A Foreign Film Without Subtitles.

Sharing files between PCs and Macs is no longer a luxury, it is a necessity. But it doesn’t have to be a foreign concept.

Lots of products on the market claim to solve your problems of sharing files across platforms, but take a careful look before you buy. 

Some, such as disk mounting utilities only give you a partial solution: and when your file appears on screen, you get a big surprise. You can’t read a word of it - not your text, not your formatting - it looks like garbage.

You see, transferring your files only gets half the job done. What you need to finish the job is translation.

What good is it to simply transfer a file from a PC if you can’t decipher it once it hits your Mac?

MacLinkPlus from DataViz is the total solution for both file transfer and translation.

It’s been on the market since 1984 and has led the way in bridging the gap between PCs and Macs. With over 600 translation combinations for the most popular word processing, spreadsheet, database and graphics applications, you’ll find it the strongest translation product with the widest breadth of translation possibilities anywhere!

MacLinkPlus is the solution to virtually any problem you may encounter in moving files between PCs and Macs. And being able to read them - with their formatting intact - once they get there.

For more information, call DataViz today at (800) 733-0030. And be sure to ask about our new multi-pack pricing. We’re the one translation company that won’t leave you sitting alone in the dark.

MacLink Plus - Freedom To Use The File You Choose

All product names are trademarks or registered trademarks of their respective holders. DataViz, Inc. 55 Corporate Drive, Trumbull, CT 06611 (203) 268-0030

CIRCLE 172 ON READER SERVICE CARD.
## Table 3: Features of the Current Mac Family

<table>
<thead>
<tr>
<th>Feature</th>
<th>Performa 200</th>
<th>Performa 400</th>
<th>Performa 600</th>
<th>Performa 600 CD</th>
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<tr>
<td><strong>CPU</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Microprocessor</td>
<td>68030</td>
<td>68030</td>
<td>68030</td>
<td>68030</td>
</tr>
<tr>
<td>Floating-point unit</td>
<td>none</td>
<td>none</td>
<td>optional</td>
<td>optional</td>
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<td>Data bus</td>
<td>16 bits</td>
<td>16 bits</td>
<td>32 bits</td>
<td>32 bits</td>
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<tr>
<td>Microprocessor clock speed</td>
<td>16 MHz</td>
<td>16 MHz</td>
<td>32 MHz</td>
<td>32 MHz</td>
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<tr>
<td>RAM caches</td>
<td>256-byte (instruction) in 68030, 256-byte (data) in 68030</td>
<td>256-byte (instruction) in 68030, 256-byte (data) in 68030</td>
<td>256-byte (instruction) in 68030, 256-byte (data) in 68030</td>
<td>256-byte (instruction) in 68030, 256-byte (data) in 68030</td>
</tr>
<tr>
<td>RAM on motherboard</td>
<td>2 MB</td>
<td>4 MB</td>
<td>4 MB</td>
<td>4 MB</td>
</tr>
<tr>
<td>SIMM slots</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Memory-management unit</td>
<td>built in to 68030</td>
<td>built in to 68030</td>
<td>built in to 68030</td>
<td>built in to 68030</td>
</tr>
<tr>
<td>Video</td>
<td>9-inch internal CRT</td>
<td>internal VRAM video controller</td>
<td>internal VRAM video controller</td>
<td>internal VRAM video controller</td>
</tr>
<tr>
<td><strong>Ports</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>ADB</td>
<td>single</td>
<td>single</td>
<td>dual</td>
<td>dual</td>
</tr>
<tr>
<td>Audio out</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Audio in</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
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<tr>
<td>Serial (modem)</td>
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<td>LocalTalk</td>
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<tr>
<td>EtherTalk</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Video</td>
<td>•</td>
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<td>•</td>
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<tr>
<td>SCSI</td>
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<td>•</td>
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<tr>
<td>External floppy drive</td>
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<td>•</td>
<td>•</td>
<td>•</td>
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<tr>
<td><strong>Slots</strong></td>
<td></td>
<td></td>
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<tr>
<td>Processor direct</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Cache card</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>NuBus</td>
<td>•</td>
<td>•</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Virtual-memory support</td>
<td>•</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Size (L x W x H)</td>
<td>11.2 x 9.7 x 13.2 in.</td>
<td>15 x 12.2 x 3 in.</td>
<td>16.5 x 13 x 6 in.</td>
<td>16.5 x 13 x 6 in.</td>
</tr>
<tr>
<td>Weight</td>
<td>17.1 lb</td>
<td>8.8 lb</td>
<td>25 lb</td>
<td>25 lb</td>
</tr>
</tbody>
</table>

*Apple does not publish list prices for the Performa series.

†This estimate was given by an Apple spokesperson at product release.
It can pick a fly out of your pea soup.
It never faints at the sight of blood.
It can digest a whale in 60 seconds.

While these may not be the qualities you want in a dinner date, they may be precisely what you’re looking for in a color scanner.

If so, meet the new UMAX UC840. Built using the same high-quality technologies that recently earned our other color scanners top marks from both MacUser and PC Computing.

The UC840 renders halftones, line art and text with hard-to-believe clarity and detail (800 × 400 dpi, to be exact). In fact, through software interpolation, you can get up to 1600 × 1600 dpi! Details that competitive scanners can lose sight of — like the wings of that annoying little fly — come through with particular clarity.

Revolutionary one-lamp scanning and auto-calibration systems virtually guarantee that colors remain absolutely true to the original. (Blue blood may be fine for aristocrats, but the rest of us still prefer a nice, bright red.)

We’d also like to make a point about speed, if you have a minute. Because that’s about all it takes the UC840 to scan a 4 × 5-inch color image (other scanners can take two to five times as long).

And if you have a few more seconds, we’ll give you a few more important facts: The dynamic range is wide enough to read the most subtle differences between 16.8 million 24-bit colors, and 256 shades of gray. It’s both Macintosh and PC-compatible. And image editing software is included, free of charge. If that weren’t enough, the UC840 is incredibly easy to maintain. We even offer 48-hour turn around in the unlikely case repairs are required.

Call 800-562-0311 today, and we’ll tell you where to catch a demonstration of the new UC840. (Feel free to bring along your dinner date.)

©1992 UMAX Technologies, Inc. 3170 Conscendo Drive, Santa Clara, CA 95054. 408/482-0771, Fax 408/482-0776. UMAX is a registered trademark of UMAX Data Systems, Inc. "Maximize Your Image" is a trademark of UMAX Technologies, Inc. Other company names and product names are trademarks of their respective companies. 

CIRCLE 145 ON READER SERVICE CARD.
### Table 3: Features of the Current Mac Family, continued

<table>
<thead>
<tr>
<th>Feature</th>
<th>Classic</th>
<th>Classic II</th>
<th>LC II</th>
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<tbody>
<tr>
<td>List price (MB RAM/drive)</td>
<td>$1,079</td>
<td>$1,239</td>
<td>$1,239</td>
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<tr>
<td></td>
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<td>$1,349</td>
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<td>Street price (MB RAM/drive)</td>
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<td></td>
<td>$1,200</td>
<td>$1,000</td>
<td>$1,250</td>
</tr>
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<td><strong>CPU</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Microprocessor</td>
<td>68000</td>
<td>68030</td>
<td>68030</td>
</tr>
<tr>
<td>Floating-point unit</td>
<td>none</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Data bus</td>
<td>16 bits</td>
<td>16 bits</td>
<td>16 bits</td>
</tr>
<tr>
<td>Microprocessor clock speed</td>
<td>8 MHz</td>
<td>16 MHz</td>
<td>16 MHz</td>
</tr>
<tr>
<td>RAM caches</td>
<td>none</td>
<td>256-byte (instruction) in 68030, 256-byte (data) in 68030</td>
<td>256-byte (instruction) in 68030, 256-byte (data) in 68030</td>
</tr>
<tr>
<td>RAM on motherboard</td>
<td>1 MB</td>
<td>2 MB</td>
<td>4 MB</td>
</tr>
<tr>
<td>SIMM slots</td>
<td>0**</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Memory-management unit</td>
<td>none</td>
<td>built in to 68030</td>
<td>built in to 68030</td>
</tr>
<tr>
<td>Video</td>
<td>9-inch internal CRT</td>
<td>9-inch internal CRT</td>
<td>internal VRAM video controller</td>
</tr>
<tr>
<td><strong>Ports</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADB</td>
<td>single</td>
<td>single</td>
<td>single</td>
</tr>
<tr>
<td>Audio out</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Audio in</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Serial (modem)</td>
<td>•</td>
<td>•</td>
<td>2</td>
</tr>
<tr>
<td>LocalTalk</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>EtherTalk</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Video</td>
<td>○</td>
<td>○</td>
<td>•</td>
</tr>
<tr>
<td>SCSI</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>External floppy drive</td>
<td>•</td>
<td>•</td>
<td>○</td>
</tr>
<tr>
<td><strong>Slots</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processor direct</td>
<td>○</td>
<td>○</td>
<td>•</td>
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<tr>
<td>Cache card</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>NuBus</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td><strong>Other</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Virtual-memory support</td>
<td>○</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>Size (L x W x H)</td>
<td>11.2 x 9.7 x 13.2 in.</td>
<td>11.2 x 9.7 x 13.2 in.</td>
<td>15 x 12.2 x 3 in.</td>
</tr>
<tr>
<td>Weight</td>
<td>16 – 17.1 lb</td>
<td>16 – 17.1 lb</td>
<td>8.8 lb</td>
</tr>
</tbody>
</table>

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*This model was dropped from the Apple price list as this article went to press.

*This price is as listed on the Apple price list of September 26, 1992.

**Two SIMM sockets and an additional 1 megabyte of RAM are included on an add-in card in the 2-megabyte configuration.
Few things have taken off so fast.

Out of the blocks to number one in a scant six months. Few things this side of NASA have ever experienced this kind of blast-off.

Because nobody else has figured out how to combine word processing, graphics, spreadsheet, charting, database, and communications quite like ClarisWorks. No awkward modules, no hidden speed traps.

Simply, ClarisWorks has caught on so fast because it’s so easy to catch on to. All the tools you need are always right there. And because it doesn’t devour memory, ClarisWorks still leaves a PowerBook with room for volumes.

But don’t just take our word for it. “ClarisWorks is now the yardstick against which other integrated software programs will be measured,” lauds MacWeek. “A standout...a breakthrough in price and capability,” raves MacUser.

Of course, the best way to see why ClarisWorks soars above the rest is to strap yourself in at your authorized Claris dealer.

Just call us at 1-800-544-8554, ext. 36. Then get your hands on ClarisWorks. And blast through work.
SCAN THE SEVEN WONDERS OF THE WORLD.
It's no wonder so many companies today are choosing Agfa scanners.

From desktop publishing to high quality production prepress and graphic arts, Agfa offers a family of high-quality scanners that are not only affordable and easy to use, but designed for every production environment.

Whether you choose our affordable Arcus™ color or Focus desktop scanners or our exceptionally fast Horizon™ color prepress scanner, you'll be getting a scanner that's the highest quality in its class.

Agfa scanners offer a range of features designed to meet your specific application needs. Like scanning resolution up to 1200 dpi. Multiple scanning modes from black and white to color. Transparency modules. Unique light sources. And image sampling up to 12 bits per color.

Built for speed, flexibility and increased productivity, Agfa scanners also offer the ability to work with reflective and transparent art. Automatic exposure and density control. Sharpness enhancement. White balance calibration. Exceptional dynamic range. And gamma and tone curve correction.

In addition, we offer a full complement of drivers for MAC®, PC®, and SUN® platforms and Agfa's professional imaging software.

It's not surprising our scanners help you reach new levels of image control and accuracy. Consider the company behind them.

For over 100 years, Agfa's photographic and prepress products have provided the graphic arts industry with innovative, productive solutions. It's this long-term understanding of graphic arts needs that has enabled us to build a family of scanners and a service track record second to none.

We'd like to show you Agfa's family of high-quality scanners. Call us today at 1-800-685-4271.

Whatever your expertise, whatever your scanning needs, at Agfa, we can do wonders for your image.

AGFA
The complete picture.
### Table 3: Features of the Current Mac Family, continued

<table>
<thead>
<tr>
<th></th>
<th>IIIi</th>
<th>IIIvx</th>
<th>IIIe</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>List price (MB RAM/drive)</strong></td>
<td>$1,729 (3/40)$&lt;sup&gt;6&lt;/sup&gt;</td>
<td>$3,200 (4/80) 512K VRAM&lt;sup&gt;11&lt;/sup&gt;</td>
<td>$2,539 (5/SuperDrive)$&lt;sup&gt;6&lt;/sup&gt;</td>
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<tr>
<td></td>
<td>$1,999 (5/60)$&lt;sup&gt;6&lt;/sup&gt;</td>
<td>$3,500 (5/80) w/ CD-ROM and 1 MB of VRAM&lt;sup&gt;11&lt;/sup&gt;</td>
<td>$2,719 (5/80)$&lt;sup&gt;2&lt;/sup&gt;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$3,089 (5/230)$&lt;sup&gt;6&lt;/sup&gt;</td>
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<tr>
<td><strong>Street price (MB RAM/drive)</strong></td>
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<td>$2,150 (5/SuperDrive)$&lt;sup&gt;6&lt;/sup&gt;</td>
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<tr>
<td><strong>CPU</strong></td>
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<tr>
<td>Microprocessor</td>
<td>68030</td>
<td>68030</td>
<td>68030</td>
</tr>
<tr>
<td>Floating-point unit</td>
<td>68882&lt;sup&gt;16&lt;/sup&gt;</td>
<td>68882</td>
<td>68882</td>
</tr>
<tr>
<td>Data bus</td>
<td>32 bits</td>
<td>32 bits</td>
<td>32 bits</td>
</tr>
<tr>
<td>Microprocessor clock speed</td>
<td>20 MHz</td>
<td>32 MHz</td>
<td>25 MHz</td>
</tr>
<tr>
<td>RAM caches</td>
<td>256-byte (instruction) in 68030, 256-byte (data) in 68030</td>
<td>256-byte (instruction) in 68030, 256-byte (data) in 68030, 32K on motherboard</td>
<td>256-byte (instruction) in 68030, 256-byte (data) in 68030, 32K on cache card</td>
</tr>
<tr>
<td>RAM on motherboard</td>
<td>1 MB</td>
<td>4 MB</td>
<td>none</td>
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<tr>
<td>SIMM slots</td>
<td>4</td>
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<td>8</td>
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<tr>
<td>Memory-management unit</td>
<td>built in to 68030</td>
<td>built in to 68030</td>
<td>built in to 68030</td>
</tr>
<tr>
<td>Video</td>
<td>internal RAM video controller</td>
<td>internal VRAM video controller</td>
<td>internal RAM video controller</td>
</tr>
<tr>
<td><strong>Ports</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ADB</td>
<td>single</td>
<td>dual</td>
<td>dual</td>
</tr>
<tr>
<td>Audio out</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Audio in</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Serial (modem)</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>LocalTalk</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>EtherTalk</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>Video</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>SCSI</td>
<td>○&lt;sup&gt;15&lt;/sup&gt;</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>External floppy drive</td>
<td>●</td>
<td>○</td>
<td>●</td>
</tr>
<tr>
<td><strong>Slots</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Processor direct</td>
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<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Cache card</td>
<td>○</td>
<td>○</td>
<td>● (with 32K cache card)</td>
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<td>NuBus</td>
<td>1</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td><strong>Other</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Virtual-memory support</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Size (L x W x H)</td>
<td>14.9 x 12.4 x 4 in.</td>
<td>16.5 x 13 x 6 in.</td>
<td>14.4 x 11.9 x 5.5 in.</td>
</tr>
<tr>
<td>Weight</td>
<td>10 lb</td>
<td>25 lb</td>
<td>13.6 lb</td>
</tr>
</tbody>
</table>

*This model was dropped from the Apple price list as this article went to press.

1 This price is as listed on the Apple price list of September 28, 1992.

11 This price was given by Apple one month prior to the October 19, 1992, product release; the street price was not yet available.

<sup>6</sup>The IIIi’s single expansion slot accepts either an adapter card with a PDS socket or an adapter card with a NuBus slot. Apple’s adapter cards both include a 68882 FPU.
Schedule's high powered project management tools when more power is called for. Great for importing and exporting, too! FREE Demo kit! List price: $279.

**FastTrack Schedule™**
version 2.0 offers simple planning and scheduling in a Gantt chart format! Just draw in timeline bars and milestones and enhance for presentations! Create activity breakdowns with the outliner. and take advantage of FastTrack.

**FastTrack Resource™**
version 1.0 is a resource allocation tool that offers an easy-to-use database format for the tracking of Who, What, Where, When and How; a project manager needs to know when assigning resources to projects and activities. Flexible reports reveal which resources are available, or even over allocated in a variety of formats that include histograms, project Gantt charts and combination reports. $10 Demo kit! List Price: $249.

**AEC Information Manager™**

is a straightforward database that gives the manager, administrator or project team all the tools they need to track any type of status oriented information! Creating custom databases is a snap with AEC's preformatted field types, and creating all kinds of columnar reports is even easier! Information can be sorted at multiple levels, and simple and complex searches can be achieved effortlessly. Whether the project is complicated or trouble free, AEC Information Manager can offer the tracking system to organize it! $25 Demo kit!

Order your new demo kits now! Please call (800) 346-9413 or (703) 450-1980
Circle 101 on Reader Service Card.

**FastTrack Schedule™ 2.0** now gives you even more power to schedule anything, fast. Create custom Gantt charts for presentations that include graphics, labels, notes, titles, borders and real dates!

Walk away from tedious and old fashioned scheduling techniques. **FastTrack Schedule™ 2.0** offers a modern day solution for busy managers who need to get the project underway and review progress quickly. Forget the frustration, scheduling doesn't have to be a nightmare.

Order a new FREE FastTrack Schedule 2.0 demo kit now and we'll ship it out within 24 hours!
(800) 346-9413 or (703) 450-1980

Circle 100 on Reader Service Card.
### Table 3: Features of the Current Mac Family, continued

<table>
<thead>
<tr>
<th></th>
<th>PowerBook 100</th>
<th>PowerBook 145</th>
<th>PowerBook 160</th>
<th>PowerBook 170</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>List price (MB RAM/drive)</strong></td>
<td>$2,399 (4/40)$</td>
<td>$2,699 (4/40)$</td>
<td>$3,099 (4/80)$</td>
<td>$4,599 (4/40) w/ data/fax modem$</td>
</tr>
<tr>
<td></td>
<td>$2,799 (4/80)$</td>
<td>$3,499 (4/120)$</td>
<td></td>
<td>$4,299 (4/40)$</td>
</tr>
<tr>
<td><strong>Street price (MB RAM/drive)</strong></td>
<td>$700 (4/40)$</td>
<td>$2,000 (4/40)$</td>
<td>NA</td>
<td>$3,875 (4/40) w/ data/fax modem</td>
</tr>
<tr>
<td></td>
<td>$750 (4/40) w/ external floppy drive</td>
<td>$2,350 (4/80)</td>
<td></td>
<td>$3,650 (4/40)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$3,950 (4/80)</td>
</tr>
</tbody>
</table>

### CPU

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Microprocessor</strong></td>
<td>68000</td>
<td>68030</td>
<td>68030</td>
<td>68030</td>
</tr>
<tr>
<td><strong>Floating-point unit</strong></td>
<td>none</td>
<td>none</td>
<td>none</td>
<td>68882</td>
</tr>
<tr>
<td><strong>Data bus</strong></td>
<td>16 bits</td>
<td>32 bits</td>
<td>32 bits</td>
<td>32 bits</td>
</tr>
<tr>
<td><strong>Microprocessor clock speed</strong></td>
<td>16 MHz</td>
<td>25 MHz</td>
<td>25 MHz</td>
<td>25 MHz</td>
</tr>
<tr>
<td><strong>RAM caches</strong></td>
<td>none</td>
<td>256-byte (instruction) in 68030, 256-byte (data) in 68030</td>
<td>256-byte (instruction) in 68030, 256-byte (data) in 68030</td>
<td>256-byte (instruction) in 68030, 256-byte (data) in 68030</td>
</tr>
<tr>
<td><strong>RAM on motherboard</strong></td>
<td>2 MB</td>
<td>2 MB</td>
<td>4 MB</td>
<td>2 MB</td>
</tr>
<tr>
<td><strong>SIMM slots</strong></td>
<td>0$</td>
<td>0$</td>
<td>0$</td>
<td>0$</td>
</tr>
<tr>
<td><strong>Memory-management unit</strong></td>
<td>none</td>
<td>built in to 68030</td>
<td>built in to 68030</td>
<td>built in to 68030</td>
</tr>
<tr>
<td><strong>Video</strong></td>
<td>9-inch Supertwist LCD</td>
<td>9.8-inch Supertwist LCD</td>
<td>9.8-inch Supertwist LCD</td>
<td>9.8-inch thin-film transistor (active matrix)</td>
</tr>
</tbody>
</table>

### Ports

<p>| | | | | |</p>
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<th></th>
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</thead>
<tbody>
<tr>
<td><strong>ADB</strong></td>
<td>single</td>
<td>single</td>
<td>single</td>
<td>single</td>
</tr>
<tr>
<td><strong>Audio out</strong></td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td><strong>Audio in</strong></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td><strong>Serial (modem)</strong></td>
<td>●$</td>
<td>●$</td>
<td>●$</td>
<td>●$</td>
</tr>
<tr>
<td><strong>LocalTalk</strong></td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td><strong>EtherTalk</strong></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td><strong>Video</strong></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td><strong>SCSI</strong></td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td><strong>External floppy drive</strong></td>
<td>●</td>
<td>●</td>
<td>●</td>
<td>●</td>
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</tbody>
</table>

### Slots

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<th></th>
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<th></th>
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</thead>
<tbody>
<tr>
<td><strong>Processor direct</strong></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td><strong>Cache card</strong></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td><strong>NuBus</strong></td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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</tbody>
</table>

### Other

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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Virtual-memory support</strong></td>
<td>○</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td><strong>Size (L x W x H)</strong></td>
<td>11 x 8.5 x 1.75 in.</td>
<td>11.25 x 9.3 x 2.25 in.</td>
<td>11.25 x 9.3 x 2.25 in.</td>
<td>11.25 x 9.3 x 2.25 in.</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>5.1 lb</td>
<td>6.8 lb</td>
<td>6.8 lb</td>
<td>6.8 lb</td>
</tr>
</tbody>
</table>
They wanted to bring color copying in-house. We've just opened the door.

Color documents were always of supreme importance to the people at this world-famous movie and publishing company. In fact, they spent thousands per month on outside color copying services. They wanted their own machine but no one had put together the kind of performance and support they needed. Then Tammy Johnson and the Xerox team introduced them to the Xerox 5775 Digital Color Copier. They were all impressed by the color quality and speed of the Xerox 5775. And the numbers people were especially attracted to the low costs per copy and high reliability figures. Then the creative people got their hands on it. They found the color touch screen so easy to use that it opened up a whole new world of creative possibilities.

And they were pleased to learn that soon they could fully network the Xerox 5775 to Macs and IBM PC-compatibles. The only question that remained was service and support. Xerox had the answer. One person to call anytime for anything, direct Xerox service for all components and the Xerox Total Satisfaction Guarantee.

If you want to put the power of color to work in your business, open the door to Xerox. We'll put it together for you. For more information on the Xerox 5775, call 1-800-TEAM-XRX, ext. 702.

Xerox
The Document Company

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CIRCLE 246 ON READER SERVICE CARD.
The abacus first appeared around 500 or 600 B.C. Some say it was invented by the Egyptians. Others think it was the ancient Chinese. But whoever it was, they had the right idea: create a simple, easy-to-use device for working with numbers, and people will be a lot more productive.

Introducing 1-2-3 for Macintosh Release 1.1: the easiest-to-use Mac® spreadsheet.

Like the abacus, 1-2-3® for Macintosh® was inspired by simplicity, and Release 1.1 is even simpler to use. Now you can drag-and-drop data between worksheets. And with new SmartSum, you can simultaneously sum multiple ranges. Plus, Copy Down, Copy Right and Copy Back enable you to copy labels or formulas across columns, rows or 3D worksheets.

Of course, 1-2-3 is still the only spreadsheet that gives you In-Cell® editing, so you can enter a formula directly into a cell for faster, easier editing.

The easiest graphing of any Mac spreadsheet.

1-2-3's remarkable graphing and charting capabilities make it the best Macintosh spreadsheet for presenting data. Because unlike Microsoft® Excel, 1-2-3 lets you store your graphs and charts in the same file as your worksheets. So you can manipulate data, text and graphics all in the same file with one set of menus and only one set of tools. And you can make one-click graph type changes, pull objects across window boundaries to the
worksheet, dynamically link chart titles to cell contents, and shrink charts so they appear as small icons on your worksheet.

Now Release 1.1 takes these graphing capabilities even further. Like the ability to paste pictures behind your graphs, stack pictures to form bar charts, and view your graph source data by scrolling up the bottom edge of your graph. You can even resize chart text simply by using the mouse to drag the handles.

True 3D makes organizing and analyzing data fast and easy.

Only with the true 3D capabilities of 1-2-3 can you easily consolidate multiple spreadsheets into one file without having to link the files. 3D allows all spreadsheet functions to be performed through multiple worksheets just as they are performed down rows and across columns.

The easiest transition from DOS to Mac.

For DOS spreadsheet users moving to Macintosh, 1-2-3 is the only way to go. 1-2-3's traditional Classic® Menu makes it easier for you to access familiar 1-2-3 commands and to run macros already written for 1-2-3. And only 1-2-3 offers cross-platform capabilities, so you can work more efficiently and productively with the 18 million other 1-2-3 users across all major platforms.

1-2-3 for Macintosh. All in all, it's the easiest way to work with numbers to come along in centuries. To find out for yourself, buy a copy from your Lotus Authorized Reseller and try it for 60 days with a full money-back guarantee direct from Lotus. Or call 1-800-TRADEUP, ext. 7245* for a free working model. (Excel users be sure to ask about our special upgrade price**)
Table 3: Features of the Current Mac Family, continued

<table>
<thead>
<tr>
<th>Feature</th>
<th>PowerBook 180</th>
<th>PowerBook Duo 210</th>
<th>PowerBook Duo 230</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$4,699 (4/120)^T</td>
<td>$3,299 (4/120)^T</td>
<td></td>
</tr>
<tr>
<td>Street price (MB RAM/drive)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CPU</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Microprocessor</td>
<td>68030</td>
<td>68030</td>
<td>68030</td>
</tr>
<tr>
<td>Floating-point unit</td>
<td>68882</td>
<td>none</td>
<td>none</td>
</tr>
<tr>
<td>Data bus</td>
<td>32 bits</td>
<td>32 bits</td>
<td>32 bits</td>
</tr>
<tr>
<td>Microprocessor clock speed</td>
<td>33 MHz</td>
<td>25 MHz</td>
<td>33 MHz</td>
</tr>
<tr>
<td>RAM caches</td>
<td>256-byte (instruction) in 68030, 256-byte (data) in 68030</td>
<td>256-byte (instruction) in 68030, 256-byte (data) in 68030</td>
<td>256-byte (instruction) in 68030, 256-byte (data) in 68030</td>
</tr>
<tr>
<td>RAM on motherboard</td>
<td>4 MB</td>
<td>4 MB</td>
<td>4 MB</td>
</tr>
<tr>
<td>SIMM slots</td>
<td>0**</td>
<td>0**</td>
<td>0**</td>
</tr>
<tr>
<td>Memory-management unit</td>
<td>built in to 68030</td>
<td>built in to 68030</td>
<td>built in to 68030</td>
</tr>
<tr>
<td>Video</td>
<td>9.8-inch thin-film transistor (active matrix)</td>
<td>9.8-inch Supertwist LCD</td>
<td>9.8-inch Supertwist LCD</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ports</th>
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<th></th>
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</thead>
<tbody>
<tr>
<td>ADB</td>
<td>single</td>
<td>single^000</td>
<td>single^000</td>
</tr>
<tr>
<td>Audio out</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Audio in</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Serial (modem)</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>LocalTalk</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>EtherTalk</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Video</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>SCSI</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>External floppy drive</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Slots</th>
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<tbody>
<tr>
<td>Processor direct</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Cache card</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NuBus</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual-memory support</td>
<td>**</td>
<td>**</td>
<td>**</td>
</tr>
<tr>
<td>Size (L x W x H)</td>
<td>11.25 x 9.3 x 2.25 in.</td>
<td>10.5 x 8.5 x 1.5 in.</td>
<td>10.5 x 8.5 x 1.5 in.</td>
</tr>
<tr>
<td>Weight</td>
<td>6.8 lb</td>
<td>4.2 lb</td>
<td>4.2 lb</td>
</tr>
</tbody>
</table>

^T This price was given by Apple one month prior to the October 19, 1992, product release; the street price was not yet available.

** This PowerBook can be upgraded to a maximum of 12 megabytes; upgrade information and pricing were not available at press time.

*** This PowerBook can be upgraded to a maximum of 20 megabytes; upgrade information and pricing were not available at press time.

To add this port, this PowerBook requires a MiniDock, a Duo Dock, or a Floppy Adapter.

To add this port, this PowerBook requires an Ethernet NuBus card in the Duo Dock.

To add this port, this PowerBook requires a MiniDock or a Duo Dock (RJ-11 is built in for internal modem, however).

To add this port, this PowerBook requires an Ethernet NuBus card in the Duo Dock.
We make your portable more portable...
Order Today!
800-659-5956
Visa and Mastercard Accepted

Other PowerBook Products Available, Call or write for further information.

Charge Your Battery
While on the Road!
Automobile Power Adapter,
Models PB-1 & PB-2
Power your PowerBook from a standard auto lighter socket or charge the internal battery between job sites or sales calls. A red indicator light insures visual function of unit at all times. Small in size, the black extruded aluminum housing is compact and rugged.
Only $99.95

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Charger/Conditioner,
Model BC-4070
A must for all Model 140 & 170 PowerBook users. It automatically cycles the battery over its full range to correct and prevent loss of running time caused by the memory effect of nicad batteries.
Only $189.95
Includes AC & 12V DC Power Adapters

Buy Extra Time!
Auxiliary Power Pack,
Model APP-2
Designed for all Powerbook 100 Series, the APP-2 extends PowerBook operation up to four times that of the standard battery. Ideal for long flights or anytime you need extended use. Can be recharged via 115VAC transformer, 12VDC source or the Apple universal AC adapter for worldwide recharging.
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Includes AC & 12V DC Power Adapters

Electronic Design
6414 Cambridge Street
Minneapolis, MN 55426
Phone: (612) 927-6303
Fax: (612) 927-7740

CIRCLE 45 ON READER SERVICE CARD.
### Table 3: Features of the Current Mac Family, cont.

<table>
<thead>
<tr>
<th>CPU</th>
<th>Microprocessor</th>
<th>Floating-point unit</th>
<th>Data bus</th>
<th>Microprocessor clock speed</th>
<th>RAM caches</th>
<th>RAM on motherboard</th>
<th>SIMM slots</th>
<th>Memory-management unit</th>
<th>Ports</th>
<th>Slots</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>68040</td>
<td>subset of 68881/2</td>
<td>32 bits</td>
<td>25 MHz</td>
<td>4K (instruction) in 68040</td>
<td>4 MB</td>
<td>4</td>
<td>built in to 68040</td>
<td>dual</td>
<td>Processor direct</td>
<td>Virtual-memory support</td>
</tr>
<tr>
<td></td>
<td></td>
<td>built in to 68040</td>
<td></td>
<td></td>
<td>4K (data) in 68040</td>
<td>none</td>
<td></td>
<td></td>
<td>Audio out</td>
<td>Cache card</td>
<td>NuBus</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4 KB</td>
<td>2</td>
<td></td>
<td>Audio in</td>
<td>NuBus</td>
<td></td>
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<td></td>
<td></td>
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<td>5</td>
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<td>Serial (modem)</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>LocalTalk</td>
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<td></td>
<td>EtherTalk</td>
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<td>Video</td>
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<td></td>
<td></td>
<td>SCSI</td>
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<td></td>
<td>External floppy drive</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>Virtual-memory support</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Size (L x W x H)</td>
<td></td>
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| List price (MB RAM/drive) | $4,219 (4/SuperDrive) | $7,359 (8/230) |
|                          | $4,669 (4/80)        | $8,169 (8/400) |
|                          | $5,039 (4/230)       |               |
|                          | $5,849 (4/400)       |               |
| Street price (MB RAM/drive) | $3,300 (4/SuperDrive) | $5,900 (8/230) |
|                          | $3,700 (4/80)        | $6,100 (8/400) |

**CPU**
- The central processing unit, or CPU, that manages the Mac and all of its applications.

**Floating-point unit** — In Macs with 68030 microprocessors, an optional chip that adds high-powered number-crunching capability.

**Data bus** — The width of the data path between RAM and the microprocessor, in bits.

**Microprocessor clock speed** — The speed of the timing signal that synchronizes internal computations in the CPU.

**RAM caches** — Caches that contain the most-recently-used data, where it can be accessed quickly by the microprocessor.

**RAM on motherboard** — The amount of nonremovable RAM that’s soldered onto the motherboard.

**SIMM slots** — The number of SIMM connectors available for RAM.

**Memory-management unit** — The location of the MMU (if any), which is necessary to support virtual memory and AUUX.

**Video** — The primary display device supported.

**ADB** — Whether the Mac has single or dual Apple Desktop Bus ports for keyboards, mice, and so on.

**Audio out** — Does the Mac have a built-in audio-out jack?

**Audio in** — Does the Macintosh support monophonic audio input and digitization?

**Serial (modem)** — Does the Mac have a port for connecting an external modem or other serial device?

**LocalTalk** — Does the Mac have a port for connecting a LocalTalk network that can be used as a second serial port when LocalTalk is made inactive?

**EtherTalk** — Does the Macintosh have a port for connecting to an Ethernet network?

**Video** — Does the Mac have an external video connector?

**SCSI** — Does the Mac have a connector for SCSI devices?

**External floppy drive** — Does the Mac have a connector for an external floppy-disk drive?

**Processor direct** — Does the Mac have a connector for a RAM-cache card (included with the IIC)?

**Cache card** — Does the Mac have a connector for add-in boards that directly address the Macintosh’s microprocessor?

**NuBus** — The number of slots available for NuBus expansion cards.

**Virtual-memory support** — Does the Mac support virtual memory under System 7?

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*This price is as listed on the Apple price list of September 28, 1992.*
Perfect Color in Minutes

"Scanned in too light"

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"No color, pump up the saturation"

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Whatever the monitor. Whatever the image. For the first time ever your desktop color proof will match your final print.

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Color desktop publishing will never be the same.
Now Your Mac Does Windows Too.

New SoftPC with Windows not only lets your Macintosh run Windows applications, it's been accelerated to really shine with Microsoft Windows 3.1. SoftPC is the software only solution that lets you run more than 50,000 standard and custom DOS applications on your Macintosh. And now, SoftPC with Windows, the newest member of the SoftPC family, includes Windows installed and ready to run. Plus, we've added special optimized drivers to give you the performance you need.

So while a PC is just a PC, SoftPC with Windows makes your Mac both a Mac and a PC with Windows.

At a click, you can run any standard-mode Windows application you want: VGA graphics too, of course.

Click again, and you’re back on the Mac track.

Ask for "SoftPC with Windows" where you buy Mac software, or call us for the name of your nearest dealer. After all, if you can run Windows and have your Mac too, you’ve got a very clear advantage.

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CIRCLE 155 ON READER SERVICE CARD.
Buying the right Mac is only the beginning. What if you want to print a letter? Download stock quotes from an on-line service? Send a fax to your accountant? Stuff your Mac with enough memory to make Photoshop really hum? Review your budget on a bigger screen? You can do all this (and more) with your Mac, but these tasks require something extra — a peripheral.

When you buy a Mac, you know you’re going to buy it from Apple. Peripherals, on the other hand, are sold by a dizzying array of companies — Apple included — and unless you’ve got an expert at your elbow, finding the right one can seem next to impossible.

We can’t be at your elbow when you make your decision, but we can give you enough facts (and questions to ask) to make you expert enough to confidently evaluate and buy on your own. Here is a compilation of the best tips on buying devices such as printers, fax modems, hard drives, and monitors — the essential peripherals for any Mac system. By using this information — as well as our monthly lab reports on the latest Mac gear and the individual product ratings in the MiniFinders directory in this guide — you’ll be able to find the products that best meet your needs.
Keep track of your life and the people in it.

“A powerful personal information management system—DateBook and TouchBASE keep me organized and in control.”

—Guy Kawasaki, Author of Selling the Dream and The Macintosh Way

**DateBook** is the Macintosh personal time management system. DateBook combines calendar, scheduling, alarms and To Do lists to keep track of all your daily activities. DateBook is customizable yet simple and easy to use.

- Year, month, week, day and list views
- Reminders and up-to-date To Do lists
- Sets alarms and recurring appointments instantly
- Prints schedules in popular fILOFAX and DayTimer formats

**TouchBASE** is the personal contacts database that gives you instant access to vital information on friends and associates. It handles both your business and personal contact needs. You’ll find it easier and more reliable than your rolodex.

- Search and sort to find people fast
- Auto-formatting for quick data entry
- Mail-merge for easy correspondence
- Print envelopes, labels, and fax cover sheets

**A Winning Team**

- Complete personal information management
- Simple to learn and easy to use
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- Sharing of contact and event information

Look for reviews of our products in Organizational Tools Section/Personal-Info Managers. Available at all fine software outlets.

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How to Buy

Hard-Disk Drives

What’s the difference between a hard disk and a hard drive? The disk is where your data resides; the drive is the entire unit.

You can buy internal or external hard-disk drives. Because an internal drive is installed inside your Mac, it saves space on your desktop. If it needs repairs, however, you may have to do without your Mac for a while. External hard drives can take up more desk space, but they work with every Mac and you can stack drives as your storage demands increase.

Want an external drive that uses a minimum of desk space? Look for one with a “zero footprint” case — these slide right under your Classic-style (Classic, Classic II, SE, SE/30, or Plus) CPU.

Many vendors sell hard drives, but the mechanisms within the drives are produced by only a few manufacturers — and it’s the mechanism and driver software that determine the drive’s performance. Check reviews in MacUser and other computer magazines to find the best drive mechanisms.

When comparing similar hard drives, divide each one’s price by its capacity to get a base dollar-per-megabyte price. Because many hard drives contain the same mechanism, a high price doesn’t necessarily mean high quality.

Make sure you know exactly what disk mechanism you’re getting, and beware of “bargains” — sometimes vendors, rather than installing an advertised high-quality mechanism, substitute a lower-priced (and less reliable) one, occasionally from a company that has gone out of business.

Service and support are vital — reputable companies offer free phone support, quick turnaround on repairs, and loaner drives when yours needs servicing.

Hard drives are often advertised in terms of their speed, but you don’t necessarily need to get the fastest drive. If you have a Mac Classic, Plus, or SE, your Mac’s SCSI circuitry limits the data-throughput speed, so the hard drive’s speed isn’t that important. If, however, you’ll be upgrading to a faster Mac in the future, it’s worth spending the extra money to get a speedier hard drive.

Because a hard drive is a SCSI device, you need to be able to set its SCSI ID easily. Look for external hard drives that let you set the SCSI ID with push buttons; stay away from DIP switches.

Most drives have two SCSI ports. A terminator is placed in one port if the drive is the first or last device on a SCSI chain. However, some drives now offer built-in active termination, which automatically senses whether the drive is in the middle or at the end of the SCSI chain and sets its termination accordingly.

Find out what formatting software is included with the hard drive. Some formatters offer just the basics, so you’ll need to buy a third-party product if you want to do such things as partition your drive or add password protection.

Looking for freebies? Some vendors include software such as disk-repair utilities, shareware, and virus checkers on their formatted drives at no extra cost.

Check the drive’s documentation. You should get a manual that includes information on SCSI issues and tells you how to use the formatting software.
Look on the bright side. We know our data's going to survive.

Verbatim tapes, optical and floppy disks. Your best defense against data loss.

Circle 162 on reader service card.
How to Buy

Monitors

So you've just upgraded from a Classic to a IIvx. Your computer has more power, more storage, and a sleek design, but there's still something missing — a monitor. If you're used to the built-in 9-inch display that's part of the Plus, SE, and Classic II, the array of monitors available can be both enticing and intimidating. Here's a quick guide to the fundamentals of shopping for the right monitor (for tips on test-driving a monitor at a dealer, see “Do-It-Yourself Screen Tests,” February '91, page 198).

- Monitors are available with screen sizes of 12 to 21 inches. As with TVs, the screen size is measured diagonally.
- Depending on the monitor's resolution, a 12-inch monitor shows about half of an 8 1/2 x 11-inch page; a full-page display (15 inches) shows the whole page; and a two-page display (21 inches) shows most of two pages side by side.
- Wide displays are good for such applications as spreadsheet and page-layout programs or for working with several applications open simultaneously.
- If you're using your Mac for design and need a direct correlation between the size of objects on-screen and their printed size, look for a monitor with a resolution of 72 dpi (dots per inch). A 72-dpi monitor is known as a WYSIWYG (what-you-see-is-what-you-get, pronounced wizzy-wig) monitor. On a monitor with higher resolution, objects appear smaller and more of the page fits onto the screen, but text may be harder to read.
- If you do little more than word processing, go for a monochrome (black-and-white) or gray-scale monitor. They're cheaper and sharper than color monitors.
- Buy a color monitor if you're using your Mac for graphic design or presentations. If your Mac supports it, buy a 24-bit-color board. You'll get millions of smooth colors (8-bit color tends to band), and when you want to speed things up, you can use the Monitors control panel or an Fkey (such as the shareware Switcheroo) to switch the color mode to 8-bit.
- If your Mac supports a color monitor but doesn't have built-in video (the IIfx, IIcx, II, or SE/30), you'll need to buy a video card. Just make sure the monitor you're interested in is compatible with your video card. Call the monitor or card manufacturer for confirmation.
- Tell the dealer which Mac (or Macintosh™ developers: don’t be afraid to protect your applications and your profits. Software Security's new MacUniKey family of hardware-based software protection devices offers complete, effective and non-intrusive software protection.
  • Works on all Mac systems, from PowerBook™ to Quadra™
  • Compatible with AppleTalk™, TokenTalk™ and EtherTalk™
  • Available real-time clock and 128 to 512 bytes memory
MacUniKey “binds” your application to a uniquely-coded hardware device attached to the serial port. Your software may be freely copied and distributed, but it won't run without the appropriate MacUniKey attached. Contact Software Security today for more information.

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Guess who didn't backup with DiskFit?

Your Mac feels warm. In fact, feverish. Suddenly, there's a wisp of smoke. Followed by a mushroom-shaped cloud. Oh, no! Computer Crash! There goes your precious data. Up in smoke. Will life ever be the same? Sure. If you backed up with DiskFit, no sweat. DiskFit is the backup software designed solely for the Mac.

So it works quickly and easily. Friendly. Stores and protects your data simply, smartly. After all, if your data was worth creating, it's worth protecting. So smile. DiskFit protects that too.

DiskFit Direct™
DiskFit Pro™
To go forward, you must back up

Dantz Development Corporation 1400 Shattuck Avenue, Berkeley, CA 94709 510-849-0293

CIRCLE 28 ON READER SERVICE CARD.

Mac video card) you’ll be hooking the monitor up to, and make sure you get the appropriate cable — all Macs with built-in video and many new video cards check for specific connections on the video port. If you don’t have the right cable, the video circuitry won’t work.

When buying a monitor, ask to see several brands at once so you can compare their performance. To avoid interference from magnetic fields (which can cause screen jittering), don’t place the monitors too close together.

A good monitor has accurate screen geometry — circles are round, not oval, and squares have straight, even sides. There may be distortion at the edges of the screen, because the electron beam that creates the screen image has to travel farthest to get to the edges of the screen, but the distortion should be minor. Larry Pina’s shareware program Test Pattern Generator (available from user groups and on-line services such as ZiffNet/Mac) lets you easily test a monitor's screen geometry.

Some monitors have etched screens to cut down on glare, but this shouldn’t be at the expense of sharp focus. You can also reduce glare with antiglare screens from third-party manufacturers.

To avoid screen flicker, opt for a monitor with a vertical-refresh rate of more than 60 hertz. If your eyes are sensitive to fluorescent lights, choose the highest-possible refresh rate.

Look for monitors with the following controls: brightness, contrast, horizontal position, vertical position, horizontal size (or width), and vertical size (or height).

Test for sharp focus by displaying a document with small fonts and thin lines — a spreadsheet, for example.

CIRCLE 85 ON READER SERVICE CARD.

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No other ad design program offers so much creative versatility in a single package.

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CIRCLE 85 ON READER SERVICE CARD.
Apple announces two entirely unexpected ways to get ahead in business.
1. At your desk, it's a fully featured Macintosh. With 256-color video support, support for up to a 16-inch monitor, two NuBus expansion slots, room for an extra internal hard disk drive and an extended keyboard.

2. Touch the Eject button, and out slides a 4.2-pound PowerBook Duo 210 or 230. With a fast (35 MHz) or very fast (33 MHz) Motorola 68030 processor.

3. Outside the office, you can send and receive faxes and electronic mail by adding an optional PowerBook Express Modem. And thanks to the Apple EyeWatch battery saver, you can extend each charge up to 4.5 hours.

Come and go as you please.

The new Macintosh Duo System.

At your desk, you want a Macintosh with a large color monitor, expansion capabilities and an extended keyboard.

Everywhere else, you want one that's light and small enough to carry from meeting to meeting.

But using two computers can be a bit complicated, even with the simplicity that Apple builds into every PowerBook* and desktop Macintosh computer.

How can you be sure that the file you're working with is the latest version? And how do you keep track of hundreds of files in two different places?

The Macintosh Duo* System is designed to simplify things.

At your desk, it's an extremely powerful Apple* Macintosh. With support for up to a 16-inch monitor, a pair of NuBus expansion slots and your favorite keyboard.

Touch one button, and out slides our new PowerBook Duo*. Weighing just a shade more than 4 pounds. With an exceptionally bright screen, an integrated trackball and palm rest and up to 120MB of internal hard disk storage. So you carry all your files and software with you.

Our new PowerLatch* technology makes the transition elegant and simple. When you reinsert the PowerBook Duo in the Macintosh Duo Dock, it senses which keyboard, monitor and expansion cards you're using. And it remembers your printer and other network connections.

What's more, the whole system costs less than the combined costs of a comparably powered PowerBook and desktop Macintosh.

The remarkable new Macintosh Duo System. It's not just the best of both worlds. It's the easiest way to go from one to the other.
The PowerBook 160 and 180 have external video support. You can plug in a VGA or an Apple monitor and work with up to 256 colors. Or use a variety of projection devices that let you give spectacular presentations.

The new PowerBook 160 offers video out for presentations and color monitors, an exceptionally bright 16-level grayscale screen and enough power for almost any business application.

The PowerBook 180 offers video out, extraordinary performance (33 MHz) and the grayscale successor to the active-matrix display already considered among the best in portable computing. A screen so bright and sharp, you have to see it to believe it.

The enhanced PowerBook family.

You don't really care if you ever see the inside of your office again. After all, it's what you get done that counts. Not where you do it. So the newest PowerBook computers make it easier to do whatever you have to do, wherever you happen to be.

We added a video connector in the 160 and 180 that lets you plug in a VGA or an Apple monitor to work with as many as 256 colors. Or plug in a projection device and give stunning, full-color presentations with animation, sound and video.

We added 16 levels of gray and brightened a screen already considered among the best in portable computing.

We added significantly more power, speed and storage capacity. And the EverWatch battery saver, a system that can squeeze up to three hours from a single charge.

We designed a new option, the PowerBook Express Modem, that lets you send and receive faxes and electronic mail with extraordinary speed. Or use AppleTalk and Remote Access software to work with a Macintosh or an AppleTalk network via telephone.

And then, we lowered the price. So now millions more people can afford a PowerBook of their very own.

In the event you do decide to go back to the office, you'll discover we've added a new capability to the 160 and 180. Now you can plug a PowerBook into a Macintosh SCSI port, in effect transforming it into an external hard drive, making it extremely fast to move files back and forth.

And of course, we left in all the things that made PowerBook the only personal computer to be named a Product of the Year by Fortune, Business Week and InfoWorld.

It's the power to make you independent. The power to be your best:

Apple Thinks.
America's Most Popular Macintosh Workshops Now On Video

Speed Learning
Most people are amazed. They need training. They hate reading manuals and they don't want to pay huge sums for local Macintosh training. At first they feel like giving up in frustration. Then someone tells them about MacAcademy's unique and valuable Video Training Library.

Effectiveness
Many of our customers say our videos cut their learning curve by up to 70%! Videos give you the ability to actually see each technique on the Macintosh screen. The video allows you to replay, to fast-forward, or to find any particular technique immediately by using our unique counter system.

The Price
The first benefit of the training library is the price. Each video is only $49. While other training companies have raised their prices out of sight, MacAcademy videos cost the same as five years ago.

Selection
The next bit of good news is the huge selection of training videos available from MacAcademy. Below you will find a sampling of the videos currently available.

Quality
No blurry screens. No paid actors reading scripts. No frills. Each MacAcademy video features one of our top trainers recreating the classroom atmosphere and teaching you each program from start to finish.

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Call 800-527-1914 with credit card or purchase order info or mail or FAX your order to the address and number below. Add $3 plus $1/video shipping and handling.

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Acis 4th Dimension Video #1
Acis 4th Dimension Video #2
Acis 4th Dimension Video #3
Acis 4th Dimension Video #4
Adobe Illustrator 3.2 Video #1
Adobe Illustrator 3.2 Video #2
Adobe Illustrator 3.2 Video #3
Adobe Photoshop Video #1
Adobe Photoshop Video #2
Adobe Photoshop Video #3
Aldus Freehand Video #1
Aldus Freehand Video #2
Aldus Freehand Video #3
Aldus PageMaker Video #1
Aldus PageMaker Video #2
Aldus PageMaker Video #3
Aldus PageMaker Video #4
Aldus Persuasion Video #1
Aldus Persuasion Video #2
Aldus SuperPaint Video #1
Aldus SuperPaint Video #2
Aldus SuperPaint Video #3
Claris FileMaker Pro Video #1
Claris FileMaker Pro Video #2
Claris FileMaker Pro Video #3
Claris MacDraw Pro Video #1
Claris MacDraw Pro Video #2
Claris MacProject II Video #1
Claris MacProject II Video #2
Claris MacWrite II Video #1
Claris MacWrite II Video #2
ClarisWorks Video #1
ClarisWorks Video #2
ClarisWorks Video #3
ClarisWorks Video #4
Deneba Canvas Video #1
Deneba Canvas Video #2
Deneba Canvas Video #3
Claris HyperCard Video #1
Claris HyperCard Video #2
Claris HyperCard Video #3
Intuit Quicken Video #1
Intuit Quicken Video #2
Lotus 1-2-3 Video #1
Lotus 1-2-3 Video #2
Lotus 1-2-3 Video #3
Macintosh (6.0 or 7.0) Video #1
Macintosh (6.0 or 7.0) Video #2
Macintosh (6.0 or 7.0) Video #3
Microsoft Excel Video #1
Microsoft Excel Video #2
Microsoft Excel Video #3
Microsoft Excel Video #4
Microsoft Excel Video #5
Microsoft Word Video #1
Microsoft Word Video #2
Microsoft Word Video #3
Microsoft Word Video #4
Microsoft Works Video #1
Microsoft Works Video #2
Microsoft Works Video #3
Microsoft Works Video #4
QuarkXPress Video #1
QuarkXPress Video #2
QuarkXPress Video #3
WordPerfect Video #1
WordPerfect Video #2

Vide o s can be updated upon release of new software versions for only $14.95.

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Claris FileMaker Pro Video #2
Claris FileMaker Pro Video #3
Claris MacDraw Pro Video #1
Claris MacDraw Pro Video #2
Claris MacProject II Video #1
Claris MacProject II Video #2
Claris MacWrite II Video #1
Claris MacWrite II Video #2
ClarisWorks Video #1
ClarisWorks Video #2
ClarisWorks Video #3
ClarisWorks Video #4
Deneba Canvas Video #1
Deneba Canvas Video #2
Deneba Canvas Video #3
Claris HyperCard Video #1
Claris HyperCard Video #2
Claris HyperCard Video #3
Intuit Quicken Video #1
Intuit Quicken Video #2
Lotus 1-2-3 Video #1
Lotus 1-2-3 Video #2
Lotus 1-2-3 Video #3
Macintosh (6.0 or 7.0) Video #1
Macintosh (6.0 or 7.0) Video #2
Macintosh (6.0 or 7.0) Video #3
Microsoft Excel Video #1
Microsoft Excel Video #2
Microsoft Excel Video #3
Microsoft Excel Video #4
Microsoft Excel Video #5
Microsoft Word Video #1
Microsoft Word Video #2
Microsoft Word Video #3
Microsoft Word Video #4
Microsoft Works Video #1
Microsoft Works Video #2
Microsoft Works Video #3
Microsoft Works Video #4
QuarkXPress Video #1
QuarkXPress Video #2
QuarkXPress Video #3
WordPerfect Video #1
WordPerfect Video #2

CIR C L E 8 3 O N R E AD E R SE R VIC E CA R D .
How to Buy Laser Printers

Buying a laser printer is a little like buying a new car. Will the sturdy economy printer really be enough to meet your needs, or do you need the zippy little sports model that spits out page proofs in no time flat but puts a big dent in your budget? And what about such extras as fonts, memory, and special paper trays? To help reach your buying decision, read on.

There are two types of laser printers: PostScript and QuickDraw. PostScript printers can be used on a network, and they let you print outline fonts and graphics created with the PostScript page-description language. QuickDraw printers, such as the Apple LaserWriter LS, can neither be used on a network nor can they print PostScript documents.

Do you really need a PostScript printer? If simple text files or spreadsheets are all you print, the answer is definitely no. You can print graphics on a QuickDraw printer, but you need PostScript to print graphics created with a PostScript application, such as Illustrator or PageMaker.

Rather than laser printers, consider inkjet printers, which have resolutions comparable to those of QuickDraw laser printers but cost about half as much. And some inkjets can be used on a network.

If you do want PostScript, you can save as much as $400 by buying a printer that uses cloned PostScript technology instead of the real thing licensed from Adobe. Printing very complex graphics with absolute confidence requires true PostScript, however.

Before you buy, make a comprehensive list of which applications you use, what you print, and what page sizes you need. Then create test documents that typify what you print. Include PostScript graphics, rotated and filled text, and any unusual fonts you use regularly. If you’re buying from a dealer, use the sample files to see how the printer copes with them. If you’re buying by mail, call the printer manufacturers and see if you can arrange to have a product demonstration in your office.

Beware of manufacturers’ speed claims. Most printer ads cite a page-

NEW!

SCSI Video Frame Grabber
For Any Macintosh

New ComputerEyes/RT offers affordable, accurate, real-time 24-bit color video frame capture for any Macintosh computer - SE/30, Classic, LC, IIsi, Mac II, Quadra, PowerBook, etc. Portable external SCSI device is easily moved from Macintosh to Macintosh.

Real-time video preview directly on the monitor. Fast, full-screen 640x480 image grab in 1/30th second from any composite (or S-Video) camcorder or VCR. Supports all Macintosh displays. Outputs standard TIFF and PICT files.

Supports QuickTime for capturing video animations!

ComputerEyes/RT SCSI - $599.95.
Other ComputerEyes versions available from $249.95.
Also available - New TeleEyes Mac-to-TV converter. External device allows your Mac to display to large-screen composite (or S-Video) monitors or to video tape. TeleEyes Mac-to-TV - $299.95.
See your dealer or call (800) 346-0090 for more information and free demo disk.

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per-minute speed, which doesn't take the document-imaging time into account. For documents with elaborate graphics, that can be a long, long time. If you need an especially fast printer, go for one with a RISC (reduced-instruction-set-computing) processor. Find out what the printer's consumables costs are — how often does the toner cartridge need to be replaced or refilled, for example, and how much do replacements cost? Also find out what other components need to be regularly replaced.

Even if you don't need special paper trays now, make sure they're available in case you want to add them later.

Plugging a ROM card into a PostScript printer is a new way to add fonts and provides quick access to several fonts for less than $300 per card. The cards' main advantage is speed, in that you don't have to download the fonts each time you want to use them.

If you use several fonts regularly, buy a printer that can be connected to a hard-disk drive in which you store the fonts.

Ask how much memory the printer has and whether you can upgrade it. Low memory configurations (less than 2 megabytes) may affect what page sizes you can print (important if you print legal-sized documents) and how many fonts you can use.

Don't buy memory upgrades directly from a dealer or manufacturer. Check out third-party companies for the best prices.

Make sure the printer you choose is compatible with your network. Tell the dealer exactly what platforms and network configuration you will be using with the printer. Ask what cabling and connectors are required. If possible, try the printer on your network to see how it performs.

If you're considering a printer that is not designed exclusively for Macs, make sure an AppleTalk interface kit is included in the price.

If you want a multiplatform printer, get one that switches from Mac to PC printing on the fly.
New Norton Utilities.
Greater Than
The SUM Of Its Parts.

More than simply combining
SUM and the Norton Utilities, we
made it faster, more powerful,
and easier to use.

Talk about a win-win proposition.
Now you can get the most
comprehensive data protection
and recovery features for the
Mac in a single box. Plus, some
innovations that make Norton
Utilities 2.0 the very best way
to protect your data.

The Ultimate In
Data Protection.

Using simple menus and
icons, Norton Utilities 2.0 com-
bines the technologies from SUM and
Norton Utilities to guide you through the
best and worst of computing times.

To start, the Norton
Disk Doctor™ is in
and it’s more powerful
than ever. It auto-
matically diagnoses
damaged hard drives
and floppies, identi-
\ifying and repairing both
common and uncom-
mon disk errors.

Say you’ve accidentally erased an
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of their respective holders.
Why do I need a fax modem? That’s exactly what I thought! As a graphic designer at Supra, my job is to design great-looking stuff, not to use our products. So I was skeptical — and downright reluctant — when my boss told me to start using a SupraFAXModem.

But I tried it. And I love it! Here’s why...

SAVES TIME. Now I have extra time because I don’t wait in line at the fax machine anymore — in fact, I don’t even leave my desk! I simply use the Chooser to select the modem (instead of a printer), “print” an open file, and tell the modem where to send it. It only takes a minute!

SAVES MONEY. Besides the money we save because I’m designing instead of “chasing paper,” I save a lot by using the SupraFAXModem’s data capabilities. It’s usually less expensive to transfer a file using my modem than to use an overnight delivery service. And because SupraFAXModems feature V.42bis data compression, my files transfer up to 4 times faster — which means lower long-distance charges! It has also saved me when I’ve forgotten important files at work, because I can easily call our network and retrieve them using AppleTalk Remote Access.

WHY DO I NEED A FAX MODEM?

EASY TO USE. Not being particularly technical, I was a little intimidated when my boss dropped the modem on my desk and said “Go for it.” But getting started was easy. The SupraFAXModem for Macs has everything I need in the box — FAXst™ and MicroPhone™ 1.6 software, cables, and manuals — so I dove in. A great little 16-page manual walked me through installing the modem (which went really fast), sending and receiving my first faxes, and transferring data files. The software was easy to use, worked great with my Mac, and did everything I wanted it to. Before I knew it, I was using a fax modem!

GREAT FAX QUALITY. As a graphic designer, I care about how things look. That’s why I was thrilled when I saw how clear the faxes I send look when they reach the fax machine on the other end! It doesn’t matter whether I’m sending a quick memo, or a proof page, the SupraFAX-Modem faxes a near laser-quality, perfect page.

GOOD FOR THE PLANET. And to top it all off, my SupraFAXModem Modem lets me avoid extra printouts and non-recyclable fax paper!

I strongly recommend that all Macintosh owners consider the benefits of using a SupraFAXModem.

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COMPLETE MACINTOSH PACKAGES
How to Buy Memory

If you’re running System 7, you’ve already got a minimum of 2 megabytes of RAM (random-access memory) installed — but if that’s all you’ve got, you’re probably struggling to run one program, such as Microsoft Excel or PageMaker, let alone a few necessary utilities. To have more than one application open at once (or to run MultiFinder under System 6), you need to beef up the amount of RAM available. That’s not as daunting as it sounds — there are lots of mail-order companies selling memory, and prices are getting lower every day. Do a little research before you buy, and in no time, your memory problems will be over.

To add more memory to your Macintosh, you need to install SIMMs (single in-line memory modules) on the motherboard. SIMMs come in many sizes — 256K, 512K, 1 megabyte, 2 megabytes, 4 megabytes, and 16 megabytes — and speeds — 150, 120, 100, 80, and 60 nanoseconds (the lower the number, the faster the SIMM). The size and speed you need depend on your Mac. As long as you get the minimum speed your Mac can use, you’re all right — you can use faster SIMMs, but your Mac just won’t be able to make use of the extra speed.

What size and speed do you need? You’ll find all the information in Connectix’s free booklet The Macintosh Memory Guide. You can get a copy by calling Connectix at 800-950-5880 or 415-571-5100. The Guide also fills you in on the mysteries of virtual memory and 32-bit addressing.

You can install SIMMs yourself, but doing so may void the warranty of some Macs, such as the Classics and the PowerBooks. Adding memory to a compact Mac (a Classic, Plus, SE, or SE/30) requires extreme care and the use of a special Torx T-15 screwdriver to open the case. If you don’t feel comfortable installing SIMMs yourself in these Macs — even if they’re no longer under warranty — budget an extra $50 or so to get a dealer to do it for you.

You can buy SIMMs from your Apple dealer, but you’ll pay a lot less if you buy them through a mail-order company. Check the classified ads in magazines such as MacUser for brokers, and call large
No Wild, No Wildlife.

Polar bears, musk-ox, grizzlies, caribou — more animals than you’d find in Yellowstone — can be found on the magnificent coastal plain of the Arctic Refuge in Alaska. Unfortunately, this portion of our last arctic wilderness has caught the eye of the oil industry. Right now Congress is considering proposals that would allow the oil companies to drill there, even though reports indicate there’s less than a one-in-five chance oil would be found.

If we allowed drilling in the region, we would jeopardize the culture of the native Alaskans and untold wildlife, including a herd of 180,000 caribou. Our last arctic wilderness would be despoiled.

The Sierra Club works to save wildlife by saving the wilderness. And we believe, with your help, this arctic wilderness will remain an invaluable refuge.

For information on how you can help:

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Dept. AR
730 Polk Street
San Francisco, CA 94109
(415) 776-2211

mail-order companies such as MacWAREHOUSE and Mac-Connection. You can sometimes buy SIMMs directly from the manufacturer as well.

- Prices vary widely, depending on whom you call (between $28 and $35 for 1-megabyte SIMMs at press time), but don’t automatically go for the lowest price. Compare warranties, support, and quality as well as price.

- Ask whether the SIMMs you’re buying are manufactured with used chips. The chips may be of good quality, but they may also have a short life. Such a practice can also indicate that a company is cutting corners and may not be in business much longer.

- Ask for SIMMs that are surface-mounted rather than through-hole — they use less power, create less heat, and are more reliable.

- If a company offers a lifetime warranty on its SIMMs, find out exactly what that means. Does the warranty apply to the chips and the panel? And is it voided if you transfer the SIMMs from one Mac to another? Also, a lifetime warranty is useless if the company goes out of business in a year. Ask how long the company has been around — the answer may give you some indication of how stable it is.

- Ask what kind of installation advice you get with your SIMMs. Some large mail-order houses will include with your order a video that shows you how to install memory, some send written instructions, and others have telephone-support technicians who walk you through the installation process.
For more than three decades Letraset has set the standard in the field of typeface development. In the nineties, Letraset continues to forge the way with innovative type software products that give designers the creative edge.

**FONTEK**
Letraset's world renowned display type library offers superior quality digital type fonts in the broadest range of type display styles available. FONTEK typefaces are faithful to the library's original typeface designs in every detail—on screen and in print. Each FONTEK disk features a free Character Chooser Utility for easy access to FONTEK's complete character set plus alternatives, accents and symbols in both TrueType™ and Postscript™ Type 1 formats.

**LetraStudio**
Create dazzling and imaginative headlines with the perfect tool for custom display typography and type effects. Layout grids, drawing tools and guidelines provide everything you need to condense, stretch, slant, scale, rotate and distort type with total control over kerning, letter spacing, sizing and placement. Ideal for signage, multi-media, video titling, package design or any imaginative print media application.

**FontStudio**
If you love type, FontStudio 2.0 is the all-powerful professional program for you. FontStudio puts you in total control of character outlines and on-screen bitmaps whether you're creating an original logo, font of your own, or importing and modifying an existing PostScript Type 1, Type 3, or TrueType font. For more information call 1-800-343-TYPE.
Who's been mousing with your Macintosh®?

Even if you must share your Macintosh, you don't have to share all of your software and data — if you use Kent•Marsh Ltd. security software. Whether you lock folders with FolderBolt, limit access to your hard disk with NightWatch II, or provide bullet-proof encryption protection with MacSafe II, Kent•Marsh has a safe, secure solution.* Choose all or any combination of our modular security products. They're easy to learn and to use — and easy on your budget because you buy only what you need. And if you're a PowerBook user, we can protect your files on the road — even if your PowerBook is stolen!

Kent•Marsh has led the Macintosh security field since it began. All we do is security — with a full time in-house product development and consulting staff available free of charge to answer your questions and help you make security decisions.

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*See product listings in this publication for more detailed information.

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CIRCLE 36 ON READER SERVICE CARD.
CD-ROM is an acronym for compact disc read-only memory. CD-ROMs look exactly like their audio counterparts, and in fact, you can play audio CDs on a CD-ROM drive.

No, you can’t hook up your CD player to your Mac and use it to read CD-ROMs. Unfortunately, CD players have slower access times than do CD-ROM drives, and they lack the error-correction circuitry and SCSI interface necessary for computer use.

Why are CD-ROM drives more expensive than CD players? Fewer CD-ROM drives are produced, so they cost more to manufacture. They also require more-expensive components.

For those who are in the market for a CPU too, buying a Mac IIvx or Performa 600 CD from Apple is a good deal; the optional internal CD-ROM drive is much cheaper than a comparable external drive would be.

Although you won’t break any speed records with a CD-ROM drive, manufacturers have finally freed themselves from old standards that shackled performance. NEC now makes some drives that are showing faster throughput than was previously possible, and other manufacturers are sure to soon follow suit.

Check out the audio software that comes with the CD-ROM drive. Usually in the form of a control panel or a HyperCard stack, audio software lets you play audio CDs on your drive when you are not using it to access data. Some programs let you do such things as shuffle tracks and create custom playlists.

For the best-quality sound, make sure the drive has RCA preamp jacks that let you hook it up to external speakers; otherwise you’re limited to the headphone jack.

Check the volume control — you want something that will give you as much power as possible.

If you have in mind specific uses for the CD-ROM drive — accessing Adobe Photoshop files, for example — test the drive with the software you plan to use it with, before you buy. You may find that there are significant performance differences among drives.

If you want to use the CD-ROM drive to display the contents of Photo CD discs (Kodak’s new image-storage medium), make sure that it is multisession-capable. That means that you can keep adding images at different times to your Photo CD until it’s filled up.

Some manufacturers bundle free CDs with their drives, but don’t let this practice blind you to the drive’s quality — or lack of it.

Dust is a CD-ROM drive’s greatest enemy. If you’re going to be working in a dirty environment (near an open window or in a room where people smoke, for example), make sure the drive’s door closes, thus protecting the mechanism.

Drives that come with self-cleaning lenses are more effective in the fight against dust, but they’re also more expensive.

Here’s how to test a CD-ROM driver’s reliability: Mount a disk, drag it into the Trash, and then re-mount it. If the disk doesn’t re-mount, the driver’s questionable.

The pundits who promised there’d be a CD-ROM drive on almost every desktop may soon be proved right. Sales of these read-only drives, which let you access discs that can contain more than 600 megabytes of data, are finally taking off. In addition, more Mac-specific CD-ROMs are becoming available. Using CD-ROMs is proving especially popular for training, reference, and storing such resources as graphics and clip art. If you’re in the market for a CD-ROM drive, these pointers will direct you toward the right one.
You know how it is. You fall in love with the original. And the sequel always seems wanting.

Not so with new FileMaker® Pro 2.0 for the Macintosh. ~ This sequel to the best-selling Macintosh database of all time has even more power and functionality than the original.

Thanks to a starring cast of over 50 new features. And an entirely new interface for scripting called ScriptMaker™. ~ ScriptMaker makes it easier than ever to create customized scripts that automate virtually any database job you can imagine. Simply select the tasks you want
accomplished, click your mouse and your script is ready to run. It's that easy. But great scripting is just the beginning. Completely System 7 Savvy, FileMaker Pro lets you cast and play QuickTime movies in your database records. Print out over 50 different types of Avery labels — perfectly formatted first time, every time. And even share Macintosh FileMaker Pro files with PCs running FileMaker Pro for Windows. ~ FileMaker Pro 2.0. One of the rare sequels that truly delivers a blockbuster of a performance.

**Life Where the Sequel Than the Original.**

To Upgrade To FileMaker Pro 2.0, Call 1-800-544-8554, Ext. 17.
So what else could you ask for?

Not much when CalComp’s new CCL 600™ laser printer already includes letter and 11 x 17 paper sizes, the latest Canon-based laser engine with crisp 600 x 600 dpi resolution, concurrent Macintosh and PC connectivity, compatibility with PostScript, HPGL/2 and PCL5, plus special processors for incredibly fast throughput.

So easy to buy, too. Just call CalComp Direct to order the new CCL 600 or to see a demonstration at your nearest CalComp dealer. You get a 30-day money back guarantee, 1-year warranty and CalComp’s world class support, so why wait? Order now!
How to Buy

Fax Modems

Just as the fax machine threatens to make bicycle messengers extinct, the fax modem might be on the way to making fax machines obsolete. If you create most of the documents you fax (letters, memos, and so on) on your Mac, you should seriously consider investing in a fax modem. Most of them now have easy-to-use software that makes faxing a document from your Mac almost as easy as printing it. And fax modems are reasonably priced — street prices are less than $400 for modems with high fax- and data-transmission speeds. But before you go out and buy a fax modem, read the following tips.

- Confused about modem specs? You’re not alone. A modem’s data-transfer rate is stated in bps (bits per second). You can also tell a modem’s speed by the CCITT (Comité Consultatif Internationale de Télégraphie et Téléphonie) standards it supports. The bottom line is to look for a modem that’s capable of fast data transmission, preferably with a data-transmission rate of 14.4 Kbps (the CCITT’s V.32bis rating) and V.42bis data compression and V.42 error control; for fax transmissions, look for the CCITT V.17 rating (14.4 Kbps) for both sending and receiving. Don’t go below 9,600 bps for either data or fax transmissions.

- Although few fax machines operate at 14.4 Kbps now, it’s still worth buying a high-speed fax modem — within a year, more machines will operate at the higher speed, and in the meantime, your modem’s software will automatically slow the transmission speed down to match that of older devices.

- Very carefully read the description of what the modem does. Some fax modems may have different speeds for fax and data transmissions, but this fact is seldom clearly explained. For example, a modem that can send a fax at 9,600 bps may transmit data at only 2,400 bps, or the modem may have a fax-send
speed of 9,600 bps and a fax-receive speed of only 4,800 bps.

If you want to use AppleTalk Remote Access (ARA) — and if you’re seriously thinking of telecommuting, ARA is essential — you need a modem that is capable of data transmission at 9,600 bps; 14.4 Kbps is even better. Make sure that the modem comes with a driver file for ARA (not all do).

Send-only fax modems are slightly less expensive than modems that can also receive faxes, but unless you already have a fax machine and know that you will never want to use your modem to receive faxes, you may as well pay a little extra for the ability to receive them too.

If you fax from your PowerBook, an internal modem is a must. Although an internal modem is more expensive than most external models, the ease of using a built-in fax modem makes it well worth the extra cost. Another benefit is that you don’t have to carry a printer around: Simply dial a fax machine, and let it print out your files.

A fax modem receives a fax as a graphic, not as editable text. To convert the fax to text, you must scan it, using OCR (optical character recognition) software. This process will become easier with forthcoming OCR fax software from Calera and Sf’Technologies that will automatically convert faxes to editable text.

Look for products that use enveloping, a technique that lets you place several fax-formatted files in an envelope to be sent as a single fax transmission.

For good-quality text in sending faxes, make sure you have ATM (Adobe Type Manager) installed or use a non-PostScript rasterizer such as Freedom of Press.

If possible, test a few fax modems with documents that combine text and graphics before making a buying decision. Modems differ widely in the quality of the graphics they produce, and testing is the only way to be sure you’re getting the best one.

For the ultimate in convenience, you can get fax modems that manage your voice mail. The modem digitizes phone messages and stores them on your Mac’s hard disk.
In 1975, the world looked on in awe as the Soyuz and Apollo space capsules broke down traditional barriers and joined together in space. The link-up was hailed as a marvel of technology. Today's technological marvels come in smaller packages. Introducing PathFinder from Dayna. The first AppleTalk router to break the $1,000 price barrier. As well as bringing glasnost easy and affordable.

PathFinder has connectors for LocalTalk and all Ethernet cable systems, from thick and thin Ethernet to 10BASE-T. It supports AppleShare and NetWare for Macintosh, the most popular Macintosh network operating systems, as well as any other AppleTalk-based communications software. All for the remarkably low price of $899.

But the biggest breakthrough is PathFinder's amazing ease of use. For small networks, PathFinder is ready to plug and play right out of the box. On larger networks, it can be configured to suit any need. And unique to PathFinder is an "Automatic" setting that combines LocalTalk and Ethernet segments automatically into one seamless network.

Trust the connectivity experts at Dayna to make a product this good, so easy to use and so affordable.

If you're used to routers that sell at prices that are out of this world and require a rocket scientist to set up and maintain, it's time you hooked up with Dayna. Call (801) 531-0600 extension 351 today and ask about connecting with PathFinder.

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CIRCLE 133 ON READER SERVICE CARD.
Introducing the hammer1000FMF SCSI-2 Drive

If you've been looking to save a bundle on a gigabyte of power, may we proudly present the very affordable hammer1000FMF.™

Built using the fastest drive mechanism in the world, the 1000FMF is a compact, external drive that works with any Macintosh (an internal version works with most Mac models). And it comes with one feature you won't find on any other drive: the Hammer name.

At FWB, we use only the highest-quality components in our Hammer products, such as gold-plated connectors to ensure reliable high-speed transfers, and extra-thick, twisted-pair, double-shielded cables. We then carefully assemble and thoroughly test each unit—by hand—to ensure the quality and performance you've come to know from FWB.

This quality is backed by our industry-leading reputation for reliability: a two-year standard warranty, and Hammer PremiumService™ for as long as you own the drive. Want more? The 1000FMF also comes with our advanced Hard Disk ToolKit™ software for unparalleled control, security, and versatility.

So if you've been thinking you'd have to make a tradeoff to get the very best in a gigabyte drive, check out the performance of the hammer1000FMF.

It's a very small price to pay.
How to Buy

Input Devices

・ Of course you’d never forget to do this, but it does happen: If you’re buying off the shelf, make sure the device you get works with the Mac. Some manufacturers produce Mac and PC versions of the same device that are packaged similarly.

・ If you’re left-handed, make sure you try the mouse or trackball before you buy. Some models work just as easily with either hand, others you may have to rotate to use comfortably, and some are designed exclusively for the right hand.

・ Before you buy an input device, find out what the return policy is. It can take several days to get used to a new keyboard, mouse, or trackball. If, after that time, you still aren’t comfortable using it, you should be able to return it.

・ Don’t be too swayed by the argument that one device is more ergonomically correct than another. This buzzword is applied to most devices and has become virtually meaningless. More than what products you use, how you work often influences your comfort and health.

・ For maximum comfort, look for devices that keep your hand and wrist relatively level. Avoid products that make you flex your wrist.

・ To work more comfortably, consider buying (or making) a wrist rest to use with your mouse, trackball, or keyboard.

・ Beware of all-in-one keyboards that combine trackballs and keyboards that can be removed or rearranged. They’re good for southpaws — you can put the numeric keypad or trackball in a more convenient position — but check out the price: Sometimes that sort of combination package costs more than buying the individual parts separately.

・ The higher a mouse’s or trackball’s resolution, the more responsive the device is.

・ The software that comes with your mouse or trackball is an added value — it can boost productivity by letting you control speed or assign certain actions (such as cutting and pasting) to certain clicks — but most users never make the most of it. Find out what the software can do before you buy the device, and once you own it, take advantage of the software’s features.

・ If desk space is an issue, trade in your mouse for a trackball, but first find out the trackball’s dimensions — some are surprisingly large.

・ Hate the PowerBook’s trackball? Supersmall mice and trackballs (Appoint’s Thumbelina Mac and MicroSpeed’s MicroTRAC, for example) plug in to the PowerBook’s ADB port and are tiny enough to be tucked into the carrying case when you’re on the go.

・ For presentations, look for cordless mice and miniature trackballs you can hold in your hand.

・ A digitizing tablet that uses a pen or stylus for input gives you extreme control, but unless you spend a lot of time using painting or photo-editing applications, you probably don’t need one.

・ What’s the input device of the future? Voice-recognition products that let you tell your Macintosh what to do. Articulate System’s Voice Navigator is the current state-of-the-art device. Look for future developments from Apple too.

If, like most other Mac users, you spend a lot of time entering data into your Mac, you probably wish for things that would make the whole process a little easier and a lot more comfortable — such as a trackball that fits your hand, a keyboard that doesn’t hog desk space, or a mouse you can use when giving presentations. Luckily, there are plenty of good, reasonably priced third-party input devices that let you work more comfortably and more productively.
How Butterflies Transform

The butterfly passes through several stages to its glorious transformation from egg to the completed creature that we all visualize as the butterfly. The adult butterfly has been immensely灵活 and several thousand eggs throughout the lifetime of each species. It will emerge in the form of a butterfly as it feasts on sugar and nectar.

Upon hatching, the caterpillar is blind and has a brownish color. It will feed on leaves, becoming larger and more active as it grows. It will eventually pupate, transforming into a chrysalis. The chrysalis is a protective casing for the butterfly, allowing it to develop internally.

The chrysalis will transform into a butterfly when it is fully developed. The butterfly will emerge from the chrysalis, becoming fully grown and capable of flight. It will then fly to find a mate and engage in reproduction, ensuring the continuation of the species.

Now, you can share in the splendor of a similar magical event: DocuMorphosis™. Transform dull looking pages into exciting, attention grabbing documents. Add excitement with logos, photographs, line drawings, charts — in 24-bit color or 256 shades of gray. See your applications enriched with new meaning and importance — with the affordable ScanMaker II, by Microtek.

Place the image you want on the scanner. ScanMaker II has built-in features to make the transformation easy. The results will be astonishing.

Images are crystal clear, brimming with all the rich color and fine detail of the original at resolutions up to 1200 dpi. You can even scan printed text directly into your word processing program with optional OCR software. No more re-typing!

Find out how simple and convenient scanning can be. Experience the wonder of DocuMorphosis. Bring new life to your documents — for under $1000. ScanMaker II. For more information, or the name of your nearest authorized Microtek dealer, call 1-800-654-4160.
How to Buy

Scanners

Scanners convert an image into digital information that is understood by the Mac and can then be edited with image-editing software or, in the case of OCR, a word processor.

When comparing similar scanners, take along the kind of photograph, document, or piece of art you'll be scanning so that you can compare ease of use and quality of results.

Working with large images or images that contain several grays or colors? Look for a scanner that has the ability to save the file to disk rather than to RAM — grayscale and color scanning of images requires lots of memory.

If you need to pick up fine details or small type in the work you're scanning, go for a scanner with a high resolution (expressed as dots per inch, or dpi). Remember, however, that a scanner with high resolution also picks up dirt and flaws on the original art. Standard resolution is 300 dpi.

If you'll be using a sheetfed scanner to scan several documents in succession (for example, if you're doing OCR work), look for one that has an automatic document feeder or a remote-scan button, which lets you press a button every time you insert a new page to be scanned, as you would with a photocopier. This feature will add about $500 to the scanner's price, but it will let you load the documents, start the scanner, and then get on with other work.

Adobe's Photoshop (Photoshop LE, which doesn't include separation capabilities) or Fractal Design's ColorStudio. The advantage of such software is that it lets you scan and edit images without having to switch among programs.

If you already own a copy of Photoshop, look for scanners that include a Photoshop plug-in — software that lets you scan from within the program.

If you want to use the scanner for OCR work, make sure the OCR software included is easy to use and scans in text accurately — otherwise you may spend as much time editing the text as you would have spent typing it.

Bargain hunters will be happy to know that most monochrome hand scanners cost less than $500. The good news is that they're small and convenient and even let you scan on vertical surfaces; the bad news is that they're suitable only for scanning small items such as logos — they aren't good for doing extensive OCR work.

Determine how the scanner you're considering is connected to your Mac. Most connect by means of the SCSI port (some require a special interface box to do so), a few are connected through the modem or printer (serial) ports, and others require the installation of a special card. A SCSI connection has the advantage of fast data transfer and makes the scanner easier to install (all Macs from the Plus up have a SCSI port).

Having your own scanner used to be a luxury. Now, however, prices are coming down — street prices of some color scanners are lower than $1,500 — and as prices plunge, the number of uses for personal scanners is soaring. Whether you want to scan office documents into your Mac using OCR, or just want to pick up the occasional piece of spot art, the following information should help you find the right scanner.

You'll probably pay more if the scanner comes with image-editing software — it can be the company's own software or a third-party product, such as a special version of Adobe's Photoshop (Photoshop LE, which doesn't include separation capabilities) or Fractal Design's ColorStudio. The advantage of such software is that it lets you scan and edit images without having to switch among programs.

If you already own a copy of Photoshop, look for scanners that include a Photoshop plug-in — software that lets you scan from within the program.

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Make it clear.

Make it colorful.

Make it happen.

The HP DeskWriter 550C for the Mac.
$1,099.

Great things happen when you have a DeskWriter 550C printer from Hewlett-Packard. Because it's never been so easy to print high-quality black and white. And brilliant color.

The DeskWriter 550C prints true black at 300 dots per inch. Clean, crisp and sharp, for the kind of professional print quality you expect from HP.

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You can get an HP DeskWriter 550C, or the DeskJet 550C for PCs, for a suggested list price of only $1,099* So if you're looking for an affordable way to make a powerful impression, get a DeskWriter 550C printer. Then see what happens.

For another cost-effective way to get great-looking black and white and color, the HP DeskWriter C and the DeskJet 500C are now available for a low price of just $779.

Call 1-800-552-8500, Ext. 7119 for the name of the authorized HP dealer nearest you. To receive information by fax call 1-800-333-1917, choose HP FIRST, document #9607.
Secondhand Equipment

- Secondhand Macs are available through several sources: classified ads, user groups, auctions, computer swaps, and companies that specialize in selling used Macs. You'll pay more if you buy through a company, but you should get some sort of guarantee — often money-back — in return for the higher price. Buying from a user group is a good bet, because of the technical support available.
- Be careful about low-priced computers — the less expensive the Mac, the more likely it is that you'll have to spend money and time either fixing it or upgrading it. If you know what you're doing, a damaged Mac can be a great deal. If you don't, you'll probably end up with a useless box.
- A secondhand Mac's age is not as important as its condition: Appearance is a good indication of how the Mac's been treated.
- Check out Mac Pluses for a good low-end deal. It's possible to find Pluses with 4 megabytes of memory for around $500. Before buying a Plus, though, find out if it has its original power supply. If it does, there's a good chance that it will need a new one before long.
- Another good buy is an SE without an internal hard drive. Add your own hard drive for a low-priced, reliable machine.
- Are you looking for something more advanced than a Plus or an SE? By adding some simple upgrades (such as a PMMU chip and a high-density floppy-disk drive) to a Mac II, you can get reasonable performance for a very reasonable price.

Older Macs such as the Mac II and the Plus may seem quaint next to their newer, streamlined siblings. But before you buy a new machine you might use only for business emergencies or for personal use, consider secondhand Macs; many still have plenty of life left in them. Of course, there are always hazards in buying used equipment, but if you follow these suggestions, you can minimize the risks.

- To avoid expensive repairs, examine the floppy-disk drive of a used Mac carefully. Make sure it can initialize a new disk, that it can read some good disks you've brought from home, and that the Eject function works smoothly.
- If the Mac is noticeably slow, check its speed with the System Index utility, included with Mac expert Larry Pina's Macintosh II Repair and Upgrade Secrets (Carmel, Indiana: Hayden Books, 1990). This utility includes a test and a chart that tell you how fast Macs — starting with the Plus — should be. A significant speed problem can be fixed only by a logic-board upgrade.
- When buying a Mac with a 9-inch screen (an SE or a Plus, for example), take along a measuring tape so you can check the active-screen size. It should measure just under 7.25 x 4.75 inches. If the active screen is smaller, the power supply may be in trouble.
- If you plan to connect an external drive, modem, or printer to the Mac, make sure you test the connections before buying.
- If you're buying an SE, ask whether it has a SuperDrive floppy-disk drive. Older SEs don't, and they won't be able to read 1.44-megabyte floppy disks or DOS disks.
- It's not worth it to buy secondhand peripherals such as hard-disk drives or modems. New models are more reliable, have warranties, and are competitively priced.
How to Buy
Mail-Order Products

☑ Well-established companies are unlikely to disappear overnight, but if you’re not sure how well established a company is, it pays to do a little research and ask a few questions. Post a message on a bulletin board (MacUser’s on-line service, ZiffNet/Mac, for example), and ask other users for feedback.

☑ Know exactly what you want before you call. It’s hard to browse over the phone, and in many cases, the person on the other end is trained only to take your order, not to help you make a decision. Magazines, on-line forums, and user groups are all good places to seek advice.

☑ To avoid having to return merchandise, find out whether the product you’re interested in is compatible with your system. You should be able to get help from an Apple dealer, or you can call Apple customer service at 800-776-2333.

☑ 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. Even if your credit-card company won’t go that far, it’s worth using plastic to pay for your purchases. If the product is never delivered or is defective, you can contest the charge with your credit-card company, which will in turn deal with the mail-order company.

☑ Confirm the price when you place your order. Sometimes the printed price isn’t current or there are hidden charges. If the price is higher than you thought it would be, it’s worth trying to see if the company will accept the lower payment. You should also find out how much the delivery charge is.

☑ Some companies will waive the delivery charge if you order at a certain time of day (after 8 p.m., for example). The savings depend on what and how much you buy, but you may be able to shave at least $5 off the final cost.

☑ Ask about delivery methods — find out what carriers are used, how fast they are, and how much each one costs.

☑ Because you’re buying sight unseen, make sure the company has a return policy you’re comfortable with. In most cases, a money-back guarantee or a trade-in policy is a must. Find out if you’re responsible for paying shipping charges on returned goods and whether you’ll be charged a restocking fee.

☑ Before you use your new merchandise, make sure it’s exactly what you ordered — the correct model or version number, for example. Errors are not uncommon, and it’s easier to return goods before they’ve been unpacked.

☑ If you’re buying hardware, find out how the company handles repairs or replacements. Ask how quickly you can expect to get your equipment back if you have to send it in for service and whether the company offers loaner equipment.

☑ Technical support varies from company to company. Unless you’re a techno-expert, it’s best to work with a company that offers free technical support.
6 reasons to order from Mac Depot:
- The lowest prices
- We carry over 2,500 products
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UMAX

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- Spectra Star Model 450 .......... $5995 (includes 35mm SlideMaker)

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- PaintWriter 550C .................. $729
- PaintJet XL300 .................... $2399
- PaintJet XL300 Postscript ...... $3399
- Supermac
  - Proof/Positive Full-Page Printing System ...................... $7899

Seiko Instruments
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- ColorPoint PS 8MB ............... $3999
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- Rocket 33 ...................... 1989.00
- RocketShare ................... 419.00
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### COLORPAGE T16 II

- **Colorpage T16 II**
- **Price**: $1299

### HEWLETT PACKARD

#### With 3-YEAR WARRANTY

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- **NoteBook KeyPad**
  - Makes number crunching fast and easy on your PowerBook with arrow and function keys.
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- 50597: DATAPAK 80MB F F OOT PRINT
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- 50598: DATAPAK 160MB F F OOT PRINT
  - 999.00
- 50599: CDROM DRIVE PORTA
  - 1049.00
- 60730: FLOPPY DRIVE 2.1/3.5
  - 539.00
- 60731: INFINITY 40MB 3.5
  - 539.00
- 60732: INFINITY 80MB 3.5
  - 539.00
- 60733: INFINITY 160MB 3.5
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  - 55167: 3D WRITER/ILLUS
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  - 50540: MULTIA CREATE V3.0
  - 515.00

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miniFinders is a comprehensive directory of current Macintosh hardware and software products that have been reviewed and rated in MacUser. Our rating system awards one (worst) to five (best) mice, based on each product's overall value within its category. As the state of the art changes, so does each product's rating. More-detailed product information can be found in the issue cited in parentheses near the end of each entry. MacUser Editor's Choice Award winners are indicated with a *, along with the year in which they received that recognition. Hardware products are generally listed alphabetically by manufacturer; software products are generally listed alphabetically by product.

A HyperCard stack of the entire MiniFinders database is available on ZiffNet/Mac and offers regular updates and keyword-searching capabilities as well as access to the complete text of MacUser back issues. You can find this MiniFinders stack in Library 3 of the MacUser Forum (filename: MUMINI.NEO). Check the table of contents for information on how to sign up.

Because product prices, hardware specifications, software features, and vendor addresses change quickly, we recommend contacting manufacturers directly for the latest product information.

Vendors can update their listing by sending written notification to MiniFinders, c/o MacUser, 950 Tower Lane, 18th Floor, Foster City, CA 94404.

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**DATA ACQUISITION & ANALYSIS**

| IPLab Spectrum | 103 |

IPLab Spectrum is a scientific image-processing package that extracts and analyzes data from photographic-quality color images. Supports video capture and includes scripting language. Interface is neither predictable nor intuitive. Allows mathematically expressed image modification down to the pixel level. Provides a Movie command to cycle through a series of images. No morphology and quantitative analysis. Version 1.0 reviewed. Version 2.2 shipping. Requires Macintosh II series or higher, 4 MB of RAM, and a color display system. $999. Signal Analytics Corp., 374 Maple Ave. E., Ste. 204, Vienna, VA 22180. 703-281-3277. (July '91)

**LabVIEW**

LabVIEW is a graphical programming environment for creating applications that manage data-acquisition, robotics, and machine-control operations. Data analysis includes complex math and signal processing. LabVIEW is one of the best-designed and most efficient systems on the Mac or PC for creating "virtual" instruments; Engineers accustomed to sketching block diagrams (before programming a data-acquisition task) can feel comfortable with this program, where the user's drawing becomes the actual functioning software interface. Version 2.1 reviewed. Version 2.2 shipping. Requires 4 MB of RAM and a hard drive. $1,995; run-time version, $495. National Instruments Corp., 6504 Bridge Point Pkwy., Austin, TX 78730. 800-433-3488 or 512-794-0100. (May '91) * 90 Eddy 4D Calc

4D Calc is a spreadsheet module that works with the 4th Dimension database application. Although it can't replace a full-featured spreadsheet program, 4D Calc's "hot" links to 4D databases immediately update shared information. The ability to exchange data as SYLK files between Excel and 4D is adequate, but formulas may be replaced by...
This developer tool lets 4th Dimension speed up many user-defined procedures, rather than interpreting code into machine language. The program is copy-protected, asking for an original disk at launch and occasionally thereafter. Despite this nuisance, 4D Compiler is indispensable for 4D developers. Version 1.0 reviewed. Requires 4th Dimension 2.1.1 or later. $295. ACIUS, Inc., 10351 Bubb Rd., Cupertino, CA 95014. 408-252-4444. (June '91)

4D XREF "!!!
4D XREF is a specialized analytical tool that every 4D developer will cherish. It's simply a module that lists and cross-references all the different variables, procedures, commands, externals, structure elements, and layouts used in an entire database. The entire XREF file can be saved as a text file for use in other applications. Listings provided (including Layouts and Structure) allow for clear, graphically intuitive analyses of procedures, layout dimensions, and structure maps. Version 1.0 reviewed. Requires 4th Dimension 2.1.1 or later. $200. ACIUS, Inc., 10351 Bubb Rd., Cupertino, CA 95014. 408-252-4444. (June '91)

4th Dimension "!!!
4th Dimension is a fast, versatile relational database that can create powerful, elegant standalone applications. Has a Pascal-like procedural language, but also allows simplified database design using standard layout outlines. Design environment provides easy linking of different information types. Good documentation. ACIUS and many third-party vendors offer a wide variety of specialized 4D add-ons. Version 2.23 reviewed. Version 3.0 shipping. Requires Mac Plus or later, System 6.0.3 or later, 2 MB of RAM, and a hard drive. $895. ACIUS, Inc., 10351 Bubb Rd., Cupertino, CA 95014. 408-252-4444. (Aug '92)

4D Write "!!!
4D Write is a word-processing module that works with 4th Dimension. Although you couldn't replace a full-blown word-processing program with 4D Write, it has basic features such as formatting, rulers, and the capability to handle simple graphics. No spelling checker or style sheets. Sometimes has difficulty opening large text files, and translation of imported RTF (rich text format) documents is not good, although you can specify RTF when saving documents. Version 1.0 reviewed. Requires 4th Dimension 2.1.1 or later. $295. ACIUS, Inc., 10351 Bubb Rd., Cupertino, CA 95014. 408-252-4444. (June '91)

4th Right! Professional "!!!
4th Right! Professional is a database-development shell for ACIUS' 4th Dimension application. Requires laborious setup and has confusing interface. Structure file consumes 1.7 MB of storage even before user customization. Sluggish for uncompiled databases, due to poor programming. Inaccurate documentation. Version 2.01 reviewed. Requires 4th Dimension. $695. Digital Concepts, Inc., P.O. Box 69159, Portland, OR 97201. 503-244-4460. (Feb '92)

Atlas Pro "!!!
Atlas Pro is a sophisticated digital cartographer that displays demographic and marketing information geographically. Uses basic spreadsheet-like tools to manipulate and edit data. Can use System 7.0's publish-and-subscribe feature to update maps linked to data files created by other applications. Can also link multiple PICT files and QuickTime movies for point-and-click access from a 4D database. The entire large library of maps and supporting data is available (some at additional cost) but there is no internal database manager. Provides remote-mainframe SQL links. The program is fast at presentation mapping; provides international maps; and supports U.S. boundary maps by state, county, ADI, DMA, and ZIP code. Version 1.05 reviewed. Version 1.5 shipping. Requires Macintosh Plus or later and a hard drive. 68030CPU or higher and color display system recommended. $795; optional street maps, $200 to $500 per county; entire U.S.A. on CD-ROM, $25,000. Strategic Mapping, Inc., 3135 Kifer Rd., Santa Clara, CA 95051. 408-970-9600. (May '92)

Azimuth "!!!
Azimuth is a cartographic powerhouse that teams sophisticated projection mapping with 2-D CAD tools. Lets you build excellent perspective maps of the earth based on a view from space. No built-in data-analysis features, but allows detailed map annotation. Can export files in black-and-white EPS format for use with DTP and illustration programs. Includes outlines of all countries and states but not of counties or city streets. Version 2.0 reviewed. Version 2.1 shipping. Requires Macintosh Plus or later and a hard drive, $395. Graphsoft, Inc., 8370 Court Ave., Ste. 202, Ellicott City, MD 21043. 410-461-9488. (Apr '92)

Databasen!!!
Databasen is an easy-to-use flat-file manager in a DA. Handles pictures, text, and numbers. Imports QuickDEX and other files. Includes separate application, Databasen Builder, for designing databases for use with the DA. Xtras feature lets you incorporate sound, phone dialing, and graphics. Allows only a single view of data. Has 50-field limit and minimal calculation options. Doesn't generate reports. Files are large. Version 1.51 reviewed. Requires Macintosh Plus or later. $129.95. Baseline Publishing, Inc., 1770 Moriah Woods Blvd., Ste. 14, Memphis, TN 38117. 800-926-9677 or 901-682-9676. (Feb '92)

Double Helix "!!!

Easy4D "!!!
Inc., 2067 Massachusetts Ave., Cambridge, MA 02140. 800-999-4649 or 617-876-4876. (Feb '92)

File ****
Microsoft File is a basic flat-file database manager. Has 100 form templates that work with standard preprinted business forms. Version 1.1 reviewed. Version 2.0 shipping. Requires Macintosh Plus or later. $395. Microsoft Corp., One Microsoft Way, Redmond, WA 98052. 800-426-9400 or 206-882-8080. (Nov '89)

File Force ****
File Force is a relational-database manager. Script editor provides a graphic way to view database file structures, establish file relations, and access layouts. Excellent documentation. Version 1.0 reviewed. Version 1.01 shipping. $395. ACIUS, Inc., 1051 Bubb Rd., Cupertino, CA 95014. 408-252-4444. (Sept '90)

FileMaker Pro ****½
The flat-file-database manager FileMaker Pro is ideal for novices but has the power to run large, sophisticated databases. Offers flexible layouts, good searching/sorting functions, many data-entry and calculation options, and good reporting capabilities. Has many of the features of a relational-database manager. Several users on an AppleTalk network can access and modify one FileMaker database simultaneously without requiring a dedicated server. Search engine is adequate but lacks precision. Has adaptable password-security system. FileMaker tends to favor reliability over processing speed, so Macs with 68000 CPUs or slow, overloaded hard drives will feel sluggish. Version 1.0v2 reviewed. Version 2.0 shipping. Requires Mac Plus or higher with System 6.03 or later, 2 MB of RAM, and a hard drive. $299. Claris Corp., 800-999-4649 or 617-876-4876. (Feb '92) ★ '86 Eddy

FileDivision IV ****

FoxBASE+/Mac ****½
FoxBASE+/Mac is a powerful relational-database manager that can read unmodified dBASE/DBS or FoxBASE/DBS files. Amazingly fast, regardless of database size. Good emulation of dBASE on the Mac. Requires more detailed coding than other similar programs. Steep learning curve, but worth it for professional applications. Supports multithreaded databases. Parent company Microsoft is planning a major upgrade for late 1992 release. Version 2.01 reviewed. Requires Macintosh Plus or later, System 6.03 or later, and a medium drive. $495. Fox Software, Inc. (Microsoft), 134 W. South Boundary, Perysburg, OH 43551. 419-874-0162. ★ '88 Eddy

GeoQuery ****
GeoQuery is a digital cartographer that displays demographic and marketing information geographically. Large library of maps and supporting data available (some at additional cost). Has internal SQL-database program but does not support Apple's DAL. Excellent import capabilities. Street-level mapping can cover entire U.S., and the program includes international maps and supports U.S. boundary maps by state, county, ADI, DMA, and ZIP code. Version 1.01 reviewed. Version 2.0 shipping. Requires Macintosh Plus or higher, 2 MB of RAM, and a hard drive. $995; additional maps, boundary files, and city point files, starting at $95 each; quantity discounts available; site licenses available. MapInfo Corp., 200 Broadway, Troy, NY 12180. 800-327-8627 or 518-274-6000. (Mar '91)

Omnis Seven ****½
Omnis Seven is a fast, powerful, easy-to-use relational-data-database manager. Offers stellar cross-platform compatibility between PC and Mac environments. Ideal for experienced database developers, yet also provides Short Menus mode and consistent, easy-on-the-brain interface for beginners. Supports multithread database programs. Version 1.0 reviewed. Version 1.03 shipping. Requires Mac Plus or later with 2 MB of RAM, System 6.03 or later, and a hard drive. $1,250. Blyth Software, Inc., 1065 E. Hillsdale Blvd., Ste. 300, Foster City, CA 94404. 800-346-6647 or 415-571-0222. ★ '87 Eddy

Panorama II ****
Panorama is a powerful and classy flat-file-database manager. Stores databases in RAM to maximize performance, but file size is therefore limited by memory-partition size. Vulnerable to electrical power interruptions. Spreadsheets like data entry. Supports text, numbers, graphics, and dates as data types, with a wide range of input formatting. Offers powerful charting function and macros. ClaroViewer option suggests data input based on contents of similar records. Supports basic loop function between separate databases. Confusing calculation setup. Version 2.01 reviewed. Version 2.06 shipping. Requires Macintosh Plus or later, System 6.03 or later, and a hard drive. $395. ProVUE Development Inc., 15180 Transistor Ln., Huntington Beach, CA 92649. 714-892-8199. (Feb '92) ★ '88 Eddy

Pro-Cite ****½
Pro-Cite is a complete database-management system for bibliographies. Almost unlimited flexibility in bibliography formatting. Full-featured search and sort capabilities. Overly complicated and nonintuitive use of menu bar and dialog boxes. Version 1.3 reviewed. Version 2.0 shipping. Requires Macintosh Plus or later and System 6.03 or later; hard drive recommended. $395. Personal Bibliographic Software, Inc., P.O. Box 4250, Ann Arbor, MI 48106. 313-996-1580. (Feb '89)

RecordHolder Plus
RecordHolder Plus is a versatile flat-file-database manager with functionality not significantly improved since first release. Slow. Has compact files. Counterintuitive, clumsy interface. Allows only single view of data and can't select a subset of records. Version 3.1 reviewed. Version 3.16 reviewed. Requires Macintosh Plus or later with System 6.03 or later and a hard drive. $149.95. Software Discoveries, Inc., 137 Krawski Dr., South Windsor, CT 06074. 203-644-9225. (Feb '92) ★ '87 Eddy

Reports ****½
Reports fills the gap left by HyperCard's limited report-
MINIFINDERS

generation ability by delivering
powerful database-reporting
capabilities to HyperCard
users. You can create report
layouts, choose any HyperCard-
based record selection
and sorting criteria, and print
the results. Reports is actually
several applications in a single
package; a layout editor, a
card selector (within stacks),
and an overall viewing and
editing system (thanks to the
MasterView application in-
cluded). Version 2.0 reviewed.
Version 2.5 shipping. Requires
Mac Plus or later with 4 MB of
RAM, System 6.05 or later,
a hard drive, and HyperCard 2.1
(included) or later. $1,399.95
direct. Nine Five Software,
P.O. Box 18899, Boulder, CO
80308. 800-292-5925 or 303-
441-1014. (July '91)

Retriever II ■■■

Retriever is a spreadsheet-orien-
ted flat-file-database
manager that has good reporting
capabilities. Uses icons instead
of menus for many functions.
Limited layout options and
interfacing problems. Has a fast
sorting function, a decent
searching capability, and a
clever automated phone-dialing
feature. Version 1.0 re-
viewed. Requires Mac Plus or
later and System 6.03 or later.
$49.95 direct. Exodus Soft-
ware, 800 Compton Rd., Ste.
9240, Cincinnati, OH 45231.
513-522-0011. (Aug '92)

Tactician 2.0 ■■■■■

Tactician 2.0 is a digital car-
tograph that displays demo-
graphic and marketing infor-
mation geographically. Has
elegant performance and in-
terface that incorporates
Apple's iAL. A large library
of maps and supporting data
is available, but there is no inter-
national database manager. The
program has no international
maps but supports street-level
mapping and U.S. boundary
maps by state, county, ADI,
DMA, and ZIP code. Version
2.0 reviewed. Version 2.2
shipping. Requires Macintosh
II series, a color monitor, 4
MB of RAM, and a hard drive.
$2,495. Tactics International,
16 Haverhill St., Andover, MA
01810. 800-927-7666 or 508-
475-4475. (Mar '91) ★ '90

Adobe Premiere ★★★★★

Adobe Premiere is a full-
fledged QuickTime movie-
editing studio in software. Has
slick, streamlined interface
that's accessible and intuitive
for novices. Although not yet
as feature-rich as the Amiga-
based NewTek Video Toaster,
Premiere offers powerful digi-
tal-video editing and a wide
variety of special effects and
transitions. Uses premade
QuickTime movies created by
video-digitizer boards. Can
also incorporate PICS, PICT,
and Photoshop images, along
with digitized sound in snd,
SoundEdit, and AIFF formats.
On Macs with suitable video
cards, records QuickTime
movies with sound directly to
VRs. Uses SMPTE-format
time-based editing. Latest ver-
sion generates edit-decision
lists for professional off-line
editing. Version 1.0 reviewed.
Version 2.0 shipping. Requires
Macintosh II series or higher
with 4 MB of RAM, a high-
capacity hard drive, System
6.07 or later, and 32-bit Quick
Draw. $495. Adobe Systems,
1585 Charleston Rd., P.O. Box
7900, Mountain View, CA
94039. 300-833-6687 or 815-
961-4400. (June '92)

Amdek AM/738/ ★★★★★

This autotransynchronous color
monitor has a shadow-mask
tube and is moderately priced.
Suffers from pincushioning
and poor convergence. Active
screen size is 11.8 inches. Scan
rate ranges from 31.5 to 38
kHz horizontally and from 50
to 90 kHz vertically. Has silica
antiglare treatment. External
controls include image bright-
ness/contrast, horizontal po-
sition, and horizontal and ver-
tical size. Video-signal com-
patibility includes Macintosh
II series and LC plus 1,024 x
768 pixels interlaced at 60 Hz.
Good documentation. $599 (or
$399 direct). Amdek, 3471 N.
First St., San Jose, CA 95134.
800-722-6335 or 408-922-
5700. (Aug '92)

Apple Display 8•24 ★★★★★

This 24-bit color display system
combines the 13-inch
AppleColor Hi-Res RGB Dis-
play with the Macintosh Dis-
play Card 8•24. The 13-inch
diagonal screen size may not
be large enough for some
professional applications, but
the AppleColor's sharpness,
focus, and color quality are
unbeatable. Requires Macin-
tosh II series or higher and
System 6.05 or later. $1,498.
Apple Computer, Inc., 20525
Mariani Ave., Cupertino, CA
95014. 800-776-2333 or 408-
996-1010. (May '91)

Apple Display 8•24 GC ★★★★★

This 24-bit color display sys-
28] In the extremely fast
metrical display Card 8•24 GC.
The screen size may not be
large enough for some pro-
essional applications, but
one will ever have reason to
complain about the Apple-
Color's sharpness, focus, and
color quality. Requires Macin-
tosh II series or higher and
System 7.0 or later. $2,298.
Apple Computer, Inc., 20525
Mariani Ave., Cupertino, CA
95014. 800-776-2333 or 408-
996-1010. (May '90)

Apple Macintosh 12" Monochrome Display ★★★★★

This 12-inch monochrome
monitor has good geometry.
Due to the antiglare etching,
users can experience focus
problems. The screen is dim.
Resolution is 74 dpi. Requires
Macintosh II series with video
card (optional with Mac Iici
and Iisi), Monitor only, $299.
Apple Computer, Inc., 20525
Mariani Ave., Cupertino, CA
95014. 800-776-2333 or 408-
996-1010. (Apr '90)

Apple Macintosh Portrait Display ★★★★★

This high-quality, full-page
monitor is one of the best
available. Its screen resolu-
tion is slightly below true
WYSIWYG, so things appear
a bit small. Can produce up to
256 levels of gray, using an
8•24 card. The monitor cable
doesn't fit all third-party video
cards, so check before you buy.
Requires Macintosh II series
with video card (optional with
Mac Iici and Iisi). $1,099.
Apple Computer, Inc., 20525
Mariani Ave., Cupertino, CA
95014. 800-776-2333 or 408-
996-1010. (Feb '91) ★ '89

Eddy

AppleColor High-Resolution RGB Monitor ★★★★★

The AppleColor High-Resolution
RGB Monitor is standard
among 13-inch monitors.
Sharp. Has adequate bright-
ness, but with no built-in glare
protection. Can support 24-
bit color when used with the
Macintosh 8•24 and 8•24 GC
cards. Its 69-dpi screen reso-
lution gives a slightly longer-
than-WYSIWYG image. Very
reliable workhorse. Requires
video card (optional with
Macintosh LC, Iici, and Iisi), $799. Apple Computer, Inc.,
20525 Mariani Ave., Cuper-
tino, CA 95014. 800-776-2333
or 408-996-1010. (May '90)

Computer Care Color material★★★★

This internal display adapter
works with the PowerBook
140, 145, and 170 at 8-bit pixel
depth. Trouble-free. Includes
6 MB of expansion RAM.
Dons't support virtual mem-
ory or RAM disks. Supports
12-, 13-, 15-, and 16-inch
Apple-compatible monitors,
as well as SVGA, VESA 19-
inch, and VGA standards.
Configured using Monitors
control panel. Includes inter-
facing cable, $1,399. Computer
Care, Inc., Ford Centre, 420
N. Fifth St., Ste. 1180. Minne-
apolis, MN 55401. 800-950-
2273 or 612-371-0061. (Dec
92)

Computer Friends ColorSnap 32+ ★★★★★

Computer Friends ColorSnap
32+ is a NuBus card that digi-
tizes single frames of video
input. Produces above-aver-
age image quality. Software is
powerful, complete, and easy
to use. Provides image cata-
loguing plus plug-ins for
Photoshop and QuarkXPress.
Video-in options include com-
posite, RGB, and S-video.
Live-video display is slow and
uses a small window; 24-bit
cards can be digitized, but
resolution is 640 x 480 pixels.
Version 1.1 reviewed. Version
1.2 shipping. Requires Mac
II series, $995. Computer
Friends, Inc., 14250 N.W.
Science Park Dr., Portland, OR
97229, 800-547-3303 or 503-
626-2291. (July '91)
This NuBus video-digitizing card supports NTSC video signals (a PAL version is also available). Input can be composite or S-video. Captures well-saturated but somewhat pixelated colors. Lacks sound input and doesn’t drive Mac monitors. Includes ColorSnap software for still-video capture and DVA VideoShop software for editing and QuickTime-video capture. Version 1.13 ColorSnap 32+ software reviewed. Requires Macintosh II series or higher, 8 MB of RAM, a color display system, and a large, fast hard drive. $1,195. Computer Friends, Inc., 14250 N.W. Science Park Dr., Portland, OR 97229. 800-547-3303 or 503-626-2252. (Oct ’92)

DARIUS TSM1431

This autosynchronous color monitor has a shadow-mask tube and is moderately priced. Active screen size is 11.5 inches. Scan rates range from 15.75 to 39 kHz horizontally and from 50 to 90 kHz vertically. Has etched antiglare treatment. External controls include image brightness/contrast, horizontal and vertical position, horizontal and vertical size, and input select. Signal compatibility includes Mac II series and 1,024 x 768 pixels interlaced at 60 Hz. Incomplete documentation. $599. Darius Technology, Inc., 22028 26th Ave. S.E., Bothell, WA 98021. 206-483-8899. (Aug ’92)

DIVA VideoShop

This digital-video-editing package provides tools for integrating QuickTime movies with still images and sound files. Easy-to-use, highly intuitive interface. Works well with QuickTime-video frame grabber boards such as SuperMac’s VideoSpigot. Poor sound handling. Excellent tools for organizing files and creating special effects. Weak documentation. Includes HyperCard application and the Image Bank CD-ROM, a large collection of business-oriented QuickTime movies. Version 1.0 reviewed. Requires System 7 or later, HyperCard, and a color display system. $599. DIVA Corp., 222 Third St., Ste. 3332, Cambridge, MA 02142. 617-491-4147. (Nov ’92)

E-Machines ColorPage E16

This affordable 8-bit-color display system includes a PDS video card, a cable, and a 16-inch Toshiba shadow-mask monitor. Has good display characteristics, and cable is poorly shielded. Resolution is WYSIWYG 72 dpi. Active screen size is 14.5 inches diagonally. External monitor controls include brightness/contrast, vertical position/size, horizontal position/size, and degaussing. Good software features. Requires Macintosh LC. $1,828. E-Machines, Inc., 9305 S.W. Gemini Dr., Beaverton, OR 97005. 800-344-7274 or 503-646-6699. (Feb ’92)

E-Machines ColorPage T16

This affordable 8-bit-color display system includes a PDS video card, a cable, and a 16-inch Sony Trinitron monitor. Has excellent display characteristics. Resolution is WYSIWYG 72 dpi. Active screen size is 14.5 inches diagonally. Only external monitor controls are power switch and vertical/horizontal convergence. Brightness and contrast are controlled by software. Automatic degaussing. Good software features. Cable is poorly shielded. Requires Macintosh LC. $2,228. E-Machines, Inc., 9305 S.W. Gemini Dr., Beaverton, OR 97005. 800-344-7274 or 503-646-6699. (Feb ’92)

E-Machines ColorPage T16/24

This 24-bit color display system combines the ColorPage T16 monitor with a 24-bit video card. This high-quality, affordable system scored highest in overall performance in our lab-report testing. The 16-inch-diagonal screen size should be large enough for most professional applications. Sharpness, focus, and color quality are nearly perfect. Requires Macintosh II series or higher. $3,598. E-Machines, Inc., 9305 S.W. Gemini Dr., Beaverton, OR 97005. 800-344-7274 or 503-646-6699. (May ’91)

E-Machines ColorPage T16/8

The ColorPage T16/8 is a bright, top-quality 8-bit-color monitor. The monitor is a razor-sharp Sony Trinitron, and the video card is also excellent. Requires Macintosh II series. With 8-bit card, $2,598. E-Machines, Inc., 9305 S.W. Gemini Dr., Beaverton, OR 97005. 800-344-7274 or 503-646-6699. (May ’90) ★ ‘88 Eddy

E-Machines Futura MX

Futura MX is an accelerated 24-bit-color video card that supports 38 virtual-screen sizes. Affordable, but not as fast as similar products. Low power consumption. Card’s timing settings are controlled with mechanical switch instead of with software. Document scrolling is performed only in accelerated mode. Supports resolutions of 640 x 480, 800 x 600, 832 x 624, and 1,024 x 768 pixels. Supports hardware pan and zoom. Five-year warranty. Requires Mac II series or higher. $1,599. E-Machines, Inc., 9305 S.W. Gemini Dr., Beaverton, OR 97005. 800-344-7274 or 503-646-6699. (May ’92)

E-Machines QuickView Studio QT

This NuBus video-digitizing card supports NTSC or PAL video signals. Input can be composite, RGB, or S-video. Included daughtercard allows sound input with 22-kHz stereo sampling. Doesn’t drive Mac monitors. Captures 8- or 16-bit color only. Includes software for still-video capture but not for editing or QuickTime-video capture. Power consumption is relatively high at 21.25 watts. Version 1.5 software reviewed. Requires Mac II series or higher, 8 MB of RAM, a color display system, and a large, fast hard drive. With sound-input daughtercard, $1,995. E-Machines, Inc., 9305 S.W. Gemini Dr., Beaverton, OR 97005. 800-344-7274 or 503-646-6699. (Oct ’92)

E-Machines TX/24

This 24-bit-color display system combines the E-Machines TX monitor with a 24-bit video card. Delivers very good overall performance. The 16-inch-diagonal screen size should be large enough for most professional applications. This monitor provides a non-WYSIWYG, 87-dpi image that displays plenty of information at a somewhat-reduced scale — good for page layout but a problem when you need to read small type. Excellent sharpness, focus, brightness, and color quality. Requires Macintosh SE/30 or II series with NuBus adapter. $3,298. E-Machines, Inc., 9305 S.W. Gemini Dr., Beaverton, OR 97005. 800-344-7274 or 503-646-6699. (May ’91)

Envisio Notebook Display Adaptor

This moderately priced internal display adapter works with the PowerBook 100 at 1-bit pixel depth. Includes 2 MB of RAM but no pass-through connector for expansion memory. System must be rebooted if monitor is unplugged. Supports RAMdisks. Doesn’t support virtual memory or 32-bit addressing. Supports 13-, 15-, and 21-inch Apple-compatible monitors, as well as VGA standard. Includes interface cable. $495.
Envisio, Inc., 510 First Ave. N., Ste. 303, Minneapolis, MN 55403. 612-339-1008. (Dec '92) ★ ★ '91 Eddy Envisio Notebook Display Adaptor 030 ***

This internal display adapter works with the PowerBook 140, 145, and 170 at 8-bit pixel depth. Includes 4 MB of expansion RAM. System must be rebooted if monitor is unplugged. Supports 32-bit addressing and RAM disks. Doesn’t support virtual memory. Supports 12-, 15-, 16-, and 21-inch Apple-compatible monitors, as well as VGA standard. Includes interface cable. $1,395; with 6 MB of RAM, $1,695. Envisio, Inc., 510 First Ave. N., Ste. 303, Minneapolis, MN 55403. 612-339-1008. (Dec '92)

FAST Electronics Screen Machine 24-

This NuBus video-digitizing card supports NTSC or PAL video signals (a SECAM version is also available). Input can be composite or S-video, although S-video was non-functional during testing. Good image controls but produces some screen artifacts in captured images. Defaults to PAL. Lacks sound input and doesn’t drive Mac monitors. Includes SM-Camera software for still-video capture, SM-Movie Machine software for editing, and SM-Movie Maker for QuickTime-video capture. Version 2.5 Camera and 1.0 Movie Maker reviewed. Requires Macintosh II series or higher, 8 MB of RAM, a color display system, and a large, fast hard drive. $1,299. FAST Electronics, 5 Commonwealth Rd., Natick, MA 01760. 508-655-3278. (Oct '92)

Forda Addonics Mon-7CA

This Trinitron-based auto-
synchronous color monitor has good spatial uniformity and color range. Diagonal active screen size is 11.75 inches. Scan rate ranges from 30 to 57 kHz horizontally and from 45 to 90 kHz vertically. External controls include image brightness/contrast, horizontal and vertical size, position, and horizontal and vertical size. Video-signal compatibility includes Mac II series, plus 1,024 x 768 pixels interlaced at 60 Hz or noninterlaced at 75 or 60 Hz. Incomplete documentation. $694. Fora, Inc., 30 W. Montague Expwy., San Jose, CA 95134. 408-944-0393. (Aug '92)

General Parameters

StarTime/VideoShow ***

The StarTime/VideoShow is a software/hardware combination for color presentations. Using the VideoShow box and a monitor, you can play back presentations without a Mac. Software is clunky and doesn’t really take advantage of Mac graphics, because its main purpose is to convert Mac presentations into VideoShow format. Version 1.0 reviewed. Version 2.2 shipping. Software requires Macintosh SE or later. System 6.0.3 or later, presentation software, and a hard drive; VideoShow requires a color monitor. StarTime, $199; VideoShow Model HQ, $4,995. General Parameters Corp., 1250 Ninth St., Berkeley, CA 94710. 800-223-D099 or 510-524-3950. (Nov '89)

Generation Systems Color 24 ****

This 24-bit color display system combines an Ikegami Trinitron monitor with a 24-bit video card. High-quality, affordable combination delivers very good overall performance. The 20-inch-diagonal screen size is adequate for most professional applications. Excellent brightness, sharpness, focus, and color quality, but color convergence is slightly off. Requires Macintosh II series. $5,595. Generation Systems, Inc., 10049 N. Reiger Rd., Baton Rouge, LA 70809. 800-873-4384 or 504-291-7221. (May '91)

Generation Systems CT-20

This 20-inch color monitor is bright and fairly sharp. Excellent color quality and software. Hardware capabilities include pan and zoom (with 24-bit card only). Requires SE/30 or Mac II series. 8-bit (Mac II or SE/ 30), $3,999; 24-bit (Mac II or SE/30), $5,995. Generation Systems, Inc., 10049 N. Reiger Rd., Baton Rouge, LA 70809. 800-873-4384 or 504-291-7221. (May '90)

Generation Systems TV Board

The Generation Systems TV Board is a video-out NuBus card that outputs only an NTSC composite signal, but its 8-bit color or gray-scale image is clean. No video-in options, digitizing, or file-save formats. Easy to install and use. Lacks software but includes cables. Toll-free unlimited technical support. Requires Macintosh II series. $395. Generation Systems, Inc., 10049 N. Reiger Rd., Baton Rouge, LA 70809. 800-873-4384 or 504-291-7221. (Aug '91)

Generation Systems TV Box

The TV Box is an external component that accepts the Mac’s 15-pin RGB cable and can output an NTSC composite signal. Poor image quality but easy to use. No other video-in options, digitizing, or file-save formats. TV Box software facilitates Mac-to-TV link. Includes cables. Toll-free unlimited technical support. Requires Macintosh II series. $395. Generation Systems, Inc., 10049 N. Reiger Rd., Baton Rouge, LA 70809. 800-873-4384 or 504-291-7221. (Aug '91)

Lapis DisplayServer II

The DisplayServer II is a monochrome NuBus video card that lets a Mac II run PC-compatible VGA monitors. The card has occasional problems with some Mac programs, and it isn’t cost-effective if used with a small monitor. Users on a tight budget, however, can save by using this card with a recycled big VGA monitor—it produces a crisp, jitter-free image. Version 2.0reviewed. Version 4.5 shipping. Requires Macintosh II series or higher. $349. Lapis Technologies, 1100 Marina Village Pkwy., Ste. 100, Alameda, CA 94501. 800-435-2747 or 510-748-1600. (June '91)

MacGenius

This 15-inch monochrome monitor has a warm-color phosphor and bright screen. Good software with inverse video capability. Card difficult to install. Screen resolution is 80 dpi. Requires Macintosh Plus or SE. $1,495. Genius Technology, 755 E. 31st St., Hastings, MN 55033. 800-328-9524 or 612-437-2233. (Apr '90)

Mag Innovation MX14S

This Trinitron-based auto-
synchronous color monitor has good color range. Active screen size is 12 inches. Scan rate ranges from 30 to 64 kHz horizontally and from 50 to 120 kHz vertically. Has no antiglare treatment. External controls include image brightness/contrast, horizontal and vertical position, and horizontal and vertical size. Degaussing and input select are automatic. Video-signal compatibility includes Mac II series and LC, plus 1,024 x 768 pixels interlaced at 60 Hz and noninterlaced at 75 or 60 Hz. Incomplete documentation. $799; optional Mac IT cable, $25. Mag Innovation, 4392 Corporate Center Dr., Los Alamitos, CA 90720. 714-827-3998. (Aug '92)

Mass Microsystems ColorSpace III/FX

The ColorSpace III/FX are two NuBus cards that bring live 24-bit video to the Mac. They
can drive the Mac monitor and a TV display. The FX board converts regular NTSC composite-video signals to RGB. The II board lets you mix live video with computer graphics. Allows sophisticated special effects, but software and manuals are inadequate. Includes NTSC Digitizer for grabbing 640-x-480-pixel PICT frames for export. Also includes VideoAuthor tool kit for HyperCard scripting. Toll-free unlimited technical support. Requires Macintosh II series and appropriate cable. III and ColorSpace FX bundle, $2,495. Mass Microsystems, Inc., 810 W. Maude Ave., Sunnyvale, CA 94086. 800-522-7979 or 408-522-1200. (Aug '91) $8 Eddy Mass Microsystems

QuickImage 24

This moderately priced NuBus video-digitizing card supports NTSC or PAL video signals. Input can be composite or S-video. Poor image quality and low frame-rate capture. Lacks sound input and doesn't drive Mac monitors. Includes easy-to-use QuickImage software for still-video capture. Lacks image controls and software for editing and QuickTime video capture. Version 2.0 software reviewed. Requires Macintosh II series or higher, 8 MB of RAM, a color display system, and a large, fast hard drive. $495. Mass Microsystems, Inc., 810 W. Maude Ave., Sunnyvale, CA 94086. 800-522-7979 or 408-522-1200. (Oct '92)

Mirror PixelView

This monochrome full-page display system is unique, because it can be used with a Mac Plus. Comes with a screen saver and large-cursor option and useful software to manage pop-up menus and the menu bar. Image quality is average. Video cards are also available for the SE, SE/30, and Mac II series. Comes with tilt/swivel stand. Requires Macintosh Plus or later. $477. Mirror Technologies, Inc., 2644 Patton Rd., Roseville, MN 55113. 800-654-5294 or 612-633-4450. (Feb '91)

Mirror ProView 20

This affordable 8-bit-color display system includes a PDS video card, a cable, and a 20-inch Sanyo Trinitron monitor. Has good display characteristics. Resolution is WYSIWYG 72 dpi. Active screen size is 17.8 inches diagonally. External monitor controls include brightness/contrast, vertical position, horizontal position, size, vertical/horizontal convergence, and degaussing. Good software features. Requires Macintosh II and PDS adapter, $2,799 direct; PDS adapter, $50. Mirror Technologies, Inc., 2644 Patton Rd., Roseville, MN 55113. 800-654-5294 or 612-633-4450. (Feb '92)

Mirror ProView 24-bit Display System

This 24-bit-color display system combines an Ikegami Trinitron with a 24-bit-video card. A high-quality, affordable combination, this system delivers good overall performance. The 19-inch-diagonal screen size is large enough for most professional applications. Sharpness, focus, and color quality are excellent, but geometry is slightly off. Good software. Requires Macintosh II series, $2,999. Mirror Technologies, Inc., 2644 Patton Rd., Roseville, MN 55113. 800-654-5294 or 612-633-4450. (May '91)

Mitsubishi Diamond Pro 14

This autoscopomorphic color monitor has a shadow-mask tube with a low display-nuising rate. Active screen size is 12.75 inches. Scan rate ranges from 30 to 58 kHz horizontally and from 30 to 90 kHz vertically. Has etched antiglare treatment. External controls include image brightness/contrast, horizontal and vertical position, and vertical and horizontal size. Includes useful pincushioning control that's not very intuitive. Automatic degaussing. Video signal compatibility includes Mac II series and LC, plus 1,024 x 768 pixels interlaced at 60 Hz and noninterlaced at 75 or 60 Hz. Good documentation. $839; optional Mac II cable, $35. Mitsubishi Electronics America, 5665 Plaza Dr., Cypress, CA 90630. 800-843-2515 or 714-220-2500. (Aug '92)

Mitsubishi Diamond Pro 37

This autoscopomorphic monitor contains a 37-inch CRT that supports resolutions as high as 1,024 x 768 pixels. Bright colors. Excellent focus and wide viewing angle. Imperfect screen geometry may be annoying at close range. Has easily accessible system connections. Weighs a hefty 225 pounds. Poor documentation. Requires Macintosh video cable, $9,995; Mac video cable, $54; optional cabinet pedestal, $995. Mitsubishi Electronics America, 5665 Plaza Dr., Cypress, CA 90630. 800-843-2515 or 714-220-2500. (Dec '92)

Mobius One Page Display

The Mobius One Page Display is a 15-inch monochrome full-page display that's a good choice for SE owners. Software for the SE model provides multiscreen capability, a screen saver, acceleration control, and other features. Video cards are available for the SE, SE/30, and Mac II series. The interface card that comes with the SE model is also a CPU accelerator that speeds up all processing. Has antiglare coating and comes with a tilt/swivel stand. Requires Macintosh SE or higher with System 6.05 or later. $595 direct; with 68030 accelerator on card, $1,095. Mobius Technologies, 5835 Doyle St., Ste. 107, Emeryville, CA 94608. 800-523-7933 or 510-523-7900. (Feb '91)

NEC MultiSync 4FG

This autoscopomorphic color monitor has a shadow-mask tube with good color tracking and excellent brightness. Active screen size is approximately 18 inches. Supports resolutions as high as 1,152 x 870 pixels. AccuColor System lets you match display colors to selected output device. Software-only version provides multiple resolutions with Quadra's built-in video. Good tutorial software. $5,398; with 24-bit MacF 24X video card, $4,798. NEC Technologies, Inc., 1414 Massachusetts Ave., Boxborough, MA 01719. 800-632-4636 or 508-264-8000. (Sept '92)

Neotech Image Grabber and Color Adapter Module

Neotech Image Grabber is a NuBus card that digitizes single frames of still-video input. Excellent image quality. Outputs gray-scale NTSC video. The Colour Adapter Module is an optional external box that adds color capability. Software is powerful but complex. Video-in options include composite, RGB, and S-video. Live-video display uses resistible 640-x-480 pixel window; 24-bit images can be digitized, but resolution is 640 x 480 pixels. Version 1.5 reviewed. Version 2.05 shipping. Requires Macintosh II series or higher. Image Grabber, $1,499; Colour Adapter Module, $499. Advant Computer Products, Inc., 449 Santa Fe Dr., Ste. 213, Encinitas, CA 92024. 619-942-8456. (July '91)

Nissei Sangyo Hitachi 15 MVX

This autoscopomorphic color monitor has a shadow-mask tube with good objective geometry. Active screen size is 12.5 inches. Scan rate ranges from 30 to 58 kHz horizontally and from 50 to 100 kHz.
vertical. Has antistatic silica antiglare treatment. External controls include image brightness/contrast, horizontal and vertical position, size, and ratios. Video-signal compatibility includes Mac II series and LC, plus 1,024 x 768 pixels interlaced at 0 Hz and noninterlaced at 75 or 60 Hz. Incomplete documentation.

$795. Nissel Sango America-Hitachi, 800 South St., Waltham, MA 02154, 800-441-4382 or 617-893-5700. (Aug '92)

**Nutmeg 19° Mono Display**

**This 19-inch monochrome monitor is bright and has an average-quality focus. Geometry is fair. Phosphor is bluish with a yellowish center. Includes Stepping Out II. Screen resolution is 72 dpi. Requires Macintosh Plus, SE, SE/30, Classic, LC, or LC II series.**

$1,280. Nutmeg Systems, 25 South Ave., New Canaan, CT 06840, 800-777-8439 or 203-966-3226. (Apr '90)

**Nutmeg M190c**

This affordable 8-bit-color display system includes a PDS video card, a cable, and a 20-inch Sony Trinitron monitor. Has average display characteristics, and video card has no FPU slot. Skimpy software. Active screen size is 17.5 inches diagonally. Resolution WYSIWYG 72 dpi. External monitor controls include brightness/contrast, vertical position/size, horizontal/vertical convergence, and degaussing. Requires Macintosh II. $3,949. Nutmeg Systems, 25 South Ave., New Canaan, CT 06840, 800-777-8439 or 203-966-3226. (Feb '91)

**Outbound Outrigger Intelligent Monitor**

This integrated SCSI display adapter and full-page monitor works with Outbound notebook computers at 1-bit pixel depth. Fast, Easy installation. Also works with the Mac Plus, SE, SE/30, all Classics, the Mac II family, and PowerBooks. Monitor has antiglare treatment and 82-dpi resolution. Active screen area is 8 x 10.5 inches. Supports 32-bit addressing and RAM disks.


**Panasonic Panasync**

**C1395**

This autostereoscopic color monitor has a shadow-mask tube with good color tracking. Active screen is 12.5 inches. Scan rate ranges from 30 to 57 kHz horizontally and from 50 to 90 kHz vertically. Has etched antiglare treatment. External controls include image brightness/contrast, horizontal and vertical position, and horizontal and vertical size. Video-signal compatibility includes Mac II series and LC, plus 1,024 x 768 pixels interlaced and noninterlaced at 60 Hz. Input-connector cable is permanently attached. Good documentation. $750; optional Mac II cable, $40. Panasonic, Two Panasonic Way, Secaucus, NJ 07094, 800-742-8086 or 201-348-7000. (Aug '92)

**PCPC II 16° Color**

This 24-bit-color display system combines a Sony Trinitron monitor with a 24-bit-video NuBus card. A high-quality, affordable combination, this system delivers good overall performance. The 16-inch-diagonal screen size is large enough for most professional applications, but the 82-dpi pixel density produces an image that may appear too condensed. Sharpness, focus, and color quality are excellent. Includes Stepping Out II software. Requires Mac II series or higher. $2,495. PCPC (Personal Computer Peripherals Corp.), 4 Daniels Farm Rd., Ste. 326, Trumbull, CT 06611. 800-622-2888. (Oct '89)

**Princeton MultiView II**

The overall performance of this 15-inch-diagonal, monochrome full-page monitor was below average in our lab tests. Screen geometry and focus are poor. Comes with a tilt/swivel stand. Board for SE or SE/30, $845; with board for Mac II series, $995; antiglare treatment, $75. Princeton Publishing Labs, Inc., 101 Business Park Dr., Ste. 100, Skillman, NJ 08558, 609-924-1153. (Feb '91)

**Princeton Ultra 1400**

This autostereoscopic color monitor has a shadow-mask tube with poor color tracking. Active screen size is 12.5 inches. Scan rate ranges from 15 to 36.5 kHz horizontally and from 45 to 120 kHz vertically. Has etched antiglare treatment. External controls include image brightness/contrast, horizontal and vertical position, and horizontal and vertical size. Video-signal compatibility includes Mac II series and LC, plus 1,024 x 768 pixels interlaced at 60 Hz and noninterlaced at 75 and 60 Hz. Good documentation. $479 direct; optional Mac II cable, $19.95; optional Mac LC cable, $29.95. UDSI (Ultimate Display Solutions, Inc.), 1125 Northmeadow Pkwy., Roseville, CA 95678, 800-221-1490 or 404-664-1010. (Aug '92)

**Proxima Ovation**

Ovation is a color active-matrix LCD panel for use with overhead projectors. Displays brilliant, contrasty image that, unlike conventional LCD panels, keeps up with the fastest animations, mouse actions, or even 30-fps live video. Resolution is 640 x 480 pixels. The panel can address up to 3,375 true colors from the Mac, or up to 24,000 colors in Video mode. Supports Mac RGB, VGA (IBM PC), and either NTSC or PAL broadcast standards. Accepts VHS or S-VHS input from camcorders, laser-disc players, and VCRs. Optional Cyclops hardware includes optical sensor that re-acts to point-and-click input on-screen from a light-tipped wand. Optional Laser Pointer lets you control Cyclops while standing 25 feet away from screen. Version 1.5 reviewed. Version 3.0 shipping. Requires Macintosh II series or higher (interface kits available for other Macintosh models). $8,495; Cyclops, $749; Laser Pointer, $995. Proxima Corp., 6100 Nancy Ridge Dr., San Diego, CA 92121, 800-447-7604 or 619-457-5500. (Jan '92)

**Radius Color Pivot LC**

This affordable 8-bit-color display system includes a PDS video card, a cable, and a 15-inch Toshiba shadow-mask monitor. Active screen size is 13.22 inches diagonally. Monitor can rotate 90 degrees between portrait and landscape orientations. Offers excellent focus, color quality, and maximum usable brightness. Included software is excellent. Allows resolutions of 82 dpi or WYSIWYG 72 dpi. Only external monitor controls are power switch and brightness/contrast. Automatic degaussing. Monitor also available with Radius NuBus cards for other Macs. Requires Macintosh LC. Monitor only, $1,549; LC interface card, $399. Radius, Inc., 1710 Fortune Dr., San Jose, CA 95131. 800-227-
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This affordable 8-bit-color display system includes a PDS video card, a cable, and a 15-inch Toshiba shadow-mask monitor. Active screen size is 13.22 inches diagonally. Monitor can rotate 90 degrees between portrait and landscape orientations. Offers excellent color, color-quality, and maximum usable brightness. Included software is excellent and allows resolutions of 82 dpi or WYSIWYG 72 dpi. Only external monitor controls are power switch and brightness/contrast. Degaussing is automatic. Card uses no adapter or installation. Monitor also available with Radius NuBus cards for other Macs. Requires Mac IIfi Monitor only, $1,499; IiS interface card, $599. Radius, Inc., 1710 Fortune Dr., San Jose, CA 95131. 800-227-2795 or 408-434-1010. (Feb '92)

**Radius Full Page Display**

The Full Page Display is a bright monochrome portrait display, with screen resolution slightly better than that of true WYSIWYG. It is capable of 256 shades of gray with available Radius cards. A slight screen flicker is perceptible. Requires Macintosh Plus or later. $699. Radius, Inc., 1710 Fortune Dr., San Jose, CA 95131. 800-227-2795 or 408-434-1010. (Apr '90)

**Radius Pivot for Built-in Video**

This Pivot for Built-in Video is an impressive 15-inch-diagonal full-page display. It offers excellent focus and maximum usable brightness. Includes the unique ability to rotate 90 degrees between portrait and landscape orientations. Comes with a tilting/swivel stand. Video card requires Macintosh II series, SE/30, or LC. Monitor only, $489 (for Macs with built-in video); optional video card, $599. Radius, Inc., 1710 Fortune Dr., San Jose, CA 95131. 800-227-2795 or 408-434-1010. (June '91)

**Radius PowerView**

This trouble-free SCISD display adapter works at 8-bit pixel depth with the Classic II and PowerBook 140 and 170. Easy installation. Slow when set to 8-bit color. Supports 13-, 15-, 16-, and 21-inch Apple-compatible monitor monitors, as well as Radius Pivot monitors and VGA standard. Supports virtual memory, 32-bit addressing, and RAM disks. Configured using Monitors control panel. Includes interface cable. $599. Radius, Inc., 1710 Fortune Dr., San Jose, CA 95131. 800-227-2795 or 408-434-1010. (Apr '90)

**Radius Two Page Display**

This monitor's high pixel density may not offer perfect WYSIWYG, but it does display a lot of information. Its lack of glare protection is a trade-off in favor of maximum brightness. Excellent geometry. Linearity, focus, and lack-of-nuisance ratings above average. Requires Mac SE, SE/30, or II series. $1,399. Radius, Inc., 1710 Fortune Dr., San Jose, CA 95131. 800-227-2795 or 408-434-1010. (Oct '90)

**Radius PrecisionColor 24x**

The PrecisionColor 24x is an accelerated 24-bit-color video card that lets you change screen resolutions on the fly. Good performance. Offers seven resolution choices ranging from 560 x 760 up to 1,152 x 882. An adapter for the IiS is available. Requires Macintosh II series or higher. $1,999. Radius, Inc., 1710 Fortune Dr., San Jose, CA 95131. 800-227-2795 or 408-434-1010. (May '92)

**Radius PrecisionColor Display/20**

This autostereoscopic color monitor has a bright 20-inch Trinitron tube with excellent color. Active screen size is 18 inches. Supports resolutions as high as 1,152 x 870 pixels. Screen has excellent glare protection. Allows precise control of color convergence and saturation, especially with optional PrecisionColor Calibrator. Degaussing is automatic at power-up only. Monitor only, $3,299; with PrecisionColor 24X 24-bit video card, $1,999; PrecisionColor Calibrator, $599. Radius, Inc., 1710 Fortune Dr., San Jose, CA 95131. 800-227-2795 or 408-434-1010. (July '91)

**Radius Two Page Display/19**

The Radius Two Page Display is a bright, well-focused 19-inch monochrome display system. Comes with Radius’ famous software, which includes tear-off menus and screen capture. Requires Macintosh SE, SE/30, or II series. $1,099. Radius, Inc., 1710 Fortune Dr., San Jose, CA 95131. 800-227-2795 or 408-434-1010. (Apr '90)

**Radius Two Page Display/21**

This NuBus video-digitizing card supports NTSC, PAL, and SECAM video signals. Input can be composite or S-video. Drives 13-inch Mac monitors and provides 24-bit color at 640 x 480 pixels. Includes expansion connectors. Basic image controls. Three-year warranty. Requires Macintosh II series or higher, 8 MB of RAM, a color monitor, and a large, fast hard drive. $2,199. RasterOps, 1501 Walsh Ave., Santa Clara, CA 95051. 800-729-2656 or 408-562-4200. (Oct '92)

**RasterOps 24STV**

This NuBus video-digitizing card supports NTSC, PAL, and SECAM video signals. Input can be composite or S-video. Drives 13-inch Mac monitors and provides 24-bit color at 640 x 480 pixels. Includes expansion connectors. Basic image controls. Lacks sound input. Includes MediaGrabber software for still-video and QuickTime-video capture but not editing. Three-year warranty. Version 2.0 software reviewed. Requires Macintosh II series or higher, 8 MB of RAM, a color monitor, and a large, fast hard drive, $2,199. RasterOps, 2500 Walsh Ave., Santa Clara, CA 95051. 800-729-2656 or 408-562-4200. (Oct '92)

**RasterOps 24XLi**

This 24-bit color-accelerated video card has a tuner that can pick up broadcast and cable TV. Accepts audio from TVs, VCRs, and videodisc players. Clear, accurate image quality. Limited software. Video-in options include composite, RF, and RGB. Supports NTSC or PAL. Live-video display in 8- or 16-bit mode only; 8- or 16-bit images can be digitized. Can read and capture closed-captioned text and can display full-motion video at 30 fps. Audio can fall out of sync with video due to NuBus data-transfer limitations. Requires Macintosh II series or higher. $1,699. Radius, Inc., 1710 Fortune Dr., San Jose, CA 95131. 800-227-2795 or 408-434-1010. (July '91)

**RasterOps 24MXTV**

This NuBus video-digitizing card supports NTSC, PAL, and SECAM video signals. Supports high-frame-rate captures. Input can be composite or S-video. Drives 13-inch and 16-inch Mac monitors and provides 24-bit color at 640 x 480 pixels. Includes expansion connectors. Lacks sound input. Includes MediaGrabber software for still-video and QuickTime-video capture but not editing. Basic image controls. Three-year warranty. Requires Macintosh II series or higher, 8 MB of RAM, a color monitor, and a large, fast hard drive, $2,199. RasterOps, 2500 Walsh Ave., Santa Clara, CA 95051. 800-729-2656 or 408-562-4200. (Oct '92)

**RasterOps 24XLTV**

This 24-bit color-accelerated video card supports hardware pan and zoom plus many virtual-screen sizes. Good image quality. Includes NTSC, PAL, and SECAM capture and display. Input can be composite, RGB, or S-video. Resolution choices include 640 x 480, 800 x 600, 1,024 x 768, and 1,152 x 870 pixels. Lacks sound input. Includes MediaGrabber software for still-video and QuickTime-video capture but not editing. Basic image controls. Optional RISC-based daughterboard boosts QuickTime playback and video-caption frame rate. Has relatively high power consumption of 19.5 watts. Three-year warranty. Version 2.0 software reviewed. Requires Macintosh II series or higher, 8 MB of RAM, a color monitor, and a large, fast hard drive, $2,199. RasterOps, 2500 Walsh Ave., Santa Clara, CA 95051. 800-729-2656 or 408-562-4200. (Oct '92)
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software reviewed. Version 2.1 shipping. Requires Macintosh II series or higher, 8 MB of RAM, a color monitor, and a large, fast hard drive. $3,499. RasterOps, 2500 Walsh Ave., Santa Clara, CA 95051. 800-729-2656 or 408-562-4200. (Oct '92)

RasterOps MediaTime

This NuBus video-digitizing card supports NTSC, PAL, and SECAM video signals. Has trouble fitting properly into IIx, IIC, or Quadra 700. Input can be composite or S-video. Provides two sound inputs and two outputs with 44.1 kHz stereo sampling. Drives 13-inch Mac monitors and has basic image controls. Provides 24-bit color at 640 x 480 pixels. Includes MediaGrabber software for still-video and QuickTime video capture but not editing. Three-year warranty. Version 2.0 reviewed. Requires Macintosh II series or higher, 8 MB of RAM, a color monitor, and a large, fast hard drive. $1,499. RasterOps, 2500 Walsh Ave., Santa Clara, CA 95051. 800-729-2656 or 408-562-4200. (Oct '92)

RasterOps Video Expander


RasterOps VideoTime

This NuBus video-digitizing card supports NTSC, PAL, and SECAM video signals. Supports high frame-rate captures. Input can be composite or S-video. Lacks sound input. Includes MediaGrabber software for still-video and QuickTime video capture but not editing. Basic image controls. Three-year warranty. Version 2.0 reviewed. Requires Macintosh II series or higher, 8 MB of RAM, a color monitor, and a large, fast hard drive. $3,499. RasterOps, 2500 Walsh Ave., Santa Clara, CA 95051. 800-729-2656 or 408-562-4200. (Oct '92)

Relax Ikegami Trinitron

This 20-inch color monitor is very sharp but has annoying flicker and other electronic nuisances. Requires Macintosh II series or higher. $1,899 direct. Relax Technology, Inc., 3101 Whipple Rd., Ste. 22, Union City, CA 94587. 510-471-6112. (May '90)

Relisys RE-1422

This autod synchronous color monitor has a shadow-mask tube and is moderately priced. Active screen size is 12 inches. Scan rate ranges from 28 to 50 kHz horizontally and from 47 to 89 kHz vertically. External controls include image brightness/contrast, horizontal position, and vertical size. Video-signal compatibility includes Mac II series and LC. Plus 1,024 x 768 pixels interlaced at 60 Hz and noninterlaced at 75 and 60 Hz. Incomplete documentation. $749. Relisys, Inc., 320 S. Milpitas Blvd., Milpitas, CA 95035. 408-945-9000. (Aug '92)

Sampo AlphaScan Plus KDM 1466A

This autod synchronous color monitor has a shadow-mask tube with good geometry but poor color quality. Active screen size is 12.25 inches. Scan rate ranges from 30 to 60 kHz horizontally and from 50 to 90 kHz vertically. Has silica antiglare treatment. External controls include image brightness/contrast, horizontal and vertical position, and horizontal and vertical size. Video-signal compatibility includes Mac II series and LC. Plus 1,024 x 768 pixels interlaced at 60 Hz and noninterlaced at 75 and 60 Hz. Input-connector cable is permanently attached. Incomplete documentation. $849. Sampo America, 5550 Peachtree Industrial Blvd., Norcross, GA 30071. 404-449-6220. (Aug '92)

Samtron SC428V

This autod synchronous color monitor has a shadow-mask tube and is moderately priced. Active screen size is 12 inches. Scan rate ranges from 31.5 to 35.5 kHz horizontally and from 50 to 90 kHz vertically. Has etched antiglare treatment. External controls include image brightness/contrast, horizontal and vertical position, and horizontal and vertical size. Video-signal compatibility includes Mac II series and LC. Plus 1,024 x 768 pixels interlaced at 60 Hz. Input-connector cable is permanently attached. Incomplete documentation. $549. Samtron Displays, Inc., 14251 E. Firestone Blvd., Ste. 101, La Mirada, CA 90638. 310-802-8425. (Aug '92)

Sampo AlphaScan Plus CM1445

This high-quality, 24-bit color display system combines a Seiko Trinitron monitor with a RasterOps 264 24-bit video NuBus card. A great value. The 14-inch-diagonal screen size may be large enough for some professional applications. The WYSIWYG display has standard 72-dpi pixel density. Complete controls are provided for screen-image brightness, contrast, vertical position/size, horizontal position/size, and vertical/horizontal color convergence. Requires Macintosh II series or higher. $749. Seiko Instruments USA, Inc., 1130 Ringwood Ct., San Jose, CA 95131. 408-922-5900. (May '91)

Sigma Designs ColorMAX 6/24

This high-quality, affordable color display system combines a Sony Trinitron monitor with a 24-bit video card. Sharp, well-focused system delivers excellent color quality, and the 19-inch-diagonal screen size is large enough for nearly all professional applications. This WYSIWYG display has standard 72-dpi pixel density. Geometry slightly off, however. Requires NuBus-capable Mac. Monitor only, $3,595; 24-bit card, $1,495; 8-bit card, $995. Sigma Designs, Inc., 47900 Bayside Pkwy., Fremont, CA 94538. 800-845-8086 or 510-770-0100. (Feb '91)

Sigma Designs Power Portrait

This integrated SCSI display adapter and full-page monitor works with Outbound note­books, Pluses, SEs, SE/30s, all Classics, Portables, and PowerBooks at 1-bit pixel depth. Easy installation. Monitor has resolutions of 72, 80, and 88 dpi. Active screen area is 8 x 10.7 inches. Supports virtual memory, 32-bit addressing, and RAM disks. Configured using Monitor's control panel. Includes interface cable and tilt/swivel stand. Platinum color, $995; granite, $1,095; antiglare treatment option, $50. Sigma Designs, Inc., 47900 Bayside Pkwy., Fremont, CA 94538. 800-845-8086 or 510-770-0100. (Dec '91)

Sigma Designs SilverView

This 21-inch monochrome monitor is bright, with good focus and fair geometry. Minimal screen-nuisance factors.
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MINIFINDERS


Sony CPD-1304

This Trinitron-based, synchronous-color monitor has excellent color range. Active screen size is 13 inches. Scan rate ranges from 28 to 50 kHz horizontally and from 50 to 87 kHz vertically. Has silica antiglare treatment. External controls include image brightness/contrast, horizontal and vertical position, horizontal and vertical size, and input select. Automatic degaussing. Video-signal compatibility includes Mac II series and LC, plus 1,024 x 768 pixels interlaced and noninterlaced at 60 Hz. Incomplete documentation. $1,000; optional Mac II cable, $20. Sony Computer Peripherals Co., 655 River Oaks Pkwy., San Jose, CA 95134. 800-352-7669 or 408-432-0190. (Aug '92)

Sony RVP-6000

This enclosed rear-projection display system uses three separate, high-intensity projectors to create an extremely bright RGB image on a flat 60-inch screen. Usable even under normal room lighting. Supports resolutions as high as 1,280 x 1,024 pixels. Picture quality is good. Has slightly less stable image and narrower viewing angle than that provided by most large CRT monitors. Effective viewing range is 10 to 45 feet. Entire enclosure weighs 450 pounds. Requires dealer installation and a Mac video cable. $2,200; Mac video cable, $185. Sony Business and Professional Group, 3 Paragon Dr., Montvale, NJ 07645. 800-334-3005 or 408-245-2202. (Dec '92)

SuperMac 19" Dual-Mode Spectrum/8 PDQ si

This 8-bit-or 24-bit-color display system includes a PDS video card, a cable, and a 19-inch Sony Trinitron monitor. Has excellent display characteristics, and cable is well shielded. Has resolution of 82 dpi or WS124V 72 dpi. Active screen size is 17.76 inches diagonally. External monitor controls include power switch, brightness/contrast, vertical position, and vertical/horizontal convergence. Degaussing is automatic. Software features include pan, zoom, and on/off acceleration control. Warranty is 3 years for monitor, 5 years for card. Requires Macintosh IIsi, SuperMac Technology, 485 Potrero Ave., Sunnyvale, CA 94086, 800-334-3005 or 408-245-2202. (Feb '92)

SuperMac 19" Platinum Display

This exceptional gray-scale display system has excellent focus, geometry, and lack-of-nuisance ratings. Above-average brightness and sharpness. Color-capable card. Hardware pan and zoom. Vertical desktop. Glare protection. Requires Macintosh II series or higher. Monitor, $1,099; 8-bit card, $399. SuperMac Technology, 485 Potrero Ave., Sunnyvale, CA 94086, 800-334-3005 or 408-245-2202. (Oct '90)

SuperMac 19" SuperMatch Spectrum/8 LC

This high-quality color display system combines a Hitachi monitor with a Spectrum/8 PDQ 24-bit video card. It delivers excellent color quality, and the 19-inch-diagonal screen size is large enough for nearly all professional applications. The WS124V display has standard 72-di pi pixel density. Few external controls are provided to manage screen-image characteristics. Requires Mac II series. $4,398. SuperMac Technology, 485 Potrero Ave., Sunnyvale, CA 94086, 800-334-3005 or 408-245-2202. (May '91)

SuperMac (Hitachi) 19" Thunder

This high-quality color display system combines a Hitachi monitor with a Spectrum/24 PDQ 24-bit video card. It delivers excellent color quality, and the 19-inch-diagonal screen size is large enough for nearly all professional applications. This near-WS124V display has 77-di pi pixel density, so screen objects are slightly condensed. Few external controls are provided to manage screen-image characteristics. Requires Mac II series. $3,499. SuperMac Technology, 485 Potrero Ave., Sunnyvale, CA 94086, 800-334-3005 or 408-245-2202. (May '92)

SuperMac Thunder/24

Thunder/24 is a fast 24-bit-color accelerated video card with good software. High power consumption. Supports hardware pan and zoom, and extended desktop. Offers six resolution choices ranging from 512 x 384 up to 1,152 x 870 pixels. No support for 16-bit color. Has four SIMM slots for a maximum 8 MB of GWorldRAM. Five-year warranty. Requires Macintosh II series or higher. $3,499. SuperMac Technology, 485 Potrero Ave., Sunnyvale, CA 94086, 800-334-3005 or 408-245-2202. (May '92)

Taxan Crystal View

This 19-inch monochrome monitor is bright and sharp but has poor subjective focus. Screen color is uneven with a yellowish center. Screen resolution is 72 dpi. Requires Mac SE, SE/30, or II series. $1,695. Taxan America, Inc., 2880 San Tomas Expressway, Ste. 101,
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CIRCLE 126 ON READER SERVICE CARD.
**MINIFINDERS**

Santa Clara, CA 95051. 408-748-0900. (Apr '90)

**Taxan MultiVision 795**

This Trinitron-based auto-synchronous color monitor is bright and has good color range. Active screen size is 12 inches. Scan rate ranges from 30 to 57 kHz horizontally and 50 to 100 Hz vertically. Has silicon antagonist treatment. External controls include image brightness/contrast, horizontal and vertical position, horizontal and vertical size, and input select. Video-signal compatibility includes Mac II series and LC, plus 1,024 x 768 pixels interlaced at 60 Hz and noninterlaced at 75 Hz and 60 Hz. Incomplete documentation.$1,085. Taxan America, Inc., 2880 San Tomas Expressway, Ste. 101, Santa Clara, CA 95051. 408-748-0900. (Aug '92)

**Truevision NuVista+**

The Truevision NuVista+ is a NuBus card that offers both input and output, using composite, RGB, or S-video NTSC signals. Can output digitize 32-BIT RGB in a resizable window. Saves images in PICT or TGA formats. Allows impressive live-video effects. Good manual and software. Includes cables. Toll-free unlimited technical support. Requires Macintosh II series or higher.$2,995; with 2 MB of RAM, $3,595; with 4 MB of RAM, $4,795. Truevision, 7340 Shadeland Station, Indianapolis, IN 46256. 800-344-5783 or 317-841-0332. (Aug '91)

**VideoFX**

Video FX is a professional-quality system for frame-accurate analog video editing. Hardware includes a NuBus card and an external box that controls as many as three video decks. The box contains an audio mixer, a video switcher and encoder, and a time-code generator. Software is easy to use and handles all standard video-editing tasks well. Can combine high-resolution Post-Script text and graphics or custom backgrounds with incoming video. Generates edit-decision lists for use with high-end video equipment. Excellent lent support. Version 2.1 reviewed. Requires Macintosh II series or higher with 8 MB of RAM, high-capacity hard drive, two videotape decks with time-based corrector, and a video monitor.$9,995. Digital FX, Inc., 755 Ravenal Dr., Mountain View, CA 94043. 800-955-8273 or 415-961-2800. (Aug '92)

**VideoSpigot Pro**

VideoSpigot Pro is an affordable hardware/software package for digitizing consumer-level NTSC and PAL video. Drives Mac monitors as large as 21 inches and provides 24-bit color at 640 x 480 pixels. NuBus card lets you create colorful, home-video-quality QuickTime movies at resolutions as high as 320 x 240 pixels (NTSC). Supports high frame-capture rates but has poor image controls. Easy to use and install. Included ScreenPlay software lets you preview incoming video and record it to RAM or to disk. Lacks S-video input capability. Sound recording depends on built-in microphone on an LC or IIsi, or on a separate sound digitizer such as MacroMedia's MacRecorder. Five-year warranty. Requires LC or Mac II series or higher, 8 MB of RAM, a color monitor, and a high-capacity hard drive.$1,499 (includes Premiere). SuperMac Technology, 485 Potrero Ave., Sunnyvale, CA 94086. 800-334-3005 or 408-245-2202. (Oct '92)

**MICE RATINGS**

For your Mac to help you learn a foreign language, the Think & Talk CD-ROM series is a good place to start. Based on the famous Berlitz method, this course will give you an excellent grounding, and you can try out other HyperGlot language programs. If you have a mike-equipped Mac, you can record your own voice to compare with the pronunciation of native speakers included in this program. Per language, $199. HyperGlot Software, P.O. Box 10746, Knoxville, TN 37939. 615-538-8270. (Dec '92)

**American Discovery**


**Bertlitz Think & Talk**

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**Business Simulator**

Business Simulator is a simulation-game business training tool. Make decisions that manage the company through several stages during 25 years. Decisions become tougher over time. Version 1.0 reviewed. Version 2.0 shipping.

**Amazing Universe**

Anyone interested in astronomy will enjoy this collection of images of planets, stars, comets, and galaxies culled from photographs taken from observatories and during space missions. Editing software lets you magnify the images and apply filters and colors. The nonintuitive interface and lack of explanation of what you're viewing makes this program most suitable for adults and older teenagers.$79.95. Hopkins Technology, 421 Hazel Lane, Hopkins, MN 55343. 612-931-9376. (Dec '92)

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**Business Simulator**

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**Aesop's Fables**

This well-executed collection of Aesop's fables will appeal to children and their parents. Kids will like the wacky Einstein-like host who introduces and explains the fables, and adults will appreciate the stunning illustrations (collected from 19th-century editions of the fables). The fables are read aloud, and a dictionary is included to explain any unfamiliar words in the text. $99. Quantum Leap Technologies, Inc., 1399 S.E. Ninth Ave., Ste. 4, Hialeah, FL 33010. 800-762-2877 or 305-885-9985. (Dec '92)

**Alphabet Blocks**

Alphabet Blocks teaches pre readers the letters and sounds of the alphabet. The on-screen elf's digitized voice is clear and pleasant. Very intuitive. Version 1.0 reviewed.

**MacTechnology, 485 Potrero Ave., Sunnyvale, CA 94086. 800-334-3005 or 408-245-2202. (Oct '92)**
Requires Macintosh Plus or later and a hard drive. $69.95. Strategic Management Group, Inc. (SMG), 3624 Market St., Philadelphia, PA 19104, 800-445-7089 or 215-387-4000. (Dec '87)

Dietician

A good tool for creating or monitoring special diets. Figures out the nutritional value of recipes. Can also show diabetic exchanges. Limited built-in food data, but up to 700 items can be added. Data in manual is fairly old. Version 1.3 shipping. Requires Macintosh Plus or later and System 5.0 or later. $94.95. ALSoft, Inc., P.O. Box 297, Spring, TX 77383. 713-353-4090. (Oct '90)

Earthquest

This HyperCard stack instructs users about Planet Earth through a series of games, puzzles, and quizzes. Its deciding environmental edge provides lots of practical information on ways to save the planet. Includes HyperCard. Gaming aspects suitable for nine-year-olds, but its information and phraseology are more suitable for teenagers. Recommended with classroom supervision. Needs minor debugging. Version 2.0 reviewed. Requires Mac Plus or later, 2 MB of RAM, System 6.0.5 or later, and HyperCard 2.0. $59.95. Earthquest, Inc., 125 University Pkwy., Palo Alto, CA 94301. 415-321-3838. (Dec '91)

French Reading Lab 1: 3 by Maupassant

Sick of conjugating verbs and wish you could move on to something a little meatier in your language studies? This series of French short stories is just the thing for intermediate-level language students looking for a challenge. You can click on unfamiliar words to check meanings, and an included audiotape lets you hear the language. $29.95. HyperGlot Software, P.O. Box 10746, Knoxville, TN 37939. 615-558-8270. (Dec '92)

Fun Physics

Fun Physics (formerly Interactive Physics I) is one of the best teaching tools — short of a physics laboratory — you can buy. Students set up and run experiments, using simple drawing tools that attach objects with various strings and springs. Results of experiments are animated on-screen. There are limits to the number of masses and connectors, but that doesn’t detract much from the overall program. Includes 15 ready-made experiment files that demonstrate possible uses of the program. Excellent manual. Version 1.0 reviewed. Version 1.2 shipped. Requires Macintosh Plus or later and System 6.0.3 or later; hard drive recommended. $99. Knowledge Revolution, 15 Brush Place, San Francisco, CA 94103. 800-766-6615 or 415-553-8153. (Apr '90)


Headline Harry and the Great Paper Race

Headline Harry is a little like the Carmen Sandiego series, in that you have to solve a case by using your knowledge of history and geography, but it requires a little more effort on the part of the players, so it’s more educational. Help Harry figure out what the real facts of a story are in his quest to scoop the rival newspaper on a case. Easy to modify and scramble according to your language. $29.95. Davidson & Associates, 19840 Pioneer Ave., Torrance, CA 90503. 310-793-0600. (Dec '92)

Interactive Physics II

This powerful 2-D simulation program lets users model mechanical and electrostatic systems based on the laws of physics. Excellent supplement to high-school and college physics courses. Useful visualization and presentation tool for scientists, engineers, and basement mechanics. Interface is inviting and intuitive. Provides toolbox of common mechanical devices. Uses spreadsheet-like interface for equation processing. Calculates motion based on user-defined parameters and displays animated sequences. Exports animations as QuickTime movies. Version 1.0 reviewed. Requires Macintosh II series or higher; 4 MB of available RAM, System 6.0.3 or later, and a hard drive. $399. Knowledge Revolution, 15 Brush Place, San Francisco, CA 94103. 800-766-6615 or 415-553-8153. (Dec '92)

KidsMath

KidsMath is a set of eight educational applications for ages 3 to 7. Quality ranges from adequate to superb. Supports color and large monitors. Version 1.0 reviewed. Version 2.0 shipped. Requires Macintosh Plus or later. $49.95. Great Wave Software, 3533 Scotts Valley Dr., Ste. E, Scotts Valley, CA 95066. 408-438-1990. (May '90)

KidsTime

KidsTime is a package of five quality educational programs for children between the ages of 3 and 7. The programs all have adjustable levels of difficulty, and some use speech. The different programs teach the alphabet, basic music concepts, simple word-processing skills, use of a computer, and connect-the-dots doodling. Supports color. Version 1.0 reviewed. Version 1.3 shipped. Requires Macintosh Plus or later. $49.95. Great Wave Software, 3533 Scotts Valley Dr., Ste E, Scotts Valley, CA 95066. 408-438-1990. (Oct '86)

LXR•TEST


MacPhotography Workshop

MacPhotography Workshop is a seven-disk program that teaches basic camera and darkroom techniques. Animated simulations and hypertext make learning black-and-white photography easy. Designed for both self-instruction and classroom use. Requires Mac Plus or later and a hard drive. $85; site license, $399. Inтелligation Library for the Macintosh, 130 Crenoma Drive, P.O. Box 1922 (Dept. GAPI), Santa Barbara, CA 93116. 800-346-8355 or 805-968-2291. (Sept '90)

Mavis Beacon Teaches Typing!

Mavis Beacon Teaches Typing! has more features than a Selectic. Lots of diagnostics concerning typos. Incomplete documentation. Version 1.1 reviewed. Version 1.3 shipped. Requires Macintosh Plus or later. $49.95. Software Toolworks, 60 Leveroni Ct., Novato, CA 94949. 800-234-3088 or 415-883-3000. (Nov '88)

Number Munchers

Number Munchers is an educational arcade game aimed at grades 3 to 12. Teaches variety of skills for multiplication, factors, primes, equalities and inequalities. Easy levels are a snap, and the hardest levels are thoroughly challenging. Adaptable to classroom. Version 1.0 reviewed. Version 1.2 shipped, Requires Macintosh Plus or later with System 6.0.3 or later and a hard drive; color display system recommended. $49.95. MECC, 6160 Summit Dr. North, Minneapolis, MN 55430. 800-685-6322 or 612-569-1500. (Oct '90)

NumberMaze

NumberMaze makes practicing basic math skills a game. Children ages 5 through 12 can work their way through various mazes by solving numerical and word problems in counting, addition, subtraction, multiplication, and division. Can select problem types and difficulty. Games can be customized with familiar

MICE RATINGS

Fun Physics 5

Fun physics (formerly Interactive Physics I) is one of the best teaching tools — short of a physics laboratory — you can buy. Students set up and run experiments, using simple drawing tools that attach objects with various strings and springs. Results of experiments are animated on-screen. There are limits to the number of masses and connectors, but that doesn’t detract much from the overall program. Includes 15 ready-made experiment files that demonstrate possible uses of the program. Excellent manual. Version 1.0 reviewed. Requires Macintosh Plus or later and System 6.0.3 or later; hard drive recommended. $99.
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names and additional levels. Based on five major math-textbook series for grades 1 through 6, Version 1.0 reviewed. Version 1.2 shipping. Requires Macintosh Plus or later. $69.95. Great Wave Software, 5335 Scotts Valley Dr., Ste. E, Scotts Valley, CA 95066. 408-438-1990. (Dec '89) ★ 88 Eddy

Nuts & HyperBolts $$$

Nuts & HyperBolts is a series of HyperCard stacks for improving your grammar. Works with the mouse only. No keyboard shortcuts. Version 2.0 reviewed. Version 4.0 shipping. Requires Macintosh Plus or later and HyperCard 2.1. $189.95 for five-disk set; volume prices available. Sterling Swift Software, 1104 Kinney Ave., Austin, TX 78704. 512-443-5566. (Sep '90)

Physics $$$

Physics is a capable, intelligent, well-designed study aid. Covers topics from vectors to thermodynamics to the nature of light. Animated experiments let you try out concepts. Version 1.0 reviewed. Version 2.0 expands to 45 countries and more. Requires 2 MB of RAM. $49.95. Broderbund Software, Inc., 500 Redwood Blvd., P.O. Box 6125, Novato, CA 94948. 800-521-6263 or 415-382-4400. (May '89)

Playroom, The $$$

The Playroom is a highly entertaining and educational program that teaches basic concepts, such as spelling, telling time, and counting, with style. It's centered around a child-sized room furnished with a multitude of objects that spring to life with just a click. Six of the room's objects lead into high-interest learning activities for the three-to-six-year-old set. Version 1.0 reviewed. Version 2.01 shipping. Requires Macintosh Plus or later with 2 MB of RAM. $49.95. Broderbund Software, Inc., 500 Redwood Blvd., P.O. Box 6125, Novato, CA 94948. 800-521-6263 or 415-382-4400. (Sept '90)

Talking Reader Rabbit $$$

Talking Reader Rabbit teaches four-to-eight-year-olds how to read with four elegant games that build on one another. Supports color. Version 2.0 reviewed. Version 3.0 shipping. Requires Macintosh 512Ke or later. $69.95. The Learning Co., 6493 Kaiser Dr., Fremont, CA 94555. 800-852-2255 or 510-713-0230. (June '88)

Transparent Language $$

This program should be celebrated by polyglot wannabes everywhere. Offers stories and poems in foreign languages, with text linked to detailed comments, word and phrase meanings, specific notes, and sentence or clause meanings. Lets you read and explore at your own speed. Bookmark feature saves your place for later reference. Includes user guide and tape cassette. Perfect for PowerBooks. Requires Mac Plus or later, System 6.0.2 or later, and a hard drive. French, German, or Spanish, $139 each; Latin, $129; other languages available. Transparent Language, Inc., 9 Ash St., Northampton, MA 01060. 800-521-6263 or 415-382-4400. (Nov '88)

Type! !!!!

Type! is a typing tutorial that is both practical and flashy. Users can interrupt and move easily among functions. Use of the Return key and space bar are assumed but never explained. Version 1.0 reviewed. Requires Macintosh Plus or later. $29.95. Broderbund Software, Inc., 500 Redwood Blvd., P.O. Box 6125, Novato, CA 94948. 800-521-6263 or 415-382-4400. (Nov '89)

Typing Instructor Encore !!!!

Encore is a Mac typing tutorial that—unlike many others on the market — makes good use of your computer's abilities instead of simply imitating a typewriter. Although the program is easy to control and offers good performance, it has some strange bugs. Version 1.0 reviewed. Version 2.0 shipping. Requires Mac Plus or later. $29.95. Individual Software, Inc., 5870 Stone-Ridge Dr., Ste. 1, Pleasanton, CA 94588. 800-331-3313 or 510-734-6767. (Nov '88)

Typing Tutor IV-++

Typing Tutor IV++ consistently tests your skill in using all keys, including seldom-used ones. The user's attention span wanes, because the testing material is unimaginative. Version IV+ reviewed. Version 5+ shipping. Requires Macintosh Plus or later. $49.95. QUE Software, 11711 N. College Ave., Carmel, IN 46032. 800-992-0244 or 317-573-2500. (Nov '88)

Where is America's Past Is Carmen Sandiego? !!!!

Another in the popular Carmen Sandiego series, this package requires knowledge of American history over the past 200 years. Your goal is to solve the crimes committed by Carmen and her vile henchmen. Your kids will learn a little history and geography from this series and will quickly become a world contender. Requires Mac Plus or later. $59.95. Broderbund Software, Inc., 500 Redwood Blvd., P.O. Box 6125, Novato, CA 94948. 800-521-6263 or 415-382-4400. (Dec '92)

Where in the World Is Carmen Sandiego? !!!!

Where in the World Is Carmen Sandiego? (Deluxe Edition) !!!!

With this latest, largest, and glitziest of the Carmen Sandiego series, the user still has the same mission: to track down Carmen and her gang, who are stealing the world's treasures. But Carmen has some clever new recruits, and the search expands to 45 countries and more than 2,500 clues. Requires 4 MB available RAM, a color display system, and a hard drive. $79.95. Broderbund Software, Inc., 500 Redwood Blvd., P.O. Box 6125, Novato, CA 94948. 800-521-6263 or 415-382-4400. (Dec '92)

Where in Time Is Carmen Sandiego? !!!!

Where in Time Is Carmen Sandiego? is the fourth in the popular Carmen Sandiego series. The previous releases use intriguing stories and characters to teach geography to young Mac users, but this package adds the element of time travel (sounds better than "history" and is much more fun). The story revolves around a time machine that Carmen and her gang are using to steal treasures from the past. The Acme Detective Agency has issued you a Chronoskimmer time-travel device, but only your ability to learn geographic clues can save the day! Version 1.0 reviewed. Version 1.2 shipping. Requires Macintosh Plus or later and a hard drive. $49.95. Broderbund Software, Inc., 500 Redwood Blvd., P.O. Box 6125, Novato, CA 94948. 800-521-6263 or 415-382-4400. (Apr '93)

Zoo Friends !!!!

Zoo Friends is a learning, exploring experience for children in grades 2 through 4. Contains five animal exhibits and a Learning Center. Requires HyperCard 1.2.2 or later. Shareware, $9. David J. Combs, 1220 Sagemont Place, Alta Dena, CA 91001. 818-791-4504 or 213-744-7547. (Dec '89)

ENTERTAINMENT

3 in Three !!!!

This popular game from the fevered brain of Cliff Johnson is an endlessly fascinating, frustrating, fun-filled collection of 80 animated puzzles. Appeals equally to smart kids of all ages. Nutty plot involves saving hapless number 3 after she falls off a spreadsheet into the hostile Land of Letters. Supports color or black-and-white Macs. Version 1.2 reviewed. Requires Macintosh Plus or later. $49.95. Inline Design, 308 Main St., Lakeville, CT 06039. 800-453-7671 or 203-453-4995. (Dec '92) ★ 91 Eddy

4-D Boxing !!!!

Step into the ring, and make your bid for the world boxing title. Watch the action from one of nine camera angles as boxers jab, dodge, taunt each other, and deliver the knockout blow. With colorful 3-D polygonal graphics and modern animation techniques, the boxers move fluid, exciting, humanlike fashion. $49.95. Electronic Arts, 1450 Fashion Island Blvd., San Mateo, CA 94404. 800-245-4525 or 415-571-7171. (Dec '92)

A Silly Noisy House !!!!

If you've got the hardware to
run this imaginative CD-ROM, your kids will love its clever animations, delightful sounds, and familiar songs. Interface responds quickly and logically to mouse clicks, letting the compulsively curious explore every fun-filled object in every room in a big make-believe house. Perfect for three-to-eight-year-olds.

Aldus Corporation, 1351 Pacific Coast Hwy., Santa Monica, CA 90401. 800-446-2001 or 310-451-1383. (Sept '89)

Ali Baa Baa and the Forty Winks


Apache Strike

Apache Strike would have been an excellent arcade game in the late 70's, but now it's passed. Navigate a helicopter to destroy ever-increasing numbers of enemy aircraft and tanks. Version 1.0 reviewed. Version 1.1 shipping. Requires Macintosh Plus or later. $49.95. Casady & Greene, Inc., 22734 Portola Dr., Salinas, CA 93908. 800-359-4920 or 408-484-9228. (Apr '92)

Armour Alley

More than an exercise in blowing up tanks, helicopters, and personnel, Armour Alley requires a solid understanding of military strategy, planning, and the value of human life. You are rewarded for saving lives rather than for ending them needlessly. The game offers ten levels of difficulty and lets you play against the computer or via modem against a remote Mac or PC.

There's also a multiplayer mode for AppleTalk networks (each player must have a copy of the game). Armour Alley gives your brain a workout instead of letting you rely merely on hand/eye coordination. Version 1.0 reviewed. Version 1.1 shipping. Requires Mac Plus or later and System 6.03 or later. $49.95. Three-Sixty Pacific, 2105 S. Bascom Ave., Ste. 380, Campbell, CA 95008. 408-776-2187 or 408-879-9144. (Feb '91)

Balance of the Planet

Balance of the Planet is similar to the classic game Balance of Power but with the object of securing global environmental survival. It's difficult to win, but eventually you should be able to get positive scores, and your awareness of environmental issues will be greatly enhanced. Players can set the basic bias of the game, ranging from pro-nuclear industrialists to extreme "green." Version 1.0 reviewed. $24.95. Chris Crawford (developer), 5251 Sierra Rd., San Jose, CA 95132. 408-926-5388. (Aug '90)

Baseball's Greatest Hits

More than just a collection of statistics, this imaginative CD-ROM, reads like a baseball's history alive with sound clips (hear Carl Hubbell reminisce about how the screwball got its name). QuickTime movies and commentaries by Mel Allen and Red Smith. There's even a game that tests your knowledge of baseball trivia. Requires a color-capable Mac with 2 MB of RAM, a hard drive, a CD-ROM drive, and external speakers or headphones. $79.95. The Voyager Company, 1351 Pacific Coast Hwy., Santa Monica, CA 90401. 800-446-2001 or 310-451-1383. (Dec '92)

Battle Chess CD-ROM Enhanced

The power of 3-D animation and fantasy meet in this imaginative version of an old classic. Watch as pieces march on the checkered battleground and actually engage in hand-to-hand combat. Although the use of sound is deficient, the lively and comical animation sequences inject personality into the playing pieces. The game has ten levels of play, and if you play long-distance games via modem. $79.95. Interplay Productions, 17922 Fitch Ave., Irvine, CA 92714. 714-553-6655. (Dec '92)

Beyond Dark Castle

Beyond Dark Castle brings back Prince Duncan in an epic performance of run, jump, and fight his way to victory. More challenging than the popular original, but it's really just more of the same. Version 1.0 reviewed. Requires Macintosh Plus or later. $49.95. Aldus Corp., 411 First Ave. S., Seattle, WA 98104. 800-333-2538 or 206-628-2320. (Aug '88)

Bridge


Chessmaster 2000

Chessmaster 2000 is a challenging chess program that can appeal to novices as well as experts. You can view the board from 2-D or 3-D perspectives and also turn it for a better look. Play is smooth and easy, and the program responds by voice. You may get tired of hearing "checkmate," though. Version 1.0 reviewed. Version 1.02 (2100) shipping. Requires Macintosh Plus or later and a hard drive. $49.95. Software Toolworks, 60 Leveroni Ct., Novato, CA 94949. 800-234-3088 or 415-883-3000. (July '87)

Chuck Yeager's Advanced Flight Trainer

Chuck Yeager's Advanced Flight Trainer doesn't quite have the right stuff to hold interest for long. Simplistic controls. Lacks features found in versions for other platforms. Version 1.0 reviewed. Requires Macintosh Plus or later. $49.95. Electronic Arts, 1450 Fashion Island Blvd., San Mateo, CA 94404. 800-245-4525 or 415-571-7171. (Nov '88)

Creepy Castle

Creepy Castle brings Journey to Transylvania, where your character's girlfriend is held captive by an evil doctor in his mysterious castle. First you must travel to the castle through woods and graveyards where ghouls and werewolves lurk. Then vampires stalk you once you're in the castle, and you still have to make it through the dungeons and past the doctor! $49.95. Reactor, Inc., 445 W. Erie Ave., Chicago, IL 60610. 312-573-0800. (Dec '92)

Crystal Quest

Crystal Quest combines all the good elements of nearly every video game ever made. Move a piece around to gobble up points and crystals. Shoot the nasties, and get through the goal before they get you. Excellent sound effects. Supports color. Includes Critter Editor to customize the opponent. Version 2.2X shipping. Requires Macintosh Plus or later with System 6.03 or later. $49.95. Casady & Greene, Inc., 22734 Portola Dr., Salinas, CA 93908. 800-359-4920 or 408-484-9228. (Apr '88)

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need better-than-average hand-eye coordination, but it’s well worth the effort. Version 1.0 reviewed. Version 1.1 shipping. Requires Macintosh Plus or later. $49.95. Aldus Corp., 411 First Ave. S., Seattle, WA 98104. 800-333-2538 or 206-628-2320. (Apr ’87) ★ ’87 Eddy

Darwin’s Dilemma 四四四 Darwin’s Dilemma provides intriguing, deceptively simple entertainment. You manage a game piece called Darwin, which moves other icons to combine them within an invisible grid. These icons include genuine life such as amoebas or paramecia, and your progress in managing recombinant life forms lets you graduate to jellyfish, octopi, and crabs. A trick called telewapping lets you accelerate the evolutionary process, and (if you’re willing to lose points) you can undo a series of regrettable moves. Version 1.0 reviewed. Version 1.0 shipping. Requires Macintosh Plus or later. $59.95. Bullseye Software, P.O. Box 7900, Incline Village, NV 89450. 702-831-2523. (July ’87)

Funny: The Movie in QuickTime 四四四 This QuickTime collection of movies includes 100 jokes told by performers ranging from Frank Zappa to Henny Youngman. Movies can be played in their entirety or searched for jokes based on criteria such as the teller's hair color or level of tastefulness. Jokes range from true stories to riddles to sight gags, with some gratuitous nudity thrown in. An After Dark module displays jokes as screen savers. Requires Macintosh II or higher. System 6.03 or later, a hard drive, and a CD-ROM drive; sound recording requires System 6.07 or later and a hard drive; sound recording requires System 6.07 or later and a hard drive; color display system recommended. $59.95. Broderbund Software, Inc., 500 Redwood Blvd., P.O. Box 6125, Novato, CA 94948. 800-521-6263 or 415-382-4400. (Aug ’91) ★ ’91 Eddy

Kid Pix Companion 四四四 This add-on for the popular Kid Pix program offers extra rubber-stamp tools and pictures to color as well as QuickTime movie support. Kids can animate their creations and produce captivating slideshows. Keeps even the most grown-up kid amused for hours. Requires Kid Pix application. $39.95. Broderbund Software, Inc., 500 Redwood Blvd., P.O. Box 6125, Novato, CA 94948. 800-521-6263 or 415-382-4400. (Child ‘92)

Kid Works 2 四四四 With Kid Works 2, children can write and illustrate their own stories and then listen while the Mac reads the story back. Built-in drawing program is fun to use. A little like Kid Pix, this program has several tools, including a rubber-stamp feature that lets you repeat an icon to your heart’s content. Slow but worth the wait. $59.95. Davidson & Associates, 19840 Pioneer Ave., Torrance, CA 90503. 310-793-0600. (Dec ’92)

Kloniké 四四四 Kloniké is a version of solitaire that uses video-game-like scoring to create a superb, totally addictive game. Simple to play — nearly impossible to stop playing. Version 3.3 reviewed. Version 5.01 shipping. Shareware, $1.00. Unison-Tymlabs, 675 Almanor Ave., Ste. 202, Sunnyvale, CA 94086. 408-245-3000. (Dec ’87)

Living Books 四四四 The first two packages in the Living Books CD-ROM series, Just Grandma and Me and Arthur’s Teacher Trouble, are delightful. Children can have the story read to them or can listen to the story and play along. Double-clicking on the pictures lets you find the hidden games (find the crooning chocolate-chip cookies!).

MICE RATINGS 四四四 ★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★★
Fascinating animations. Moving from page to page can take a while, but that didn't faze our preschool test subjects. Requires color display system and CD-ROM drive. $49.95 each. Broderbund Software, Inc., 500 Redwood Blvd., P.O. Box 6125, Novato, CA 94948. 800-521-6263 or 415-382-4400. (Dec '92)

MacRhacketball $59.95

MacRhacketball uses digitized videos and sounds of professional players to create a realistic simulation. Has lots of control settings and can be played with another person via modem or between hard-wired Macs. Turn off hard drives before playing. Version 2.0 shipping. Requires Mac Plus or SE. $59.95. XOR Corp., 10800 Normandale Blvd., Bloomington, MN 55437. 800-635-2425. (Oct '90)

McGee

McGee is nicely animated, if limited, entertainment for two-to-four-year-olds. Four-year-olds will quickly outgrow McGee’s few and predictable options. Version 1.0 reviewed. Version 3.0 shipping. Requires Macintosh Plus or later; II series or LC required for color. $29.95 direct. Lawrence Productions, Inc., 1800 S. 35th St., Galesburg, MI 49053. 800-421-4157 or 616-665-7075. (Aug '90)

Mission: Starlight

Mission: Starlight is a throwback to Star Wars-type arcade games. It lets you swoop in low and fast, vaporizing foreign objects and lobbing missiles into the enemy power plant. This type of program has been around before, but this one is fast-paced, with responsive spaceship and intriguing graphics. Version 1.1 reviewed. Version 1.1.6 shipping. Requires Macintosh Plus or later with System 6.03 or later. $49.95. Casady & Greene, Inc., 22734 Portola Dr., Salinas, CA 93908. 800-359-4920 or 408-484-9228. (Oct '90)

Mission: Thunderbolt

Designed by Dave Scheifler, this game takes place in a postapocalyptic world invaded by aliens. Your mission is to recover an antimatter device that can make hash of your enemies. But first, you must fight your way through a multitude of beasts while maintaining your supply of weaponry, armor, strange devices, and pills of various colors. Each new game has radically different characters and environments. There's no single way to do things correctly, and the keys to survival are forethought, cunning, and creativity. Extended play guaranteed to turn rational, well-adjusted citizens into bug-eyed social misfits devoid of family values. Version 1.0 reviewed. Requires Macintosh Plus or later with System 6.03 or later. $39.95. Casady & Greene, Inc., 22734 Portola Dr., Salinas, CA 93908. 800-359-4920 or 408-484-9228. (Oct '90)

Oids $44.95

Oids is one of the finest Mac arcade-style games ever played. Futuristic action based on your rescue of enslaved Oids from hostile planets bristling with missiles and artillery. Limited to black-and-white or 16 colors. Lasting entertainment value. Version 1.0 reviewed. Requires Macintosh Plus or later and System 6.03 or later. $44.95. Software Heaven (FTL Games), 6160 Lusk Blvd., Ste. C200, San Diego, CA 92121. 619-453-5711. (June '91)

Pipe Dream

Pipe Dream is an addictive game that demands a nearly perfect mixture of strategy and speed. You must build a pipeline fast enough to prevent the stuff in the line from running out—that's it. It has 36 levels or so. Its copy-protection scheme requires you to use an included decoding wheel. Version 1.0 reviewed. Version 1.2 shipping. Requires Macintosh Plus or later with System 6.03 or later. $24.95. Lucasfilm Ltd., Games Division, P.O. Box 10307, San Rafael, CA 94912. 800-782-7927 or 415-721-3300. (May '90)

PlayMaker Football

This combination of football and computer game is more of a coaching simulation than a play simulation. Gives priority to strategic skills rather than to animation—although the animation is reasonably good. Version 1.0 reviewed. Version 2.0 shipping. Requires Macintosh Plus or later. $49.95. Broderbund Software, Inc., 500 Redwood Blvd., P.O. Box 6125, Novato, CA 94948. 800-521-6263 or 415-382-4400. (May '91)

Prince of Persia

This swashbuckling arcade game features realistic animations of Hollywood-style swordfighting. To rescue a sultan's imprisoned daughter from a dangerous dungeon, all you have to do is traverse winding corridors, fight numerous muscular guards, snatch magical objects, leap across chasms, drink potions, crawl under gates, and hang on by your fingertips. Then things get complicated. Version 1.0 reviewed. Requires Macintosh Plus or later, 2 MB of available RAM, and a hard drive; color display system recommended. $49.95. Broderbund Software, Inc., 500 Redwood Blvd., P.O. Box 6125, Novato, CA 94948. 800-521-6263 or 415-382-4400. (Dec '92)

Railroad Tycoon

Railroad Tycoon provides an excellent simulation environment that revolves around building trains, schedules, and stations, and then laying miles of track. Includes natural objects such as trees and mountains, as well as cities and a wide variety of geographic and time options. Provides fun animations and sound, which can be turned off for faster performance. Supports color. Detailed, historically accurate railroad wiring is built in. Password-type copy protection requires checking manual. Version 1055.01 reviewed. Requires Macintosh Plus or later with 2.5 MB of RAM and System 6.03 or later. $69.95. MicroProse Software, 180 Lakefront Dr., Hunt Valley, MD 21030. 410-771-1151. (Jan '92)

Red Baron

World War I airplanes engage in dogfights in this flight-simulation game. Players choose to play either German or Allied forces and run a variety of missions against the game’s many aces, including the Red Baron. Record your missions, using the Mission Recorder option, and then play them back to help plan future strategy. The manual includes historical background, maps, and flight tactics. $69.95. Dynamix, Inc., 99 W. 10th, Ste. 337, Eugene, OR 97401. 503-343-0772. (Dec '92)

Rise of the Dragon

Rise of the Dragon is a sci-fi detective fantasy set in Los Angeles. The city has fallen into the Age of Decay, and your job as private investigator William “Blade” Hunter is to stop a string of drug murders. Futuristic color graphics, soundtrack, animations, and interface design are superb. Offers multiple story lines for repeated play. Skimpy documentation. Version 1.0

MacUser 127
**On-Line, Inc., P.O. Box 485, Sport**

RoboSport

Billed as a thinking man’s shoot-em-up game, RoboSport is actually a battle-strategy simulation that pits teams of robots against each other. Choose from predestined battle scenarios, or program your robots’ actions. As many as three players can use the same Mac, serial or modem connections, or communication via AppleTalk network. Fun if you enjoy tactics and planning, but don’t expect lively action — especially via modem. Version 1.0 reviewed. Version 1.1 shipping. Requires Macintosh Plus or later and System 6.0.3 or later; 2 MB of RAM and a hard drive required for color version. $59.95. Maxis, 2 Theatre Square, Ste. 230, Orinda, CA 94563. 800-336-2947 or 510-254-9700. (Aug ’92)

**Solitaire Royale**

Solitaire Royale is a collection of eight solitaire card games. The Tour mode cycles you through each game. Tournament deals the same hand for several players. Copy-protected. Version 1.0 reviewed. Version 1.1 (black and white) and 1.0 (color) shipping. Requires Macintosh Plus or later; color version requires Macintosh SE/30 or II series. $39.95. Spectrurn HoloByte, 2490 Mariner Square Loop, Alameda, CA 94501. 510-349-3484. (May ’92)

**Spectre**

Spectre is a supremely well-designed arcade game that pits tank against tank in a futuristic version of Capture-The-Flag. Game display reveals an eerie, impressive, nocturnal landscape. Using simple keyboard commands, you navigate your tank through a fast-moving perspective view of animated windmills, titanium-hard, polygonal, and lifesustaining ammo dumps. Great sound effects and color support. Tanks are easily customized with different combinations of speed, armor, and armament. Can be played by one user versus the computer, but the real thrill comes from battling as many as five other Spectre owners through an AppleTalk network. Addictive, amazingly fast, and a serious threat to office productivity. Version 1.0 reviewed. Requires Macintosh Plus or later. $59.95. Velocity Development, P.O. Box 875, Palatine, IL 60078. 708-991-0594. (May ’92)

**Spelunx and the Caves of Mr. Seudo**

Direct from Robyn and Rand Miller, this “noncompetitive exploration environment” is an interactive extravaganza. Builds on the success of their previous masterpieces, The Manhole and Cosmic Osno. Perfect for kids of all ages. Excellent way to have fun while learning astronomy, music, chemistry, and so forth. Easy point-and-click interface to an endless labyrinth of tunnels, secret rooms, journeys in space, and surprise color animations. Version 1.0 reviewed. Requires Macintosh Plus or later. 2 MB of available RAM, and HyperCard; color display system recommended. $49.95. Brødberud Software, Inc., 500 Redwood Blvd., P.O. Box 1215, Novato, CA 94948. 408-521-6263 or 415-382-4400. (Nov ’92)

**Star Fleet I: The War Begins**

Star Fleet I: The War Begins is a space opera of the Star Trek variety. Rise through the ranks from ensign to admiral.
in this serialized adventure. No color support in this old game, and it may not work reliably with newest Systems. Version 2.1 reviewed. Requires Mac Plus or SE. $29.95. Interstel Corp., P.O. Box 57825, Webster, TX 77598. 713-946-7676. (May '88)

Strategic Conquest ※※※※
Strategic Conquest challenges you to discover an unexplored world and conquer it by manufacturing and deploying armies, ships, and planes. This two-disc game doesn't support an external drive. Version 1.0 reviewed. Version 3.01 shipping. Requires Macintosh Plus or later and System 6.03 or later. $59. Delta Tao Software, Inc., 760 Harvard Ave., Sunnyvale, CA 94087. 800-827-9316 or 408-730-9336. (Feb '88)

Strategic: The Computer Game ※※※※
The Mac version significantly improves on the classic Milton-Bradley board game in many ways. The object of the game is to capture your opponent's headquarters (symbolized by the enemy flag) before the enemy captures yours. Each side deploys an army of 32 officers (valued according to their rank), 1 spy, 6 bombs, and 1 flag. The Mac's presentation of Strategic closely resembles the board-game version's basic grid. The copy-protection scheme requires you to use a cardboard code wheel prior to play. Version 1 reviewed. Requires Macintosh Plus or later. $49.95. Spectrum HoloByte, 2490 Mariner Square Loop, Alameda, CA 94501. 510-522-3584. (Dec '92)

Surgeon 3: The Brain ※※※※
If you've ever wanted to be a brain surgeon, now's your chance. In Surgeon 3, you're presented with life-or-death decisions and the future of your patients is in your hands. There are three different skill levels, so you can work your way from intern to attending physician. A great feature is the library, where you can look up information about brain diseases and neurology. A drawback is that there's little information about how to play the game, so you learn what to do by making mistakes — and losing your patients. Color, $59.95; black-and-white, $49.95. ISM, Inc., P.O. Box 247, Phoenix, AZ 85081. 602-779-1832 or 503-246-6200. (Mar '90)

Synchronicity ※※※※
Synchronicity, based on the Ching, can be used as a stress-reduction or decision-making tool. Beautiful artwork and sounds. Even skeptics like it. Version 1.0 reviewed. Requires Macintosh Plus or later and System 6.04 or later. $59.95. Visionary Software, Inc., P.O. Box 69447, Portland, OR 97201. 800-877-1832 or 503-246-6200. (Mar '90)

Tesserae ※※※※
Tesserae has a simple premise: Clear the game board of colored tiles by jumping one over another in as few moves as possible. Deceptively hard to master. Color is key to this game and governs which tiles you can jump and where you can land. In black-and-white mode, the tiles have differing patterns. Absolutely gorgeous color, with a satisfying psycho-technic display once you're down to your last tile. Excellent sound effects. Has no paper documentation, although a clever on-line manual provides interactive instruction. Version 1.04 reviewed. Requires Mac Plus or later. $49.95. Inline Design, 308 Main St., Lakeville, CT 06039. 800-453-7671 or 203-435-4995. (Mar '92)

Welltris ※※※※
Welltris is an arcade game that is a sequel to Tetris. You maneuver falling shapes in 3-D. Has musical accompaniment, options to preview shapes, and color or black-and-white versions. Not a DA. Copy-protected. Version 1.0 reviewed. Version 1.1 shipping. Requires Macintosh Plus or later. $39.95. Spectrum HoloByte, 2490 Mariner Square Loop, Alameda, CA 94501. 510-522-3584. (Oct '90)

Wordtris ※※※※
The fourth game in the popular 'tris series puts a new twist in the familiar Tetris scheme of positioning multisized objects in horizontal lines. This time, the blocks are all squares, but each contains a letter. Players must form words with these letters to prevent the screen from filling up. This game is great fun for one player or more (you can play against other players over a network or via modem). $49.95. Spectrum HoloByte, 2490 Mariner Square Loop, Alameda, CA 94501. 510-522-3584. (Dec '92)

Financial Management

A4 ※※※※
A4 is based on 4th Dimension, the relational-database manager, and thus has 4D's power and drawbacks. It integrates general ledger, accounts payable, and accounts receivable modules. Users familiar with 4D can customize it easily. Excellent multiuser capabilities. There's no payroll or last-in, first-out system, and it can be very slow. Version 2.0 reviewed. Version 3.1 shipping. Requires Macintosh LC or higher with 2 MB of RAM. $1,595; with open source, $3,595. Softek Design, Inc., P.O. Box 2100, Telluride, CO 81435. 303-728-5252. (May '90)

Accountant, Inc. ※※※※

ACCPAC Simply Accounting ※※※※
ACCPAC Simply Accounting has six ledgers and eight journals to handle the needs of most small-to-medium-sized businesses. Better Mac interface than most accounting packages. Payroll tax labels can't be modified, which forces you to subscribe to Bedford's yearly update service. Version 1.03 reviewed. Version 1.3 shipping. Requires Mac Plus or later with System 6.03 or later and hard drive. $199; updates $100 per year or free with SupportPlus program. Computer Associates International, Inc., One Computer Associates Plaza, Islandia, NY 11788. 800-531-5236 or 516-342-5224. (Sept '88)

Business Sense ※※※※
Business Sense is a basic double-entry accounting package with a one-write approach. Reports on two years' worth of data. Has unusually strong data-importing and -exporting capabilities. Has payroll and budgeting features. Works on a single Mac only; tasks can't be divided among multiple machines. Version 1.3 reviewed. Version 1.6 shipping. Requires Macintosh Plus or later with System 6.07 or later and a hard drive. $199 (or $129.95 direct). Business Sense, Inc., 318 Sapphire St., Kemmerer, WY 83101. 800-377-4954 or 307-877-2231. (May '90)

CashLedge ※※※※
CashLedge uses cash-basis accounting rather than accrual accounting. Double-entry bookkeeping is supported transparently. Has transaction journals. No customer credit limits or finance-charge calculations. Version 1.2 reviewed.
CheckFree is electronic-bill-paying software that works with a dedicated service. Bills are paid by printed draft or by electronic-transfer method. Users have no way of knowing in advance which method the service will use for a particular payment, so four days notice is required for payments. Your regular monthly bank statements show all CheckFree electronic-funds transfers. Software works well but has problems with MultiFinder. Supports only simple budgeting. Good for users whose financial setup is comprised of installment payments or frequent late charges. Terrible manual. Version 1.5 reviewed. Requires Macintosh Plus or later, System 6.03 or later, and Hayes-compatible modem; hard drive recommended. $33.95 including shipping; service costs $9.95 per month for up to 20 payments, $3.50 for each additional 10 payments. CheckFree Corp., 720 Greencrest Dr., Westerville, OH 43081. 800-882-5280 or 614-898-6000. (Sept '91)

Checkwriter is a personal-accounting package that uses your checkbook like a ledger. Limited financial planning, but features include an overhead warning for specified categories, a transfer command that shifts funds between accounts, an address database, drawing tools for designing checks, a Quicken file converter, good reporting options, and an updating function for recurring transactions. Includes a DA version, payment-remitter INTT, and two-level password protection. Outputs checks on laser printers or ImageWriter. Version 3.1 reviewed. Version 4.0 shipping. Requires Macintosh Plus or later and System 6.05 or later; hard drive recommended. $69. Aatrix Software, Inc., 523 N. Washington Ave., Grand Forks, ND 58203. 800-426-0854 or 701-746-6801. (Sept '90)

Components Accounts Payable
Components Accounts Payable is part of an integrated accounting series. Provides state-of-the-art flexibility, integrity, and functionality. This easy-to-use module sets up detailed account information, including bank data, payment terms, and expense items for disbursements. Fast. For small-to-medium-sized businesses that don't require a multiuser accounting system. Excellent documentation. Version 1.0 reviewed. Requires 68030 CPU or higher, 2 MB of RAM, System 6.03 or later, and a hard drive. $795. Satori Software, 2815 Second Ave., Ste. 295, Seattle, WA 98121. 206-443-0765. (Oct '91)

Components Accounts Receivable
Components Accounts Receivable is part of an integrated accounting series. Provides state-of-the-art flexibility, integrity, and functionality. This module can handle as many as 252 special journals and does an outstanding job of tracking financial data at different levels of a business operation. Fast and easy to use. For small-to-medium-sized businesses that don't require a multiuser accounting system. Thorough, well-designed documentation. Version 1.0 reviewed. Requires 68030 CPU or higher, 2 MB of RAM, System 6.03 or later, and a hard drive. $795. Satori Software, 2815 Second Ave., Ste. 295, Seattle, WA 98121. 206-443-0765. (Oct '91)

Components General Ledger
Components General Ledger is part of an integrated accounting series. Provides state-of-the-art flexibility, integrity, and functionality. Report generator may be strong enough to entice you to import data and use it with other accounting systems. Especially appealing to users with database or graphics backgrounds. Several optional modules are available. Version 1.0 reviewed. Requires 68030 CPU or higher, 2 MB of RAM, System 6.03 or later, and a hard drive. $795; Job Cost/Time Billing, $1,495; Accounts Receivable, $795; Accounts Payable, $795. Satori Software, 2815 Second Ave., Ste. 295, Seattle, WA 98121. 206-443-0765. (Oct '89)

Computerized Classic Accounting
Computerized Classic Accounting is an Excel-based integrated accounting system. The spreadsheet interface is intuitive, working like traditional paper journals and ledgers. Supports custom reports, fully detailed audit trail, and password protection. Analysis can be done in Excel at any time. A good alternative for those currently using paper ledgers. Version 1.5 reviewed. Requires 3.0 shipping. Requires Macintosh SE or later with 2 MB of RAM, Microsoft Excel 3.0 or later, and a hard drive. Basic configuration, $195; Client Write-Up version for accountants, $495; enhanced version, $695. Absolute Solutions, Inc., P.O. Box 232400, Leucadia, CA 92023. 800-633-7666 or 619-436-5495. (Sept '92)

DacEasy Light Checkbook Accounting
This is a well-done, functional system for small-business and personal accounting that's like using a checkbook. After the initial setup of personal data, preferred forms, and passwords, you have available a full range of bookkeeping options, reports, invoices, and transaction analyses. Can handle multiple bank accounts, and even credit-card purchases and balances. Version 2.0 reviewed. $69.95. DacEasy, Inc., 17950 Preston Rd., #800, Dallas, TX 75252. 800-877-8088 or 214-248-0205. (May '91)

Dollars & Sense
This personal-finance management program can share data with tax planning software and an electronic-banking utility called Moneyline. Provides a variety of basic accounting tools. Does not fill out tax forms. Upcoming version will allow automatic file transfer to Macintosh. Version 1.1 reviewed. Version 5.0 shipping. Requires Macintosh Plus or later with System 6.07 or later and a hard drive. $99 (or $49.95 direct). Business Sense, Inc., 318 Saphire St., Kemmerer, WY 83101. 800-377-4954 or 307-877-2231. (Mar '87)

Evolwe Evolve is a collection of Excel macros that attempts to provide streamlined financial reports and graphs from accounting data. Difficult to set up and use, and calculation is slow. Imports data in a wide variety of exchange formats, but only one tabular arrangement of data fields can be imported. Inflexible system for naming and locating of files and folders. Includes report editor for designing custom layouts. Version 1.01 reviewed. Requires Macintosh SE or later with 2 MB of RAM, Excel 3.0 or later, and a hard drive. $195. Absolute Solutions, Inc., P.O. Box 232400, Leucadia, CA 92023. 800-633-7666 or 619-436-5495. (Sept '92)

Flexware
Flexware is based on a proprietary language. This true multiuser accounting system or must be professionally installed — it can't be used just off the shelf. Highly modular and extremely customizable. Basic modules cover all aspects of accounting. Can automatically pass data into Excel for further analysis. Version 6.02C reviewed. Version 6.91 shipping. Requires Mac Plus or later with hard drive and 4 MB RAM. $895 per module, except Order Processing, Purchasing, Sales/Lead Tracking, and Request for Service, $795 each; Point-of-Sale, $695; Job Cost, $995. Flexware, Inc., P.O. Box 68, 2255 Westlake Blvd., Tahoe City, CA 96145. 800-527-6587 or 916-581-6999. (May '90)

Great Plains Accounting Series
Great Plains Accounting Series consists of several modules covering all aspects of
with well-implemented Bal­
loon Help (for System 7 us-
er), helps you render unto
Uncle Sam that which belongs
to him. Version 1991 re-
viewed. Requires Macintosh
SE or later, System 4.2 or later,
and a hard drive. Federal.
$79.95 (annual update.
$39.95); state, $49.95 (update,
$24.95). ChipSoft, Inc., 6330
Nancy Ridge Rd., Ste. 103,
San Diego, CA 92121. 619-
453-8722. (Apr '92) * 86
'Eddy

MacInvoice 1.0

MacInvoice is an invoicing
system for small businesses.
Limited formatting ability; ex-
cellent printing ability. Ver-
sion 1.0 reviewed. Requires
Macintosh Plus or later.
$69.95. Synex, 692 Tenth St.,
Brooklyn, NY 11215. 800-
447-9967 or 718-499-6293.
(Nov '89)

MacMoney 3.5

MacMoney is a full-featured
financial manager that pro-
duces a wide and useful vari-
ety of reports and graphs. Ex-
cellent for home-based busi-
nesses. Works with Survivor's
Invoic program to generate
invoices. No password pro-
tection. Version 3.5 reviewed.
Version 3.53 shipping. Re-
quires Macintosh Plus or later.
$119.95. Survivor Software
Ltd., 11222 La Cienega Blvd.,
Ste. 450, Inglewood, CA
90304. 310-410-9527. (Sept
'91) * 86 Eddy

Managing Your Money 2.0

Managing Your Money is
Andrew Tobias' full-featured,
well-supported, personal fi-
tancial-manager program.
Can print checks, keep detailed
accounts or budgets, and help
with planning for taxes, insur-
ance, and retirement. Tracks
complex portfolio manage-
ment and net worth, but re-
quires manual updating of
stock and bond values. Al-
 lows password protection. Can
import Quickken 3 data, and
can export data for use in
MECA's tax-preparation
package, TaxCut. Excellent for
users with moderately complex finances or invest-
ments. Overkill for simple
money-management tasks. Ver-
sion 5.0 reviewed. Re-
quires Macintosh Plus or later.
System 6.03 or later, 2 MB of
RAM, and a hard drive.
$79.95. MECA Software, Inc.,
55 Walls Dr., P.O. Box 912,
Fairfield, CT06430.203-256-
5000. (Dec '92)

Multi-user Desktop
Accounting (MDA) 4.0

Multi-user Desktop Account-
ing uses the Omnis database
manager. Sets the standard for
multiuser performance and
accounting functionality in the
off-the-shelf market. There are
nine fully integrated modules
eight user-security classi-
fications. Version 2.05 re-
viewed. Version 2.07 shipping.
Requires Mac Plus or later with
2 MB RAM recommended
(4 MB for AppleShare server),
and hard drive. Single-
user version, $1,795; to
5 users, $2,795; to 10 users;
$3,795. Logisoft, Inc., 128
Villa Ct., Lafayette, CA
94549. 510-939-3556. (May
'90)

MultiLedger 4.0

MultiLedger is an integrated
general-ledger, accounts-re-
civable, accounts-payable,
and inventory system. It does
batch printing, handles mul-
tiple companies, tracks bud-
gets, and has high-resolution-
graphics statement printing.
Double-entry bookkeeping
supported transparently. Has
transaction journals, but no
customer credit limits. Multi-
user version also available.
Version 1.3 reviewed. Version
2.0 shipping. Requires Macin-
tosh Plus or later. MultiLedger,
$395; multiuser version, $695.
CheckMark Software, Inc.,
1520 E. Mulberry, Ste. 200,
Fort Collins, CO 80524.800-
444-9922 or 303-484-3541.
(May '90)

Peachtree Accounting for
Macintosh 5.2

Peachtree Accounting for
Macintosh (formerly atOne!) is
an integrated accounting
package with general-ledger,
accounts-payable, accounts-
receivable, and payroll mod-
ules. Primarily for small busi-
nesses. Features very good
security, customizable reports,
flexible fiscal calendar with 12
or 13 periods per fiscal year,
and up to 26 open peri-
ods stored on-line. Version 1.0
reviewed. Version 2.0 ship-
ing. Requires Macintosh Plus
or later and a hard drive. $99.
Peachtree Software, 1505 Pa-
vilion Place, Norcross, GA
30093.800-247-3224 or 404-
564-5800. (Nov '89) * 86
Eddy

Peachtree Insight

Accounting for Macintosh 5.2

Insight is a high-powered ac-
counting program for small-
to medium-sized businesses.
Modules include Accounts
Receipt & Billing, Accounts
Payable, General Led-
er, Inventory, and Payroll.
Expert Reports feature allows
powerful, customizable analy-
sis of financial status. Version
1.0 reviewed. Requires Macin-
tosh Plus or later, System 4.2
or later, and a hard drive. $395.
Peachtree Software, 1505 Pa-
vilion Place, Norcross, GA
30093.800-247-3224 or 404-
564-5800. (Dec '86) * 86
Eddy

ProfitAbility Professional 4.0

This HyperCard-based single-
entry bookkeeping system, with
its emphasis on ease of
use and reporting, is an ideal
choice for small businesses
looking for a do-it-yourself
time-and-billing package.
Handles general-ledger ac-
counts, check printing, invoic-
ing, price estimates, basic in-
ventory control, time-and-
materials tracking, and pay-
roll (including federal taxes,
FICA, and Medicare costs).
Has built-in phone list, mail-
ing list, and a daily planner.
Unsuitable if your business
involves very complex ac-
cruals or tax reporting, but
perfect for a mom-and-pop
accrual or cash-accounting
MINIFINDERS

system. Includes HyperCard 2.1. Version 1.4 reviewed. Version 1.8 shipping. Requires Mac II series or higher with 2.5 MB of RAM and System 6.05 or later; 4 MB of RAM recommended. $149 direct; optional payroll and time/materials modules, $29.95 each. Wetzel & Co., Inc., 147 E. Rocks Rd., Norwalk, CT 06851. 800-635-7849 or 203-846-2504. (Jan '92)

Project Billing 

Project Billing handles all aspects of client accounting and produces professional-looking bills. It's good at batch entry and at assigning different tax rates to various items. The interface is clumsy, and "action" descriptions are too limited. Requires Mac Plus or later, System 6.03 or later, and a hard drive. $595. Satori Enterprises, 4585 74th Rd., Norwalk, CT 06850. 800-777-2016 or 203-846-2504. (Jan '92)

Quicken 

Quicken is an excellent tool for home budgets, cash-flow management, and tax-record keeping. Mimics your checkbook, so tracking finances is easy and intuitive. Provides detailed, customizable reports supporting tax deductions, expenses, and sources of income for U.S. Federal and Canadian tax forms. Offers CheckFree electronic bill-paying support. Superlative documentation and on-line help. Exports data in SYLK (Excel) or STD (MacIntax and TurboTax) formats. Lacks standard accounting safeguards and advanced features required for serious business use. Version 3.0 reviewed. Requires Macintosh Plus or later with System 6.03 or later and a hard drive. $695 per module. SBT Corp., One Harbor Dr., Sausalito, CA 94965. 415-331-9900. (May '90)

Service Industry Accounting 


WOS Fund Accounting 

WOS Fund Accounting is a true multituser system designed to meet the unique needs of government and nonprofit agencies. Contains general ledger, payroll, purchase-order/voucher, and accounts-receivable modules. Can handle multiple-fund accounting and multiple-year adjustments. Meets most federal reporting requirements. Version 1.5 reviewed. Version 3.3 shipping. Requires Mac Plus or later and a hard drive. $4,995. WOS Fund Accounting, Inc. (Farmington Hills, MI 48035), 1321 Wakarusa Dr., Ste. 2061, Lawrence, KS 66049. 913-843-8150. (May '90)

General Hardware & Accessories

CasioLink for the Macintosh 

CasioLink is a hardware/software package that links the popular Casio BOSS series of electronic organizers to a Mac. The software is a bit limited and clunky, but it works. Can import and export to text files and HyperCard stacks but has some trouble importing from stacks. Version 1.01 reviewed. Version 2.0 shipping. Requires Macintosh Plus or later and Casio BOSS. $129.95. Casio, Inc., 570 Mount Pleasant Ave., Dover, NJ 07801. 201-361-5400. (May '90)

CleanPath Computer-Controlled Maintenance Kit 

The CleanPath Computer-Controlled Maintenance Kit is a collection of tools and software for cleaning your screen, keyboard, floppy disk drive, and dot-matrix printer (print head and platen). Includes special cleaning fluids, wipes, swabs, and two drive-cleaning disks. The high-quality cleaning materials are easy to use and effective. Software tells you when to use the cleaning tools. On-screen instruction sheets for each of the kit's elements. Not computer-controlled. $59.95. Discwasher, Inc., 2950 Lake Enna Rd., Lake Mary, FL 32746. 305-325-0573 or 407-333-8900. (July '90)

Colby SE/30 

This powerful portable computer has hardware contrast and brightness controls for better viewing. Battery life up to three hours. Can be upgraded with optional hard disk drives and 8 MB of RAM. Not meant to be used in transit. System suffers a tiny bit from annoying screen flicker. Floppy-only version, $5,699. Colby Systems, 2991 Alexis Rd., Palo Alto, CA 94304.
The Ergotron Workstation is one of the best, most versatile computer workstations available. This freestanding or wall-mountable heavy steel unit includes a high shelf for your Mac II and a movable support arm for your monitor. Comes in a variety of configurations.

$1,099 and up, direct. Ergotron, Inc., 3450 Yankee Dr., Ste. 100, Eagan, MN 55121. 800-888-8458 or 612-452-8135. (Mar '89)

Hewlett-Packard 48SX Calculator $59.00

The 48SX is a powerful and versatile calculator. It supports file transfers with Macs, using the MacKermit program. The calculator includes a powerful text editor, a data manipulation editor, and a matrix editor that resembles a spreadsheet program. Programs and variables are stored by name in a directory. The calculator uses sound output, a real-time clock with alarms, and infrared and RS-232 serial ports as well as RAM and ROM expansion ports. The Serial Interface Kit adds considerable power but could use improvements.

$350; Serial Interface Kit, $59.95. Hewlett-Packard (Direct Marketing), P.O. Box 58059, MS#511-SJ, Santa Clara, CA 95051. 800-752-0900 (USA) or 800-387-3867 (Canada). (Mar '91)

KeyLock $59.95

The KeyLock is a security package that has a piece of hardware that's inserted into the floppy-disk slot (and can be physically locked) and an INIT that requires the correct password during startup. Includes a DA that darkens the screen and requires the same password. INIT and DA portion are easily bypassed.

$129.95. VikingTech, 533 1/2 Via De La Valle, Ste. E, Solana Beach, CA 92075. 619-792-1385. (July '90)

MacTable $329.95

The MacTable is an elegant Danish-style worktable that holds a Mac and a printer with room to spare. The table, 30 inches deep by 58 inches wide, is made of particleboard and must be assembled. Cabinet is optional. 46-inch table, $329; 58-inch table, $359; cabinet, $159 (all direct prices).

SeanCo, P.O. Box 3217, Redmond, WA 98073. 800-722-6263 or 206-481-5434. (June '90)

Mobile Computer 400 $329.95

The Mobile Computer 400 is a portable computer small enough to carry, and it's relatively inexpensive. It has a proprietary operating system but uses a pull-down menu and a pointer that's controlled by a built-in touch pad — reasonably intuitive for Mac owners.


Outbound Notebook 2030 $129.95

Fast, light, and upgradeable, the Notebook 2030 gives Apple's PowerBook 140 a serious run for its money. Unlike earlier Outbound laptops, the Notebook has up-to-date, standard Mac ROM chips preinstalled. Upgrade path for the Notebook 2000 series includes faster CPUs, math coprocessor, and greater hard-drive capacities. LCD display is larger than Apple's but not as sharp and fast. Doesn't support color video. Has built-in microphone, all the usual Mac ports (including ADB and standard 25-pin SCSI), and Outbound's improved Track-Bar input device. Doesn't accommodate internal modem. With 4 MB of RAM and 40 MB hard drive, $1,999 direct; optional 68881 coprocessor, $129. Outbound Systems, Inc., 4840 Pearl E. Cir., Boulder, CO 80301. 800-444-4607 or 303-786-9200. (Feb '92)

Portable Attache $329.95

The Portable Attache is an attractive alternative to the Mac Portable case. Manufactured by Zero Halliburton, it's made of aluminum, is approximately the same size as the Mac Portable case, and comes with a handy accessory case (the perfect size for a Dicomex printer) that fits inside. The file pocket in the Portable Attache detaches and becomes a portfolio. It's not suitable for checking on an airline, but the Portable Attache/Transport case (also available exclusively from EDC) is. Requires Macintosh Portable. $329.95; Portable Attache/Transport case, $369.95. EDC, 13101 Washington Blvd., Ste. 110, Los Angeles, CA 90066. 310-578-9712. (Sept '90)

GRAPHICS & DESIGN

1001 Fun Posters and More $129.95

This collection of templates for posters, fax cover sheets, memos, signs, and notes is useful for special occasions at work, home, or school. Many templates are corny, even sophomoric. Contains some good material, and all templates are easily customized. $79. Newslettermen, 11500 Hart St., North Hollywood, CA 91605. 818-503-8016. (Dec '92)

BannerMania $59.95

BannerMania is a specialty graphics program that lets you print banners, bumper stickers, signs, posters, and T-shirt designs. Includes 19 custom outline fonts that scale and print at any size. Also imports Type 1 fonts. Works with laser printers and makes good use of ImageWriter's limited color capabilities. Offers variety of special effects for text manipulation, including the awesome Transmogrify command. Limited graphics import/export capabilities. Excellent manual. Version 1.0 reviewed. Requires Macintosh Plus or later and System 6 or later. $59.95. Bruderbrand Software, Inc., 500 Redwood Blvd., P.O. Box 6125, Novato, CA 94948. 415-521-6263 or 415-382-4400. (Oct '91)

CameraMan $49.95

CameraMan captures scenes and on-screen actions and saves the resulting graphics as a QuickTime sequence, a PICS animation, or a series of PICT files. Captures 8-bit and 4-bit color as well as black-and-white images. Maximum 8-bit color capture speed is generally less than 4.5 frames per second even on the fastest Mac-II-series machines. Can capture an entire screen or a designated selection. Doesn't record sound, so QuickTime movies require a separate program to mix in digital audio. Version 1.0 reviewed. Requires QuickTime. $149. Vision Software, 3160 De La Cruz Blvd., Ste. 104, Santa Clara, CA 95054. 408-748-8411. (Sept '92)

Capture $59.95

Capture is a reliable screen-capture utility. It can capture full or partial screens either to the Clipboard or to a PICT file. Supports 8-bit and 32-bit color. Capture may have to be renamed on your Mac to avoid INIT conflicts. Version 2.0 reviewed. Version 4.0 shipping. Requires Macintosh Plus or later and System 6.0.3 or later. $129.95. Mainstay, 5311-B Derry Ave., Agoura Hills, CA 91301. 818-991-6540. (Jan '90)

Cheshire $45.95

Cheshire is an INIT that lets you copy and paste tab-delimited data into simple charts, which can be placed in a document. Many chart types are possible, typeface styles can be varied, and the charts can be modified if placed into drawing programs such as MacDraw II or DeskDraw. The only programs from which this handy utility can extract data are MacWrite II, Word, MacDraw II, and PageMaker. Version 1.0 reviewed. Requires Macintosh Plus or later. $125. Abbott Systems, 62 Mountain Rd., Pleasantville, NY 10570. 800-552-9157 or 914-747-4171. (Feb '91)

DeskPaint and DeskDraw $49.95

DeskPaint and DeskDraw are full-featured, 24-bit color painting and drawing programs in DA form. They include flexible calibration options for vertical and horizontal rulers. Printer resolution can reach 4,000 dpi. DeskPaint has basic color controls and image-manipulating functions. Inadequate for professional artists. Version 3.08 reviewed. Requires Mac Plus or later, 2 MB of RAM, and a hard drive. $199. Zedcor, 4500 E. Speedway, Ste. 22, Tucson, AZ 85712. 800-482-4567 or 602-881-8101. (Dec '92)
Keep this supplement handy
It includes a complete selection of products to make your life easier and your work more fun.

SCAN
One of the biggest advances in desktop publishing has been in the field of scanning, once something only a color separator could do. Now, affordable color scanners are for everyone!
We offer 600, 800, and 1850 dpi scanners that handle flat art, transparencies, or slides. Desktop scans are ideally suitable for finished output (in newsletters or low-end brochures) or for position only (in high-end four-color projects).

VIEW
Whether you need a high-resolution color monitor or a monochrome display, you'll find the right monitor...right here. Included in this supplement are dozens of monitors in all sizes (13" to 21"), and all levels of resolution (from 640 x 480 to 1152 x 870).

PRINT
Are you tired of waiting forever for less-than-perfect printouts? A great printer from Hardware That Fits is your answer!
Need speed? We offer several models, including our own RealTech Laser that zip through even your most complicated documents with ease. Need 11 x 17 capability? It isn't expensive or hard to get anymore, now that the RealTech Laser 400 is at your service.

ACCELERATE
The Mac you thought was so fast yesterday is the one you're waiting, waiting, waiting for today. If you do a lot of number-crunching or use lots of scanned images, you need a break!
A high-quality performance upgrade from Hardware That Fits will make projects fly, giving you more work time and less wasted time.

STORE
What in the Mac world is worse than lost, corrupted, or unreadable data? And what in the world is more important than backup? Hardware That Fits offers plenty of storage options to use for a primary drive or for backup. Our high-quality drives, removable storage media, and backup systems will keep your data safe and sound, so you can work, not worry.

CONNECT
The correct network makes all the difference between a productive team and a slow-moving traffic jam. Hardware That Fits has networking equipment for everyone, whether you're part of a small workgroup or a huge enterprise. We'll keep you connected with the best in routers, hubs, bridges, and modems...and the best advice on how to use them.

Macintosh solutions you can really celebrate!

We want to help you solve your computing problems. We're not interested in making a quick buck.
Sometimes we even have to talk a customer out of buying more equipment than he or she needs. Because we believe in building relationships, not increasing our sales quotas.

Meet a few of the friendly folks who'd like to be your Mac solutions partner...
Your one-stop source for intelligent Macintosh solutions.

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1-409-760-2400

Fax: 1-409-539-4141
WE WANT TO BE YOUR MACINTOSH SOLUTIONS PARTNER (WE'RE REALLY NOT INTERESTED IN A ONE-SHOT SALE)

In these difficult economic times, value is the most important criteria for making a purchasing decision; that's why our business is still growing while others are floundering. We're in our eighth year of providing the best value in the Mac market. Sure, there are some companies that can give you a better price on a particular product... but will they stand behind it (and by you... and will they even still be in business)? We will. We're a subsidiary of a financially-sound public company, and have been members of the Better Business Bureau since 1987. We offer you the best overall value, customer service, technical support, and financing options because we're interested in being your total solutions partner... and because we'll be around to help you.

WEAL Provencer, President

Welcome to your one-stop source for Macintosh solutions:

a complete selection of products to make your life easier & your work more fun.

During the past seven years, we've become known as America's one-stop source for custom solutions. Why? Because our friendly sales and customer service teams have always been more interested in solving your computing challenges than in making a quick buck. From time to time, they have to talk a customer out of buying more equipment than they really need. That's because we believe in building relationships and providing total solutions... and that's why we're America's largest mail order seller of Mac hardware.

SOLUTION: Customer service
When you order from us, you get computer experts, not clerks!
All of our salespeople have a minimum of three years of computer experience. They're trained in Apple's intensive program, as well as our own. They're ready to help you (with a smile!) both before and after the sale.

SOLUTION: Tech support
Best tech support anywhere. And it's toll-free: 1-800-364-MACS.
Our tech team is well trained, well informed, and well known for their ability to solve customers' problems with a minimum of inconvenience to the customer.

SOLUTION: Financing options
Business leasing available: call toll-free 1-800-364-LESS.
We've made it easier than ever to enjoy our productivity-enhancing products by offering five different leasing programs. Choose the one best tailored to your company's needs! Call us toll free for more information.

SOLUTION: 100% satisfaction
OUR FAMOUS GUARANTEE: If you don't like it, we'll buy it back.
If you're not 100% satisfied, call for your RMA number and return the product within 30 days of the ship date. We'll refund your purchase price (minus consumables for printers).

Are you looking for a specific product, and don't have time to read this entire supplement? Flip through the pages and watch for the corresponding icon.
Of course, we'd much prefer it if you would read this supplement cover to cover; there are dozens of products that would help you increase your productivity. But if you're short of time, just keep your eye on the icons on the right-hand pages. If you're looking for a monitor, and the monitor icon is black... that's your page!

SOLUTION: 100% satisfaction
OUR FAMOUS GUARANTEE: If you don't like it, we'll buy it back.
If you're not 100% satisfied, call for your RMA number and return the product within 30 days of the ship date. We'll refund your purchase price (minus consumables for printers).

We've made it easier than ever to enjoy our productivity-enhancing products by offering five different leasing programs. Choose the one best tailored to your company's needs! Call us toll free for more information.

SOLUTION: 100% satisfaction
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OUR FAMOUS GUARANTEE: If you don't like it, we'll buy it back.
If you're not 100% satisfied, call for your RMA number and return the product within 30 days of the ship date. We'll refund your purchase price (minus consumables for printers).
HIGH-END GRAPHICS SOLUTIONS
The latest innovations in pre-press desktop technology (scanning through proofing)

PAGES 4-13

POWERBOOK SOLUTIONS
Macintosh PowerBooks & accessories for office or travel

PAGES 38-39

BUSINESS SOLUTIONS
Monitors and printers for productive, cost-effective workstations

PAGES 42-48

DESKTOP PUBLISHING SOLUTIONS
Intermediate graphic and multimedia solutions

PAGES 14-21

STORAGE SOLUTIONS

PAGES 22-23, 34-35

NETWORKING/COMMUNICATIONS SOLUTIONS

PAGES 30-33

ACCELERATORS/PERFORMANCE SOLUTIONS

PAGES 40-41
IT DOESN'T TAKE A GENIUS TO SEE
the quantum leaps made in electronic publishing in the last five years.

When we first started producing our ads, we typeset on the Mac...but were still encumbered by artboards, keylines, acetate overlays and that messy, messy wax. Not anymore!
The office shown at right is where this supplement was actually produced.

(By the way, if you’re interested in purchasing a graphics workstation and would like to see the evolution of some of these pages, just let us know. We’ll send you a description outlining each stage of production.)

If you produce high quality, four-color brochures and publications, here’s a system that really solves a lot of pre-press problems. Tired of making rough mockups to show positioning for transparencies? Weary of waiting for your DCS files from the color separator? The RealTech Scan 800 (with Transparency Option) lets you scan transparencies and slides so you can design the page with all your pictures in place from the beginning! Save time by printing first-draft copy in spreads on the RealTech Laser 400...and improve quality by checking traps and outlines on the RasterOps CorrectPrint 300.

High-end graphics system. (Includes Quadra 950, 1 GB Fujitsu hard drive, RasterOps 20” Trinitron color monitor, RasterOps 24 XLI video card, and Key Tronic MacPro Plus extended keyboard. See individual pricing for scanner, color printer, etc.)

Lease: $348/per mo. $12,715

Ask about our LEASING PROGRAM
Toll-free information: 1-800-364-LESS
Intelligent solutions for desktop publishers, corporate art departments & graphic designers!

Anne goes for the RealTech Scan 800 in a BIG way! She thinks it's one of the best design tools on the graphics scene. She loves the Color 350, too. See pages 12-13 and 20-21 for more information.)
We're an authorized RasterOps dealer... for the past four years, we've supported these excellent products with top-of-the-line service and warranties.

RasterOps Sweet 16" Color Monitor
High-resolution display delivers color graphics and images with superior definition. Flicker-free screen reduces eyestrain; tilt-and-swivel base allows you to adjust the monitor to a comfortable angle. Displays up to 16.7 million colors; 624 x 832 resolution, 75 Hz refresh rate. The complete system combines the RasterOps Sweet 16 monitor and RealTech 8-bit video card (a single slot, graphics display adapter for the Macintosh II family of computers). An alternative bundle includes a RasterOps PaintBoard Li video card, which supports the Quadra series. Software support for the PaintBoard Li includes a system extension for controlling the on-board accelerator, hardware pan and zoom, extended desktop, and gamma selection.

Sweet 16 Monitor w/RealTech 8-bit Card
Lease: $43/ per mo. $1578
Sweet 16 Monitor w/PaintBoard Li Card
Lease: $56/ per mo. 2048

RasterOps 21" Color Monitor
High-resolution, anti-glare screen makes extended viewing more comfortable for your eyes. Display controls allow you to customize display settings (depending on the graphics display adapter being used). This large-screen color display supports scanning frequencies from 30-64 kHz horizontal and 50-120 Hz vertical, and a resolution of up to 1152 x 870 pixels. Dual input connectors enable it to be used with a variety of graphics display adapters, in a variety of environments. Tilt-and-swivel base for adjustable viewing angles. Bundled with the RasterOps 24Xli card, it displays up to 16.7 million colors with superior definition. Compatible with the Macintosh II and Quadra families of computers.

21" Color Monitor w/24Xli Card
Lease: $137/ per mo. $4998

My experience in running large retail organizations for more than 16 years was the person at the top normally heard from customers only when things 'had not gone according to Hoyle' somewhere down the line. I would like to be the exception and bring to your attention my experiences of OUTSTANDING SERVICE from two of your employees during my recent purchase of a RealTech 19" monitor and RasterOps 24Xli card... (their) responsive service was a refreshing change.

— Stephen E. Snider
Name-brand color solutions at incredibly appetizing prices!

**RasterOps 20" Trinitron Color Monitor**

$2859

*Lease price: $78/month*

Multi-scan capability provides optimum resolution for nine factory preset modes; allows you to upgrade your display to a maximum resolution of 1280 x 1024 without changing your monitor. User-selectable display allows you to store up to 15 different display settings in memory. Non-reflective, flat screen and tilt-and-swivel base for optimum long-term working comfort. Up to 16.7 million colors; 75 Hz refresh rate.

20" Color Monitor w/RasterOps PaintBoard Li Card

Lease: $100/per mo.
"...be forewarned: PostScript-clone printers still have a long way to go before they can rival true Adobe PostScript printers."

So fast it will bring a smile to your face! The RealTech Laser 400's high-performance Weitek RISC processor and ATM font rendering technology enable it to print complex documents 4 to 5 times faster than other non-RISC laser printers in its price range.

Based on Adobe PostScript® Level 2... compatible with all current application software that supports the PostScript® language. It contains a number of performance, function and quality enhancements that save printing time and improve quality. In addition, PostScript® Level 2 offers new capabilities, including forms handling, graphic patterns support, and new half-tone algorithms.

The RealTech Laser 400 uses a Fuji-Xerox printer engine that prints 15 pages per minute at top speed.

More printers! SEE PAGES 8-11, 20-21, 24-29, 46-47: NEC, SEIKO, TI, KODAK, RASTEROPS, KODAK, REALTECH.
The only 11x17 printer with Adobe PostScript® Level 2 for less than $3500.

- High-speed printing (15 ppm, letter size)
- 2 paper trays included!
- SCSI port
- Full page 11x17 printing*

The ideal networking printer. The RealTech Laser 400’s three interface ports (Appletalk® RS-422, IBM PC parallel, and RS-232-C) can be used simultaneously. It can be assigned either PostScript® or LaserJet II emulation, making it the ideal network printer. A Hewlett-Packard LaserJet Series II emulation allows use with non-PostScript applications software. The perfect solution for multi-user printing environments.

Prints full-page 11x17 documents. No more tiling to get the full image area, or taping letter-size pages together! The RealTech Laser 400 is the optimum tabloid printer. *Note: Prints to within 5 mm of the edge.

SCSI port. The standard configuration includes a SCSI port and 4 Mb of RAM, upgradable to 16.
WHY A DYE SUBLIMATION PRINTER IS AN EXCELLENT INVESTMENT FOR ANYONE IN THE GRAPHICS FIELD

Does your company have to buy more than one set of traditional color proofs for a print project (at $35-100 each)? A dye sublimation printer can eliminate a lot of the hassle and cost of color proofing; you can see what the final result will look like without running four sets of film each time to create the proof. The RasterOps CorrectPrint 300 offers the highest-quality output available in desktop color proofing technology. At a cost of less than $2 per proof, it's a wise purchase.

Photographic quality dye sublimation proofs for under $2 a page!

RasterOps CorrectPrint 300 Dye Sublimation Printer

Uses a four color (CMYK) dye-sublimation thermal printing process at 300 dots per inch. The result is a continuous-tone print that resembles photographic-quality output. The CorrectPrint 300 prints on special sheet-fed paper or transparencies, not on rolls. It uses a RISC controller with JPEG decompression capability, and comes with 0 Mb RAM. (12 Mb RAM is required; it's upgradable to 36 Mb.)

The CorrectPrint 300 is Adobe PostScript® language compatible, and includes three standard interfaces: AppleTalk, Ethernet (two Ethernet ports—thick and twisted pair), RS-232C, plus a SCSI port, allowing users to share the CorrectPrint 300 among Macs, PCs, workstations, or a network.

Includes 35 resident fonts.
Affordable color printing solutions.
Unparalleled quality for high-end comps and presentations, or for low-cost, pre-press color proofs.

Seiko Instruments

Letter-size color output at the price of high-end black and white.

Seiko Instruments Personal ColorPoint PS
Prints full-bleed comps on plain laser paper or transparency film. 84 page size allows the printed image to be larger than standard letter size (up to 8.53" x 11.93").
300 dpi color thermal printer uses 16 MHz RISC processor. 6 Mb RAM standard, upgradable to 10 or 22 Mb.
Adobe PostScript® language compatible. Download, process and print images simultaneously; the Personal ColorPoint PS has multiple frame buffers. Includes three standard interfaces: AppleTalk, Centronics, and RS-232, plus a SCSI port, allowing users to share the ColorPoint among Macs, PCs, workstations, or a network.
The Personal ColorPoint PS continuously polls all interfaces and re-configures automatically to receive incoming data.
Includes 39 resident fonts.

Hardware That Fits

Toll-free in the U.S. & Canada, too

Hardware Fits

Hours 8 am to 7 pm CST

Don and Sharla, like everyone at Hardware That Fits, enjoy testing new products. They're happy to be able to offer such high-quality color output to customers!
The RealTech Scan 800.

The ideal color solution for scanning flat art AND transparencies.

At last... quality you can celebrate!
(You can actually use the separations for printing. We did.)

Color scan — 8 x 10 matte finish photo
Grayscale scan — 5 x 7 matte finish photo

Examples above and at bottom of page were scanned by an independent service bureau at the default settings. The color scan above was adjusted with ScanMatch color calibration software, and color-corrected with Adobe Photoshop. The grayscale scan is 8-bit (256 shades of gray).

Scans in 24-bit color, 8-bit grayscale or black & white. Scanning speed is 9.1 seconds at 300 dpi (black and white or grayscale), and 75 seconds for color scanning.

Transparency Option available for scanning transparencies and negatives!
Our Transparency Option lets you scan slides, transparencies, film, or negatives. Exposure time is adjustable for scanning dark film.

Gamma-correction and Savitar's ScanMatch color-calibration software are included.

The RealTech Scan 800 features gamma-correction, which lets you adjust contrast and brightness without losing details in highlight and shadow areas.

ScanMatch color calibration software (included) adjusts scan files so colors are true when displayed on your monitor.

FREE! SCANMATCH COLOR CALIBRATION SOFTWARE ($199 RETAIL VALUE!) IS INCLUDED WITH EVERY REALTECH SCAN 800.

RealTech Scan 800
Street price: $1299
800 dpi B/W scan (enlarged to show detail)

Microtech 600ZS
Street price: $1299
600 dpi B/W scan (enlarged to show detail)

Howtek Scanmaster 3+
Street price: $7499
1200 dpi B/W scan (enlarged to show detail)
Do you need “position only” scans for comps, or mid-range separations for printing newsletters and flyers? The RealTech Scan 800 is your solution!*

- You don’t have to buy two separate scanners to meet your need to scan both reflective and transparent artwork and photos. The RealTech Scan 800 is one of only a very few scanners that offer an optional attachment for scanning transparencies, slides, and film.
- You can actually improve image quality with gamma-correction. When your original document isn’t vivid, you can use gamma-correction (in real time) to improve the image quality. Very few scanners feature gamma-correction — yet it’s standard on the RealTech Scan 800!
- 25 black and white halftone patterns! Some scanners only offer four.
- More brightness, contrast & resolution levels than other leading scanners.
- Color calibration software included FREE!
  The RealTech Scan 800 comes with ScanMatch color calibration software (FREE)...and it’s available with Adobe Photoshop or ColorAccess from Barneyscan at an additional cost.
- It’s fast! It scans black and white documents in 9.1 seconds; color, in 75 seconds.

* The balloon picture shown above originated as an 8 x 10 color transparency. (Shown directly at left is a color Polaroid of the same photo.) The transparency was scanned with the Transparency Option on the RealTech Scan 800, adjusted with ScanMatch color calibration software, and color-corrected with Adobe Photoshop. Color separations were produced with ColorAccess software from Barneyscan. Judge for yourself—Is the quality of this separation good enough for your company newsletter or flyer?

800 dpi color scan — 8 x 10 transparency

RealTech Scan 800 ...........................................$1299
  Lease: $36/per mo.
RealTech Scan 800 w/ Transparency Option ..............1794
  Lease: $49/per mo.
RealTech Scan 800 w/ Adobe Photoshop .................1499
  Lease: $41/per mo.
Now it's easy to capture full-motion video on your Mac!

VideoSpigot® from SuperMac® is an affordable new digital video system. It captures full-motion video in 24-bit color and converts it to Apple’s QuickTime file format (which can be stored on hard disk, optical disk, or removable cartridge). Plays back at rates of up to 30 frames per second, depending on which Mac you're using.

Once your video is converted, you can cut, edit, copy and paste it into your own multi-media productions, or into word-processing or graphics documents. Designed for Mac IIsi and LC systems, Quadras, and all NuBus Macintosh II systems.

VideoSpigot LC: $249
VideoSpigot IIsi or NuBus: $329/369
VideoSpigot Pro: $1079
Spigot & Sound: $479
Spigot & Sound Pro: $1159

A RealTech Color 350 printer w/10 Mb RAM Lease: $165/per mo.... $3995
B Quadra 700
C RealTech 19” Trinitron Lease: $52/per mo........ 1895
D Key Tronic MacPro Plus extended keyboard .......... 139
E 425 Mb Fujitsu hard drive Lease: $27/per mo......... 999
F Wacom Tablet — 12 x 18 Lease: $28/per mo......... 1029
G Microtek Scanmaker II color scanner Lease: $26/per mo......... 949

Video cards available for this system:
RasterOps MediaTime: $1599
RasterOps PaintBoard Li: 799
Thunderstorm: 829

In the graphic design business, the desktop publishing hardware is changing so rapidly that it can be confusing what to buy — Jon’s knowledgeable and friendly help guided me toward the right decision for my company.

— Elaine Kropveld
EKlectic Images
media solutions performance.

Do you create company training films...video presentations...newsletters and brochures? We understand the equipment requirements of the creative Mac user who needs to combine sound, motion, graphics, and words. We can suggest combinations of Mac products that will help you design projects to keep you in the spotlight!

Graphic/multi-media system. (Includes Quadra 700, 425 Mb hard drive, RealTech 19" Trinitron color monitor, RasterOps PaintBoard II video card, and Key Tronic MacPro Plus extended keyboard. See individual pricing for scanner, color printer, etc.)

Lease: $226 per mo. **$8255**

EXPANDING YOUR GRAPHICS STATION DOESN'T HAVE TO BE A BIG PRODUCTION!

Every person on our friendly sales crew can provide you with all the information you need to make a sensible buying decision. And no high-pressure sales tactics...we want to build a relationship with you (and repeat performances!).

When you work in a fast-paced design firm with yesterday deadlines, it is extremely important for me to receive the information quickly. Never once have I been put on hold while inquiring about products and technical issues. Not any of this call you back later nonsense. And it is always nice to have a friendly person on the other end of the line...even after I receive my order, you are still there to assist me. Who could ask for more?

— Donna Whitlow, Desktop Publishing Specialist, Larnish & Associates Inc.
RealTech 19" Trinitron
Color Monitor

$1895
Lease price: $52/month

- Auto-syncing
- 24- or 8-bit color
- Multi-mode display

View 16.8 million colors at 72 dpi! 1024 x 768 standard resolution; will auto-sync to 640 x 480, 832 x 624, 1024 x 768, and 1152 x 870 (two full pages of brilliant color!).

Uses a Trinitron® tube from Sony. Multi-level bit depth support provides accurate screen display for all applications. Will interface with Quads, and with popular video cards from RasterOps, Radius, and SuperMac.

The RealTech Trinitron 24-bit color system rapidly produces photorealistic quality images at maximum speeds through NuBus block transfer, which enables large blocks of information to be moved across the NuBus at peak transfer rates.

It combines display and graphics acceleration capabilities in one slot, and is designed specifically for the Macintosh II family of computers.

Our 24-bit system includes hardware pan-zoom and extended desktop functions for all monitor sizes. The video card features custom ASIC chips designed to accelerate your display.

As a result, graphics-intensive applications work faster and more smoothly when processing large color images. Our 24-bit accelerated system works with Mac II, IIx, IICx, IICl, IIfx, and Quadra 700, 900 and 950. Available with on-board video for the Quadra family.

Our 8-bit system includes the RealTech RT-8 video card. Compatible with Mac II, IICx, IIfi, IIfx, SE/30, and LC.

RealTech Trinitron w/8-bit Card
Lease: $65/pers mo.
RealTech Trinitron w/24-bit Card
Lease: $74/pers mo.

COMES STANDARD WITH 7 FACTORY PRESET RESOLUTIONS, PLUS 7 PROGRAMMABLE SETTINGS FOR ADDITIONAL VIDEO CARDS.
...returned a call late at night (at a time convenient to me) from his own home. I think this sort of dedication goes beyond the call of duty...with this sort of technical support, I have no hesitation recommending your organization to friends and colleagues, and you certainly have my business in the future.

— Jules Allen
Harlequin Graphics
HOW TO CHOOSE A DESKTOP SCANNER

If you need high-quality print output, a high-resolution scanner is a necessity. You need to be able to scan, edit, crop and scale your images without distortion or blurring. If you'll be using OCR software or 35mm slides, look for a scanner that includes (or will accept) a document feeder and a transparency option. Finally, check the scanner's software: Is it easy to use...flexible...and powerful enough for your needs?

Our technical team tests these scanners (and all Hardware That Fits products) before shipping them to you. They're conscientious, dedicated, and always willing to go the extra mile. Front row, left to right: Doug and John. Back row: Marcus, Mark and Jeremy.

SEE THE REALTECH SCANNER ON PAGES 12-13...IT OFFERS A TRANSPARENCY OPTION.

MICROTEK

Microtek Scanmaker II

$949*
Lease: $26/month

High-resolution 600 dpi color scanner. Outstanding image quality in a compact, flatbed design. Includes ScanMatch color calibration software.

- 24-bit color, 8-bit grayscale
- 600 dpi scanning
- 3 scanning passes (red, green, and blue filters)
- 14 brightness settings for each color plane
- Scanning speed: approx. 150 seconds

Microtek ScanMaker II XE
Lease: $33/month

$1195

Microtek Scanmaker Slide Scanner

$1569
Lease: $43/month

Scans 35 mm slides in landscape or portrait orientation. High-resolution scanning at up to 1850 dots per inch.

- 24-bit color, 8-bit grayscale
- 1850 dpi scanning
- 3 scanning passes (red, green, and blue filters)
- Scanning speed: approx. 100 seconds

* Microtek ScanMaker II includes a limited edition of Adobe Photoshop. Other scanners on these two pages include a full version of the program.
Adobe PhotoShop (the full version) is included with these scanners.

Seiko SpectraPoint Color Scanner

$2049

Lease: $56/month

- 24-bit color, 8-bit grayscale
- 800 dpi scanning
- 1 scanning pass (red, green, and blue filters)
- 14 brightness settings for each color plane
- Scanning speed: approx. 28 seconds at 400 dpi

Single-pass flatbed scanner allows color matching between scanner and monitor. Custom gate arrays perform image processing functions like shading, scaling, edge emphasis, and color correction at high speeds. JPEG-compatible image compression and decompression software. Color gamma tables and hardware-based color masking capabilities allow color matching between scanner and monitor.

If you want to scan transparencies like this one, you need the RealTech Scan 800 with Transparency Option (see pages 12-13).
I am writing this letter to express our complete satisfaction with the recent purchase of a RealTech Color 350 laser printer. We compared your color printer to those from QMS, Tektronix and Seiko. The Color 350 was the clear winner in price, performance, 'live' image area, ease of use and installation.

...we saved a considerable amount of money on service bureau charges and were able to meet a very stringent deadline. Our client was particularly pleased by the vibrant colors and the sharpness of the output we produced on the Color 350. I am sure we will purchase more hardware from you in the near future. Keep up the good work! 

— Achinta K. Mitra
TIECAS Type and Graphics, Inc.

The RealTech Color 350: the affordable color solution for anyone who needs quality color.

Surprisingly affordable price. A lot of people we work with (especially our ad agency!) have been asking us to develop a color printer. We all agreed it should be high quality, but priced at a level that would be affordable for small companies, and cost-efficient for large organizations that plan to use it as a workgroup printer. Finally, it's here, ready to create world-class color printouts.

Unlike some other printers, you can print on both sides! Some color printers are limited to single-sided printing. Not ours! The RealTech Color 350 can print on both sides of the paper.

It's fast! 16 Mhz RISC processor...which means you get your pages much faster than other color printers currently on the market.

It can handle graphics-intensive pages. It comes with 10 Mb standard. If you really need heavy-duty power, it's upgradable to 18 or 34 Mb.

Brilliant, saturated color. You'll see bright, sharp colors and smooth gradient tints from your Color 350.

True black text. Some color printers use a combination of cyan, magenta, and yellow to print black. Because the RealTech Color 350 uses 4 colored ink sheets, black type is rich and solid, as it should be.

No-muss, minimum fuss consumables. The ink ribbon is housed in an easy-to-remove cartridge. No messy ink containers!

IF YOU'RE INTERESTED IN A COLOR 350, WE'LL BE HAPPY TO SEND YOU A SAMPLE COLOR OUTPUT TO SHOW YOU ITS QUALITY.
Add color to business charts and graphs – only 69¢ per page!

$5995

Lease price: $165/month

- thermally-sensitive ink sheets are housed in an easy-to-load cartridge; quick, simple installation of consumables
- changing paper or transparency film is easy (unlike other color printers that use roll media)
- 4 colors — cyan, magenta, yellow and black — are printed in 4 passes on the paper or film

Ideal color printing solution
Perfect for workgroups
PANTONE® color simulations

The RealTech Color 350 produces laser-quality graphics using state-of-the-art thermal technology.

Whether you need a letter-size handout or tabloid-size chart for a presentation, the Color 350 is the right solution. For less than $1 per page, you can impress clients, customers, or colleagues!

Comes with one year on-site warranty in the continental United States. First 60 days on-site; remainder of warranty depot.

One year on-site warranty.................................................. $649
Two year on-site warranty.................................................. 1495

Frequent business travelers proclaim the Apple PowerBook (A – see pages 36 & 37) the most important business tool to emerge during the last two years. We believe they’ll soon be saying the same thing about our RealTech Color 350 (B) and (C) our RealTech Laser 410 (see pages 8-9). They all help you save time and make a good impression!
**High-capacity solutions**

**Peripheral Land**

**Infinity MaxOptical 1 Gigabyte Drive**

Safe, portable 1 GB of capacity. Optical cartridges are highly resistant to environmental damage, shock and magnetic fields, even head crashes and breakages. Well-suited for long-term storage of 10 to 25 years. Provides fast random access to files, unlike magnetic tape, for quick retrieval of archived projects or infrequently used programs. Keep unlimited storage on-line with Infinity magneto-optical removable cartridges. More storage for your money! 1 GB 5.25" Magneto-Optical Drive: $99/perm. $3539

**Infinity MiniArray**

Incorporates data striping to provide data transfer rates of 5 Mb per second sustained, and 7.5 per second burst. Based on two half-height drives, a proprietary controller card and PLI's QuickSCSI NuBus Host Adapter (which supports data transfer rates 20% greater than the standard Quadra SCSI ports). Connects to the internal 50-pin SCSI port on QuickSCSI. Infinity MiniArray: $4599

**Fujitsu Internal Drives**

SCSI 2 drives backed by a 5-year warranty. For external use, add $105 for RealTech enclosure (shown above in photo).

- 425 Mb Internal Drive: $28/perm. $1029
- 520 Mb Internal Drive: $35/perm. $1385
- 1.1 GB Internal Drive: $54/perm. $1959
- 1.7 GB Internal Drive: $80/perm. $3199

**Ask about our LEASING PROGRAM**

Toll-free information: 1-800-364-LESS

---

**Storage Dimensions**

**1 GB Erasable Optical Drive**

The capacity of a rigid disk drive with the convenience of removable storage.

- 1 GB Erasable Optical Drive: Lease: $125/perm. $4579

**500 Mb Bullet Drive**

Disk mirroring, disk spanning capabilities. Portable drive has "auto-park" head. Comes with two SCSI ports, its own power supply, and software.

- 500 Mb Bullet Drive: Lease: $55/perm. $1999

**Mac 2 Expandable Cabinet**

Lets you join two full-height drives in one case and use them as a single, larger drive. Dual power supply and fans ensure long life.

- Mac 2 Expandable Cabinet: Lease: $134/perm. $4898

**Infinity 1 GB MaxOptical 5.25" Erasable Optical Drive**

Safe, portable 1 GB of capacity. Optical cartridges are highly resistant to environmental damage, shock and magnetic fields, even head crashes and breakages. Well-suited for long-term storage of 10 to 25 years. Provides fast random access to files, unlike magnetic tape, for quick retrieval of archived projects or infrequently used programs. Keep unlimited storage on-line with Infinity magneto-optical removable cartridges. More storage for your money! 1 GB 5.25" Magneto-Optical Drive: $99/perm. $3539

**Infinity 128 Mb 3.5" Magneto-Optical Drive**

A plug-and-play, low cost-per-megabyte solution! Would you like to store 128 Mb of data on a 3.5" disk the size of a floppy? Now you can, with PLI's rewritable optical drive. Durable magneto-optical media is resistant to magnetic fields and shock.

With a 15-year storage life, it's ideal for archiving images and documents, as well as providing you with practical, affordable day-to-day storage. Average access time of 40 milliseconds. Disk rotational speed of 3000 rpm; 64K data buffer. 128 Mb Infinity Floptical Drive: Lease: $45/perm. $1649

---

**Newer Technologies**

**SCSI II Dari**

Peripheral Land

Infinity MaxOptical

1 GigaByte Drive

RealTech

Half-height Drive Enclosure

RealTech

Half-height Drive Enclosure
Mass Microsystems

DataPak 128 Mb
3.5" Magneto-Optical Drive
Amazing! 128 Mb of data on a disk the size of a floppy! DataPak's new 3.5" rewritable optical technology gives you high-capacity storage with the reliability of an optical disk and the performance of a removable cartridge drive. Average access time of 38 milliseconds, disk rotational speed of 3000 rpm and 64K data buffer. The fastest performance available in an optical drive today.
MassMicro 128 Mb DataPak
Lease: $45 per mo.

Newer Technologies

SCSI Dart Solid State Storage System
Easy software setup; no switches to set! Ideal solution for file-server duties. Compatible with Macintosh, PS/2 and PCs with SCSI drive interfaces. Access times are .5 milliseconds. Uses 1, 4, or 16 Mb SIMMs. Built-in uninterruptible power supply. Includes SCSI cable and two-year warranty on parts and labor.
SCSI Dart Solid State Storage System
Lease: $499 per mo.

SCSI II Dart Solid State Storage System
Accelerates both sorting and report generation in database and accounting applications. Access times of .1 millisecond; transfer rates of up to 12 Mb per second. Uses 1, 4, or 16 Mb SIMMs for the storage media. Built-in uninterruptible power supply. Includes SCSI cable and two-year warranty on parts and labor.
SCSI II Dart Solid State Storage System
Lease: $81 per mo.

Upgrading to a mass storage hard drive doesn't have to mean a mass outlay of your hard-earned money.
Big-screen solutions at a price you can enjoy.

RealTech 15" Grayscale Monitor

$449
Lease: $12/mo.

<table>
<thead>
<tr>
<th>CPU</th>
<th>Type</th>
<th>Price</th>
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<tbody>
<tr>
<td>Mac II family</td>
<td>mono video</td>
<td>$379</td>
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<tr>
<td>SE, SE/30, LCI</td>
<td>video card</td>
<td></td>
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<tr>
<td>Mac II family</td>
<td>GS256 video</td>
<td>$879</td>
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<tr>
<td>SE/30, LCI</td>
<td>video card</td>
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<td>Mac Ilsi, IIC</td>
<td>GS16</td>
<td>$449</td>
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<tr>
<td>Quadras</td>
<td>GS256</td>
<td>$449</td>
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<td></td>
<td>(on-board video)</td>
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Crisp black text and superior grayscale at a price that lets you experience the convenience of large-screen viewing. Flicker-free screen helps reduce eyestrain; tilt-and-swivel base allows you to adjust the monitor to a comfortable angle. 15" portrait display has 870 x 640 resolution, 80 dpi. Vertical refresh rate of 75 Hz, full grayscale capability. Flat CRT, (P4 phosphorus) with anti-glare screen. One-year warranty.

RealTech 21" Grayscale Monitor

$795
Lease: $20/mo.

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</tr>
</tbody>
</table>

At last...now you can view crisp black text and superior grayscale on two-page spreads! Flicker-free screen; tilt-and-swivel base. Flat CRT, (P4 phosphorus) with anti-glare screen. One-year warranty.

Macintosh Ilsi Workstation with RealTech 15" Full-Page Grayscale Monitor

$3199
Lease price: $88/month

Mac Ilsi Workstation
Includes Macintosh Ilsi with 5 Mb of RAM, 105 Mb hard drive, RealTech 15" full-page monitor, and Key Tronic MacPro Plus extended keyboard.

More monitors!

SEE PAGES 6-7, 16-17, 26-27, 36-37, AND 44-45 FOR MONITORS IN ALL SIZES AND PRICE RANGES.
Budget color systems!

With these prices and our leasing plan, now there's no excuse for not moving to color...

**Macintosh II Workstation with Seiko 14" Color Monitor**

$3139

Lease: $86/mo.

- Texas Instruments MicroLaser Plus
  - Prints 9 pages per minute;
  - 3000 page-per-month duty cycle.
  - 1.5 Mb of RAM.


- Includes 17 resident fonts.
- T1 MicroLaser Plus
- Lease: $34/per mo.

**Macintosh LC II Workstation with Sony 13" Color Monitor**

$1949

Lease: $54/mo.

- NEC Silentwriter Model 95
  - Uses microfine toner and NEC's patented "Sharp Edge" technology to produce superior-quality output.
  - Prints 6 ppm at 300 dpi. 2 Mb RAM, expandable to 5 Mb.
  - Built-in envelope feeder and 250-sheet paper tray.

- Adobe PostScript Level 2, Automatic emulation switching.
- Optional second paper tray available.
- NEC Silentwriter
- Lease: $40/per mo.

- Workstation
  - Macintosh LC II with 5 Mb of RAM, 120 Mb hard drive, 14" Seiko Trinitron color monitor, and Key Tronic MacPro Plus extended keyboard.

- Lease: $86/per mo.

**Workstation**

- Macintosh LC II with 4 Mb of RAM, 80 Mb hard drive, 13" Sony color monitor, and Key Tronic MacPro Plus extended keyboard.

- LC II Workstation
- Lease: $54/per mo.

$1949
Sony 13" Monitor

$419

Sharp, clear, affordable.

- 640 x 480 resolution
- 24- or 8-bit color
- adjustable tilt-and-swivel base
- can be used with a variety of cards

Great quality for a bargain price! Tilt-and-swivel base allows you to adjust the monitor to a comfortable angle. 16.7 million colors; 640 x 480 resolution.

Sony 17" Trinitron Monitor

$1199

Exceptionally crisp text and graphics!

- Multi-scan, high resolution monitor produces exceptionally sharp text and graphics...makes it easy to work for extended periods of time. Super Fine Pitch™ aperture grille allows more electrons to reach the color phosphors on the screen—so the images are brighter and the colors more vibrant than in conventional monitors. Displays up to 16.7 million colors; 1024 x 768 resolution in non-interlaced mode, 30-87 Hz refresh rate. Flicker-free screen, tilt-and-swivel base.

Ask about our LEASING PROGRAM
Toll-free information: 1-800-364-LESS
I that will delight you!

The ideal solution for color on a budget.

$1295
Lease price: $36/mo.

Seiko Instruments
17" Trinitron Monitor

Virtually flat, anti-glare screen with high-contrast tube for exceptional color.

Virtually flat screen reduces glare and maintains focus out to edges. High-contrast Trinitron tube provides superior color and crisp, clear type.

Maximum resolution of 1280 x 1024 (in non-interlaced mode), for extreme detail in your most demanding jobs. Displays up to 16.7 million colors. 50-87 Hz refresh rate. Flicker-free screen, tilt-and-swivel base.

Specially designed electronics and state-of-the-art light metal silica anti-glare treatment meet MPR II compliance standards.

$579
Lease price: $16/mo.

Seiko Instruments
14" Trinitron Monitor

43% brighter than the leading competitor!

- 640 x 480 resolution
- 24- or 8-bit color
- can be used with a variety of cards

High-resolution Trinitron tube. Flicker-free screen, tilt-and-swivel base. View 16.7 million colors at 72 dpi. 640 x 480 resolution, 75 Hz refresh rate.

Now you can afford to play around with the idea of owning a color system.
HOW TO DECIDE WHICH PRINTER IS THE BEST SOLUTION FOR YOUR NEEDS

1. How many pages do you need to print each month?
2. What page-per-minute speed do you require?
3. What is the printer's resident language? (Adobe PostScript Level 2 is the language of speed and compatibility.)

Texas Instruments MicroLaser Turbo XL

$2795

- 25,000 page-per-month duty cycle
- prints 16 pages per minute
- 2.5 Mb RAM
- 35 resident fonts

300 dpi, Adobe PostScript Level 2; RISC-based processor. 2.5 Mb RAM. Prints 16 pages per minute. 25,000 page-per-month duty cycle. Optional accessories: second paper tray and SCSI interface.

Includes 35 resident fonts. SCSI Interface $239

Texas Instruments MicroLaser Plus

$1249

- 3,000 page-per-month duty cycle
- prints 9 pages per minute
- 1.5 Mb RAM
- 17 resident fonts

300 dpi, Hewlett-Packard LaserJet Series II emulation standard. 1.5 Mb RAM. Prints 9 pages per minute. 3,000 page-per-month duty cycle. Optional accessories: second paper drawer, envelope tray. Includes 17 resident fonts.

Second Paper Drawer $207
Envelope Tray $269

Texas Instruments MicroLaser Plus 15 w/1.5 Mb RAM (35 resident fonts)
Lease: $377/mo...... $1349

More printers!
SEE PAGES 8-11, 20-21, 38-39, & 46-47 FOR NAME-BRAND PRINTERS: SEIKO, RASTEROPS, REALTECH...

I'd like to take a few minutes to thank you for your assistance in purchasing equipment for my Apple IIsi. Not only were you helpful, you were also informative...

I know this may sound trite, but shopping over the phone, and buying things 'sight unseen' can be a real tragedy. Dealing with you, I can be sure of what I'm getting...that, to me, is rare.

I have referred a couple of people to Hardware That Fits, and I'm sure that they will be satisfied also. Thanks again for your help, and keep up the good work!

— Lisa Wilkins, Syva Company
NEC SILENTWRITER MODEL 95

Micro-fine toner and NEC's patented "Sharp Edge" technology give you sharp, black print quality.


Includes 35 resident fonts.

$1469

Lease price: $40/month

- 6,000 page-per-month duty cycle
- prints 6 pages per minute
- 2.5 Mb RAM
- 35 resident fonts

Our marketing communications team knows the importance of a good, speedy printer! Seated: Holly, Baron. Back row: Réal, Lisa, Phil, Jeanne, Beth.
Networking solutions:
cards and hubs.

Asante EN/SC (SCSI-to-Ethernet adapter)
The Ethernet solution for Macs without available slots. For computers that don't have an internal slot for a network card (such as the PowerBook or Mac Classic), or for computers whose slots are already full. Can be installed in minutes! Designed with ports for all three types of Ethernet media: thick, thin, and 10Base-T. Includes two SCSI connectors. An excellent long-term investment, because you can easily change from one type of network media to another without additional hardware purchases.

Asante 10T Hub/8 (Ethernet concentrator)
Connects you to a high-speed 10Base-T network...lets you use inexpensive unshielded twisted-pair (UTP) telephone wire instead of expensive coaxial cable for local area networks. Connects in a star configuration to Macs, PCs or any other workstation that has a 10Base-T Ethernet card or external 10Base-T transceiver (and others which meet IEEE specifications for 10Base-T Ethernet). Has a total of nine ports (8 UTP, 1 BNC); all ports can be connected simultaneously, providing your network manager the maximum flexibility possible. Supports all popular network operating systems and network management software. Compact; easy to install.

Asante MacCon 3 Ethernet Card
Auto-sensing ports automatically configure the card for the type of media used...which means you can easily change from one type of network media to another without buying additional hardware. Available for the Mac SE, SE/30, IIsi and Nubus (Mac II family).

TechWorks
GraceLAN Update Manager
The most advanced tool available for updating and installing software on your network. Now you can update files and applications right from your desktop! GraceLAN Update Manager checks system requirements and compresses files to minimize network traffic.

GraceLAN for 50 Users...$285
DaynaSTAR MiniHub

Low price per node! A non-intelligent hub for connecting devices on 10Base-T networks.

Eight RJ45 jacks for 10Base-T connections allow communication between various types of computers, printers, and servers. Supports any network operating system. Can operate as a stand-alone hub for up to eight devices, or can be daisy-chained with other hubs over 10Base-T wiring to create larger networks. Includes BNC connector to connect the MiniHub to a thin Ethernet backbone.

DaynaSTAR MiniHub (8-port) $299

DaynaPORT E/I-T NuBus Card

Verb: Connects Mac II computers to thin, fiber optic or 10Base-T Ethernet cable systems.

Includes an RJ-45 jack for 10Base-T wiring.

DaynaPORT E/I-T NuBus Card $269

DaynaPORT E/Z

Ideal for Macintosh computers that don’t have a slot for a network interface card. Connects the Mac Plus, Classic, and PowerBook to Ethernet. Also an ideal solution for SE, LC, and llsi computers that have used up their only slot and need an Ethernet connection. Connect to your Mac’s printer port instead of using a SCSI Ethernet connector. Supports all Ethernet cable systems. Includes RJ45 connector for 10Base-T twisted-pair wiring, a BNC port, and an AUI port.

DaynaPORT E/Z $269

Dayna EtherPrint

Connecting LocalTalk printers to an Ethernet system used to require an expensive bridge or router. Not anymore!

EtherPrint is affordable, easy to install and easy to use. It connects directly to a LocalTalk printer or other device and an Ethernet cable system. EtherPrint supports AppleTalk Phase 1 and Phase 2 protocols, so you can divide your network into multiple zones.

Dayna EtherPrint $335
Dayna EtherPrint Plus $439
WHEN SHOULD YOU GRADUATE FROM LOCALTALK TO ETHERNET?

If your LocalTalk network is bogging down and can't keep up with those 24-bit color graphics files you're transferring (or all the file sharing you need to do), you should make the move to Ethernet. In real-world file transfer tests, Ethernet is three to five times faster than LocalTalk. But if you don't know which bridge, hub, card, or router will work with your particular setup, give us a call (toll-free). We can help you make the right connections!

**Farallon**
**PhoneNet Star Controller**
An intelligent hub that lets you create larger, more manageable LocalTalk networks. Uses unshielded twisted-pair cabling; star topology increases network reliability. StarCommand software (included) provides advanced network management, including automatic error notification, traffic statistics, line test, and the ability to switch individual ports on and off.

**Ether 10-T Starlet**
(9-port)
Connects up to eight Ethernet devices (for a total of nine ports) in a reliable star topology. Can be used to expand intelligent 10Base-T hubs, such as the Star Controller EN, by allowing you to add multiple nodes to a single port. Includes eight easy-to-use RJ45 10Base-1 ports, and one BNC 10Base-2 port for connecting multiple Starlet hubs. Link integrity LEDs indicate function status.

**Cayman**
**GatorBox CS Rack**
Rack-mounted version of the GatorBox CS. Dual fans and status lights on front and back.

**PhoneNet Star EN (12-port)**
Keeps your network running even in the event of network errors. If a device sends disruptive jamming signals, the port it's attached to is automatically disconnected before the rest of the network is affected. Uses twisted-pair wiring to connect up to 12 network devices. Additional devices can be added to each port using the Starlet mini-hub. Includes StarCommand software, which automatically monitors StarController hubs, reports errors, provides per-port traffic information, and allows ports to be switched on or off.

**PhoneNet Star Controller (stand-alone hub)**
Lease: $30/per mo. **$1099**

**PhoneNet Star Controller (24-port)**
Lease: $38/per mo. **$1389**

**PhoneNet Star Controller (9-port)**
Lease: $9/ per mo. **$279**

**PhoneNet Star Controller (12-port)**
Lease: $18/ per mo. **$1369**

LET'S TALK! CALL US TOLL-FREE FOR ANSWERS TO YOUR QUESTIONS ABOUT HOW TO SET UP NETWORKING IN YOUR OFFICE.
Networking bridges and routers.

**NetBridge**
Doubles your network's node count and wiring length limit. Can connect two independent local networks into one large internetwork without any performance degradation. Directs network traffic to the shortest route. Comes with Shiva Net Manager software, which lets network managers group networks into zones, restrict access between zones, and more.

NetBridge...............Lease: $12/per mo. **$449**

**EtherGate Router**
Routing gateway that combines EtherTalk and LocalTalk networks into a single internetwork; connects remote LocalTalk and EtherTalk networks over phone lines. Consists of an Ethernet port (thick and thin, used one at a time) and two LocalTalk/serial ports.

EtherGate Router.......Lease: $38/per mo. **$1399**

**NetSerial**
Allows users to share serial devices, such as printers, over a LocalTalk network. Can be used as a gateway to minicomputers and mainframes. Connects directly to the network without a dedicated computer.

NetSerial...............Lease: $8/per mo. **$299**

**NetModem/E (for Ethernet networks)**
Consists of a dedicated communications processor, a high-speed 14,400 baud modem with v.32bis and v.42bis support and a built-in Ethernet interface.
- **Remote dial-in access** allows a user with any standard modem to dial into a network. Requires no communications applications or new user interface.
- **Shared modem dial-out** works with leading communications programs.
- **Remote routing** routes AppleTalk or IPX packets over ordinary phone lines.

NetModem/E...............Lease: $43/per mo. **$1579**

**NetModem V2400 (for LocalTalk networks)**
Remote users can dial into a network or out over a shared phone line. Consists of a Hayes-compatible 2400 baud modem with v.22 and v.22bis support, and a built-in LocalTalk interface.

NetModem V2400...........Lease: $10/per mo. **$369**

**NetModem/v.32 (for LocalTalk networks)**
Same features as NetModem/E, but designed for LocalTalk networks. Consists of a Hayes-compatible high-speed 9600 baud modem with v.32 support, and a built-in LocalTalk interface.

NetModem/v.32...........Lease: $35/per mo. **$1269**

**FastPath SR Router/Gateway**
Routes multiple protocols: TCP/IP, DECnet, AppleTalk Phase 1 and Phase 2, IPXTalk and NFS. Includes EtherModule, a removable Ethernet connector that allows you to switch to a different Ethernet media if needed. Comes with Shiva Net Manager software. Rack-mounted.

FastPath SR.............Lease: $56/per mo. **$2049**

**Hublet**
No configuration software required! A stand-alone local concentrator for 10Base-T networks, the Hublet allows multiple nodes to connect to a single 10Base-T drop. Can be daisy-chained to create small 10Base-T networks. Four ports offer connections to Macs, PCs, workstations, or any 10Base-T device.

Hublet...............Lease: $6/per mo. **$229**

Acts as a "power strip" for 10Base-T networks... splits a single 10Base-T network into two!
CHOOSING THE RIGHT STORAGE MEDIA

If you have simply run out of room, a fixed hard drive might be just right. But for more specialized needs, there are more options. Floptical drives let you use both floppy disks and 21 Mb disks, for unlimited data storage. A portable drive is great for users on the go — just slip it into your briefcase! A cartridge drive is the choice of pros for archiving documents.

### Conner

**Internal Drives**
- 120 Mb ........................................ $389
- 212 Mb ...................................... 629

**External Drives**
- 120 Mb ........................................ $479
- 212 Mb ...................................... 719

### Quantum

**Internal Drives**
- 105LP Mb .................................. $389
- 240S Mb .................................. 729
- 425S Mb .................................. 999

**External Drives**
- 105LP Mb .................................. $479
- 240S Mb .................................. 815
- 425S Mb .................................. 1085

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**Peripheral Land**

**Infinity Floptical Drive**
Reads and writes 720K and 1.44 Mb floppy disks. Can also use 3.5" floppy disks with a capacity of 20.8 Mb.
Floptical technology incorporates optical servo tracks, an infrared light-emitting diode, and photo detector to position read/write heads.
Inexpensive 21 Mb floppy diskettes provide unlimited low-cost per Mb expandability.
21 Mb Infinity Floptical Drive
Lease: $1.39 per mo. .................................. $469
21 Mb Floptical for Quadra (internal)
Lease: $1.19 per mo. .................................. 409

**Infinity 44 & 88 Mb Turbo Drives**
Effective for storing and archiving seldom-used data. Average access time: 20 milliseconds. Fast data throughput, and SCSI-2 support. Unlimited storage capacity: all you have to do is add more cartridges. The Infinity Turbo 44 and 88 use a Syquest mechanism, reducing chances of a head crash. Free yourself from the capacity limit of a fixed hard drive.
Infinity 44 Mb Turbo Drive
Lease: $14.99 per mo. .................................. $579
Infinity 88 Mb Turbo Drive
Lease: $19.99 per mo. .................................. 699

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WE COULD EXTOL THE VIRTUES OF OUR TECH SUPPORT TEAM. BUT WE WON'T. WE'LL LET SOMEONE ELSE TELL YOU HOW TERRIFIC THEY ARE...

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I bought my RealTech Laser just before Christmas. At the time, I remember being a little irritated because I paid $700 more than the price MacFriends was asking for what I considered to be the same machine. (Their ad came out after I placed my order.)

Your salesman at the time pointed out that you provide tech support, which didn't seem to be worth the $100 difference at the time.

I was wrong, wrong, WRONG.

Your tech support people just pulled me out of an awful situation with a 2 minute phone call. This is a growing business. I plan to buy more Macs, hard drives, monitors, software upgrades...and I plan to buy them from you.

— David Hayes
David Hayes Advertising
affordable storage.

Mass Microsystems

21 Mb Floptipak Drive
A breakthrough in high-capacity floppy storage! 21 Mb floppy-sized cartridge holds 25 times the data of a floppy disk at a low cost per Mb. Also reads 1.44 Mb high-density or standard 720K disks, which means you can continue to use older floppies while you make the transition to Floptical disks.

21 Mb Floptipak Drive
Lease: $13/ per mo. $469

45 or 88 Mb DataPak Removable Cartridge Drives
One of the most cost-effective ways available to add capacity and back up your data. This is a system that grows with you — when you need more storage, just add another cartridge. The 20 milliseconds access time of DataPak drives is actually faster than some fixed drives; up to 32K buffer. HDI SCSI cable available for PowerBooks.

45 Mb Removable Drive
Lease: $16/ per mo. $569

88 Mb Removable Drive
Lease: $18/ per mo. 659

DiamondDrive Portables
This compact, quiet drive offers all of the capabilities of standard external hard drives. Weighing under 3 lbs., each drive is shock-mounted in a rugged, scratch-resistant case.

Depending on the disk capacity you need, you can choose either the one-inch unit with a single SCSI port, or the two-inch unit with dual SCSI ports. Both models are so quiet you’ll hardly know they’re there — and compact enough to carry in a briefcase.

120 Mb DiamondDrive Portable (1")
Lease: $14/ per mo. $499

210 Mb DiamondDrive Portable (2")
Lease: $19/ per mo. 679

DiamondDrive
For a variety of storage intensive data and image applications, from small business to large network needs. An affordable way to increase your Macintosh system’s storage capabilities.

120 Mb DiamondDrive
Lease: $16/ per mo. $589

210 Mb DiamondDrive
Lease: $23/ per mo. 829

HitchHiker 80
A compact, light-weight design provides the reliability, performance and superior design found in conventional hard drives. Uses standard 50-pin SCSI connectors, has an external SCSI ID selector switch, and is internally terminated. Requires no AC power since the drive is powered directly from your Macintosh. Power adapter, ADB cable, and SCSI extender are included.

HitchHiker 80 Drive
Lease: $18/ per mo. $669

Storage Dimensions

200 Mb Bullet Drive
Very light, portable drive with “auto-park” heads. Comes with two standard SCSI ports, its own fan and power supply, and software. All Storage Dimensions drives come with MacinS tor utilities, disk mirroring and disk scanning capabilities.

120 Mb Bullet Drive
Lease: $19/ per mo. $679

200 Mb Bullet Drive
Lease: $30/ per mo. 1079

325 Mb Bullet Drive
Lease: $40/ per mo. 1449

Like the drives on this page, you can always count on our tech team.

Every week, we receive dozens of letters like the one at the left. Most of them are written specifically to thank someone on our tech team for pulling them out of a jam. It’s true that on a few products we sell, our prices are higher than the competition. But they don’t offer toll-free tech support... and we do! (1-800-364-MACS)
WHY NOT USE A POWERBOOK AS YOUR PORTABLE AND YOUR DESKTOP COMPUTER?

I do. I travel a lot (negotiating the great Mac deals you see in our ads), and I just can't afford to waste time copying data from my PowerBook to a standard hard drive. So I don't. When I come back to my office, I simply attach the RealTech 15" monitor's SCSI station and cable to the back of the PowerBook and start working. (The PowerBook's screen is great — but nothing beats a full-page display!)

Our portable traveling solution — the PowerBook, Kodak Diconix 180si printer, and leather attaché — is a time-saving trio for the frequent business traveler. No more waiting for the hotel business office to print documents for you. If you need to publish a memo or agenda for your next meeting, just pull out the lightweight Diconix printer from your attaché, hook it up (in one easy step)...and print!

A Kodak Diconix 180si Printer
Lease: $10/per mo...$379

B Apple Macintosh PowerBook 170
w/8 Mb of RAM, 80 Mb hard drive
Lease: $256/per mo...4079

C Leather Attaché................. 139

D RealTech 15" Monitor
and SCSI Station
Lease: $24/per mo......879

Not pictured
Internal PB1 Fax Modem
Battery Pack
Charger/Reconditioner

PowerBook 170 Portable Workstation
(Includes PowerBook 170 with 8 Mb of RAM and 80 Mb hard drive, Kodak Diconix 180si printer, RealTech 15" monitor and SCSI station, internal PB1 send/receive fax modem, and executive leather attaché.)
Lease: $155/per mo...$5675
Macintosh PowerBook.
The powerful, practical, portable solution for people on the move.

Apple Macintosh PowerBook 170
$4079
Lease: $112/month

Apple's top-of-the-line, highest performance PowerBook. Its speed and responsiveness allow you to run almost any type of program with ease.

- Active matrix display (640 x 400) for optimum viewing comfort
- 8 Mb of RAM
- 80 Mb hard drive
- 25 MHz 68030 microprocessor
- 1.44 floppy drive

PowerBook 170 8/80 with 15" Trinitron Monitor and SCSI Station
Lease: $147/month

Apple Macintosh PowerBook 170 8/80 with 15" Trinitron Monitor and SCSI Station
Lease: $147/month

Apple Macintosh PowerBook 145
$2439
Lease: $67/month

With power and speed equivalent to the 170, Apple's new PowerBook 145 will become a standard feature in boardrooms, hotels, and airplanes.

- Supertwist liquid crystal display (640 x 400)
- 4 or 8 Mb of RAM
- 80 Mb hard drive
- 25 MHz 68030 microprocessor
- 1.44 floppy drive

Apple Macintosh PowerBook 145 4/80
Lease: $67/month

Apple Macintosh PowerBook 145 8/80
Lease: $75/month

Apple Macintosh PowerBook 145 8/80 with 15" Trinitron Monitor and SCSI Station
Lease: $147/month
PSI Integration

PB 1 Modem
Can send and receive from the PowerBook to any fax machine or modem. Internal 9600 bps send; 4800 bps receive fax/2400 bps.

PowerBook I rax Modm... .... $799

WANT TO BUY APPLE'S NEWEST POWERBOOK?
GIVE US A BUZZ (TOLL-FREE).
WE'LL BE HAPPY TO QUOTE YOU A PRICE.

Global Village Modems

Global Village TelePort
An ADB-compatible modem designed specifically for the Macintosh. Plugs into the Apple desktop bus port with the mouse and keyboard. No plug-in power supply or power switch!

Global Village TelePort .................. $179

Global Village PowerPort-Silver
Send and receive fax and modem data at 9600 bps. If you often communicate on-line and use dial-in software such as AppleTalk Remote Access, this is the modem you need.

Global Village PowerPort – Silver.... $469

PowerBook Memory Upgrades

Newer Technologies
Add-in memory boards for PowerBooks. Ultra-low power DRAM design ensures long battery life.

4 Mb Upgrade........... $269
6 Mb Upgrade............. $359

Solectek Modem
Easy-to-use fax modem features a 9600/4800 bps send and receive fax.

Solectek Pocket Fax........ $219
PowerBook accessories.
The portable solutions you need for computing on the go.

Zoom Modems
Combines a 9600 bps send/receive fax with a Hayes-compatible 2400 bps modem. V.42bis/MNP5 data compression provides high-speed fax and data capability for your personal computer. Group III compatible.

- Zoom 2400...........................................$75
- Zoom FX 96/24v....................................149
- Zoom 9600 v.32/42 bis..............................259

Portable Printer
Kodak Diconix 180Si Printer
Quality, portable printing has never been so easy! Thermal ink-jet printer prints on continuous-form paper. Capable of printing consecutive copies for up to 50 minutes. Unlike some portables, the self-contained ink supply on the Diconix is easy to replace. Standby lifetime is 12 hours. Approx. 2" x 6.5" x 11"; weighs under 3 lbs. Printer driver and SCSI cable are included.

- Kodak Diconix 180Si Printer..........................$379

Mass Microsystems
MassMicro 24/96 Modem
Some fax modems require bulky external transformers or batteries; this one simply plugs into the serial and ADB ports of any Macintosh. Automatic “sleep” feature drops power consumption when the unit is idle. A command or ring-detect wakes the unit, making it ideal for use with the PowerBook. Provides fax transmission at 9600 bps, and data transmission at 2400 bps. Supports Group III compatibility.

- MassMicro fm 24/96 PB..............................$209

Prometheus
ProModem 2496/R Minifax
Performs fax transmission at 9600 bps, and data transmission at 2400 bps. Group III compatible. Includes 8 LED status lights and storage for four phone numbers.

- ProModem 2496/R.................................$215

SCSI Station & Full-Page Display
A complete system... requires no video card! Flicker-free 15" RealTech portrait display has 870 x 640 resolution, 80 dpi. Vertical refresh rate of 75 Hz. Flat CRT; anti-glare screen.

- SCSI Station & 15" Display.......................Lease: $24/per mo.$879

Prometheus
ProModem 2496/R Minifax
Performs fax transmission at 9600 bps, and data transmission at 2400 bps. Group III compatible. Includes 8 LED status lights and storage for four phone numbers.

- ProModem 2496/R.................................$215

Seiko 14" Color Monitor
Affordable 14" Seiko color monitor for your PowerBook.

- Seiko 14" Color Monitor............................$579

Seiko Monitor & SCSI Station w/ Computer Care (4 Mb Card)..........................$1249
Applied Engineering

Put the power of a Quadra into your Mac!
Based on the same (68040) processor as the Quadra. Your programs will fly at incredible speed, saving you time and frustration.

Daystar Digital

PowerCache Accelerators
The Daystar PowerCache card will make your Mac II, IIcx, IIfx, IICci, LC or SE/30 run like a Quadra — but without Quadra’s fast-mode compatibility problem.
In fact, the PowerCache card is guaranteed 100% compatible with all your utilities and applications — and it doesn’t take up any NuBus slots.

Fusion Data Systems

TokaMac Accelerators
TokaMac’s 68040 accelerators provide high-speed performance for the Mac IIci, IIci, and LC. The same processor used in the Quadas can increase performance up to 300% for graphics and multi-media programs...or up to 600% when you’re number-crunching!

Tell us how much speed you need. We’ll match you with the right accelerator for your model of Mac.
Newer Technology

**fx Overdrive Accelerator**
Variable speed accelerator runs up to 25% faster than a stock IIx. Switches between 40, 45 and 50 MHz without restarting.

Mac IIx Overdrive..............................................$459

**Quadra 900 Overdrive Accelerator**
Increases performance by up to 32% by accelerating the CPU from 25 MHz to 33 MHz. Requires only 80ns or faster SIMMs. Easy to install; just snap into place!

Quadra 900 Overdrive.............................................$249

Peripheral Land (PLI)

**Quick SCSI Accelerator**
A SCSI-2 NuBus host adapter with disk mirroring — improves your SCSI performance by up to 300%. Achieve up to 4.4 Mb per second sustained transfer rate (depending on the hard drive). Partitioning allows a smaller capacity drive to be mirrored into a partition of a larger capacity drive. SCSI-1 compatible to work with your existing SCSI devices.

Quick SCSI Accelerator...........................................$339

Radius

**Rocket Accelerators**
NuBus-based accelerators for the Mac II family. The 25 MHz Rocket 25i is powered by a 68LC040 processor.

The 25 MHz Rocket and 33 MHz Rocket 33 are powered by a 68040 processor, which includes an integrated math coprocessor. All three include 8 SIMM slots for up to 128 Mb of DRAM, an 040 PDS slot, and QuickDraw and display-list acceleration software.

Radius Rocket 25i .............................................$1239

Radius Rocket ....................................................$1649

Radius Rocket 33 .................................................$2069

If you want optimum speed, call our turbocharged sales team (a few of them are shown here).

Seated: Dona, Gina, Barbara
Standing: Jim, Don, Mike, Cecil.
WHAT'S IN A NAME?
Ben Hardeman owns a nameplate-manufacturing company. To express his thanks for Jim's years of support and follow-through, Ben sent him a top-of-the-line bronze nameplate for his desk.
"You've been extremely helpful through the years.... I always depend on you to give candid advice on which options are really best for our needs."

If you need an all-purpose business workstation, we can help you get back to the basics.

Apple Means Business
Sign up for one of our personal computer seminars.

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A 240 Mb hard drive
Lease: $21/ per mo. $769

B Macintosh Iici w/5 Mb RAM

C 21" RealTech grayscale monitor
Lease: $20/ per mo. $795

D Key Tronic MacPro Plus extended keyboard
             139

E Silhouette Trackball
             79

F Seiko Smart Label Printer Plus
             175

G RealTech Laser printer
w/2 Mb RAM
Lease: $47/ per mo. $1595
Cassette feeder & tray
             199

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"The RealTech features not just a genuine Adobe interpreter, but also a PostScript Level 2 raster image processor (RIP), which earns it more than a few points for forward compatibility."
— Publish Magazine, Feb. 1992

See pages 46-47 for complete information about the RealTech Laser.

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Ask about our LEASING PROGRAM
Toll-free information: 1-800-364-LESS

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" My art department is in love with our RealTech Laser. It cut our printing times dramatically and increased our productivity.

Your sales group is top-notch. They are friendly, helpful and know what they are talking about. It's a pleasure to have a salesperson who can actually answer technical questions and not just quote prices.... Based on the sales support alone I know I don't need to call anyone else. Please keep up the good work and pass along my compliments to your team."

— Richard Wilson, Wilson & Wilson
We help you solve the equation of price, function, and affordability.

Do you create spreadsheets, charts and graphs... or write a company newsletter... or print lots of sales letters? Give us a call (toll free) and explain what kind of work you do, and the speed and level of quality you need in a monitor and printer. We'll work with you, evaluating your needs, exploring different combinations of equipment, examining the alternatives. Maybe the answer to ultimate productivity for you is the workstation shown above. And maybe not! We'll only recommend what makes sense for your needs and your budget.
radius \[ \text{15" Color Pivot/LE} \]

- ergonomic, full pivoting design
- 832 x 624 resolution
- 78 dpi, 72 Hz refresh rate
- portrait and landscape orientation

A low-cost 15" display solution for users who require a productive color desktop for business applications. You can view your documents in portrait or landscape orientation — whichever you need. Includes a Radius Color Pivot video interface for 256 colors. Full pivoting, ergonomic design and excellent image focus and clarity are standard features. This display is compatible with Macintosh Quadra, II series, LC and SE/30 computers.

<table>
<thead>
<tr>
<th>Item</th>
<th>Price</th>
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<tbody>
<tr>
<td>Color Display/21</td>
<td>$1,999</td>
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<td>Precision Color Display/20</td>
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<td>Precision Color 8 Interface</td>
<td>$519</td>
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<td>$509</td>
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<tr>
<td>Precision Color Calibrator</td>
<td>$449</td>
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</tbody>
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**20" SuperMatch Color Display**

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- **1024 x 768 resolution**
- **24- or 8-bit color**
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High resolution, impeccable color-realism and compatibility. Complete color matching system makes this monitor a good choice for color publishers and graphic designers who want an affordable full-page display. Hitachi tube.

Plenty of room for opening a full page document or multiple windows, plus extra viewing area. With its 72 dpi pixel density and high resolution, it ensures that your text and graphics will appear the same in print as on the screen.

---

**20" SuperMatch Dual-Mode**

**Trinitron™**

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  - (20" WYSIWYG)
- **1152 x 870 resolution**
  - (21" 2-page viewing)

Ideal for graphics professionals who need to switch from editing to illustration to layout. Choose from 1024 x 768 WYSIWYG resolution to 1152 x 870 two-page mode for working on two-page projects. With selected SuperMac graphics cards, you can even switch "on the fly" without having to leave your application or restart. Trinitron® display technology brings you exceptional color realism, because it's set to a white point of 6500° Kelvin, which eliminates the blue tint of other monitors. Meets the most stringent recommendations available for magnetic emissions.

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- **Platinum 21”** ................................................................. **$1049**
- **Platinum 20”** ................................................................. **$949**
- **Spectrum/24 Ill or Spectrum/B-24 PDQ** ................. **$829**
- **Spectrum/B NuBus/1/i1** ........................................... **$419/499/499**
- **Monochrome Card** ..................................................... **$329**
- **SuperMatch Display Calibrator** ................................. **$499**
- **Thunderstorm** ............................................................. **$829**
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- **Video Spigot Pro** ............................................................ **$1079**
- **Spigot & Sound/Spigot & Sound Pro** .................... **$479/1159**
The RealTech Laser: the original PostScript Level 2 printer. First of its kind, and the best value in its class.

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THE BEST VALUE FOR HIGH-QUALITY PRINT ON A SMALL BUDGET

Feature for feature, the RealTech Laser outperforms every other printer of its type. If you need to print complex graphics on a daily basis or large quantities of high-quality, time-sensitive documents, the RealTech Laser is the ideal choice. And for people on a network who need a fast, accessible printer — it's the perfect solution!

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Why settle for second best when you can buy the winner?

“The RealTech features not just a genuine Adobe interpreter, but also a PostScript Level 2 raster image processor (RIP), which earns it more than a few points for forward compatibility.”

— PUBLISH MAGAZINE February, 1992

The RealTech Laser is the number one choice of Fortune 100 and Fortune 500 companies for networking and workgroup publishing tasks.

The ideal solution for networking and mixed-platform environments.
The RealTech Laser’s three interface ports (AppleTalk® RS-422, IBM PC parallel, and RS-232-C) can be used simultaneously. It can be used in mixed-platform environments, as well as Macintosh or PC.

The RealTech Laser can be assigned either PostScript® or LaserJet II emulation, making it the ideal network printer. A Hewlett-Packard LaserJet Series II emulation allows it to be used with non-PostScript applications software.

Designed for multi-user use.
The RealTech Laser’s speed and quality make it a particularly appropriate choice for multi-user printing environments. Its recommended duty cycle is 5,000 pages per month. A second 250-sheet cassette feeder is available ($199), as well as an optional envelope feeder.

Faster than non-RISC printers.
The RealTech Laser’s high-performance Weitek RISC processor and ATM font rendering technology enable it to print complex documents faster than other non-RISC laser printers in its price range. ATM font rendering technology builds raw type characters 4 to 5 times faster.

The RealTech Laser uses a new version of the Sharp printer engine that prints 9 pages per minute.

Expandable! Can be upgraded to 10 Mb of RAM.
The standard configuration includes a SCSI port and 2 Mb of RAM, upgradable to 10. The RealTech Laser is the only printer of its kind with this much RAM and hard disk expansion capability!

Now available with a second paper tray & cassette.

Optional 2nd paper tray & cassette feeder $299
RealTech-quality, value-priced solutions designed specifically for electronic publishing. From scanning through first-draft color proofing, RealTech is the affordable alternative to expensive pre-press systems. The RealTech line includes a color scanner with transparency option, color printers, color and grayscale monitors, and more!

RealTech 17" Multi-Mode Color Monitor

Have you ever heard of great color... multi-mode resolution...and a great price...all in the same monitor? Anti-glare, flicker-free screen reduces eyestrain caused from extended viewing. Tilt-and-swivel base allows you to adjust the monitor to a comfortable angle. 832 x 624 standard resolution; will auto-sync to 640 x 480 and 1024 x 768. Will interface with Quadras, and with popular video cards from RasterOps, Radius, and SuperMac.

RealTech 17" Multi-Mode Monitor
w/24-bit Radius PC24XP Video Card
Lease: $41 per mo. $1495

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RealTech...quality, value-priced solutions designed specifically for electronic publishing. From scanning through first-draft color proofing, RealTech is the affordable alternative to expensive pre-press systems. The RealTech line includes a color scanner with transparency option, color printers, color and grayscale monitors, and more!
BUSINESS LEASING OPTIONS
1 True Lease...with 10% buy-out option
2 Installment Lease...with $1.00 buy-out option
3 Speed Lease...90- or 180-day terms, with buy-out or conversion to other leases
4 20/20 Lease...10% security deposit, 20 equal payments, 10% buy-out
5 90-day Deferred lease...no payment for 90 days; first and last payment in advance

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All business leases are subject to credit approval. All lease payments in this supplement are based on the "True Lease" program at 48 months. Prices, lease prices, and rates are subject to change without notice.

NOTE: Minimum total lease payment is $50 per month. Business leases only (minimum length of time in business—two years). Sorry, no personal leases.

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If you don't like it, we'll buy it back.
We Guarantee Your Satisfaction. If you aren't 100% satisfied with what you buy from us, call. Return it within 30 days of the shipping date and we'll refund your purchase price (minus consumables for printers.)

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Before returning merchandise, we must ask that you call our Customer Service Dept. toll free to receive a return merchandise authorization number (RMA). This number must be included with any product you return within 30 days of the shipping date. No C.O.D. returns, please. Thank you for your cooperation.

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When you call with a problem, our highly trained, dedicated tech team makes it their problem. They don't rest until they've helped you solve it, because they know how important it is for you to keep your equipment up and running!

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You can always count on our tech team to help you when you're in a jam. Seated, left to right: Paul and Craig. Standing: Chris, Tom, Dan, Mike, Dave.

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Our marketing communications team knows how important it is for you to understand the products you're buying. Seated, from left to right: Rial, Lisa, Phil, Jeanne, Beth.

Real for the RealTech Color 350, it's fast becoming the number one choice of designers and ad agencies for first­draft color proofs.

If you're interested in the RealTech Color 350, we'll be happy to send you a sample color output to show you its quality.

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Image Analyst

Image Analyst is an image-processing program that lets you identify and analyze any element of an image. Measurements and statistics can be automatically or interactively generated from TIFF or PICT files or from captured video images. New features simplify finding an image quickly. Version 2.0 reviewed. Version 2.1.7c shipping. Requires Macintosh Plus or later; System 4.0.1 or later; $149. Olduvai Corp., 7520 Green Rd., Ste. A, South Miami, FL 33143. 800-822-0772 or 305-665-4665. (Oct '90)

Ofoto

Ofoto is one-step gray-scale scanning software that's an absolute joy to use. Powerful, intuitive interface automates the scanning process. Produces excellent image quality and works with scanners from many manufacturers. Produces individual calibrations for a wide variety of printers and imagers, saving information about the devices' dpi, screen frequency, and other characteristics. Installation is tricky. Has minimal image-editing tools. Version 1.11 reviewed. Requires Macintosh Plus or higher with System 6.07 or later and a hard drive. $395. Light Source, 17 E. Sir Francis Drake Blvd., Ste. 100, Larkspur, CA 94939. 800-231-7226 or 415-461-4699. (Aug '91)

PictureBook

PictureBook is an excellent Scrapbook replacement. It catalogs your Scrapbook and lets you resize and/or crop anything that can be copied to the Clipboard. Has a lot of power, and the interface is easy to use. Version 1.0 reviewed. Version 1.0 PictureBook+ shipping. Requires Macintosh Plus or later and MacPaint or System 4.1 or later; hard drive recommended. $129.95. Loop Software, P.O. Box 1249, Menlo Park, CA 94026. 800-682-9676 or 914-769-7800. (Apr '91)

SmartScrap and The Clipper

SmartScrap and The Clipper II are two useful DA utilities for graphics work. SmartScrap is a major enhancement to the standard Scrapbook DA. The Clipper provides a transparent Clipboard window that lets you resize or crop a graphic to the area in which it will be pasted. Version 1.0 reviewed. Version 2.1 shipping. Requires Macintosh Plus or later and System 4.0 or System 4.1; MacPaint or System 6.03 or later; $89.95. Portfolio Systems, Inc., 10062 Miller Ave., Ste. 201, Cupertino, CA 95014. 800-729-3966 or 408-252-0420. (July '87) * '87 Eddy

PrePrint

PrePrint is an enhanced PICT editor that lets you capture and save selected screen items, without extraneous pixels surrounding captured image. Can convert color images to black-and-white on the fly and change image size at time of capture. Can leave the Screenshot window open to capture multiple images without repeatedly pressing "hotkey." Images can be printed or saved individually in bit-mapped format. PICT, 24-bit color, Clipboard or Scrapbook, or Startup- Screen formats. Version 1.1 reviewed. $59.95. Baseline Publishing, Inc., 1770 Moriah Woods Blvd., Ste. 14, Minneapolis, MN 55417. 800-926-9677 or 901-682-9676. (Mar '91)

SnapShot

SnapShot is a DA/JINIT utility that lets you capture full or partial screens. Diffs from similar products in that captured window remains on-screen within a real window, which you can use as you work. All or part of a screen, window, dialog box, or menu can be captured as a color or a black-and-white image. Supports PICT or paint formats. No way to scale or crop captured images or to save them as startup screens, but these features are available in other painting applications. Version 3.0 reviewed. Version 3.01 shipping. $59.95. Wildflower Software, 21W171 Coronet Rd., Lombard, IL 60148. 708-916-9360. (June '91)

VideoQuill

VideoQuill's purpose is to produce high-quality PICT- or TIFF-format type for video or multimedia presentations. Not wholly successful, despite nice effects such as blends and transparencies. Uses fonts only in its own format and can't convert Type 3 or Adobe Type 1 fonts. The Font Pack has 47 fonts to supplement the 2 that are provided, but this option raises the purchase price. Some text characters have been omitted, and aligning type is slow and difficult. Version 1.01 reviewed. Requires Macintosh II series with 32-bit-color QuickDraw, color display, and 2 MB of RAM. $695 with Font Pack. Data Translation, 100 Locke Dr., Marlboro, MA 01752. (508) 481-3700. (Feb '91)

Aperture

Aperture combines a CAD program with a database manager. Some of its numerous features are difficult to access, but generally the package is very useful. The database application is a decent flat-file manager, and the drawing portion of the package has color support, infinite zoom, and libraries, as well as other powerful tools. Version 3.0 upgrade adds relational database capabilities. Version 1.02 reviewed. Version 3.0 Pro shipping. Requires Macintosh Plus or later; SE/30 or Mac II series with 2 MB of RAM recommended. $2,495; multituser Networker version, $2,995. Graphic Management Group, Inc., 100-3 Summit Lake Dr., Valhalla, NY 10595. 800-346-6828 or 914-769-7800. (Apr '90)

Ashlar Vellum

Ashlar Vellum 2.0 is a powerful 2-D CAD package for architectural and mechanical

Ashlar Vellum 3D 4****

Vellum 3D is a highly-accurate 3-D-wireframe-CAD program with 2-D drafting capabilities. Doesn’t offer hidden-line removal, and can’t create shaded images as do surface and solid modelers. Particularly well suited to mechanical design, drafting, engineering, and architectural tasks. Utilizes intelligent-cursor feature called Z-Drafting Assistant to provide continuous feedback on precise cursor location. Offers easy-to-use on-screen “trackball” to rotate views of work in progress. Can create 2-D PICS animations of designed objects. Version 2.1 reviewed. Requires FPU-equipped Mac with System 6.03 or later, 4 MB of RAM, and a hard drive. $2,495. Ashlar, Inc., 1290 Oakmade Pkwy., Ste. 218, Sunnyvale, CA 94086. 800-877-2745 or 408-746-1800. (June '92) 4****

AutoCAD 6****

Already a popular CAD program on PCs and UNIX machines, AutoCAD’s latest Mac version sports an interface significantly improved over earlier attempts. Further refinement is needed, but the long list of powerful features makes this an ideal tool for 3-D engineering applications. Steep learning curve. Advanced Modeling Extension (AME) option adds sophisticated solid-modeling features and precise, automatic calculation of volume, weight, surface area, and other mass properties. Makes extensive and clever use of macro scripts that activate complex commands/sequences. Allows high-level customization using AutoLISP programming language, and many third-party applications are already available. Version Release 11 reviewed. Requires 68020 CPU or higher with math coprocessor, 8 MB of available RAM (16 MB using AME), System 7.0 or later, and a high-capacity hard drive. Quadra or display-list processor acceleration recommended. $3,500; AME, $495. Autodesk, Inc., 2320 Marinship Way, Sausalito, CA 94965. 415-332-2344. (Oct '92)

Blueprint 3****

Blueprint is an affordable, easy-to-use 2-D-CAD program that’s a simplified version of MiniCad+. It is particularly useful for architectural drafting. Has complete drawing tools and excellent control over colors and patterns. Lacks a programming environment and integrated spreadsheet and database features. Includes superb symbol libraries and good control over layering and Boolean operations. Dimensioning commands and DXP import/export capabilities are weak, but reliably exports EPS graphics. Version 2.0 reviewed. Version 2.1 shipping. Requires Macintosh Plus or later and a hard drive. $295; plotter driver, $300. Graphsoft, Inc., 8370 Court Ave., Ste. 202, Ellicott City, MD 21043. 410-461-9488. (Sept '91)

Claris CAD 4****

Claris CAD is an excellent choice for entry- or midlevel 2-D mechanical drafting. It’s easy to master if you are proficient with MacDraw II. The most important new addition is a guide to location and construction of geometric features. Lacks an integrated spelling checker and offers only limited color support. There are special tools for architects, and mechanical engineers should like the well-implemented, ANSI-standard Geometric Dimensioning and Tolerancing system. Included Claris Graphics Translator converts between standard Mac and PC graphics formats. Version 2.10 reviewed. Version 2.03 shipping. Requires 2 MB of RAM. $899; Claris Graphics Translator, $299. Claris Corp., 5201 Patrick Henry Dr., Santa Clara, CA 95052. 408-727-8227. (Mar '91)

DesignCAD 2D/3D 4****

DesignCAD 2D/3D is a capable 2-D drafting program that supports 3-D solid modeling and surface rendering. Has a few rough edges. Point-orientation method of drawing takes some getting used to. Overwhelming screens with long menus and huge palettes. Version 2.0 reviewed. Version 3.01 shipping. Requires Macintosh Plus or later and System 6.03 or later. $299. DesignCAD, Inc., One American Way, Pryor, OK 74361. 918-825-4848. (Mar '90)

Dreams 4****

Dreams is an easy-to-use drawing program with a straightforward interface. Offers color fills, automatic line measurement, and multicolor pattern editing. Doesn’t support Pantone colors. Can’t convert text to outlines. Adequate for technical illustrators who need QuickDraw speed and PostScript precision but not high-end features. Version 1.1 reviewed. Requires Macintosh II series or higher with color display system. $599. Innovative Data Design, Inc. (idd), 135D Mason Circle, Concord, CA 94520. 510-680-6818. (Nov '92)

Dynaperspective 4****

Presentation was the strength in earlier versions of this 3-D CAD program. Necessary drafting capabilities have now been added, its rendering tweaked, and its animations made faster and smaller. You can use up to 16 drafting layers. Dynaperspective’s limitation is its method for measuring relative distances. A powerful, versatile tool and a great value. Supports QuickTime and RenderMan. Version 2.01 reviewed. Version 2.33 shipping. Requires Macintosh II series or higher, 2 MB of RAM, and 8- or 24-bit video card; hard drive recommended. $995. Dynaware USA, Inc., 950 Tower Ln., Ste. 1150, Foster City, CA 94404. 415-349-5700. (Dec '90) * '90 Eddy

Generic CADD 4****

This 2-D CAD package is affordable and easy to use. Includes high-precision floating-point database that provides a virtually unlimited drafting environment and powerful zoom capabilities. Can read AutoCAD files except for contained 3-D data. Can’t save files in AutoCAD’s DWO format. Supports Type 1 and TrueType fonts. Can open vector-draw or bit-map PICT files. Can export documents in PICT or EPS format. AutoSnap feature speeds alignment of multiple drawing objects. Includes McSpot’s MacPlot plotter driver and an extensive symbol library. Version 2.0 reviewed. Requires Mac II series or higher with math coprocessor and 4 MB of RAM. $495. Autodesk Retail Products, 11911 N. Creek Parkway S., Bothell, WA 98011. 800-228-3601 or 206-487-2233. (Dec '92)

LANDesign 4****

LANDesign is versatile land-surveying software that simulates the way surveyors worked before they had Mac software to help them. All standard COGO (coordinate geometry) features are supported, and all objects can be named with both character identifiers and labels. This intelligent program is easy to use. Version 1.1 reviewed. Version 1.15 shipping. Requires Macintosh Plus or later; hard drive recommended. $595; Export Module, $300; Data Collector Module, $325. Computer Soring, Inc., 113 McCabe Crescent, Thornhill, Ontario L4J 2S6 Canada. 416-738-4601. (Sept '89)
MiniCAD+  
With a fast and logical interface, MiniCAD+ has a Pascal-like macro language, an internal database, 2-D as well as 3-D graphics, a linked spreadsheet, and a low price. Has a MacDraw-like feel, but it may have the best 3-D capabilities among low-cost CAD programs. Good documentation. Graphsoft's tech support is helpful. Includes tutorial videotape. Version 3.0 reviewed. Version 4 shipping. Requires Macintosh Plus or later with 2 MB of RAM, System 6.03 or later, and a hard drive. $795. Graphsoft, Inc., 8370 Court Rd., Ellicott City, MD 21043. 410-461-9488. (Apr '91) ★ ’90 Eddy

PowerDraw  
PowerDraw is an easy-to-use 2-D CAD program with a host of features, including an interactive snap function that aids in geometry creation. Offers complete drawing tools and excellent control over colors, true vector-oriented patterns, and Boolean operations such as joins and intersections. Has full complement of dimensioning commands. Built-in import/export capabilities are limited to PICT files, but optional PowerDraw Translator handles a variety of graphics conversions. Includes built-in plotter driver that spools print files to disk. Version 3.0 reviewed. Requires Macintosh Plus or later and a hard drive. $795; PowerDraw Translator, $275. Engineered Software, 615 Guilford-Jamestown Rd., Greensboro, NC 27409. 919-299-4843. (Sept '91)

Precision  
Precision is a 2.5-D CAD program with some quirks. The Cut and Paste functions operate oddly, and many things don’t work as expected. powerful but slow. It freezes and crashes at times. When these problems are cleaned up, it should be superb. Version 1.2 reviewed. Requires SE/30 or Mac II series with 2 MB of RAM. $295. Innovative Systems, Inc., P.O. Box 461, 145 Shaker Rd., East Longmeadow, MA 01028. 800-222-1648 or 413-525-6500. (Apr '90)

VersaCAD
VersaCAD is a powerful CAD program that doesn’t show any of its DOS roots. Excellent element manipulation and full plotter support. Library user interface is crude. Version 1.0 reviewed. Version 3.0 shipping. Requires Macintosh Plus or later. $1,995 ComputerVision (Personal CAD/CAM Business Unit), 100 Crosby Dr., Bedford, MA 01730. 800-488-7228 or 617-275-1800. (July '88) ★ ‘88 Eddy

GRAPHICS & DESIGN/CUT ART

650 Megabyte Clip-Art Disk  
The 650 Megabyte Clip-Art Disk is a CD-ROM containing 182 scanned TIFF images of digitized maps and 386 mostly color EPS files in Adobe Illustrator 88 format. EPS graphics are of amateur quality; TIFF files are more useful. The quality of the scans is adequate, but many of the images are marred by washed-out colors or are too dark to be useful. $499.95. Media Clip-Art, Inc., 411 Narragansett Dr., Cherry Hill, NJ 08002. 609-795-5993. (Sept '90)

Artbeats
Artbeats is a series of superb, high-tech EPS backgrounds. Packages include Dimensions I through 3, Potpourri, Natural Images I and 2, and Marble & Granite, which offer abstract, geometric, and natural images. Each package has about 20 full-page backgrounds, saved as both FreeHand and EPS files. These are complex backgrounds, often with sophisticated blends that demand RAM and take time to print (the results are worth it). $99.95 each. Artbeats, P.O. Box 1287, Myrtle Creek, OR 97457. 800-444-9309 or 503-863-4429. (Nov '90)

ArtClips
ArtClips is a pair of EPS artwork collections that are generally well done but poorly organized. Includes sports, home, technology, and business themes. Version 1.0 reviewed. Version 2.0 shipping. $149. Olduvai Corp., 7520 Red Rd., Ste. A, South Miami, FL 33143. 800-822-0772 or 305-665-4665. (Aug '89)

ArtWare: Equestrian
This collection of horse artwork is fun — and there’s a fair amount of it — but the quality isn’t suitable for professional publishing. $69.95. ArtWare Systems, Inc., 401-121 Capitol Blvd., Raleigh, NC 27604. 919-790-7722. (Aug '88)

Canned Art: Clip Art
Canned Art: Clip Art for the Mac is a printed catalog of more than 15,000 images currently available on disk. Most images are reduced, so several fit on a page. Excellent detailed index saves hunting through disks. Version 1.0 reviewed. Version 2.0 shipping. $29.95; sample disk, $10. PeachPit Press, 2506 Sixth St., Berkeley, CA 94710. 800-283-9444 or 510-527-8555. (Sept '90)

Click & Clip Illustrations
The Click & Clip packages are EPS graphics with a wide variety of business and seasonal themes. Version 1.0 reviewed. $395; special selections also available. Studio Advertising Art, P.O. Box 43912, Las Vegas, NV 89116, 702-641-7041. (Aug '88)

ClickArt
The ClickArt series consists of numerous MacPaint-format and EPS packages. Themes include business, sports, animals and nature, holidays, religion, and cartoons. Artwork is generally well drawn; some collections are a bit unfocused, but overall this is a good buy. MacPaint-format packages include a useful ClipOut DA and a HyperCard stack. MacPaint packages, $59.95 each; EPS packages, $129.95 each. Color Graphics for Presentations (PICT2 and EPS), $149.95. T/Maker Co., 1390 Villa St., Mountain View, CA 94041. 415-962-0195. (Nov '90)

Clipables: the EPS Graphics Library
Clipables is an enormous collection of EPS artwork. The 1,100 images are well drawn and cover a wide range of topics. Favors variety over depth. Requires System 6.03 or later. $299.95 direct. C.A.R., Inc., 7009 Kingsbury, St. Louis, MO 63130. 800-288-7855 or 314-721-6305. (Nov '90)

Cliputures
Cliputures is a series of EPS clip-art packages comprising two business packages, a sports collection, and a colorful and complete flags set. $129.95 per volume. Dream Maker Software, 925 West Kenyon Ave., Ste. 16, Englewood, CO 80110. 800-876-5665 or 303-762-1001. (Aug '89)

Collector's Editions I and II
The Adobe Collector’s Editions offer excellent selections of basic graphic elements for Illustrator users. Symbols, Borders & Letterforms contain a range of dingbats, borders, and two editable alphabets. Patterns and Textures provides more than 400 patterned fills, including standard patterns used in architecture, mapmaking, meteorology, and geology. Files are Illustrator documents and must be resaved in EPS format before being imported into other programs. Requires Adobe Illustrator. Symbols, Borders & Letterforms, $125; Patterns and Textures, $225. Adobe Systems, 1585 Charleston Rd., P.O. Box 7900, Mountain View, CA 94039. 800-833-6687 or 415-961-4400. (Nov '90)

Digit-ART
Digit-ART is an overwhelming collection of EPS clipart available on floppy disk and on CD-ROM. Comes with a well-designed catalog of images. Over 20 volumes are available. Version 1.0 reviewed. Version 5.0 shipping. CD-ROM, $799; single volume (disk), $99; two volumes (disk), $168; three volumes (disk), $199. Image Club Graphics Inc., 1902 Eleventh St. S.E., Ste. 5, Calgary, Alberta T2G 3G2 Canada. 800-661-9410 or 403-262-8008. (Aug '88)

Graphics Pak
ArtWare’s Graphics Pak is a large collection of clip art with uneven quality. The borders are the most elegant. Other
Expert Home Design lets you try out your interior-designing skills without a lot of heavy lifting. Essentially a drawing program, this package contains libraries of predrawn objects (sofas, lamps, tables, and so on) that you can alter to fit your specifications. Also includes some predrawn room plans.

$49.95 Softsync, Inc., 800 S.W. 37th Ave. (North

MacUser 187
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Tower), Ste. 355, Coral Gables, FL 33134. 800-933-2537 or 305-444-0080. (Dec '92)

FreeHand $$$%

FreeHand is a professional-level color PostScript illustration package. Steep learning curve, but has streamlined, easy-to-navigate interface. Includes many tools, 100 levels of undo, freehand drawing, and powerful Blend command. Has improved text manipulation but relies on dialog (Layers, Colors, and Styles). Can edit in Preview mode. CMYK process color controls. Generates EPS files compatible with OPI (Open Prepress Interface) system but not with Illustrator. Version 3.1 reviewed. Requires Mac Plus or later, 2 MB of RAM, and a hard drive. $395. Aldus Corp., 411 First Ave. S., Seattle, WA 98104. 800-333-2538 or 206-628-2320. (Nov '92)

Illustrator $$$%

Illustrator is a professional-level color PostScript graphics program from the company that defined the PostScript language. Powerful, compact toolbox offers many drawing tools with clever keyboard-activated options that may confuse novices. Highly responsive pen tool creates smooth, editable Bézier curves. Excellent typographical controls. Can convert text to outlines. Artwork in preview mode is not editable. New charting functions let you import detailed spreadsheet data as text, which Illustrator automatically converts into complex, easily customized charts (changes to imported numerical data also update the chart). Uses a freehand drawing mode or bit-mapped templates for detailed artwork. Version 3.2 reviewed. Requires Mac II series or higher, System 6.03 or later, and 4 MB of RAM. $595. Adobe Systems, 1585 Charleston Rd., P.O. Box 7900, Mountain View, CA 94039. 800-833-6687 or 415-961-4400. (Nov '92) ★ '88 Eddy

IntelliDraw $$$$$

This powerful new drawing program has many basic tools and some remarkably sophisticated extra features. Power often comes at the expense of slow performance or overwhelming complexity. Poor conversion of text to outlines. Lacks a real pen tool and can't export editable EPS files. Extensive object-linking capabilities, line and color style controls, support for multi-color gradient blends, multiple drawing layers, and interruptible screen redraw. Allows multipage documents. Powerful Symmetrix tool allows complex symmetrical objects to be modified quickly. Tables of numerical object dimensions can be automatically updated as linked objects are manipulated. Supports slide shows and animations. Version 1.0 reviewed. Requires Mac Plus or later, 2 MB of RAM, System 6.05 or later, and a hard drive. $299. Aldus Corp., 411 First Ave. S., Seattle, WA 98104. 800-333-2538 or 206-628-2320. (Dec '92)

MacDraft $$$$$

MacDraft is an object-oriented drawing program that offers a rich set of features for a moderate price. Object rotation is precise, and it accesses the full spectrum of 16.7 million colors. Particularly appropriate for high-school or college-level introductory CAD classes or for small architectural/construction contracting businesses. Version 2.0 reviewed. Version 2.1 shipping. Requires Mac Plus or later, System 6.03 or later, and a hard drive. $399. Innovative Data Design, Inc. (idd), 135D Mason Circle, Concord, CA 94520. 510-680-6818. (Oct '90)

MacDraw II $$$$$

MacDraw II updates the venerable, popular, object-oriented drawing program. Easy to use. Supports 8-bit color import and export, including PICT II format. Users can upgrade to new version, MacDraw Pro. Version 1.0 reviewed. Version 1.1v2 shipping. Requires Macintosh Plus or later and a hard drive. $199. Claris Corp., 5201 Patrick Henry Dr., Santa Clara, CA 95052. 408-727-8227. (Nov '88) ★ '85 Eddy

MacDraw Pro $$$$$

This updated version of Claris' popular illustration program offers an elegant, intuitive interface and a variety of basic tools. Provides precise text manipulation, a range of file-translation and -import capabilities, support for 32-bit color images (including gradient shading), and complex charting. Can't convert text to outlines and lacks automatic features. Bezigon tool allows sophisticated design and editing of Bézier curves and polygons. Supports multiple layers, slide shows, and playback of QuickTime movies. Version 1.5 reviewed. Requires Macintosh Plus or later, 4 MB of RAM, System 6.03 or later, and a hard drive. $399; upgrade from MacDraw II, $99. Claris Corp., 5201 Patrick Henry Dr., Santa Clara, CA 95052. 408-727-8227. (Nov '92) ★ '85 Eddy

Michael's Draw $$$

This feature-rich, quirky, color drawing program offers a dizzying array of tools. Has surprising ability to do sophisticated script-based image processing of pixel-based artwork. Good control of text, patterns, and drawing layers. Confusing, nonstandard interface. Can't convert text to outlines. Poor documentation. Version 1.0 reviewed. Requires Macintosh Plus or later and System 6.05 or later. $99. Event One, 222 Del Norte Ave., Sunnyvale, CA 94086. 408-734-4358. (Nov '92)

Relational Object $$$$$

Relational Object (formerly called Paradigm) is a drawing program with a difference. It performs relational drawing, in which each point's position depends on the location of other points — if you move a point, the rest of the drawing reacts correspondingly. Version 1.0 reviewed. Version 2.0 shipping. Requires Macintosh Plus or later. $240. SoftStream International, Inc., 10 Twin Ponds Dr., S. Dartmouth, MA 02748. 800-262-6610 or 508-991-4011. (Mar '90)

Sprout! $$$$$

Sprout! is a specialized drawing package that lets you design a vegetable garden appropriate for your climate region. Includes a report function that lets you print out garden layouts, calendars, and shopping lists. Doesn't help with the weeding. $79.95. Abracadabra Ltd., P.O. Box 2440, Eugene, OR 97402. 800-451-4871 or 503-342-3030. (Dec '92)

Streamline $$$$$

Streamline is a dedicated PostScript auto-trace package. Can quickly produce neatly printed traces with little tweaking. Retains original scanned images' black-and-white values. Final touch-ups must be completed in Illustrator or a similar program. Continuous-tone photos aren't usually worth the trouble. Version 1.0 reviewed. Version 2.0 shipping. Requires Mac Plus or later and System 4.2 or later. 2 MB of RAM recommended. $195. Adobe Systems, 1585 Charleston Rd., P.O. Box 7900, Mountain View, CA 94039. 800-833-6687 or 415-961-4400. (Nov '89)

Graphics & Design/Fonts & Typography

ASCII Chart $$$$-

ASCII Chart is a DA that shows all 256 characters for a font. Fonts can be easily changed with the Font menu. Can display characters at 72 points. Quickly finds hidden characters, keywords, and hex equivalents. Doesn't print. Version 2.0 reviewed. Version 4.2 shipping. Shareware (Jon Wind); $10; available from online services such as ZiffNet/Mac. (Oct '90)

ATM (Adobe Type Manager) $$$$$-

Adobe Type Manager is a must-have utility that creates smooth PostScript type fonts at any size on-screen and when printed on QuickDraw printers such as Apple's ImageWriter II. Not quite perfect (has some problems with Microsoft Word and smaller point sizes) and has slow performance on 68000-based Macs.
Version 1.01 reviewed. Version 2.0 shipping. Requires Macintosh Plus or later and System 6.03 or later. $99. Adobe Systems, 1585 Charleston Rd., P.O. Box 7900, Mountain View, CA 94039. 800-833-6687 or 415-961-4400. (Feb '90) ★ '89 Eddy

Classic Textures

Classic Textures is an advanced implementation of TeX, a popular standard among code-based typesetting programs. Used extensively for complex long-document publishing, especially in the legal profession and with large databases. Handles mathematical typesetting well. Good for people trained on mainframes in the early days. Steep learning curve. Version 2.0 shipping. Requires Macintosh Plus or later and 2 MB of RAM. $695; education-discount price, $495. Blue Sky Research, 534 S.W. Third Ave., Portland, OR 97204. 800-622-8398 or 503-222-9571. (Apr '88)

Evolution

Evolution is an easy-to-use conversion utility for translating fonts among Type 1, Type 3, and EPS formats. Doesn't produce AFM (Adobe Font Metrics) files, and fonts are unhinted. Sensitivity controls help with difficult conversions, and Evolution can output character sets as printer fonts. Version 1.02 reviewed. Version 2.0 shipping. Requires Macintosh Plus or later, System 6.04 or later, and a hard drive. $79. Image Club Graphics, Inc., 1902 Eleventh St. S.E., Ste. 5, Calgary, Alberta T2G 3G2 Canada. 800-661-9410 or 403-262-8008. (May '91)

Fontina

Fontina greatly enhances a font menu by showing all your fonts simultaneously, in multiple columns if needed. No scrolling is required. Correctly organizes font families. Can show fonts in any face and size. Trouble-free, and performance is excellent. Knapsack feature lets you put favorite fonts at top of menu. Version 1.0 reviewed. Requires Macintosh Plus or later. $69.95 direct. Eastgate Systems, P.O. Box 1307, Cambridge, MA 02238. 800-562-1638 or 617-924-9044. (Sept '90)

FontMonger

FontMonger is a robust font-alteration tool that can convert fonts among PostScript Type 1, Type 3, and TrueType formats. Alterations include small caps; inferior, superior, and slanted characters; and fractions and other composite characters. Characters from different fonts can be combined into a single font, and EPS images can be imported as characters. Alteration interface is excellent, but conversion dialog boxes are often confusing. Can export character shapes as EPS or PICT outlines; PICT images are freeware; incomplete or manual. Version 1.03 reviewed. Version 1.5 shipping. Requires System 6.03 or later and 2 MB of RAM; hard drive recommended. $149.95. Ares Software, P.O. Box 4667, 561 Pilgrim Dr., Ste. D, Foster City, CA 94404. 800-783-2737 or 415-578-9090. (Nov '94)

Fontographer

Fontographer is an excellent PostScript-font editor/generator. Features include an integrated screen-font editor, auto-tracing, a pen tool, and automatic or editable hinting. Can create PostScript and TrueType fonts, and supports Adobe's Multiple Master format. Features two pressure-sensitive freehand drawing modes that work well with digitizing tablets such as those from Wacom and CalComp. Can scale fonts mathematically or automatically interpolate between two different font weights, although results normally require some touching up. Easy to learn but powerful enough for demanding pros. Version 3.5 reviewed. Requires Macintosh Plus or later and System 6.03 or later. $495. Altsys Corp., 269 W. Renner Rd., Richardson, TX 75080. 214-680-2060. (Oct '92)

FontSizer II

FontSizer II creates high-quality screen fonts of any downloadable PostScript typeface in sizes up to 96 points. Excellent utility for producing large font sizes with true WYSIWYG. Version 1.7 reviewed. Version 2.0 shipping. Requires Macintosh Plus or later, System 5.1 or later, and a PostScript printer. $99.95. American Microelectronics, 1611 Headway Cir., Bldg. 3, Austin, TX 78754. 512-339-0001. (Apr '89)

FontStudio

FontStudio provides a fully integrated environment for typography on the Mac. If you want a font-production system, FontStudio might be irresistible, because of its ability to store character parts in a library, its excellent bit-map editor, and its strong kerning-pairs interface. Supports Adobe Type 1, Bitstream Fontographer, LetraFont, and TrueType fonts. Provides automatic and manual hinting plus automatic interpolation between two existing font weights. Lets you select either Adobe Type Manager, TrueType, or a built-in masterizer to display outline characters during design process. Can import Illustrator 1.1 artwork or use PICT and TIFF files as templates. Interface is dense, precise, and sometimes confusing. Version 2.0 reviewed. Requires Macintosh Plus or later and a hard drive. $595. Letraset USA, Inc., 40 Eisenhower Dr., Paramus, NJ 07633. 800-343-8973 or 201-845-6100. (May '92) ★ '91 Eddy

Hermes & Tribune Fonts

Hermes & Tribune Fonts are specially designed fonts that come in sizes up to 120 points. Optimized for the ImageWriter LQ, the LaserWriter IIISC, and faxmodems, these fonts look better than Apple's fonts and can replace Helvetica and Times. Requires a non-PostScript high-resolution printer. $44.95. Miles & Miles, 704 N. Water, Ste. I, Ellensburg, WA 98926. 509-925-5280. (Sept '89)

KernEdit

KernEdit is an excellent kern-pair editor that lets you alter the kerning data for both PostScript and TrueType fonts. Word View feature greatly simplifies kerning-table creation. Maximum resolution is 1/200em. Version 1.06 reviewed. Version 2.0 shipping. $149; additional kerning-table packages, $95 each. Agfa Division, Miles Inc. (Type Products), 200 Ballardvale St., Wilmington, MA 01887. 800-227-2780 or 508-658-5610. (Apr '90)

LetraStudio

LetraStudio is a type-customization program for creating headlines, logos, signs, and other display type. Can create unique distortion effects. Works with LetraFont typefaces and TrueType or Adobe Type 1 fonts. Lets you edit imported Adobe Illustrator drawings. Interface may seem awkward to some users. Exports files in Illustrator, EPS, and other formats. Can open multiprocess documents. Adequate color support. Version 2.01 reviewed. Requires Macintosh Plus or later and a hard drive. $249. Letraset USA, Inc., 40 Eisenhower Dr., Paramus, NJ 07633. 800-343-8973 or 201-845-6100. (Oct '92) ★ '88 Eddy

LetrTuck

LetrTuck is a kerning utility that lets you add, delete, or modify the kern pairs for any installed screen font in the System file, Font/DA Mover suitcases, or QuarkXPress documents. Version 1.04 reviewed. Version 3.0 LetrTuck Plus shipping. $99. EDCO Services, 124 N. Dale Mabry Hwy., Tampa, FL 33618. 800-523-8973 or 813-962-7800. (June '89)

Letterforms and Illusion

Letterforms and Illusion is a set of fonts and figures that leads you into exciting typographic explorations. Includes a limited version of MacPaint. Requires Mac Plus or later. $39.95. W. H. Freeman & Co., 41 Madison Ave., New York, NY 10010. 800-877-5351 or 212-576-9400. (Mar '90)

MacTypeography Type Sampler and Type Listing

The MacTypeography Type Sampler and Type Listing combination is a classic art director's...
The printed version of Type Sampler is the more valuable part of this package. Requires Mac Plus or later; Type List ing requires Microsoft Works. $75; one year of printed updates, $80. MacTography, 326-D N. Stonestreet Ave., Rockville, MD 20850. 301-424-3942. (Apr '90)

**Metamorphosis Professional ******

Metamorphosis Professional is a utility that converts fonts among PostScript Type 1, Type 3, and TrueType formats on the Mac. Can also produce PostScript fonts for the Apple Macintosh, TrueType fonts for the PC, and Fontographer databases. Can access PostScript fonts located in printer ROM and save them on your hard disk. Also can export EPS and PICT outlines of font characters. Elegant interface is powerful yet flexible. Can’t create bit maps for TrueType-to-Type 1 conversions and can’t convert Adobe Expert series, Version 2.01 reviewed. Version 2.04 shipping. Requires Macintosh Plus or later and System 6.0.3 or later; hard drive recommended. $149. Altsys Corp., 249 W. Renner Rd., Richardson, TX 75080. 214-680-2060. (Nov '91)

**Publishing Packs ******

Publishing Packs bundles fonts and typefaces that work well together for specific publishing projects. The packages offer substantial savings over purchasing the typefaces individually, and the documentation has useful information on typeface characteristics. Requires Macintosh Plus or later. Publishing Pack 1 (Newsletters), $395; Publishing Pack 2 (Forms and Schedules), $475; Publishing Pack 3 (Presentations), $475. Adobe Systems, 1585 Charleston Rd., P.O. Box 7900, Mountain View, CA 94039. 800-833-6687 or 415-961-4400. (Feb '89)

**SPECTacular ******

SPECTacular is a flexible type­ sampler program that prints a variety of handsome specimen sheets. Shows typefaces in one- and two-page layouts. Incomplete documentation. Version 1.16 reviewed. Version 1.2 shipping. $79.95. Omega Systems, P.O. Box 7633, Chico, CA 95927. (916) 894-6351. (Dec '91)

**theTypeBook ******

This simple type-sampler program includes four layouts: a specimen page; a key-caps table; a complete character set; and sample lines, which prints a two-line sample of each selected font. Provides a fast, easy way to compare installed fonts. No frills but offers lots of information about fonts and typography. Good support. Version 2.2 reviewed. Version 3.04 shipping. Requires Mac Plus or later with System 6.04 or later. Free from on-line services such as ZiffNet/Mac; customized version, $45; or send postage-prepaid disk mailer and an 800K disk. Golden State Graphics (Jim Lewis), 2137 Candis Ave., Santa Ana, CA 92706. 714-542-5518. (Dec '91)

**TypeAlign ******

TypeAlign is an INT/DA utility that is helpful for DTP work if you use Adobe Type Manager. TypeAlign lets you quickly place text along circular, angled, or arbitrary paths. The program could use the Clipboard better, but the simple effects are easy to control, and the results are striking. Version 1.02 reviewed. Version 1.04 shipping. Requires Macintosh Plus or later, System 6.03 or later, ATM, and a hard drive. $99. Adobe Systems, 1585 Charleston Rd., P.O. Box 7900, Mountain View, CA 94039. 800-833-6687 or 415-961-4400. (May '90) ★ '89 Eddy

**TypeChart ******

TypeChart is a set of hardwired fonts. Requires Mac Plus or later. Published Chart 1 (Newsletters), $395; Publishing Chart 2 (Forms and Schedules), $475; Publishing Chart 3 (Presentations), $475. Adobe Systems, 1585 Charleston Rd., P.O. Box 7900, Mountain View, CA 94039. 800-833-6687 or 415-961-4400. (Feb '89)

**World Class Fonts! ******

World Class Fonts! are bit­ mapped screen fonts that come with three useful utilities, all the Mac the Knife fonts, and a lot more. Eight separate volumes are available, $89.95 per volume. Dubl-Click Software, Inc., 22521 Styles St., Woodland Hills, CA 91367. 800-521-6263 or 415-382-4400. (Oct '92) ★ '90 Eddy

**Graphics & Design/Modeling & Animation**

**Alias Sketch! ******

This high-end 3-D-modeling and rendering program includes several unusual features. It provides powerful NURBS modeling, many options for complex objects and vertex editing, and model­ perspective control against scanned backgrounds. Slow and has a few performance bugs. Rendering quality is adequate, but texture-map positioning is difficult. Lacks animation capabilities. Version 1.02 reviewed. Requires 68020 CPU or higher with math co­ processor, System 6.05 or later, 32-bit Quick­ Draw, 8 MB of RAM, and a hard drive. $995. Alias Re­ search, Inc., 110 Richmond St. E., Toronto, Ontario M5C 1P1 Canada. 800-447-2542 or 416-362-9181. (Sept '92)

**Animation Works ******

This suite of powerful, afford­ able software tools simplifies the creation of Mac-based ani­ mations. Can save animations as MacPaint, MoviePlayer or QuickTime movies, and animate text with included Movie Player application. Sequences are likewise playable via HyperCard stacks, using XCMD also included in this package. Macs equipped with RGB/NTSC conversion hardware and print-to-video software can output Animation Works movies to videotape. Version 1.0 reviewed. Requires 8-bit color display system. $199.95. Gold Disk, Inc., P.O. Box 789, Streetsville, Mississauga, Ontario L5M 2C2 Canada. 416-602-4000. (Nov '91) ★ '91 Eddy

**ElectricImage Animation System ******

This high-end 3-D-modeling program offers excellent render­ ing quality and speed, control of type fonts and texture mapping, and alpha-channel support. Animation features are weak. Includes Mr. Font, a powerful text-extruding program. Has wide variety of file­ import options. Uses hardware copy-protection. Inadequate documentation. Version 1.05 reviewed. Version 1.5 shipping. Requires 68020 CPU or higher with math co­ processor, System 6.05 or later, 32-bit Quick­ Draw, 8 MB of RAM, and a hard drive. $7,495. Electric Image, Inc., 117 E. Colorado Blvd., Ste. 300, Pasadena, CA 91105. 818-577-1677. (Sept '92)

**FilmMaker ******

FilmMaker is a powerful ani­ mation tool that includes five
separate applications: Mark, Animate, Color, Sound, and Present. It is limited to the animation process, so the original graphic images that become sequential frames in FilmMaker must be created in a painting or 3-D program and then imported as PICT, PICS, or EPS files. The program isn’t optimized for precisely registered frame animation. Also, the interface seems incomplete and awkward. Version 2.01 reviewed. Requires Macintosh II series or higher with 5 MB of RAM, a hard drive, and 32-bit QuickDraw. $695. Macromedia, Inc., 600 Townsend St., San Francisco, CA 94103. 415-442-0200. (Apr ‘91) * 90 Eddy

Infinti-D 3D

Infiniti-D packs modeling, rendering, and animation features into an easy-to-use 3-D design package. Offers true object metamorphosis, freeform objects, ray tracing, SMPTE-time-code animation, and multilayer surfaces. Well-integrated interface allows multiple views and light sources plus easy object editing. Rendering quality and speed are below average. Doesn’t provide spline-based modeling tools. Sophisticated use of fractals creates realistic, randomly generated terrains. Surface maps can combine color, transparency, reflection, and glow effects. Animations can be exported to other programs. BackBurner option distributes rendering among networked Macs. Good documentation. Version 1.12 reviewed. Version 2.0 shipping. Requires 68020 CPU or higher, a math coprocessor, 4 MB of RAM, 32-bit QuickDraw, and a hard drive. $995. BackBurner, $395; group discounts available. Specular International, P.O. Box 888, Amherst, MA 01004. 413-549-7600. (Sept ’92)

Life Forms 3D

Originally developed for dance choreography, Life Forms is a 3-D human-figure animation program. Doesn’t show fine details such as fingers and faces. Can save wireframe animation scripts as PICS or QuickTime sequences. To create lifelike shaded human figures, scripts must be exported to Swivel 3D Pro for manipulation. Version 1.0 reviewed. Requires Macintosh Plus or later with 2 MB of RAM and System 6.05 or later. $495. Macromedia, Inc., 600 Townsend St., San Francisco, CA 94103. 415-442-0200. (Sept ’92)

MacRenderMan 3D

MacRenderMan generates photo-realistic color images from files created in 3-D programs and saves in RIB (RenderMan Interface Byte-stream) format. Programs supporting RIB format include Macromedia Three-D, StrataVision 3D, and Swivel 3D Professional. Spools RIB files into a folder and processes in the background under MultiFinder. Supports 32-bit color and renders attributes such as transparency, surface textures, multiple light sources, natural or artificial light, reflected light, shadows, and motion blur. Complex and time-consuming to master, but provides superb high-resolution results. Version 1.1 reviewed. Requires Macintosh II series with 24-bit-color display, 5 MB of RAM, 32-bit QuickDraw, and a hard drive. Bundled with Showplace, $695; CD-ROM version, $495. Pixar, Inc., 1001 W. Cutting Blvd., Richmond, CA 94804. 510-236-4000. (Aug ’91)

MacDance

This easy-to-use 3-D modeling program has an excellent animation interface and supports alpha channels. Rendering quality and speed are good. Type extrusion and beveling capabilities are weak. Has a few bugs and sporadic performance problems. Version 1.01 reviewed. Requires 68020 CPU or higher with math coprocessor, System 6.03 or later, 32-bit QuickDraw, 8 MB of RAM, and a hard drive. $1,495. Macromedia, Inc., 600 Townsend St., San Francisco, CA 94103. 415-442-0200. (Sept ’92)

MacTOPAS

This 3-D modeling program offers a variety of basic and advanced modeling tools, alpha-channel support, and very good rendering quality. Powerful controls for complex objects and vertex editing. Animation features and documentation are weak. Uses hardware copy protection. Version 1.01 reviewed. Requires 68020 CPU or higher with math coprocessor, 4 MB of available RAM, and a hard drive. $299. Pixar, Inc., 1001 W. Cutting Blvd., Richmond, CA 94804. 510-236-4000. (Dec ’92)

Presenter Professional 3D

This powerful, high-end 3-D modeling program offers a full range of object tools and very good rendering quality. Adequate animation capabilities. Supports RenderMan RIB standard and alpha channels. Includes spline-based modeling. Can automatically calculate object volume and surface area. Digital Clay feature uses vertex editing to easily modify nonuniform geometry of complex objects. VIDIExpress hardware-acceleration option significantly reduces rendering times. Uses hardware copy protection. Version 1.1 reviewed. Requires 68020 CPU or higher with math coprocessor, System 6.05 or later, 32-bit QuickDraw, 8 MB of RAM, and a hard drive. $3,600; VIDI Express, $4,495. VIDI (Visual Information Development, Inc.), 16309 Doublegrove St., La Puente, CA 91744. 818-918-8834. (Sept ’92)

PROmotion

or higher and a color display system. $395. Motions Works, Inc., 1020 Mainland St., Ste. 130, Vancouver, British Columbia V6B 2T4 Canada. 604-685-9975. (Nov '92)

Ray Dream Designer This midrange 3-D design program offers fast ray tracing of 3-D models and support for alpha channels but no animation capabilities. Awkward interface and creation of multiple files hinders productivity, but speedy ray-traced renderings show detailed reflective surfaces, shadows, and transparency effects. Has good PICT and texture mapping. Useful Preview mode. Resulting 24-bit PICT files are close to photo-realistic. Image-rendering process can run in the background. May be inadequate for modeling convoluted surfaces or complex objects with exact surface definitions. DreamNet option distributes rendering among networked Macs. Version 2.02 reviewed. Version 2.03 shipping. Requires Macintosh II or PowerMac; 4 MB of RAM, System 6.05 or later, 32-bit QuickDraw, and a hard drive; coprocessor chip recommended for 68020 Macs. $895; DreamNet, $200 (group discounts available). Ray Dream, Inc., 1804 N. Shoreline Blvd., Mountain View, CA 94043. 415-960-0765. (Sept '92)

Sculptr 3D Sculpt 3D offers excellent rendering quality and spline-based modeling tools. Provides absolute vertex and polygonal-face control of objects. Can model objects with extremely complex geometry. Lacks animation features. Interface is difficult to learn and navigate. Hardware-acceleration options are available. Includes three tutorial video tapes. Has hardware copy protection. Weak documentation. Version 2.1 reviewed. Requires 68020 CPU or higher with math coprocessor, System 6.05 or later, 32-bit QuickDraw, 8 MB of RAM, and a hard drive. $2,500. Byte by Byte Corp., 9442-A Capital of Texas Hwy., N., Ste. 650, Austin, TX 78759. 512-795-0150. (Sept '92)

Showplace Showplace is an easy-to-use composition program that arranges, manipulates, and illuminates existing 3-D objects imported as RenderMan RIB files. Lacks modeling and animation tools. Includes good basic selection of surface-attributed shape files. When used with MacRenderMan, provides slow but superb photo-realistic rendering. Excellent tutorial videotape. Works well with 3-D modeling programs, such as SwivelMan, that have limited rendering capabilities. Version 1.11 reviewed. Requires Mac II or PowerMac; 4 MB of RAM, a hard drive, and a color display system. Bundled with MacRenderMan, $695; CD-ROM version, $495. Pixar, Inc., 1001 W. Cutting Blvd., Richmond, CA 94804. 510-236-4000. (Sept '92)

Strata Type 3d Super 3D Super 3D is a capable object-oriented drawing program with basic 3-D modeling features. Easy to use, but lacks professional-level tools. Has three solid-rendering modes and can export a scene as an object-oriented 2-D snapshot in PICT or EPS formats. Ver- tex-level editing gives precise control over every facet of an individual character in a text block. Provides only single-source lighting. Lets you select typeface, style, and character size, and then apply customizable edge beveling, complex surface textures and scanned PICT images, and transparency. Version 1.0 reviewed. Requires 68020 CPU or higher with math coprocessor, 4 MB of available RAM, and a hard drive. $295. Strata, Inc., 2 W. St. George Blvd., Ancestor Sq., Ste. 2100, St. George, UT 84770. 800-678-7282 or 801-628-5218. (Dec '92)

SwivelMan SwivelMan is a 3-D modeling package that combines features of Swivel 3D Pro with enhanced support for the RenderMan RIB standard. Excellent control of hierarchical object links and motion axes. Phong rendering mode is fast. Built-in animation and rendering capabilities are adequate, but controls for texture-map attributes are weak. Works best with Pixar's MacRenderMan and a more powerful 3-D animation package. Lacks true spline-based modeling tools. Can output files in RenderMan RIB, PICT, EPS, DXF, and PCs formats. Version 1.01 reviewed. Requires Macintosh II or PowerMac; 4 MB of RAM, 604-206-6287-2300. (Sept '92)

DataShaper

DataShaper is a PageMaker text-import filter that converts tab- or comma-delimited data files into precisely formatted text as they are placed into a page layout. Requires careful planning and time-consuming programming of special code, but saves considerable time compared with preparing imported data manually. Works well for publishing large, frequently updated databases in custom layouts. Allows creation of multiple filters, each with its own name and providing different typography, spacing, punctuation, and inserted text. Automates arrangement of category headings, subheads, invisible placeholders, and graphics. Version 1.2 reviewed. Requires PageMaker 4.0 or later, $179.95. ElseWare Corp., 3201 Fremont Ave. N., Seattle, WA 98103, 206-632-3300. (Oct ‘91)

Fast Forms

Fast Forms is a modest, inexpensive forms-design program intended primarily for low-end users. Its manual is a joy to read. Imports and exports comma- and tab-delimited files. Can create fields to match scanned images of preexisting forms. The FastForms Filler feature lets you fill out forms without having to use the original program. Can’t import EPS graphics. Version 2 reviewed. Requires Macintosh Plus or later, $59.95. Power Up Software Corp., 2292 Campus Dr., San Mateo, CA 94403, 800-851-2917 or 415-345-5900. (Sept ‘90)

FlexForm Business Templates


FrameMaker

FrameMaker is a powerhouse program for long-document and technical publishing. Provides sophisticated control over paragraph formats and cross-referencing. Its spelling checker works well and quickly. Table formatting has been substantially improved over previous version. Imports standard Mac graphics as well as EPS (UNIX), DOS, EPS, and Sun raster files. Supports multiple conditional-text variations of a source document, which adapts the base document according to special user-defined formatting tags. Supports Desktop Color Separation (DCS) graphics, although somewhat clumsily. Version 3.0 reviewed. Requires Macintosh II series or higher with 4 MB of RAM, System 6.03 or later, and a hard drive, $795. Frame Technology Corp., 1001 Rincon Cir., San Jose, CA 95131, 408-843-7263 or 408-433-3311. (Feb ‘92) ★ ‘91 Eddy

Informed Designer

Informed Designer is a complex and comprehensive forms-design program intended primarily for high-end corporate users. Capable of accuracy to 1/10 of a degree. Draws lines from -25-point to 999-points thick. Can import or export almost anything. Can take any object and rotate, replicate, duplicate, or resize it ad infinitum. Includes more than 150 mathematical, financial, and statistical functions. Related program, Informed Manager, is a complete flat-file database manager. Version 1.01 reviewed. Version 1.3 shipping. Requires Macintosh SE or later, System 6.05 or later, and a hard drive, $295. Informed Manager, $195; other linked software components available. Shana Corp., Advanced Technology Ctr., 9650 20th Ave., Ste. 105, Edmonton, Alberta T6N 1G1 Canada, 403-463-3330. (Sept ‘90)

Interleaf Publisher

Interleaf Publisher is a speedy multilayer layout system for producing large, complicated documents. Improved user interface suffers from poor font management. Planned revision, Interleaf 5, will consist of six products tailored for specific job categories: Interleaf Professional Writer, Interleaf Illustrator, Interleaf Producer, Interleaf Academic, and Interleaf Producer. Version 3.5 reviewed. Version 3.6.2 shipping. Requires Macintosh II series with 5 MB of RAM and a hard drive. $995. Interleaf, Inc., Prospect Place, 9 Hillsdale Ave., Waltham, MA 02154, 800-456-5323 or 617-290-0710. (Apr ‘89)

LayOuts


Multi-Ad Creator

Multi-Ad Creator is a powerful tool that lets you create high-quality single-page ads for PostScript output. It is easy to use and nearly foolproof (it lacks a good-taste feature). Every kind of graphic file and most word-processor files can be imported. If you create ads and don’t need an all-purpose page-layout program, get Multi-AdCreator. Version 2.1 reviewed. Version 3.0 shipping. Requires Macintosh Plus or later with 4 MB of RAM and a hard drive, $895. Multi-
Ad Services, Inc., 1720 W. Detweiller Dr., Peoria, IL 61615. 800-447-1950 or 309-692-1530. (June '90)

**PageMaker**

PageMaker is a powerful and popular page-layout application. Easy to learn but packed with features. Versatile and well adapted to efficient long-document processing. Now includes Aldus PrePrint application for generating precise, high-resolution color separations. Has many built-in controls for word processing, complex typography, graphics, System 7 publish-and-subscribe links, indexing, and table editing. Has IAC hot links to graphics created with FreeHand and ColorStudio. Features interruptible screen redraw, real-timeaver. New Controls Palette offers exact positioning and dimensioning of selected objects. Supports Aldus Additions, which extend feature set and allow custom scripting. Version 4.2 reviewed. Requires Macintosh Plus or later, 2 MB of available RAM, System 6.05 or later, and a hard drive. $199. Aldus Corp., 411 First Ave., Seattle, WA 98104. 800-333-2538 or 206-628-2320. (July '92) ★ '85, '87, '88 Eddy

**PDQ! (Page Designs Quick!)**

PDQ! (Page Designs Quick!) and PDQ! 5 (Page Designs Quick! 5) are Aldus page-templatesdesigned exclusively for newsletter and newspaper publishing. The PDQ! set contains 60 three-column and 60 four-column layouts. PDQ! 5 contains 275 tabloid-sized, five-column layouts. The templates’ quality is excellent, but they lack art. You can modify all layouts from within PageMaker. Version 1.0 reviewed. Requires Macintosh 4.0 or later. PDQ!, $89.95 direct; PDQ! 5, $159.95. PAR Publishing, 6355 Topanga Canyon Blvd., Ste. 307, Woodland Hills, CA 91367. 818-340-8165. (Aug ‘90)

**Personal Press**

A budget page-layout program. Personal Press is easy to use yet powerful enough for basic DTP projects. Lots of good features, including lots of basic word processing, style-sheet support, good TIFF-half-tone controls, and spot-color cutouts. AutoCreate feature simplifies design and production of templates and prompts for possibly overlooked page elements. Automatic copy fitting adjusts character and paragraph spacing to match allotted page space. Needs ample memory and disk space. Screen refresh occasionally slow or buggy. Can have only one document open at a time. Can’t do process-color separations. Version 2.0 reviewed. Requires Macintosh Plus or later, 2 MB of available RAM, System 6.05 or later, and a hard drive. $199. Aldus Corp., 411 First Ave., Seattle, WA 98104. 800-333-2538 or 206-628-2320. (July '92) ★ ‘85, ‘87, ‘88 Eddy

**RagTime**

RagTime combines word-processing, page-layout, graphics, and spreadsheet capabilities. It has a wide array of charts, hypernation dictionaries in 14 languages, and an integral word processor that can check spelling in 8 languages. Linked spreadsheets within the same or other documents update automatically. Offers 80 functions, and you can add external functions for importing data from SQL databases. It also has page-layout functions such as the ability to flow text around frames and to adjust color and tint. Its number-crunching capabilities are minimal. Version 3.04 reviewed. Version 3.1 shipping. Requires Macintosh Plus or later with 2 MB RAM, System 6.02 or later, and a hard drive. $599. MacVONK, Inc., 940 Sixth Ave. S.W., Ste. 1100, Calgary, Alberta T2P 3T1 Canada. 403-232-6545. (June '90)

**Springboard Publisher**

Springboard Publisher II is a low-end, very basic, template-based DTP package. Typing window allows simplified text entry. Text and graphics editing includes in Actual Size view. Black-and-white painting tools only. Can’t color text but includes SmartArt DA. No support for TIFF halftones. Clumsy text-frame linking. No spot color, master pages, or style sheets. Imports standard word-processing documents. Version 2.0 reviewed. Requires Mac Plus or later. $199.95. Spinnaker Software Corp., 201 Broadway, Cambridge, MA 02139. 800-826-0700 or 617-494-1200. (July '91)

**Ventura Publisher**

Ventura Publisher Macintosh Edition

The Mac version of Ventura Publisher, the venerable PC page-layout program, still feels like a PC product, despite its considerable strength in technical- and long-document publishing. Even if you’re willing to forgive its clumsy adaptation to the Mac interface, Ventura still has two major problems: First, it leaves all imported text and graphics files separate from the Ventura document, which lets the document remain compact but requires constant tracking of the other linked files; second, typeface management is unreliable if you need professional results. Version 3.0 reviewed. Version 3.01 shipping. Requires 3 MB of available RAM and a hard drive. $795. Ventura Software, 15175 Innovation Dr., San Diego, CA 92128. 800-822-8221 or 619-673-0172. (May '91)

**Aldus Gallery Effects**

Aldus Gallery Effects consists of a wide variety of graphics filters that can be used with Digital Darkroom, SuperPaint, and most other programs that...
MICE RATINGS

This affordable 24-bit paint version 1.0 reviewed. Version 1.5 shipping. Requires 24-bit display system; image size is limited by available RAM (except in Photoshop or in Macs using virtual memory). $199. Aldus Corp., 411 First Ave. S., Seattle, WA 98104. 800-333-2538 or 206-628-2320. (Apr '92) ★ ★ ★ ★ ★ ★ ★ ★ ★ Easy ColorPaint

A sense of fun pervades this black-and-white painting program, which also has a friendly price tag. Extensive special-effects feature list and many clever tools make the program useful for graphics pros and doodlers alike. Has glitzy text functions and flexible print options. Allows multiple levels of Undo. Supports ATM and TrueType. Poor documentation. Version 1.0 reviewed. Version 1.03 shipping. Requires Macintosh Plus or later and System 6.04 or later; hard drive recommended. $49.95. CE Software, Inc., 1801 Industrial Cir., P.O. Box 65580, West Des Moines, IA 50265. 800-523-7638 or 515-224-1995. (Oct '91)

Easy ColorPaint


Enhance

Enhance is an affordable, 8-bit, gray-scale image processor. Has many of the sophisticated graphics tools of a first-class photo-retouching program. Blends image processing with high-level graphic-arts tools. Includes painting, text, and shape-drawing tools. Can open TIFF, PICT, MacPaint, or EPS files. Has its own virtual-memory system for dealing with very large images. Tool palette is customizable. Provides filters, masks, and anti-aliasing. Filters can be created and saved to disk. Dialog-box and command terminology is fuzzy, but manual is helpful and informative. Version 2.0 reviewed. Requires 68020CPU or higher with 2 MB of RAM. System 6.03 or later, 32-bit QuickDraw, and a hard drive. $375. MicroFrontier, Inc., 3401 101st St., Ste. E, Des Moines, IA 50322. 800-388-8109 or 515-270-8109. (May '92)

ImageStudio

ImageStudio puts a complete black-and-white or gray-scale photo-retouching lab on the Macdesktop. Editable brushes let you modify digitized images in 256 gray levels. If you never work on color images, ImageStudio may be all you
need for professional photo manipulation. Version 1.0 reviewed. Version 1.7 shipping. Requires Mac Plus or later and a hard drive; gray-scale work requires 8-bit video card and a compatible monitor. $250. Fractal Design Corp., 335 Spreckels Dr., Ste. F, Aptos, CA 95003. 408-688-8800 or 408-688-5500. (June '88)

JAG (Jaggies Are Gone) is a fast, bare-bone utility that smooths the edges of objects in bit-mapped images and animations. Supports PICT and PICS formats, 8- or 24-bit color, and dithering. Can adjust color images to match NTSC-legal video spectrum. Can also smooth vector and PostScript images converted to PICT format, but quality isn't quite as good. Handles batch processing well and can operate in the background. Version 1.04 reviewed. Requires Macintosh II series or higher with a color display system. $99.95. Ray Dream, Inc., 1804 N. Shoreline Blvd., Mountain View, CA 94043. 415-960-0765. (Nov '92)

MacPaint ****

MacPaint, the original black-and-white pixel pusher, hasn't completely lost its shine after all these years. Now supports multiple windows, design templates, and a magic eraser for corrections. Lacks free-rotation and advanced image-distortion capabilities. A good starter package for kids, and a decent paint program if you only need basic doddling capability. Version 2.0 reviewed. Requires Mac Plus or later; hard drive recommended. $125. Claris Corp., 5201 Patrick Henry Dr., Santa Clara, CA 95052. 408-727-8227. (July '88) ★ ★ ★ ★ '85, '87 Eddy

PixelPaint ***

PixelPaint is a straightforward 256-color (8-bit) painting program with a good interface, practical tools, and special effects. Works with many file formats. Four-color-separation capability is built in. Includes PixelScan utility with excellent 8-bit imaging for Sharp and Hewlett-Packard scanners. Version 2.0 reviewed. Version 2.1 shipping. Requires Macintosh II series with color video card and 2 MB of RAM, System 6.03 or later, color monitor, and a hard drive. $249. SuperMac Technology, 485 Potrero Ave., Sunnyvale, CA 94086. 800-334-3005 or 408-245-2202. (Oct '89)

Photoshop ******

Photoshop is a professional, 32-bit photo-retouching program that combines powerful image-editing capabilities with an un intimating interface. Fast, reliable, and easy to use. Flexible file-conversion options — can import and export images to and from popular graphics file formats for Mac and DOS machines. Comes with many useful special-effects filters for customizing images. Allows on-screen CMYK editing, precise control of color separations, UCR (undercolor removal), and GCR (gray-component replacement). Can open and rasterize EPS files for incorporation into continuous-tone images. Requires PostScript Level 2. Version 2.0 reviewed. Version 2.01 shipping. Requires Macintosh with 4 MB of RAM, System 6.05 or later, and a hard drive; 24-bit-color display system recommended. $799. SuperMac Technology, 485 Potrero Ave., Sunnyvale, CA 94086. 800-334-3005 or 408-245-2202. (Oct '91)

Smoothie ******

This application smooths the edges of objects in vector and PostScript images converted to PICT format. Excellent image quality. Doesn't work with bit-mapped images. Supports 8- or 24-bit color, QuickTime movie format, and file compression. Handles batch processing well. Version 1.04 reviewed. Requires Macintosh II series or higher, System 7 or later, and a color display system. $149. Michael Peirce Software, 719 Hibiscus Place, Ste. 301, San Jose, CA 95117. 408-244-6554. (Nov '92)

SuperPaint ***

SuperPaint is a combination painting/drawing program that includes plug-in tools, auto-trace, Bezier curves, support for resolutions exceeding 300 dpi, and 24-bit color support. Sophisticated color controls,
UltraPaint ***

UltraPaint is an 8-bit-color graphics program that's best for novices, but experienced artists may also find it useful. Somewhat quirky interface. Full complement of basic painting and drawing tools plus several specialized tools and modes. Can't convert text to outlines. Well-designed pen tool is easy to use. Supports multiple painting and drawing layers. Version 1.05 reviewed. Version 2.1 shipping. Requires Macintosh Plus or later with System 6.05 or later. $79. Deneba Software, 7400 S.W. 87th Ave., Miami, FL 33173. 305-596-5644. (Nov '92) * 87 Eddy

VideoPaint **

VideoPaint isn't fast or easy to learn, and it comes with a manual that's difficult to comprehend. This program offers a few special effects that other 8-bit-color paint programs can't match, however. VideoPaint includes drivers for Microtek and Sharp scanners, and it can import MacPaint, PICT/PICT2, PixelPaint, color TIFF, LZW, and Studio/8 files. The list of available export formats includes EPS, grayscale, and PostScript CMYK. Version 1.0 reviewed. Version 1.1 shipping. Requires Macintosh Plus or later, System 6.03 or later, 2 MB of RAM, and a color display system. LC version available. $495. Olduvai Corp., 7520 Red Rd., Ste. A, South Miami, FL 33143. 800-822-0772 or 305-665-4665. (Feb '91)

Authorware Professional ****

A supremely engineered tool that lets you build stand-alone interactive training applications without programming. Authorware Professional lets you blend sound, video, and animation. By stringing together icons that represent various program components, you create logical, editable sequences. Has good color-graphics and sound controls, limited but usable database functions, and basic calculation and graphing features. Can use many existing XCMDs and XFCNs written for HyperCard and Macromind Director. Generates detailed printed reports. Supports many videodisc controllers. Version 1.6 reviewed. Version 1.7 shipping. Requires Macintosh Plus or later; Mac II with 4 MB of RAM recommended for color work, $8,000; for educational users, $995. Macromedia, Inc., 600 Townsend St., San Francisco, CA 94103. 415-442-0200. (Aug '91) * 90 Eddy

CA-Cricket Presents ***


Cinematron ***

Cinematron is an easy-to-use, frame-based animation tool. Perfect if you need to build on-screen presentations for use in business and education. Not as powerful and feature-rich as programs such as MacroMind Director. Imports and plays existing Aldus Perspectives and Microsoft PowerPoint files. Includes a variety of design templates, including backgrounds and borders. AutoMotion feature combines templates with your customized animations. Has good painting tools and useful controls for sound and music. Imports PICT, PICS, and QuickTime files. Includes CinePlayer playback utility plus many sample animations and XCMDs for use in HyperCard. Version 1.0 reviewed. Requires Macintosh Plus or later and a hard drive; Mac II series recommended (with 4 MB of RAM and a color display system). $495. Vividus Corp., 651 Kendall Ave., Palo Alto, CA 94306. 415-494-2111. (July '92)

Macromind Director ****

Macromind Director is unequalled for its combination of interactivity with animated playback of color graphics and sound. By writing routines in Director's scripting language, you can develop interactive presentations and also control peripheral devices such as CD-ROM drives, VCRs, and videodisc players. One problem is that its excellent paint-layer tools create bit-mapped images only (except for text), so a separate drawing layer would help. Anyone familiar with HyperTalk scripting or similar programming should have no problem with Director. Version 2.0 reviewed. Version 3.1 shipping. Requires Macintosh Plus or later with 2 MB of RAM, System 6.05 or later, and a hard drive. $1,195. Macromedia, Inc., 600 Townsend St., San Francisco, CA 94103. 415-442-0200. (Mar '91) * 89 Eddy

Magic ****

Magic is a precise animated- presentation tool that produces near-professional-looking results without requiring professional-level skills. Uses MacDraw-like tools to draw paths for animated objects. Integrates graphics, text, sound, and QuickTime movies. Creation of interactive presentations does not require scripting. Lacks high-end features found in the MacroMind Director package. Version 1.1 reviewed. Requires Macintosh Plus or later with 4 MB of RAM, System 6.07 or later, a hard drive, and color display system. $395. Macromedia, Inc., 600 Townsend St., San Francisco, CA 94103. 415-442-0200. (Aug '92)

MediaMaker ****

MediaMaker lets you compile multimedia presentations by controlling and editing output from VCRs, videodisc players, camcorders, and CD-ROM drives. Clean, powerful interface. Also provides simultaneous control of Mac-based animations, graphics, and sound. Can assemble presentation elements and sound on videotape. With additional hardware, you can add browser windows, flip cards, and design your own layout titles or other special effects to on live or prerecorded video sequences. Compatible with Sony's LANC communication protocol for controlling video peripherals. Adequate for consumer-level presentations that don't need professional frame-accurate synchronization. Version 1.1 reviewed. Version 1.2 shipping. Requires color-capable Mac, 2 MB of RAM, System 6.05 or later, and a hard drive. $695. Macromedia, Inc., 600 Townsend St., San Francisco, CA 94103. 415-442-0200. (Dec '91)

MORE ****

MORE's outlines can be instantly transformed into presentations. Dozens of templates are provided, and users can also design their own. The program gives you a wide choice of customizable labeling schemes. Slide-making tools are excellent. Version 3.0 reviewed. Version 3.1 shipping. Requires Macintosh Plus or later, System 6.03 or later, and a hard drive. $395. Symantec Corp., 10201 Torrey Pines Rd., San Diego, CA 92130. 800-441-7234 or 619-278-9600. (Oct '90) * 90 Eddy

Persuasion ****

Persuasion is a powerful, comprehensive desktop presentation program. Template design and outlining capabilities are excellent. Many predesigned templates are included. Lacks a cropping tool, text

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kerning, and ability to rotate text or graphics. On-screen slide shows are handled well. Can import and display QuickTime movies and EPS or PICT graphics. Publish-and-subscribe capability automatically updates Persuasion images in other applications. With some limitations, you can transfer presentations between the Macintosh and Windows versions of Persuasion. Includes display-only Persuasion Player application for distribution with finished presentations. Version 2.1 reviewed.
Requires Macintosh Plus or later with 2MB of RAM, System 6.0.5 or later, and a hard drive. $495. Aldus Corp., 411 First Ave. S., Seattle, WA 98104, 800-353-2538 or 206-628-2320. (Aug ’92) ★ 98 Eddy

PowerPoint

PowerPoint is an easy-to-use desktop-presentation tool. Has good color schemes. Can send presentations to Genographics to produce color 35mm slides. Version 2.0 reviewed. Version 2.0.1F shipping. Requires Macintosh Plus or later and System 6.0.3 or later; hard drive recommended. $395. Microsoft Corp., One Microsoft Way, Redmond, WA 98052, 800-426-9400 or 206-882-8080. (Aug ’87) ★ 87 Eddy

Input Devices

Appointment Thumbelina Mac

Thumbelina Mac is a tiny trackball that works well but is best used by the nimble-fingered. Requires some dexterity and practice. Occupies no more desk space than one Oreo cookie. You may need several swipes of the marble-sized ball to move the cursor across any screen larger than a Classic’s (try the shareware mouse-accelerator software, Mouse2). Unlike larger desktop trackballs, Thumbelina Mac can be operated while supported entirely in your hand. Requires Macintosh SE or later. $99. Appoint, 7026 Koll Ctr. Pkwy., Ste. 230, Pleasanton, CA 94566, 800-448-1184 or 510-417-0611. (May ’92)

Asher Engineering quadLYNX Trackball

The quadLYNX Trackball has an encased trackball. Its small size makes it easy to control; however, operation requires some wrist movement to access the buttons. Comes in both ADB and non-ADB versions. Requires Macintosh 512K or later. $99.95. Asher Engineering, 15115 Ramona Blvd., Baldwin Park, CA 91706, 800-321-5969 or 818-962-4063. (Oct ’89)

Auto Mouse

Why use a mouse when you could be double-clicking on a Corvette? This plastic mouse cover transforms a standard Apple mouse into a little red Corvette. Looks sharp but is a little clunky in use. Other models of this accessory may become available: cats, dogs, even mouse mouse covers. $19.95. Suntime, 7817 N. Cameron Ave., Tampa, FL 33614, 813-886-1145. (Dec ’92)

CalComp DrawingBoard

The CalComp 2300A is a full-featured drawing tablet that lets you resize and reposition the drawing area. Six different input devices (pens and pucks) and several software templates are available. AE Template Manager lets you perform all the System and HyperCard menu functions on the tablet. Requires Macintosh SE or later. $495 to $2,995, depending on size. CalComp Digitizer Products Group, 14555 N. 82nd St., Scottsdale, AZ 85260, 800-458-5888 or 602-948-6540. (Oct ’89)

Quadlynx DrawingBoard II

Part of CalComp’s 3300 series, this lightweight digitizing tablet has excellent control-panel software to customize response to user input. Software automatically reconfigures depending upon type of pen or puck in use. Provides on-screen display of input options. Tablet has comfortable design and connects to ADB port. Cordless pen and puck are battery-powered, easy to use, and accurate. Planned pressure-sensitive version of this tablet will use serial port. Requires Macintosh SE or later. With corded puck, $495; with cordless puck, $645. CalComp Digitizer Products Group, 14555 N. 82nd St., Scottsdale, AZ 85260, 800-458-5888 or 602-948-6540. (Apr ’92)

Colorado Spectrum Mouse Yoke

If your mouse feels melancholy about its nose-to-the-ground existence, strap the cr iter into a Mouse Yoke and fasten the assembly to your desktop. Then fire up any flight-simulation game, and your mouse will fly with you through the wild blue yonder. The aircraft-style yoke can’t click the mouse button, and the documentation tells completely in the DOCSphere, but your mouse may scramble just as quickly as any joystick. $34.95. Colorado Spectrum, 748 Whalers Way, Ste. E201, Fort Collins, CO 80525, 800-238-5983 or 303-225-6929. (Dec ’92)

CoStar Stingray

The Stingray trackball does indeed resemble a marine creature. Low profile and simple operation may be just right for ham-fisted right- or left-handed users. Switch underneath the base lets you set the two wide, symmetrical buttons either to click and clicklock or so that both simply click. Included software precisely controls cursor acceleration and double-click speed. Attached ADB cord is too short to reach around the Mac, so connection to keyboard port is required. Requires Macintosh SE or later. $129. CoStarCorp., 22 Bridge St., Greenwich, CT 06830, 800-426-7827 or 203-661-9700. (May ’92)

Curtis MVP Mouse

Curtis MVP Mouse is actually a trackingball, and it accepts an unusual option: a foot switch that can be used for clicking or to activate a chosen key combination. The trackball uses three buttons configured to suit both left- and right-handed users. Included software lets you vary the operation of the buttons to handle standard Mac operations and custom Command-key combinations. Requires Macintosh SE or later. $1,395; version 1.0 reviewed. Version 1.01 shipping. Requires Macintosh SE or later. $149.95; optional MVP Foot Switch, $29.95. Curtis Manufacturing Co., Inc., 30 Fitzgerald Dr., Jaffrey, NH 03452, 800-548-4900 or 603-352-4123. (May ’92)

EMAC Silhouette

The Silhouette trackball is strikingly, ergonomically designed — if you’re right-handed. Curved base is shaped to support your hand comfortably while you hold the ball between thumb and a finger. Comes with four differently-colored balls, each with different weights and therefore varying spin inertia after user input. Base is vulnerable to dust and dirt, because circuit board is relatively exposed under the ball opening. Location of three buttons may feel slightly awkward for some users. Included software as signs Command-key combinations to third button and varies speed of tracking and double-clicking. Requires Macintosh SE or later. $99.95. EMAC (Everex Systems), 48431 Milmott Dr., Fremont, CA 94538, 800-628-3837 or 510-498-1111. (May ’92)

Felix

Felix is a 5.75-inch-square fixed-base mouse replacement. Space saver but awkward for lefties. Has a button on top of the pointer handle for mouse clicks. Has drawing setting for precise absolute movement. Useful software. Only ADB version is available. Version 1.0 reviewed. Version 1.22 shipping. Requires Macintosh SE or higher. $129. ALTRA, 520 W. Cedar, Rawlins, WY 82301, 800-726-6153 or 307-328-1342. (Oct ’89)

FreeWheel Pointer

The FreeWheel Pointer uses a pointer to determine the user’s head position by bouncing infrared light off a small, lightweight mirror on the user’s forehead. Compact receiver unit and puff switch (can be mounted wherever convenient). Good software. Standard keyboard arrangement is located on-screen. Requires Mac Plus or later. $1,395;
ADB adapter for Mac SE, SE/30, and IIGS series, $150. Pointer Systems, Inc., One Mill St., Burlington, VT 05401. 800-537-1562 or 802-658-3260. (Oct '89)

**HeadMaster ******

The HeadMaster is designed for users who have little or no use of their hands. It uses ultrasound signals emitted from a headset to determine the position of the user's head. Has a puck tube for the mouse button. Utilizes all mouse functions. Offers a variety of on-screen keyboards. Available for Mac SE. SE, and SE/II. Requires on-screen keyboard software such as Apple's Screen Keys; Mac SE or later requires ADB adapter. $945; ADB adapter, $150; Screen Keys, $100. Prentke Romich Co., 1022 Heyl Rd., Wooster, OH 44691. 800-262-1984 or 216-262-1984. (Oct '89)

**Kensington Microwave Turbo Mouse ADB ******

The Turbo Mouse ADB trackball lets you reverse mousing and locking functions for left-handed people. Has a chording feature for user-specified keyboard-command-equivalent functions. Excellent design and software. Version 2.0 reviewed. Version 4.0 shipping. Requires Macintosh SE or later, $169.95. Kensington Microwave Ltd., 2855 Campus Dr., San Mateo, CA 94403. 800-535-4242 or 415-572-2700. (Oct '89)

**Kidz Mouse ******

It's cute, it's colorful, and it works just like your Mac's regular rodent. The Kidz Mouse is a compact, sturdy input device that fits nicely under busy little digits but might seem awkward to adult mousers with large hands. Two buttons resembling flattened mouse ears let you click or double-click. Requires Mac SE or later, $79. Logitech, Inc., 6505 Kaiser Dr., Fremont, CA 94555. 800-231-7717 or 510-795-8500. (Dec '92)

**Kurta IS *******

Kurta IS is a digitizing tablet that's available either in the IS/ADB configuration (for connection to an ADB port) or in the IS/ONE configuration (which uses the Mac's serial port). Both configurations work consistently with corded or cordless pens and pucks, but accuracy may suffer if input pen is tilted. Cordless pen is heavy. Tablet has 13 color-coded buttons that can trigger custom macros. Also built in are several dedicated buttons that exercise frequent software options. Complex documentation. Upgraded XTG digitizer series will add pressure-sensitive operation. Requires Macintosh SE or later for IS/ADB; Requires Macintosh Plus or later for IS/ONE. Requires ADB, $945 to $965; IS/ONE, $525 to $945. Kurta Corp., 3007 E. Chambers St., Phoenix, AZ 85040. 800-445-8782 or 602-276-5533. (Apr '92)

**Logitech MouseMan ******

The MouseMan is a three-button, programmable ADB mouse with a comfortable rounded design. Included MouseKey software controls speed, tracking, and sensitivity. Extra buttons can be programmed to activate different commands depending upon the Mac's active application. MacMan is a/AUX-compatible, although MouseKey software is not. Requires Macintosh SE or later, $129. Logitech, Inc., 6505 Kaiser Dr., Fremont, CA 94555. 800-231-7717 or 510-795-8500. (Mar '92)

**Logitech TrackMan ******

TrackMan is an elegant, practical ADB trackball with versatile software. Ergonomic design has golf-ball-sized ball and three buttons in a rectangular base. Unusual set-up uses thumb to move ball and fingers to activate buttons. Included software controls trackball speed and button settings for double-click speed, clicklock or Fkey activation, as well as Command-key combinations. Provides unique ability to change all assigned button settings depending upon the active application. Requires Macintosh SE or later, $149. Logitech, Inc., 6505 Kaiser Dr., Fremont, CA 94555. 800-231-7717 or 510-795-8500. (May '92) ★ '91 Eddy Mac 'N Touch ******

Mac 'N Touch is a touch screen that's useful for applications that require a lot of pointing and clicking. Doesn't work as well for programs that require fine control, such as graphics packages. Available as an add-in screen for Mac SE and II models and as a snap-on screen for the SE only. Preassembled touch screens are available for many sizes of Mac-compatible monitors. SEAdd-in, $745; Mac II add-in, $895. MicroTouch Systems, Inc., 55 Jonspin Rd, Wilmington, MA 01887. 508-694-9900. (Oct '89)

**Mac-101 ******

The Mac-101 is an expanded keyboard. Has a keypad, 15 function keys, and more. The 101-Keys DA lets you define macros. Good feel and response. ADB versions available. $194.95. DataDesk: International (Prometheus Products), 9524 S.W. Tualatin Sherwood Rd., Tualatin, OR 97062. 800-477-3473 or 503-692-9600. (Apr '88)

**MacPro Plus Keyboard ******

The MacPro Plus Keyboard is an easily customizable alternative to Apple's Extended Keyboard. Both the "touch" (resistance to pressure) and assigned characters of individual keys can be changed to suit different typing styles and special projects. Works with all Macs and allows use of paper templates designed for Apple's keyboard. ADB connections on back of the keyboard prevent it from sitting flush against the Mac. Includes Tempo II macro utility. $179. Key Tronic Corp., P.O. Box 14687, Spokane, WA 99214. 800-262-6006 or 509-928-8000. (Sept '91)

**McIntyre ******

McIntyre combines two products: WordWriter software and a LipStick joystick for people who can't use their hands. The joystick is held in the mouth, and clicking requires pressing a button on the top of the stick with the tongue. Joystick can also be mounted on a gooseneck stand. An image of the keyboard appears on-screen so users can select letters and carry out most keyboard functions. Extremely sensitive. WordWriter software, $100; LipStick joystick, $250. McIntyre Computer Systems, 22809 Shagbark, Birmingham, MI 48010. 313-645-5900. (Oct '89)

**MicroSpeed MacTRAC ******

The MacTRAC has three buttons — a lock and two clicks — located above the trackball. Light indicator signals that the lock button has been pushed. Powerful software offers wide range of custom options, including equal ease of use for right- or left-handed people. Key Events feature adapts buttons to standard Mac operations such as Cut and Paste. Adding a macro program such as QuikKeys or Tempo II provides almost endless button/command combinations. Version 2.0 reviewed. ADB version. Requires Mac SE or later, $99; ADB version, $119. MicroSpeed, Inc., 44000 Old Warm Springs Blvd., Fremont, CA 94538. 800-232-7888 or 510-490-1403. (May '92)

**Mouse Systems A3 Mouse ******

A3 Mouse is an accurate, three-button, A/U/X-compatible input device. Has 300-dpi tracking resolution (versus the Apple rodent's 200 dpi). Uses optical sensor and special pad to provide smooth, responsive action. Control panel software programs extra buttons to activate user-defmed commands. $149.5, Mouse Systems, 47505 Seabridge Dr., Fremont, CA 94538. 510-656-1117. (Mar '92)

**Mouse Systems Little Mouse ******

The one-button Little Mouse uses infrared light reflected from a special pad to track mouse movement. Compact, with no moving parts. Relative movement and clicking action feel similar to the standard Mac mouse. Improved precision for small-on-screen objects. Must use included mouse pad. Tracking resolution is 300 dpi. $134.95. Mouse Systems, 47505 Seabridge Dr., Fremont, CA 94538. 510-656-1117. (Mar '92)

**MouseStick ******

The MouseStick is a joystick...
with programmable settings. Buttons can perform mouse-type functions or execute keyboard commands with single, double-, or triple-clicking. Available in ADB and non-ADB versions. ADB version has built-in splitter cable and can retain six settings for more popular games. Requires System 6.0.4 or later. $599.95. Advanced Gravis Computer Technology Ltd., 7400 MacPherson, Ste. 111, Burnaby, British Columbia V5J 5B6 Canada. 604-431-5020. (Oct '89)

MouseTouch

The MouseTouch is a touch screen that permits pulling down menus and entering numeric information via an on-screen keypad. Can be user-installed. Connects to ADB port. Requires Macintosh II series or higher. For 12- to 14-inch monitor, $895; for 19-inch monitor, $1,010. Information Strategies, Inc., 888 S. Greenville Ave., Ste. 121, Richardson, TX 75081. 214-234-0176. (Oct '89)

Numonics GraphicMaster

GraphicMaster is a light, portable digitizing tablet that offers easy plug-and-play setup. Includes well-designed, accurate pen and puck. No-frills software sets active area of tablet. Tablet has no macroactivation options or buttons. No cordless pointing devices are available. Requires Mac SE or later. $595. Numonics Corp., 101 Commerce Dr., P.O. Box 1005, Montgomeryville, PA 18936. 800-247-4517 or 215-362-2766. (Apr '92)

Numonics GridMaster

The GridMaster is an extremely lightweight, thin, flexible digitizing tablet that can be positioned unobtrusively and then taped against a hard, flat work surface. Uses Mac's serial port. Has small rectangular box on upper-right corner to hold electrical connections. Operation with puck is smooth and accurate, but pen operation definitely needs secure support from desktop to maintain accuracy. Main disadvantage of lightweight design is vulnerability to damage from puncture or kinks. Requires Macintosh Plus or later. With pen, $449; with puck, $469. Numonics Corp., 101 Commerce Dr., P.O. Box 1005, Montgomeryville, PA 18936. 800-247-4517 or 215-362-2766. (Apr '92)

Personal Writer PW 10SL

This PW10SL is a drawing tablet that offers friendly software setup and easy macro programming. Basic menu commands, a mousing area, software controls, a macropad, and a small keyboard appear along one side. Provides click-and-drag scalable and movable drawing area. $799 to $2,499. Personal Writer, Inc., 1903 Foreign Ave., #400, Las Vegas, NV 89106. 800-322-4744 or 310-556-1001. (Oct '89)

Sophisticated Circuits

PowerKey

The PowerKey is a well-made add-on device that starts Classics, SEs, and SE/30s with a power key. Included software lets you program future timed events such as turning on the Mac or sending a specific keystroke combination. The actual power-key hardware has four surge-protected sockets. Version 1.0 reviewed. Version 2.0 shipped. Requires Macintosh SE or later. $119. Sophisticated Circuits, 19017 120th Ave. N.E., Ste. 106, Bothell, WA 98011. 800-827-4669 or 206-485-7979. (Sept '92)

Sophisticated Circuits

PowerPad

PowerBooks don't come with numeric keypads, function keys, or easy-to-use arrow keys. Adding a PowerPad elegantly corrects all three omissions. Version 1.0 reviewed. Requires PowerBook. $119. Sophisticated Circuits, 19017 120th Ave. N.E., Ste. 106, Bothell, WA 98011. 800-827-4669 or 206-485-7979. (Dec '92)

Spark Cordless Mouse

Although it offers the appeal of wireless, infrared-beam control of your Mac, the Spark Cordless Mouse suffers from shoddy construction. Has two components, the mouse itself (powered by two AAA batteries) and a receiving unit that works well even when it and the Mac are 20 feet away. The mouse's built-in LED transmitter can be turned up to 90 degrees away from the receiver. Mouse operation is unreliable due to a poorly secured rotating ball that tracks movement. No software is included. Version 1.0 reviewed. Requires Macintosh SE or later. $165. Spark International, 1939 Waukegan Rd., Ste. 107, Glenview, IL 60025. 708-998-6640. (Mar '92)

Summagraphics

SummaSketch

SummaSketch II is a digitizing tablet that's well built and electronically reliable but is cumbersome to set up and use. External power supply, ADB adapter box, and corded pen and puck add all to wiring complexity. No cordless pen and puck are available. Tablet surface has unusually coarse texture and demands excessive tip pressure from input pen to maintain continuous stroke. Using the included software is time-consuming when setting tablet options. Good documentation. Requires Macintosh SE or later. $699. Summagraphics Corp., 60 Silver Mine Rd., Seymour, CT 06483. 800-729-7860 or 203-881-5400. (Apr '92)

Switchboard

The Switchboard was the first customizable keyboard. It comes with three standard modules: a QWERTY alphanumeric keypad, a cursor keypad, and a numeric keypad. Key movement feels comfortable, and action is smooth. Can be configured via DIP switches to run with Macs or PCs. Many customizable settings. $239.95. DataDesk International (Prometheus Products), 9524 S.W. Tualatin Sherwood Rd., Tualatin, OR 97062. 800-477-3473 or 503-692-9600. (Nov '90)

Voice Navigator

This package includes sophisticated speech-recognition software and the elegant Navigator, a microphone and attached SCSI-interface box that digitizes sound into patterns that the Mac can recognize. Provides surprisingly accurate voice recognition after the software has adapted to an individual's voice. Requires Macintosh Plus or later. $699. Articulate Systems, 600 W. Cummings Park, Ste. 4500, Woburn, MA 01801. 800-443-7077 or 617-935-5656. (Sept '91)

Wacom SD-510C Cordless Digitizer

The SD-510C Cordless Digitizer is light and thin. Uses a pressure-sensitive stylus requiring neither a cord nor a battery. Tablet connects to the modem port. Sensing area is 6 x 9 inches (roughly 10 x 13 inches overall). Resolution is 770 lines per inch with high accuracy. Much more responsive than a mouse. When not in use, makes an excellent mousepad. Includes PressurePaint program and choice of stylus or cursor. Requires Macintosh Plus or later. $695. Wacom Technology Corp., 501 S.E. Columbia Shores Blvd., Ste. 300, Vancouver, WA 98661. 800-922-6613 or 206-750-8882. (June '90)

Wacom SD420E

The Wacom SD420E is a digitizing tablet that's simply constructed and maintenance-free. Pressure-sensitive input in combination with included cordless pen but not with included cordless puck. Excellent software controls puck operation and pen's pressure sensitivity. Mouse click is always a feather-touch effort, independent of click-and-drag sensitivity. Pen and puck don't require batteries. Maximum traceable thickness of artwork is slightly less than with other tablets. Includes basic stand-alone application called PressurePaint, along with plug-ins for SuperPaint and UltraPaint. Several programs, including FreeHand, ColorStudio, Oasis, Painter, Photoshop, and Studio/32, include

MICE RATINGS

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pressure-sensitive tools for this tablet. Requires Macintosh Plus or later, $995. Wacom Technology Corp., 501 S.E. Columbia Shores Blvd., Ste. 300, Vancouver, WA 98661. 800-922-6613 or 206-750-8882. (Apr '92)

Z-Nix Cordless Super Mouse !!!!!! This cordless input device uses infrared communication between a fixed receiver base and the mouse. Automatically recharges batteries when the mouse is stored in the base, but Mac must be on for recharging to take place. Base has 6-foot cord to connect to ADB port. Convenient, reliable, and elegantly designed. Good in-hand fit but only if you’re right-handed. Has a standard button plus a second button for assigned key sequences. Included Mouse Enhancer software provides basic tracking, double-clicking, and key-sequence controls. With clear line-of-sight visibility between mouse and its base, the two work well even when more than 10 feet apart. Requires Macintosh SE or later, $99. Z-Nix Company, Inc., 211 Erie St., Pomona, CA 91768. 714-629-8050. (Nov '92)

Music & Sound


Apple MIDI Interface !!!!!! The Apple MIDI Interface is a simple musical-instrument digital interface with a 1-MHz clock rate. Has only one MIDI input and one output. Requires Macintosh Plus or later. $99. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014. 800-776-2333 or 408-996-1010. (June '88)

AudioTRAX !!!!!! AudioTRAX is a modestly priced software package that mixes MIDI music sequences with two channels of 8-bit, 22-KHz sampled sound effects. Adequate for noncommercial sound mixing. Too limited for MIDI pros. Provides controls for the MacRecorder and for audio input on newer sound-capable Macs. Has easy-to-use basic tools for editing sound samples. Excellent documentation. Version 1.01 reviewed. $299. Passport Designs, Inc., 100 Stone Pine Rd., Half Moon Bay, CA 94019. 415-726-0280. (Sept '92)

Beethoven's String Quartet No. 14, Op. 131. Compared to the earlier disc (Mozart's The Magic Flute), the String Quartet is much easier to install and to navigate. The graphic design is well suited to HyperCard's intuitive style. Requires Macintosh Plus or later. HyperCard 1.2.5 or later, a hard drive, a CD-ROM drive, and speakers or headphones. $66. Warner News Media, 3500 W. Olive Ave., Ste. 1050, Burbank, CA 91505. 818-955-9999. (Mar '91)

Beyond !!!!!! Beyond is a competent music sequencer for melodious users. Does a good job of implementing the Mac interface, and both the manual and the tutorial are excellent. Incorporates a unique feature that, at least on Macs based on a 68000 CPU, accelerates the program by adjusting its performance relative to the computer's internal clock. Version 1.5 reviewed. Version 2.1 shipping. Requires Macintosh Plus or later, MIDI interface, and MIDI synthesizer. S149 direct. Dr. T's Music Software, Inc., 124 Crescent Rd., Needham, MA 02194. 617-455-1454. (Feb '91)

Composer's Mosaic !!!!!! This music-notation and publishing program is perfect for both novice songwriters and professional music copyists. Offers high degree of automation along with state-of-the-art tools for manipulating subtle details. Provides seamless integration with MIDI sequencing programs. Click-and-drag WYSIWYG interface makes it easy to enter musical elements from movable palettes directly onto staves. Unlimited Undo capabilities. Supports multiple files, various Mac/monitor combinations, and System 7. Bundled with Adobe Sonata font. Shipping version compatible with files created with earlier Professional Composer program. Version 1.05 reviewed. Version 1.1 shipping. Requires Macintosh Plus or later, System 6.0.3 or later, and a hard drive. $595. Mark of the Unicorn, Inc., 1280 Massachusetts Ave., Cambridge, MA 02139. 617-576-2760. (Oct '92)

ConcertWare + !!!!!! ConcertWare+ has eight different instruments and can use any four at any point in a musical composition. Supports Adobe Sonata music font. Version 4.0 reviewed. Version 4.06 shipping. Requires Macintosh Plus or later. $69.95. Great Wave Software, 5353 Scotts Valley Dr., Ste. E, Scotts Valley, CA 95066. 408-438-1990. (Dec '87) $185 Eddy

ConcertWare+ MIDI !!!!!! ConcertWare+ MIDI is a composition and transcription program that can record multiple notes from a MIDI keyboard. Easy to use if you can read music. Handles eight tracks of eight voices each. Version 4.0 reviewed. Version 5.22 shipping. Requires Macintosh Plus or later. $189.95. Great Wave Software, 5353 Scotts Valley Dr., Ste. E, Scotts Valley, CA 95066. 408-438-1990. (Dec '87) $185 Eddy

Cubase !!!!!! Cubase is a Mac MIDI sequencer that started life in Germany on the Atari ST. Good interface lets you edit while a sequence is playing. Provides four windows for editing of different instruments at the MIDI-event level. Has both intuitive toolbox-style control over sounds as well as a Logical Editor that fine-tunes compositions according to various Boolean selection and editing criteria. Has excellent Match and Groove quantizing tools, which are real time-savers. Holds its own against more-established music-editing programs. Timing resolution is only 192 ticks per quarter note. Includes driver for Digidesign's SampleCell NuBus card. Compatible with Apple's MIDI Manager. Copy-protected. Version 1.8 reviewed. Version 1.83/R2 shipping. Requires Macintosh II series or higher, 4 MB of RAM, and a hard drive. $495. Steinberg/Jones, 17700 Raymer St., Ste. E, Northridge, CA 91325. 818-993-4091. (Feb '92)

Cue: The Film Music System !!!!!! Cue: The Film Music System is a powerful and versatile assistant for scoring films. Automates spotting and logging cue points and searching for matching tempos. Also performs many minor jobs, such as generating a performing-rights cue sheet. Version 2.0 reviewed. Version 3.0 shipping. Requires Macintosh Plus or later and a hard drive. $595. Opcode Systems, Inc., 3950 Fabian Way, Ste. 100, Palo Alto, CA 94303. 415-856-3333. (Feb '89)

Deck !!!!!! Deck is a completely software-generated recording system, with an interface resembling the famous Tascam Porta-02. The Digital Deck uses for Torque cassette recorder, MIDI and acoustic input can be mixed and synchronized, producing CD-quality stereo that's easy to access and manipulate. Version 1.0 reviewed. Version 1.03 shipping. Requires Digidesign's Audiomedia or Sound Tools card. $349. Digidesign, 1300 Willow Rd., Ste. 101, Menlo Park, CA 94025. 415-688-0600. (Feb '91) $90 Eddy

Deluxe Music Construction Set !!!!!! Deluxe Music Construction Set lets you enter up to 48 voices on eight staves and play the music through the Mac's internal speaker and/or via
MIDI. Copy-protected. Version 2.0 reviewed. Version 2.5 shipping. Requires Macintosh Plus or later; hard drive recommended. $129.95. Electronic Arts, 1450 Fashion Island Blvd., San Mateo, CA 94404. 800-245-4525 or 415-571-7171. (June '88)

Digidesign Audiomedia  

The Digidesign Audiomedia card and software turn the Mac into a self-contained digital recording studio. Can play back, edit, and mix sound files, and subject them to a variety of special effects. Has CD-quality sound that occupies huge amounts of hard-drive space (10 MB of disk space per minute of sound). Excellent manual includes a chapter devoted to scientific sound theory. Version 1.0 reviewed. Version 2.0 shipping. Requires Mac II series or higher, 2 MB of RAM, and a hard drive. S995. Digidesign, 1360 Willow Rd., Ste. 101, Menlo Park, CA 94025. 415-688-0600. (Oct '90) ★ 89 Eddy

Digidesign MacProteus  

MacProteus is a NuBus card that fits any member of the Mac II series. The card operates as a MIDI-controlled playback device for desktop music production and can be controlled from most programs that use Apple’s MIDI Manager and PatchBay software. A wide variety of customizable sounds are available, and the card is easy to install. Can play 16-bit linear, 39-KHz mono or stereo samples, but cannot create them. Version 1.0f2 reviewed. Requires Macintosh II series or higher. $895. Digidesign, 1360 Willow Rd., Ste. 101, Menlo Park, CA 94025. 415-688-0600. (Feb '91) ★ 90 Eddy

Digidesign Pro Tools  

Pro Tools combines professional digital-audio recording and MIDI technology in a single hardware/software package. Superb sound quality. Has four simultaneous channels for recording and playback. Includes a NuBus card, a rack-mountable Audio Interface module, and Pro-Deck and ProEdit software for mixing and editing. Equipped with four balanced XLR analog inputs and outputs plus two digital inputs and outputs (AES/EBU and S/PDIF). Allows you to directly input recorded sound from a DAT deck, then edit it in the Mac, and output it straight back to DAT format. Can capture audio at CD-quality 44.1 kHz or at 48 kHz. Version 1.0 reviewed. Requires 68020 CPU or higher, 8 MB of RAM, and a large-capacity hard drive. S5,995; 8-channel, 12-channel, and 16-channel versions also available. Digidesign, 1360 Willow Rd., Ste. 101, Menlo Park, CA 94025. 415-688-0600. (Sept '92)

Digidesign SampleCell  

SampleCell is a sample-playback Mac II NuBus card. Excellent software tools. More than 600 MB of prerecorded sounds on CD-ROM. Hardware comprises a SIMM-less NuBus card socketed for 8 MB of RAM. Card can store up to 100 seconds of 16-bit sound sampled at 44.1 kHz. Cuts cost of high-quality sound processing by using the Mac’s CPU. Doesn’t supply recording capability. Can use as many SampleCells as Mac will hold. Each card runs 16 MIDI channels. Supports MIDI keyboards, sequencers, and programs compatible with Apple MIDI Manager. Version 1.1 reviewed. Version 1.3 shipping. Requires Macintosh II series and a hard drive; CD-ROM drive required for included disc. S1,995 with no installed RAM. Digidesign, 1360 Willow Rd., Ste. 101, Menlo Park, CA 94025. 415-688-0600. (July '91)

Dr. T’s Intro+  

For beginning MIDI musicians on a budget, Dr. T’s Intro+ may be just what the doctor ordered. Includes Dr. T’s Beyond 1.6 sequencing software, Great Wave Software’s Music Writer 5.2.1 notation program, two MIDI cables, and an Altec 1-in-3-out MIDI interface. Upgrading to Beyond 2.0 is highly recommended, making this starter kit a good deal. Requires Macintosh Plus or later with 2 MB of RAM and a hard drive. S399; upgrade to Beyond 2.0, S40. Dr. T’s Music Software, Inc., 124 Crescent Rd., Needham, MA 02194. 617-455-1454. (Dec '91)

Encore  


EZ Vision  

Powerful enough for beginners, EZ Vision is a general-purpose sequencer that uses a standard tape-recorder analogy, offering many of the best features in Opcode’s professional sequencer, Vision. Works with Apple’s MIDI Manager but doesn’t recognize SMPTE time code. EZ Vision makes good use of color and allows audible output while fast-forwarding or rewinding. Version 1.0 reviewed. Requires Macintosh Plus or later and a hard drive. S149.95. Opcode Systems, Inc., 3950 Fabian Way, Ste. 100, Palo Alto, CA 94303. 415-856-3333. (Feb '91)

Finalé  

Finalé 2.0 is a complex, revolutionary music notation program. Packs power and a much-improved interface. Provides absolute control over all the music elements in large-scale compositional and/or publishing projects. New version fixes many flaws. Four new manuals are excellent, and performance is fast. Offers page and score views. Version 2.0 reviewed. Version 2.63 shipping. Requires Mac Plus or later, MIDI instrument and interface, a hard drive, and a printer; 68030 CPU and 4 MB of RAM recommended. S749. Coda Music Software, 1401 E. 79th St., Bloomington, MN 55425. 800-843-2066 or 612-854-1288. (May '90)

Galaxy  

Galaxy is a universal patch librarian program for MIDI synthesizers. When instruments are organized in a bundle, an entire Galaxy setup can be loaded with one command. Auditions and organizes individual patches from a bundle or by separate patch banks. Has many extra features, is easy to use, and allows connection to Vision (Opcode’s professional sequencing program). Version 1.0 reviewed. Version 1.2 shipping. $249.95. Opcode Systems, Inc., 3950 Fabian Way, Ste. 100, Palo Alto, CA 94303. 415-856-3333. (Nov '90)

Harmony Grid  

Harmony Grid offers an experiential approach to harmony theory. Uses a grid to show scales and chords as repeating patterns. Users play tones by moving the mouse over the grid, resulting in improvisation without requiring any training or technique. The program automatically provides counterpoint. Supports MIDI. Version 1.05 shipping. Requires Mac Plus or later (MIDI synthesizer recommended). $99. VPL Research, Inc., 656 Bair Island Rd., Third Floor, Redwood City, CA 94063. 415-361-1710. (Aug '90)

Jam Factory  


Kaboom!  

The Kaboom! control panel is based on SoundMaster, the popular shareware sound utility that lets you attach dozens of weird sounds to common Mac actions (emptying the trash, shutting down, and so on). You get dozens of digitized sounds, including lines from “I Love Lucy” and “Twilight Zone” as well as the
Music Mouse  
Music Mouse gives you instant musical feedback as you move the mouse and type on the keyboard, thus controlling tempo, vibrato, and volume. Version 1.0 reviewed. Version 2.04 shipping. Requires Mac Plus or later. $49 direct. Dr. T's Music Software Inc., 124 Crescent Rd., Needham, MA 02194, 617-455-1454. (May '87)

Music Writer  
Music Writer is a promising but frustrating program for generating musical notation automatically from MIDI or mouse input. Three packages offer 3, 6, or 40 musical staves, respectively. Imports and interprets standard Format 1 MIDI files. Allows nonstandard note heads, chord symbols, percussion notation, part extraction, and PostScript printing using Adobe's Sonoma. (Version 4 reviewed.) Requires Macintosh Plus or later. System 6.03 or later, a hard drive, a CD-ROM drive, and speakers or headphones. $79.95. Warner New Media, 3500 W. Olive Ave., Ste. 1050, Burbank, CA 91505. 818-955-9999. (Dec '92)

Mr. SoundFX  
Mr. SoundFX is a commercial version of the shareware utility, SoundMaster, which lets you assign sounds to a wide range of actions, including startup, shutdown, disk insertion or ejection, and assorted key presses. The twist here is that half the sounds are created by Michael Winslow, who rose to fame making silly noises in the movie Police Academy. Check out this product if you want your Mac to eject disks to the sound, for example, of Barry White saying, "I need you, baby." $29.95. Prosonus, 11126 Weddington St., North Hollywood, CA 91601. 800-999-6191 or 818-766-5221. (Dec '92)

MIDI Companion  
MIDI Companion is a MIDI tool that lets you patch MIDI signals, sounds, and channels through the DA and separate sounds for single-channel playback. Has extensive electronic documentation. Version 1.0 reviewed. Shareware (Robert Patterson), $15; available from on-line services such as ZiffNet/Mac. (Nov '92)

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Music Writer is a promising but frustrating program for generating musical notation automatically from MIDI or mouse input. Three packages offer 3, 6, or 40 musical staves, respectively. Imports and interprets standard Format 1 MIDI files. Allows nonstandard note heads, chord symbols, percussion notation, part extraction, and PostScript printing using Adobe's Sonoma. (Version 4 reviewed.) Requires Macintosh Plus or later. System 6.03 or later, a hard drive, a CD-ROM drive, and speakers or headphones. $79.95. Warner New Media, 3500 W. Olive Ave., Ste. 1050, Burbank, CA 91505. 818-955-9999. (Dec '92)

Performa  
Performa is a full-featured MIDI sequencer that includes looping, SMPT sync, 32 simultaneous Ins and Outs, unlimited overdubbing, and compatibility with Professional Composer for transcription. Version 2.2 reviewed. Version 4.0 shipping. Requires Macintosh Plus or later. $249; MIDI System 4.0 shipping. Requires MacPlus or later. $495; MIDI System 6.03 or later, a hard drive, a CD-ROM drive, and speakers or headphones. $79.95. Warner New Media, 3500 W. Olive Ave., Ste. 1050, Burbank, CA 91505. 818-955-9999. (Dec '92)

Music Prose  
Music Prose was designed for preparing lead sheets, piano vocal parts, and small ensemble scores. It's easy to learn and use. Can import and play back almost anything. Version 1.0 reviewed. Version 2.1 shipping. Requires Macintosh Plus or later, MIDI instrument and interface, and a hard drive; 68030 CPU and 4 MB of RAM recommended. $249. Coda Music Software, 1401 E. 79th St., Bloomington, MN 55425, 800-843-2066 or 612-854-1288. (Sept '91)

Music Prose  
Music Prose was designed for preparing lead sheets, piano vocal parts, and small ensemble scores. It's easy to learn and use. Can import and play back almost anything. Version 1.0 reviewed. Version 2.1 shipping. Requires Macintosh Plus or later, MIDI instrument and interface, and a hard drive; 68030 CPU and 4 MB of RAM recommended. $249. Coda Music Software, 1401 E. 79th St., Bloomington, MN 55425, 800-843-2066 or 612-854-1288. (Sept '91)
the Montreal Symphony, this CD-ROM also includes lucid historical and analytical information. The disc is superbly programmed in HyperCard. Its components explain aspects of the ballet, Stravinsky's style, the music, and individual instruments, Version 1.01 reviewed. Version 1.02 shipping. Requires Macintosh Plus or later, HyperCard 2.0v2 or later, a hard drive, and a CD-ROM drive. $99.95. The Voyager Company, 1351 Pacific Coast Hwy., Santa Monica, CA 90401. 800-446-2001 or 310-451-1383. (Aug '91)

Sound Manager Package

Sound Manager Package is a group of well-implemented sound-file manipulators and players. It's one of the best, most versatile utility sets available for sound (as opposed to music) aficionados. Many useful and amusing sounds are also included on disk. Includes manual. Version 1.4 reviewed. Version 1.76 Sound Mover, 2.11 SnkControl shipping. Requires Macintosh Plus or later with 2 MB of RAM; hard drive recommended. Shareware, $25; available from on-line services such as ZiffNet/Mac. Ricardo Ettore, 67 Rue de la Limite, 1970 W­Oppem, Belgium (011) 322-767-9217. (Nov '89)

SoundEdit Pro

SoundEdit Pro provides good tools for recording, editing, and mixing digitized sound. This enhanced version of the original SoundEdit maintains support for the MacRecorder. Needs minor interface improvements. Also works with newer Macs' built-in sound-recording capabilities. Supports 16-bit (CD-quality) sound files. A virtual-memory scheme can spool sound files out of limited RAM on to your hard drive. Good range of special effects and superior sound-mix quality. Version 1.0 reviewed. $975; with MacRecorder, $394; upgrade from SoundEdit, $75. Macromedia, Inc., 600 Townsend St., San Francisco, CA 94103. 415-442-0200. (Sept '92)

SoundMaster

SoundMaster is an elegant INIT/cdev that lets you assign sounds to a wide range of actions, including startup, shutdown, disk insertion or ejection, and assorted key presses. Keeps track of the amount of memory consumed by sounds. Version 1.1 reviewed. Version 1.65 shipping. Requires System 4.1 or later. $20. Bruce Tomlin, 15801 Chase Hill Blvd., Ste. 109, San Antonio, TX 78256. (Nov '89)

Studio Session


Studio Vision

Studio Vision is the first software package that seamlessly integrates MIDI data with digital audio recording. It lets you record vocals or non-MIDI instruments in the same document as MIDI data and then play it back along with the music. Actually an extension of Vision ( Opcode's top-of-the-line MIDI sequencer ), Studio Vision adds 16 tracks of audio data (assignable to 2 channels) to Vision's 99 tracks (assignable to 32 MIDI channels). Time can be notated in musical terms (bars/-beats/units) or in video terms (hours/minutes/frames), with SMPTE locking. Version 1.21 reviewed. Version 1.4 shipping. Requires Mac SE/30 or Mac II series, sound-digitizing card, a MIDI interface, and a hard drive. $995. Opcode Systems, Inc., 3950 Fabian Way, Ste. 101, Palo Alto, CA 94303. 415-856-3333. (June '91) $90 Eddy

Super Librarian

Super Librarian is a multi-platform universal patch librarian for MIDI synthesizers. Organizes different groups of instruments or different banks of a single instrument into a performance. Buttons for sending and receiving patch information are inside each Device Folder rather than on a menu. Allows transfer of patches from one type of computer to another as long as same profile is loaded into each machine. Un-Mac-like interface. Version 1.4 reviewed. Version 3.43 shipping. Requires Macintosh Plus or later, except Quadras. $99 direct. Pixel Publishing, 641 California Rd., Toronto, Ontario M6E 4V8 Canada. 416-785-3036. (Nov '90)

Trax

Simple enough for beginners, Trax is a solid, general-use sequencer that uses a standard tape-recorder analog. It could use some of the higher-end functions available in more-powerful sequencer programs. Uses same graphic interface as Passport's external MIDI sequencer, Master Tracks Pro. Works with Apple's MIDI Manager, but doesn't recognize SMPTE time code. Version 1.2 reviewed. Version 2.2 shipping. Requires Mac Plus or later and MIDI interface; hard drive recommended. Passport Designs, Inc., 100 Stone Pine Rd., Half Moon Bay, CA 94019. 415-726-2890. (Feb '91)

Turbosynth


UpBeat


Vision

Vision is a Mac sequencer that supports full SMPTE control, event-list and graphics editing; real-time and step recording; looping; tempo, meter, and dynamic changes; and standard MIDI files. MIDI Keys maps certain Mac keyboard commands to your MIDI controller. Faders window supports 32 faders, offering real-time control of volume, tempo, and synthesizer-specific functions. Copy-protected. Version 1.0 reviewed. Version 1.4 shipping. Requires Macintosh Plus or later, MIDI interface, and MIDI synthesizer. $495. Opcode Systems, Inc., 3950 Fabian Way, Ste. 101, Palo Alto, CA 94303. 415-856-3333. (Dec '89)

Voyager CD AudioStack

This Voyager CD AudioStack is a HyperCard tool kit that precisely controls a compact disc (in a CD-ROM player) to create musical stacks. The scripts are thoroughly and clearly commented, and anyone with HyperTalk proficiency should find them easy to modify. Version 1.0 reviewed. Version 1.2 shipping. Requires Mac Plus or later, HyperCard 2.1, a hard drive, a CD-ROM drive, and speakers or headphones. $195. The Voyager Company, 1351 Pacific Coast Hwy., Santa Monica, CA 90401. 800-446-2001 or 310-451-1383. (Nov '90)

Networking & Connectivity

3Com EtherLink/NI B

This NuBus Ethernet card has average performance. Version 1.1 reviewed. Requires NuBus-capable Mac. $595; bundled with EtherLink TP transceiver, $670. 3Com, 5400 Bayfront Plaza, Santa Clara, CA 95052. 800-638-3266 or 408-764-5000. (June '90)

3Com EtherLink/SE

This Ethernet interface has very fast SE-cli ent/server, and raw performance. Version 1.0 reviewed. Requires Macintosh SE. $595. 3Com, 5400 Bayfront Plaza, Santa Clara, CA 95052. 800-638-3266 or 408-764-5000. (June '90)

AccessPC

AccessPC is an INIT that lets the Mac desktop mount MSDOS and floppy disks, as well as...
as PC-compatible removable cartridges with higher capacity. Assigns Macintosh Type and Creator codes to MS-DOS files, which lets specified Mac applications open them automatically without going through the Apple File Exchange utility. Works with DOS floppy drives driven from Apple. PLI, and Kneenet. Includes universal Multi-Drive (an INIT and control panel) to help with PC drives that have trouble mounting on the Mac desktop. Works well in combination with Insignia Solutions' SoftPC running PC applications on a Mac hard drive. Version 1.1 reviewed. Requires any Mac with FDHD SuperDrive, or external DOS floppy drives. $99. Insignia Solutions, 526 Clyde Ave., Mountain View, CA 94043. 415-694-7600. (Aug '91)

AlisaTalk

AlisaTalk, a file server for networked Macs, provides numerous features for VAX, DOS, and Mac interoperability. Slow for APP file sharing and requires knowledge of VMS. Allows unlimited number of simultaneous users. Version 3.3 reviewed. Requires VAX. 10-user license, $1,500; license for unlimited users, $4,700. Alisa Systems, 221 E. Walnut St., Ste. 173, Pasadena, CA 91101. 818-792-9474. (June '91)

Apple Ethernet NB Card

An excellent performer in file-transfer tests. Has 3Com hardware. Good raw performance. Requires NuBus-capable Mac; adapter required for use in IIsi. $424. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014. 800-776-2333 or 408-996-1010. (June '90)

AppleShare Server

AppleShare is powerful, inexpensive file-server software from Apple. Fast, easy to configure and administer. Lets network users protect files from other users at the folder level. Permits setup and administration from Mac, choice of LocalTalk or Ethernet connection, and AppleShare-PC support. Allows a maximum of 120 simultaneous users, and multiple applications can run on the server. Good printspooling capabilities for up to five printers. Version 3.0 reviewed. Version 3.01 shipping. Requires a dedicated Mac SE/30 or higher with 4 MB of RAM, System 7.0 or later, and a large, fast hard drive. $1,199. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014. 800-776-2333 or 408-996-1010. (Apr '92)

AppleTalk Internet Router

This software router can create a large internet with EtherTalk and TokenTalk. Doesn't support dial-in access, but offers support for AppleTalk Phase 2, mixed Phase 1 and 2, and token-ring networks. Cabling can be thick coaxial, thin coaxial, or twisted-pair. Quality of technical support depends heavily on locating a knowledgeable, cooperative, authorized Apple dealer. Version 2.0 reviewed. $399. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014. 800-776-2333 or 408-996-1010. (Apr '92)

Applied Engineering Quadralink

The Quadralink occupies a NuBus slot and cleanly adds four 8-pin mini-DIN RS-422 and AUI ports, and a hierarchical port. Lacks an AUI port. Power supply is external. Documentation is informative. Five-year warranty. $399. Applied Engineering, Inc., 404 Tasman Dr., Sunnyvale, CA 94089. 800-662-9686 or 408-752-8388. (Oct '92)

Asante 10T Hub 1/8

This compact, nonmanaged 10BASE-T hub includes eight 10BASE-T ports, BNC and AUI ports, and a hierarchical port. Offers 12 RJ-45 ports or 1 RJ-25 port. Has LEDs to monitor collision and link status. Power supply is external. Informative documentation. Five-year warranty. Pre-10BASE-T-compatible. $799. Asante Technologies, Inc., 404 Tasman Dr., Sunnyvale, CA 94089. 800-662-9686 or 408-752-8388. (Oct '92)

Asante 10T Hub 1/12

This compact, nonmanaged 10BASE-T hub includes twelve 10BASE-T ports, BNC and AUI ports, and a hierarchical port. Offers 12 RJ-45 ports or 1 RJ-25 port. Has LEDs to monitor collision and link status. Power supply is external. Informative documentation. Five-year warranty. Pre-10BASE-T-compatible. $799. Asante Technologies, Inc., 404 Tasman Dr., Sunnyvale, CA 94089. 800-662-9686 or 408-752-8388. (Sept '91)

Asante MacConnect LC

MacConnect LC is a PDS card that provides 10BASE-T Ethernet networking capability. Includes thicknet AUI port, diagnostic software, and link-integrity LED. Doesn't auto-configure. Five-year warranty. Requires Mac II series or higher with NuBus. $249. Asante Technologies, Inc., 404 Tasman Dr., Sunnyvale, CA 94089. 800-662-9686 or 408-752-8388. (Sept '91)

Asante MacConnect SE/E

This inexpensive Ethernet device provides very good performance as an SE client. Requires Macintosh SE. $249. Asante Technologies, Inc., 404 Tasman Dr., Sunnyvale, CA 94089. 800-662-9686 or 408-752-8388. (June '90)

Avatar Lanway E-10T Direct Slot

Lanway E-10T Direct Slot is a PDS card that provides 10BASE-T Ethernet networking capability. Includes thicknet
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Cabletron E5010 DNI $1,395

Carbon Copy/Mac $1,495
Carbon Copy Mac is a screen-sharing program that lets you access another networked Mac for technical support, training, or file management. A "guest" Mac can control only one host Mac, but multiple guests can simply observe a host. Supports both network and modern connections in the same package. Capable of file transfer between Macs. Provides the security feature of assigning different "classes" of users. Not color-capable. Requires Macintosh Plus or later. 495. Microcom Utilities Product Group, P.O. Box 51489, Durham, NC 27717. 919-490-1277. (Dec '91)

Cayman GatorBox CS $259
This EtherTalk/LocalTalk hardware router offers many gateway features, including TCP/IP connectivity. No battery backup. Supports AppleTalk Phase 2, mixed Phase 1 and 2 networks, SNMP and other protocols, but only one LocalTalk port is provided. Network-security features provide configuration protection and resource hiding, including zone, printer, and device filtering. Good setup information. With optional GatorShare software, a UNIX host appears as a GatorShare server. Unlimited free technical support. $2,795; GatorShare software, $1,995. Cayman Systems, 26 Lundsdowne St., Cambridge, MA 02139. 617-494-1999. (Apr '91)

Cayman GatorCard E/I $449
This compact, nonmanaged 10BASE-T hub includes nine 10BASE-T ports and a hierarchical port. Lacks BNC and AUI ports. Has auto-polarity adjustment and LEDs to monitor collision and link status. Power supply is external. $695. Cabletron Systems, Inc., 35 Industrial Way, P.O. Box 6257, Rochester, NH 03867. 603-332-9400. (Oct '92)

Cayman MRX $1,495
This nonmanaged 10BASE-T hub includes twelve 10BASE-T ports and user-configurable AUI, BNC, and fiber-optic ports. Has auto-polarity adjustment and LEDs to monitor collision and link status. Rack-mountable. Power supply is internal. Noisy fan. $1,395. Cabletron Systems, Inc., 35 Industrial Way, P.O. Box 6257, Rochester, NH 03867. 603-332-9400. (Oct '92)

Cayman MRX/IT $1,495
This Ethernet interface is very fast. Uses top-notch Racial InterLink hardware. Version 1.1 reviewed. Requires NuBus-capable Mac. $449. Cayman Systems, 26 Lundsdowne St., Cambridge, MA 02139. 617-494-1999. (June '90)

cc:Mail Mac Platform Pack $495
cc:Mail is an E-mail application featuring keyboard loading of recipient names, message prioritizing, multiple enclosures, return receipts, reply and forwarding, storage folders, and archiving. Good interface. PC-to-Mac VGA-graphics-display translation. Requires PC for setup, administration, and server-to-server traffic. No DA for messaging. Slow sending messages to multiple recipients. Allows up to 20 file enclosures and up to 65,000 users per server. Version 1.22 reviewed. Version 2.0 shipping. Requires Macintosh Plus or later, System 6.0.6 or later, and network file server. $495; 8 users, $195 extra; 25 users, $595 extra. cc:Mail, 2141 Landing's Dr., Mountain View, CA 94043. 800-448-2500 or 415-961-8800. (Mar '92)

Compatible Systems Ether+ $1,495
Ether+ is a SCSI adapter that provides 10BASE-T-Ethernet networking capability. Includes thicknet AUI port, diagnostic software, and link-integrity LED. Doesn't auto-configure. Must be at the end of a SCSI chain. Requires Macintosh Plus or later. $495. Compatible Systems Corp., P.O. Box 17220, Boulder, CO 80308. 800-356-0283 or 303-444-9532. (Sept '91)

EtherRoute TCP $1,495
This hardware EtherTalk/LocalTalk router is easy to set up and use. Offers fast, solid performance. Current software is EtherRoute Manager 1.7.0. Router code is in upgradeable ROM, and CPU is an 80C188. Can handle no more than two LocalTalk networks and only one EtherTalk network. Offers support for AppleTalk Phase 2 or mixed Phase 1 and Phase 2. Difficult to change cable-type switch. Lacks TCP/IP support but an EtherRoute/TCP version is also available. Unlimited, free technical support. $1,495. Compatible Systems Corp., P.O. Box 17220, Boulder, CO 80308. 800-356-0283 or 303-444-9532. (Apr '91)

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- Good
- Fair
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- Not Available

Ether+ is rated Excellent.

Cayman GatorBox CS is rated Good.

EtherRoute TCP is rated Poor.

Cayman GatorCard E/I is rated Fair.

Cabletron E5010 DNI is rated Excellent.

Carbon Copy/Mac is rated Excellent.

Cayman MRX is rated Poor.

Cayman MRX/IT is rated Fair.

cc:Mail Mac Platform Pack is rated Fair.

Ether+ is rated Excellent.
card that provides 10BASE-T Ethernet networking capability. Includes thicknet AUI port, diagnostic software, and link-integrity LED. Doesn’t auto-configure. Version 1.0 software reviewed. Version 1.11 shipping. Requires Macintosh II series. $295. Compatible Systems Corp., P.O. Box 17220, Boulder, CO 80308. 800-356-0283 or 303-444-9532. (Sept ’91)

CompulAN 8000 TPC  
This nonmanaged 10BASE-T hub includes twelve 10BASE-T ports plus AUI and BNC ports. Has cascade port and LEDs to monitor link status. Rack-mountable. Power supply is external. No warranty. $699. CompulAN, 180 Charcot Ave., San Jose, CA 95131. 800-486-8110 or 408-922-6888. (Oct ’92)

DAL (Data Access Language)  
DAL is an API (application-programming interface) for sophisticated client/server database access. Server operating systems include IBM MVS and VM as well as VAX/VMS. Database-management systems include DB2, Ingres, Oracle, Rdb/VMS, SQL/DS, Sybase, Informix, and IBM MVS and VM. Offers server independence but is slower than Oracle’s SQL*Net or TechGnosis’s SequelLink. Version 1.1 reviewed. Version 1.35 shipping. Free with System 7.0, Client Toolkit, $695; servers, $995 – $30,000. APDA (Apple Programmers & Developers Association), P.O. Box 319, Buffalo, NY 14207. 800-282-2732 or 716-871-6555. (Jan ’91)

DataClub Classic  
DataClub Classic is distributed-file-server software with the look and feel of a dedicated AppleShare server. Requires an AppleTalk Phase I network or Phase II with only a router present. Lets users combine folders from different Maccs into one logical volume and move folders of data between Maccs without changing the appearance of the combined volume. Can support 76 users, each using a control panel to manage access. System 7.0-savvy. Incomplete manual. Version 1.11 reviewed. Version 2.0 shipping. Requires Macintosh Plus or later with 2 MB of RAM and System 6.03 or later. $175; 3-user package, $395; 10-user package, $795. Novell, Inc., 122 E. 1700 S., Provo, UT 84606. 800-453-1267 or 801-429-7000. (Sept ’91)

David Systems  
**Ether-T Mac ****  
This NuBus card provides 10BASE-T Ethernet networking capability. Lacks thicknet AUI port, diagnostic software, and link-integrity LED. Two-year warranty. Requires Macintosh II series or higher. $275. David Systems, Inc., 701 E. Evelyn Ave., Sunnyvale, CA 94086. 800-762-7848 or 408-720-8000. (Sept ’91)

David Systems  
**VolksNet LAN ****  
This nonmanaged 10BASE-T hub includes twelve 10BASE-T ports and a hierarchical port. A 13th UTP, BNC, AUI, or fiber-optic port is optional. Has LEDs to monitor collision and link status. Power supply is internal. Tech support unfamiliar with Mac. Informa­tory documentation. Two-year warranty. $795. David Systems, Inc., 701 E. Evelyn Ave., Sunnyvale, CA 94086. 800-762-7848 or 408-720-8000. (Oct ’92)

Dayna DaynaPORT E/I/1-T ****  
This DaynaPort E/I-T is a NuBus card that provides 10BASE-T Ethernet networking capability. It includes thicknet AUI port, limited diagnostic software, and link-integrity LED. Doesn’t auto-configure. Lifetime warranty. Version 4.0 software reviewed. Version 4.11 shipping. Requires Macintosh II series or higher and System 6.03 or later. $239. Dayna Communications, Inc., 50 S. Main St., Salt Lake City, UT 84114. 801-531-0600. (Sept ’91)

Dayna DaynaPORT E/LC-T ****  
This PDS card provides 10BASE-T Ethernet networking capability. Lacks additional ports. Comes with diagnostic software and link-integrity LED, FPU socket on board. Lifetime warranty. Version 1.0 software reviewed. Version 1.15 shipping. Requires Macintosh LC. $239; with math coprocessor, $389. Dayna Communications, Inc., 50 S. Main St., Salt Lake City, UT 84114. 801-531-0600. (Sept ’91)

Dayna DaynaSTAR Hub-12 ****  
This nonmanaged 10BASE-T hub includes twelve 10BASE-T ports. Included BNC and AUI ports cannot be used simultaneously. Offers 12 RJ-45 ports or 1 RJ-21 port. Has auto-polarity adjustment. LEDs for monitoring collision and link status are awkwardly mounted. Power supply is internal. Noisy fan. Rack-mountable but mounting equipment not included. $995. Dayna Communications, Inc., 50 S. Main St., Salt Lake City, UT 84114. 801-531-0600. (Oct ’92)

Dayna DaynaSTAR MiniHub ****  
This compact, nonmanaged 10BASE-T hub is moderately priced. It includes eight 10BASE-T ports and a BNC port. Has LEDs to monitor link status. Power supply is external. $389. Dayna Communications, Inc., 50 S. Main St., Salt Lake City, UT 84114. 801-531-0600. (Oct ’92)

Digital DECRepeater 90T ****  
This nonmanaged 10BASE-T hub includes eight 10BASE-T ports and a BNC port but lacks an AUI port. Can be used as a stand-alone hub or as a module in a Digital concentrator. Has LEDs to monitor collision and link status. Power supply is external. Toll-free tech support. $1,590. Digital Equipment Corp., 146 Main St., Maynard, MA 01754. 800-344-4825 or 508-486-5198. (Oct ’92)

Dove FastNet SE ***  
This Ethernet interface has average performance. Good diagnostics. A configuration for twisted-pair wiring connection is available. Version 2.2 shipping. Requires Macintosh SE. $299. Dove Computer Corp., 1200 N. 23rd St., Wilmington, NC 28405. 800-849-3297 or 919-763-7918. (June ’90)

Dove FastNet SE/30 ***  
This Ethernet device is a very slow AppleTalk Phase I/30 card. Good diagnostics. A configuration for twisted-pair wiring connection is available. Version 2.2 shipping. Requires Macintosh SE/30. $249. Dove Computer Corp., 1200 N. 23rd St., Wilmington, NC 28405. 800-849-3297 or 919-763-7918. (June ’90)

Dove FastNet SSCS ***  
This Ethernet interface has very slow raw performance. On-board CPU. A configuration for twisted-pair wiring connection is available. Requires Macintosh SE or later, except Portable or PowerBook. $1,249. Dove Computer Corp., 1200 N. 23rd St., Wilmington, NC 28405. 800-849-3297 or 919-763-7918. (June ’90)

EMAC SpeedLink II ****  
This NuBus Ethernet card has average performance. Good software. Version “E” hardware, 2.6 software shipping. Requires NuBus-capable Mac and System 6.03 or later. $449. EMAC (Everex Systems), 48431 Milmont Dr., Fremont, CA 94538. 800-628-3837 or 510-498-1111. (June ’90)

EMAC SpeedLink/II TP  
This EMAC SpeedLink/II TP is a NuBus card that provides 10BASE-T Ethernet networking capability. Includes thicknet AUI port, NCSA Telnet, diagnostic software, link-integrity LED, and auto-configuration. Two-year warranty. Version “E” hardware, 2.6 software shipping. Requires NuBus-capable Mac and System 6.03 or later. $449. EMAC (Everex Systems), 48431 Milmont Dr., Fremont, CA 94538. 800-628-3837 or 510-498-1111. (June ’90)

MacUser 213
This Ethernet device has very slow performance as an AppleTalk Phase 2 SE/30 server. Good performance as client. Good diagnostics. Version "E" hardware, 2.6 software release. Requires Macintosh SE/30. $449. EMAC (Everex Systems), 48431 Milmont Dr., Fremont, CA 94538. 800-628-3837 or 510-498-1111. (June '90)

**EMAC SpeedLink SE/30 TP**

This Ethernet device includes thinnet AUI port, diagnostic software, and link-integrity LED. Lacks diagnostic software. Auto-configuring. Confusing manual. Two-year warranty. Version "E" hardware, 2.6 software release. Requires Macintosh SE/30 and System 6.03 or later. $449. EMAC (Everex Systems), 48431 Milmont Dr., Fremont, CA 94538. 800-628-3837 or 510-498-1111. (Sept '91)

**Farallon Ether Mac 30i Card for Ethernet**

The Ether Mac 30i Card is a PDS card that provides 10BASE-T Ethernet networking capability. Includes thinnet AUI port and link-integrity LED. Lacks diagnostic software. Auto-configuring. Requires Mac SE/30 or Ilsi. $249 to $259. Farallon Computing, Inc., 2000 Powell St., Ste. 600, Emeryville, CA 94608. 510-596-9000. (Sept '91)

**Farallon Ether Mac II Card for Ethernet**

Farallon's Ether Mac II Card is a NuBus card that provides 10BASE-T Ethernet networking capability. Includes thinnet AUI port and link-integrity LED. Lacks diagnostic software. Auto-configuring. Requires Macintosh II series or higher. $249 to $259. Farallon Computing, Inc., 2000 Powell St., Ste. 600, Emeryville, CA 94608. 510-596-9000. (Sept '91)

**Farallon PhoneNET**

StarController/12 EN TH

This managed 10BASE-T hub includes twelve 10BASE-T ports and an AUI port but no BNC port. Has good documentation and can be used in a concentrator. In-band management via software requires LocalTalk StarController and busconnection. Pre-10BASE-T-compatible. Has LEDs to monitor link status. Power supply is external. Included StarCommand software offers GUI, password protection, out-of-band management, auto-partitioning, and per-port status. Maximum management bus length is 3,000 feet. Version 3.0 software reviewed. $1,295. StarController/24, $1,895. Farallon Computing, Inc., 2000 Powell St., Ste. 600, Emeryville, CA 94608. 510-596-9000. (Oct '92)

**Flash**

Flash is a DA/INIT combination that transfers files in the background, with or without MultiFinder. Uses Finderfolders to send and receive files. Has chat capability. Also lets you create a group folder, which sends copies of a file to everyone in a group. Setting the many options is unnecessarily complex. Good performance. Version 1.0 reviewed. Version 1.1 shipping. $199.95 per zone. Beagle Bros., 6215 Ferris Sq., Ste. 100, San Diego, CA 92121. 619-452-5500. (Sept '90)

**Focus Enhancements EtherLAN SC-T**

Good SCSI-adapter client performance for an Ethernet interface. Requires Macintosh Plus or later. $249.99. Focus Enhancements, Inc., 800 W. Cummings Park, Ste. 4500, Woburn, MA 01801. 800-538-8866 or 617-938-8088. (June '90)

**Focus Enhancements EtherLAN SC-T Series**

The EtherLAN SC-T (formerly NuvoLink SC-T) is a SCSI adapter that provides 10BASE-T Ethernet networking capability. Includes thinnet AUI port, diagnostic software, and link-integrity LED. Doesn't auto-configure. Must be at the end of SCSI chain. Five-year warranty. Requires Macintosh SE or later. $259.99. Focus Enhancements, Inc., 800 W. Cummings Park, Ste. 4500, Woburn, MA 01801. 800-538-8866 or 617-938-8088. (Sept '91)

**Focus Enhancements TurboStar**


**GraceLAN**

GraceLAN is network-management software that collects detailed information about connected Macs. Good interface. Can also scan hardware and software configuration of DOS-compatible PCs on the network. Draws network diagram. Has no internal database manager unless optional Asset Manager program is purchased. Supports workgroup passwords. Optional program Update Manager can create and distribute update packages and can delete or rename users' files. Version 2.0 reviewed. Requires Macintosh II series or higher with 4 MB of RAM, System 6.03 or later, and a hard drive. 50 users, $495; bundled GraceLAN, Asset Manager, and Update Manager, $1,495 to $1,995. Technology Works, Inc., (TechWorks), 4030 Braker Lane W., Ste. 350, Austin, TX 78759. 800-926-3148 or 512-794-8533. (Dec '92)

**InterPoll**

InterPoll is a simple, reliable network-administration tool that's suitable for small LocalTalk networks (5 to 20 nodes). Doesn't support EtherTalk, but can create simulated network traffic for analysis. Has excellent manual. No support for filters, charts, or error management. Version 1.0 reviewed. Version 1.01 shipping. $129. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014. 800-776-2333 or 408-996-1010. (Feb '92)

**LapLink Mac III**

LapLink Mac III is a Mac-to-DOS and Mac-to-Mac file transfer program that lets you have control from either computer. Version 3.0 has a revised interface. Uses a special cable to provide 750-Kbps transfer. It has an INIT that gives you background access to your remote Mac's files even when LapLink isn't running. You can protect the Mac globally for read/write or read-only access. Directory sort-and-search capability is provided, along with display filters to show and hide files. Version 3.0 reviewed. Version 3.2 shipping. Requires Macintosh Plus or later and System 5.0 or later. $149.95. Traveling Software, Inc., 18702
North Creek Pkwy., Bothell, WA 98011. 800-343-8080 or 206-483-8088. (Sept '90)

LocalTalk ★★★

This network-protocol-analyzer software can simulate network traffic for analysis, and it has many useful features. Supports AppleTalk and SNMP. Features include use of filters, triggers, and alarms. Suitable for novices willing to learn basic protocol analysis. Built-in pick-up support. Version 1.11 reviewed. Requires Macintosh SE/30 or higher and System 6.05 or later. $495. AG Group, 2540 Camino Diablo, Walnut Creek, CA 94596. 510-937-9700. (Sept '92)

LocalSwitch ★★★★★

This 16-port, packet-switching LocalTalk hub can't match Ethernet speed, but it provides a significant performance boost for small, busy AppleTalk networks. Unlike a LocalTalk router, doesn't create a new zone to isolate some network traffic. Can offer cost-effective alternative to an Effective switch and its required hardware. Best suited to networks with nodes sharing resources or with traffic easily localized. May not help with heavy file transfer or file-server performance. Version SwitchMonitor 1.05 reviewed. $3,495; optional patch panel, $395. Trik, Inc., 400 W. Cummings Park, Ste. 235, Woburn, MA 01801. 800-466-8745 or 617-933-8810. (Dec '91) ★★★★★ 87 Eddy

LRU Systems Nodem ★★★

The Nodem is a SCSI adapter that provides 10BASE-T Ethernet networking capability. Lacks additional ports or diagnostic software. Has link-integrity LED. Can be connected anywhere in a SCSI chain. Version 2.0 reviewed. Version 3.1 shipping. Requires Macintosh SE or later. $495. LRU Systems, Inc., 4 Shratton Ave., San Carlos, CA 94070. 415-594-9697. (Sept '91)

MacProducts Magic EtherNet II/10T ★★★★★

This NuBus card provides 10BASE-T-Ethernet networking capability. Includes thicknet AUI port. Lacks diagnostic software and link-integrity LED. Doesn't auto-configure. Lifetime warranty. Requires Macintosh II series or higher. $199. MacProducts USA, Inc., 608 W. 22nd St., Austin, TX 78705. 800-622-3475 or 512-472-8881. (Sept '91)

MacTOPS ★★★★★

MacTOPS is file-server software designed to network Macs to other computer platforms. Slow for large networks but supports communication with DOS-compatible and UNIX machines. Files and subdirectories are accessed transparently as if they are Mac folders. MacTOPS handles file translation between platforms. Print spooling and InBox Email software are built-in. Serialized. Supports AppleTalk, FlashTalk, EtherTalk, and TokenTalk. Unlimited number of simultaneous users. Version reviewed not AFP-compliant. Version 3.0 reviewed. Version 3.1 shipping. Requires Macintosh Plus or later and System 6.03 or later. $299 per node; 3-user pack, $399; 10-user pack, $999; license available. Sitka Corp., 950 Marina Village Pkwy., Alameda, CA 94501. 800-445-8677 or 510-769-9669. (June '91) ★ 87 Eddy

Magnalink 3000 CB ★★★★★

This hardware bridge is fast, offers excellent data compression, and provides comprehensive diagnostics. Provides automatic secondary dial-up. No LocalTalk interface, but allows dial-up asynchronous link and supports synchronous DDS (digital data service), ISDN, and T1 links. Maximum speed is 2.048 Mbps. Interfaces include RS-232, RS-449, V.35, and EtherTalk. $6,950. Magnalink Communications, 63 Nahatan St., Norwood, MA 02062. 617-255-9400. (Jan '92)

Microsoft Mail ★★★★★

This E-mail system offers excellent server architecture and performance. Efficient single-instance storage scheme is used for messages (each with unlimited number of enclosed images, text files, or sounds) to multiple addresses. Provides gateway to remote sites and dial-in remote access. Third-party products can also add links to QuickMail, VAX minicomputers, WANS, and MCI Mail. Features include image-display and voice-mail support, plus interapplication communication with Excel and Word. Clean, easily customized, no-frills interface. Simple to install, maintain and use. Can't retrieve previously sent messages. Version 3.0 reviewed. Server and each user require Mac Plus or later with a hard drive and System 6.03 or later. 5 users, $395; 20 users, $1,349; Mail Server software, $395. Microsoft Corp., One Microsoft Way, Redmond, WA 98052. 800-426-9400 or 206-882-8800. (Mar '92) ★ 87 Eddy

MultiPort ★★★★★

MultiPort is an external device that gives you six new serial ports and four ADB ports. Plugs in to the Mac's two serial ports and an ADB port. Uses Mac's Communication Toolbox or DA software to manage the extra ports, and LED lights indicate which are active. Although ADB bus standard can address up to 16 devices, Apple discourages use of more than three, so MultiPort's optional power supply is strongly recommended to prevent a blown fuse or toasted ADB circuitry in your Mac. Can create a rat's nest of cabling on your desktop, but offers easy access for troubleshooting attached devices. Version 1.0 reviewed. Requires Macintosh SE or later. $169; optional power supply, $39.95. Silicon Valley Bus Co., 475 Brown Rd., San Juan Bautista, CA 95054. 408-623-2330. (July '92)

National Semiconductor EtherNODE+16 NB-T ★★★★★

The EtherNODE+16 NB-T is a NuBus card that provides 10BASE-T Ethernet networking capability. Includes thicknet AUI port and good diagnostic software. Lacks link-integrity LED. Doesn't auto-configure. Excellent manual. Five-year warranty. Requires Macintosh II series. $399. National Semiconductor, 2900 Semiconductor Dr., P.O. Box 58900, Santa Clara, CA 95052. 800-538-8510 or 408-721-5020. (Sept '91)

National Semiconductor EtherNODE+32 SE/30-T ★★★★★

This PDS card provides 10BASE-T-Ethernet networking capability. Includes thicknet AUI port and diagnostic software. Lacks link-integrity LED. Doesn't auto-configure, and installer is outdated. Excellent networking tutorial and manual. Five-year warranty. Requires Macintosh SE/30. $449. National Semiconductor, 2900 Semiconductor Dr., P.O. Box 38090, Santa Clara, CA 95052. 800-538-8510 or 408-721-5020. (Sept '91)

NetDistributor Pro ★★★★★

This network-program can create and distribute update packages over a network. Can delete users' files. Good interface uses icon-based scripting. Doesn't support Apple Installer scripts. Doesn't perform network management or collect information about connected Macs. Requires Macintosh Plus or later, System 6.03 or later, and a hard drive. For 100 users, $695. Trik, Inc., 400 W. Cummings Park, Ste. 2350, Woburn, MA 01801. 800-466-8745 or 617-933-8810. (Dec '92)

NetMinder Ethernet ★★★★★


NetMinder LocalTalk★★★★

This network-protocol-analyzer software has a clean, intuitive interface and excellent on-line help. Can't simulate network traffic for analysis and doesn't support SNMP, etc. Includes use of OSI-like...

**Network Resources**

**Mac1000TP**

The Mac 1000TP is a NuBus card that provides 10BASE-T Ethernet networking capability. Lacks additional ports or diagnostic software. Includes link-integrity LED. Three-year warranty. Version 2.3 Installer software shipping. Requires Macintosh II series or higher. $295. Network Resources Corp. (NRC), 736 S. Hill View Dr., Milpitas, CA 95035. 408-263-8100. (Sept '91)

**Network SuperVisor**

This network-management software quickly collects detailed information about connected Macs. Sacrifices user control in favor of administrator control. Doesn't scan configuration of DOS-compatible PCs. Can't draw network diagram. Includes internal database manager. Provides several levels of multiple-administrator security. Can distribute update or rename users' files. Version 1.1 reviewed. Requires Macintosh II series or higher with 4 MB of RAM, System 6.03 or later, and a hard drive. $645 to $4,770. MacVONK, Inc., 940 Sixth Ave. S.W., Ste. 1100, Calgary, Alberta T2P 3T1 Canada. 403-232-6545. (Dec '92)

**NetWare for Macintosh**

NetWare for Macintosh lets Macs on LocalTalk or Ethernet networks connect to a NetWare file server, using AppleShare client software. Difficult to set up and administer, but offers extremely fast performance and provides connectivity to DOS, OS/2, Windows, and UNIX system platforms. Expensive and not recommended for small Mac-only networks, but excellent for Mac users needing access to non-AppleTalk PC networks already attached to a NetWare server. Can handle a maximum of 100 simultaneous Mac clients (out of 250 clients). Powerful data-security features. Version 3.0 reviewed. Version 3.11 shipping. Requires 80386- or 80486-based PC for server, plus another PC for administration, and NetWare 3.11 for fileserver software. 20 users, $895; 100 users, $1,995; NetWare 3.11, $3,495 for 20 users, $6,995 for 100 users. Novell, Inc., 122 E. 1700 S., Provo, UT 84606. 800-453-1267 or 801-429-7000. (Nov '91)

**PacerShare**

A VAX file server for networked Macs, PacerShare is very fast and reliable. Extra functionality comes at a high price. Maximum number of simultaneous users is 500. Supports Ethernet but not LocalTalk. Requires VAX, 10 users, $2,250 direct; 20 users, $3,750. Pacer Software, Inc., 7911 Herschel Ave., Ste. 402, La Jolla, CA 92037. 619-454-0565. (June '91)

**Pathworks for Macintosh**

Pathworks, a file server for networked Macs, provides self-installing, extensive VAX connectivity. Slow for AFP but excellent for NetWare and Oracle. Can distribute updates when 20 clients were connected (in our tests), although the number of simultaneous users is theoretically unlimited. Bundled with Mail for Macintosh, MacTerminal 3.0, and MacX. Supports Ethernet but not LocalTalk. Can be administered from a Macintosh, Version 1.0 reviewed. Requires VAX. Client license, $308; media and documentation, $493. Digital Equipment Corp., 146 Main St., Maynard, MA 01754. 800-344-4825 or 508-486-5198. (June '91)

**pcMACKTERM II**

pcMACKTERM II lets your Mac take control of a DOS machine from the Mac keyboard. Allows DOS files to be printed through the Mac. Version 1.1 reviewed. Version 3.11c shipping. Requires Macintosh Plus or later (with System 6.03 or later and printer), and IBM PC or later with DOS 2.0 or later and minimum of 256K RAM. $179 for pcMACKTERM II; $395 for pcMACKTERM/Network. Dynamic Microprocessor Associates (DIMA), 1776 E. Jericho Turnpike, Huntington, NY 11743. 516-462-0440. (Jan '89)

**PhoneNET Connector Series 300**

PhoneNET is an AppleTalk-compatible network that can extend up to 3,000 feet. Unused preinstalled phone cabling can be used for the network. $95.95 per node; 10-user pack, $395; 50-user pack,
This compact, nonmanaged 10BASE-T hub is moderately priced. Includes four 10BASE-T ports and a hierarchical port. Lacks BNC and AUI ports. Has only two LEDs, neither of which indicates link status. Power supply is external. Uninformative documentation. Five-year warranty. $299. Eagle Technology Corp., 1160 Ridder Park Dr., San Jose, CA 95131. 800-733-2453 or 408-441-7453. (Oct '92)

Shiva EtherGate $$$%

This router is a hardware/software combination that includes an Ethernet interface. Has incomplete RS-232 interface in synchronous mode, and has no automatic backup link. Can double as a local router. Besides LocalTalk and dial-up asynchronous links, supports synchronous DSO (digital data service), ISDN, and T1 links. Maximum speed is 64 Kbps. Inadequate documentation. Has no auto-connect or auto-reconnect. Operates using included InterNet Manager application or control panel. $1,899. Shiva Corp., One Cambridge Center, Cambridge, MA 02142. 608-458-3550 or 617-252-0300. (Jan '92)
Shiva EtherPort II This Ethernet NuBus card is very slow. Lacks diagnostic software. Requires NuBus-capable Mac. $299. Shiva Corp., One Cambridge Center, Cambridge, MA 02142. 800-458-3550 or 617-252-6300. (June ’90)

Shiva EtherPort III Shiva’s EtherPort III is a NuBus card that provides 10BASE-T Ethernet networking capability. Includes thicknet AUI port, diagnostic software, and link-integrity LED. Doesn’t auto-configure. Requires Macintosh II series. $299. Shiva Corp., One Cambridge Center, Cambridge, MA 02142. 800-458-3550 or 617-252-6300. (Sept ’91)

Shiva EtherPort SE This Ethernet interface has average performance but is erratic using AppleTalk Phase 2 driver as a client. Requires Macintosh SE. $299. Shiva Corp., One Cambridge Center, Cambridge, MA 02142. 800-458-3550 or 617-252-6300. (June ’90)

Shiva EtherPort SE/30 This Ethernet networking device delivers average performance. Lacks diagnostic software. Requires Macintosh SE/30. $299. Shiva Corp., One Cambridge Center, Cambridge, MA 02142. 800-458-3550 or 617-252-6300. (June ’90)

Shiva FastPath This hubless EtherTalk/LocalTalk router supports DECeNet. Current software is K-Star 8.0.1. Router code is in nonvolatile RAM, and CPU is a Motorola 68000. Can handle no more than one LocalTalk and one EtherTalk network. Offers support for TCP/IP, AppleTalk Phase 2, or mixed Phase 1 and Phase 2, but only one LocalTalk port is provided. Unlimited free technical support. Version 4 reviewed. Version 5 shipping, $2,799. Shiva Corp., One Cambridge Center, Cambridge, MA 02142. 800-458-3550 or 617-252-6300. (Apr ’91)

Shiva TeleBridge This WAN router is a stand-alone hardware device that’s faster than a software-only solution, although speed is still limited by the modem linked (via TeleBridge) to a LocalTalk network. Easy installation plus dial-up and leased-voice-line capabilities. Does not offer auto-connect capability. Operates using included Interner Manager application program or control panel. No EtherTalk interface. $599. Shiva Corp., One Cambridge Center, Cambridge, MA 02142. 800-458-3550 or 617-252-6300. (Jan ’92)

SoftPC - Entry Level SoftPC puts an IBM PC XT inside your Mac without making you crack the case to add any special coprocessor boards. The simulation of the DOS machine is done entirely in the software. Version 1.3 reviewed. Version 2.5 shipping. Requires Macintosh SE (with 68020 accelerator card), SE/30 or II series with 2 MB of RAM and a hard drive. $199.95. Insigina Solutions, 526 Clyde Ave., Mountain View, CA 94043. 415-694-7600. (Nov ’88)

Sonic System: Ether TwP/II The Ether TwP/II is a NuBus card that provides 10BASE-T Ethernet networking capability. Includes thicknet AUI port and diagnostic software. Lacks link-integrity LED. Doesn’t auto-configure. Requires Macintosh II series. $199. Sonic Systems, Inc., 333 W. El Camino, Ste. 280, Sunnyvale, CA 94087. 408-736-1900. (Sept ’91)

Sonic System: Ether TwP/LC The Ether TwP/LC is a PDS card that provides 10BASE-T Ethernet networking capability. Lacks additional ports or link-integrity LED. Provides diagnostic software. FPU socket on board. Requires Macintosh LC. $199. Sonic Systems, Inc., 333 W. El Camino, Ste. 280, Sunnyvale, CA 94087. 408-736-1900. (Sept ’91)

Sonic Systems: Ether TwP/SE The Ether TwP/SE is a PDS card that provides 10BASE-T Ethernet networking capability. Lacks additional ports or link-integrity LED. Provides diagnostic software. Compatible with the Mac IIci. Requires Macintosh SE/30 or Ilsi. $199. Sonic Systems, Inc., 333 W. El Camino, Ste. 280, Sunnyvale, CA 94087. 408-736-1900. (Sept ’91)

SQL*Net for Macintosh Easy to use and fast. SQL*Net is an API (application-programming interface) for client/server database access. Server operating systems include IBM MV$ and VM as well as VAX/VMS, UNIX, and OS/2. Intended for use with Oracle databases, but offers support for DB2, SQL/DL, and RMA by means of an SQL*Connect gateway. SQL*Net handles most networking protocols and client operating systems. Version 1.2 shipping. $299 per user; Oracle database for Mac, $699; servers, $920 to $13,000. Oracle Corp., 100 Oracle Pkwy., Redwood Shores, CA 94065. 800-345-3267 or 415-506-7000. (Jan ’92)

TalkManage TalkManage includes TalkStat and TalkSpy, which together provide a basic network-administration tool for LocalTalk networks. Doesn’t support EtherTalk and can’t create simulated network traffic for analysis. Poor manual doesn’t help you deal with confusing interface. No support for filters, but allows five chart types and some error management. Has awkward copy-protection scheme. Version 1.6 reviewed. Version 1.63 shipping. Requires 80386-based PC and StarGROUP LAN Manager Server software. $795 for unlimited users, $1,295 for STARGROUP Server, a file server for networked Macs, provides file sharing for Mac, DOS, and UNIX clients. Slow for AFP file sharing and cannot administer from a Mac. Maximum number of simultaneous users is 120. Requires O.L.S. 4.0 or 4.1 and STARGROUP LAN Manager Server for 80386-based PC and StarGROUP LAN Manager Server software. $795; on tape, $895. AT&T Network Systems, 475 South St., Morristown, NJ 07962. 800-344-0223 or 201-606-2000. (June ’91)

StarGROUP Server for Macintosh A file server for networked Macs, provides file sharing for Mac, DOS, and UNIX clients. Slow for AFP file sharing and cannot administer from a Mac. Maximum number of simultaneous users is 120. Requires 80386-based PC and StarGROUP LAN Manager Server software. $795 for unlimited users, $1,295 for StarGROUP Server, a file server for networked Macs, provides file sharing for Mac, DOS, and UNIX clients. Slow for AFP file sharing and cannot administer from a Mac. Maximum number of simultaneous users is 120. Requires O.L.S. 4.0 or 4.1 and STARGROUP LAN Manager Server software. $795; on tape, $895. AT&T Network Systems, 475 South St., Morristown, NJ 07962. 800-344-0223 or 201-606-2000. (June ’91)


SunTOPS SunTOPS is file-server software designed to network Sun SPARCstations with Macs using MacTOPS, and with DOS machines using DOSTOPS. Slow for large networks. Supports Ethernet/EtherTalk but not LocalTalk. Can handle an unlimited number of simultaneous users. Requires Sun O.L.S. 4.0 or 4.1 and SPARCstation 1 or Sun 4. On floppy, $1,295; on tape, $1,395. Sitka Corp., 950 Marina Village Pkwy., Alameda, CA 94501. 800-445-8677 or 510-769-9669. (June ’91)

TalkManage TalkManage includes TalkStat and TalkSpy, which together provide a basic network-administration tool for LocalTalk networks. Doesn’t support EtherTalk and can’t create simulated network traffic for analysis. Poor manual doesn’t help you deal with confusing interface. No support for filters, but allows five chart types and some error management. Has awkward copy-protection scheme. Version 1.6 reviewed. Version 1.63 shipping. Requires 80386-based PC and STARGROUP LAN Manager Server software. $795; on tape, $895. Distributed Technologies Corp., 275 Wyman St., Waltham, MA 02154. 617-684-0060. (Feb ’92)

TalkSpy TalkSpy is a basic network-administration tool for LocalTalk networks. Bundled with TalkStat network-performance analyzer. Doesn’t support EtherTalk and can’t simulate network traffic for analysis. Allows five chart types and some error management. Poor manual doesn’t help you deal with confusing interface. Lacks built-in support for pagers, filters, or remote capture. Version 1.61 reviewed.
Requires 68000 CPU or higher and System 6.05 or later.

MICE RATINGS

Discounts available.
MINIFINDERS

Takes comprehensive approach to prospecting and maintaining clients. Handles checking accounts. Excellent mail-merge functions. Ideal for small organizations needing well-rounded business-management system with strong basic-accounting features. Lacks strategic-planning capability and automated follow-up. Version 2.92 reviewed. Version 3.0 shipping. Requires Macintosh Plus or higher with 2.5 MB of RAM and a hard drive. $495; each additional user, $175. Colleague Business Software, Inc., 10000 Research Blvd., Ste. 210, Austin, TX 78759. 800-926-9965 or 512-345-9964. (Feb '92)

ConstructionMac $$$

Here's a program for those do-it-yourselfers (or small contractors) who are about to embark on home-improvement projects. ConstructionMac helps you set up a budget and schedule, keep track of costs (both estimates and actuals), figure out what materials you require, calculate surface areas (and how much paint or wallpaper you'll need), and so on. Just make sure you have plenty of room on your hard disk—the database takes up a lot of harddisk real estate. $99. Revelar, 772 E. 3300 South, Ste. 210, Salt Lake City, UT 84106. 801-485-3291. (Dec '92)

Contact Ease $$$

This contact manager has a deceptively simple interface and handles automated contact-management well. Sophisticated and fast. Design concentrates on Activity, Address, Custom, and Plan tab cards that store permanent data, and then track the progress of sales projects. Built-in word processor works well with mail-merge feature. Can generate customized tele-marketing Scripts and reports. Can't display selected records in list format. Built on the Omnis 5 database-management program. No color support, and can't change envelope font. Version 1.2 reviewed. Version 2.0 shipping. Requires Macintosh Plus or higher, 2 MB of RAM, and a hard drive. $395. 5-user pack, $1,495. WestWare, Inc., 10148 Diamond Head Ct., Spring Valley, CA 91977. 800-869-0871 or 619-660-0356. (Feb '92)

Control Classic $$$

This control manager, based on 4th Dimension, is a simplified version of Control II, a heavy-duty system for sales-lead tracking, order entry, and invoicing. Control Classicinstead concentrates on lead tracking and provides a clean interface, good automated planning, and a nice balance of word processing and mail-merge features. Some program functions require unnecessary steps. Good analysis of promotional expenses and their degree of success. Can display records in list format. AutoCardaus feature lets you alter groups of records according to user-defined criteria. Supports custom labels, graphing, and reports. Has complex, poorly organized documentation. Version 1.1 reviewed. Version 1.5 shipping. Requires Macintosh Plus or higher with 4 MB of RAM, System 6.05 or later, and a hard drive. $425; $99 per additional user. Diamante Software, 14330 Midway Rd., Ste. 119, Dallas, TX 75244. 800-223-2165 or 214-661-3857. (Feb '92)

Desk $$$

Desk is a collection of seven powerful DAs: DeskPaint, DeskDraw, DeskWrite, DeskSecretary (appointment calendar), DeskCom (modem control), DeskCalc, and DeskFile (minidatabase). Although not on a par with Microsoft Works, Desk lets you access its DAs from within any application. Version 1.0 reviewed. Version 3.07 shipping. Requires Macintosh Plus or later; DeskPaint requires a color display system, 2 MB of RAM, and a hard drive. $399.95. Zedcor, 4500 E. Speedway, Ste. 22, Tucson, AZ 85712. 800-482-4567 or 602-981-8101. (Jan '91)

DiagramMaker $$$

DiagramMaker is a multipurpose object-linking program. Forms a network of custom-designed objects with connecting points at the centers, corners, or centers of sides. Customizes organization charts from text outlines. Lines join on contact and can be pulled into areas. Objects can be linked to objects in other documents. No automatic right-angle line maintenance. Usefull text-find feature. Version 1.1 reviewed. Version 2.1 shipping. Requires Macintosh Plus or later and System 6.03 or later. $295. Action Software, 1507 E. Franklin St., Ste. 122, Chapel Hill, NC 27514. 800-826-0550. (Jan '90)

Fair Witness $$$


GreatWorks $$$

This affordable package includes several applications: a good word processor, an outfitter, two graphics modules, telecommunications software, a database program, and a spreadsheet program with charting. Although the separate modules work well and are easily navigated, the level of automatic integration among them is almost nonexistent unless you employ System 7's publish-and-subscribe feature. Does well with minimal RAM. Easy to use and adequate for simple office needs. Version 2.0 reviewed. Requires Macintosh Plus or later and System 6.03 or later; hard drive recommended. $299. Symantec Corp., 10201 Torre Ave., Cupertino, CA 95014. 800-441-7234 or 408-253-9600. (June '92)

HandiWorks $$$

HandiWorks is a simple but frustrating integrated-software package. Awkward interface. Feature set is limited, concentrating on basic page-layout functions. Has no separate modules for different data types, instead using a single document type and movable frames to arrange blocks of text, graphics, and spreadsheet numbers. Has no database module but is bundled with Address Manager DA, which is partially integrated with spreadsheet frames. Painfully obtuse mail-merge function. Version 1.0 reviewed. Requires Macintosh Plus or later and System 6.03 or later. $175. MacVONK, Inc., 940 Sixth Ave. W.S., Ste. 110, Calgary, Alberta T2P 3T1 Canada. 403-232-6545. (June '92)

IdeaFisher $$$


Inspiration $$$

Inspiration is a useful and flexible idea processor. Allows creation, unstructured brainstorming with many options for project planning, organization charts, flow charts, simple word processing, and even storyboardbing for video and film. Includes basic drawing tools and spelling checker. Printed output is adequate but not elegant. Latest version is compatible with System 7.0 and supports color and large-screen monitors. Version 2.02 reviewed. Version 3.01 shipping. Requires Macintosh Plus or later and System 4.2 or later. $295. Ceres Software, Inc., 2920 S.W. Dolph Ct., Ste #3, Portland, OR 97219. 800-877-4292 or 503-245-9011. (June '90)
Market Master  

Market Master is a contact manager, based on Double Helix, that takes a highly automated approach to developing sales. Handles contacts with a highly customizable interface; then multiple-choice system that's time-consuming to implement but totally streamlines interaction with contacts. Manages form letters, envelopes, and labels, but lacks weak mail-merge capability. Form letters cannot include contents of fields. Includes wide variety of preset reports for data and summaries. Has no custom-report generator. Auto-dial feature can't bypass local area code or set outside-line access. Except for single-user version, includes Market Master Manager, which lets supervisors analyze sales contacts and follow-ups in detail. Version 3.0 reviewed. Version 3.5 shipping. Requires Macintosh Plus or higher with 2 MB of RAM, System 6.03 or later, and a hard drive. $395; 5 users, $595; multiuser add-on, $495. Breakthrough Productions, 210 Park Ave., Nevada City, CA 95959. 916-265-0911. (Feb '92)

Microsoft Office CD-ROM  


MindLink  

MindLink is a HyperCard-based idea processor. It leads you through a structured procedure that helps you find answers by prompting you with questions. Useful, but performance can be frustrating. Includes HyperCard. Version 1.0 reviewed. Version 2.2 shipping. Requires Macintosh Plus or later and a hard drive. $299; educational site licenses available. MindLink, Inc., P.O. Box 247, North Pomfret, VT 05053. 800-233-1844 or 800-457-2025. (May '90)

Org Plus for Macintosh  

Org Plus creates hierarchical organizational charts quickly, intuitively, and with a surprising variety of styles and formats. Nearly all the graphics drudgery required in chart making is automated by this easy-to-use program. Banner Blue publishes the best-selling DOS org-chart program. Does this Mac version is simply a PC port. Org Plus is a top-quality Mac program that can exchange files with its DOS counterpart. Version 1.0 reviewed. Requires Macintosh Plus or later, System 4.1 or later, and a hard drive. $195. Banner Blue Software, P.O. Box 7865, Fremont, CA 94537. 510-794-6809. (May '91)

QPID  

QPID is a contact manager, based on 4th Dimension, that's ideal for organizations that need a single program to track prospects, clients, employees, and jobs. Automatically presents daily scheduled events when launched. Tracks jobs in comprehensive detail. Doesn't create automated sales plans and has no built-in word processor. Clearly written, well-organized manual explains database concepts well. Version 1.4 reviewed. Requires Macintosh Plus or higher with 2 MB of RAM, System 6.03 or later, and a hard drive. $695; 5-user pack, $2,459. GT Omnicon, Inc., 481 Queen St. E., Toronto, Ontario M5A 1T9 Canada. 416-365-1436. (Feb '92)

Set Clock  

Set Clock makes a ten-second phone call to a master-clock driver (near the East Coast) and then sets your Mac's internal clock to accuracy within one second. Version 1.2 reviewed. Version 3.3 shipping. Requires 300-bps or faster modem. Free on various online services. Jim Leitch, 61 Shaughnessy Blvd., Willowdale, Ontario M2J 1H9 Canada. 416-496-0828. (Nov '89)

SuperClock  

SuperClock! is a superb on-screen time indicator or clock. Can work properly in every environment and also has excellent timer and alarm functions. Perfect for PowerBooks, on which it displays battery status. Version 1.1 reviewed. Version 3.91 shipping. Requires System 4.1 or later. Free (Steve Christensen); available from on-line services such as ZiffNet/Mac. (Nov '89)

TeleMagic  

TeleMagic is a speedy, flexible contact manager based on the powerful FoxBASE database manager. Excellent, customizable search-and-sort features. Uses a simple notepad interface that automatically tracks date and time of contacts, including those telephoned using the auto-dial feature. Requires learning simple shorthand code for identifying contact status, but this allows sophisticated searches and a wide range of reports. Program has no support for automated sales plans or strategies. Good documentation. Plain interface and weak DTP features hint at TeleMagic's DOS roots, but this program is for sales pros who like to drive fast. Version 10+ reviewed. Requires Macintosh Plus or higher with 2 MB of RAM, System 6.03 or later, and a hard drive. $965; multiuser network version, $9,995. Remote Control International, 5928 Pascal Ct., Carlsbad, CA 92008. 800-992-9952 or 619-431-4000. (Feb '92)

Works  

Microsoft Works is an easy-to-use combination of word processor, mail-merge system, spreadsheet program, and telecommunications software. Works' spreadsheet component is a basic system that can perform most business analyses. Chart styles can be line, bar, stacked bar, pie, or combination; charts can update automatically when new data is entered into spreadsheets. The sorting function is merely adequate. The word-processing module rates only three mice but is adequate for simple office needs. Spreadsheet functionality is well integrated and has powerful graphics tools but can't handle text formulas or complex text formatting. Version 2.0a reviewed. Version 3.0 shipping. Requires Macintosh Plus or later. $249. Microsoft Corp., One Microsoft Way, Redmond, WA 98052. 800-426-9400 or 206-882-8080. (Jan '91) ★ '86 Eddy

Organizational Tools/Personal-Info Managers

Address Book Plus  

Address Book Plus is a handy name-and-address manager. Works easily as application, or included DA allows file access from other programs. Good sorting and import/export abilities. Flexible phone-dialing and printing options. Can merge database files, but keeping separate files open simultaneously is easier. Wide range of font and type-size options. Fast. Multi-field format can be customized by user. No network capability. Version 2.0 reviewed. Requires System 6.03 or later. $99.95; upgrade, $29.95. Power Up Software Corp., 2929 Campus Dr., San Mateo, CA 94403. 800-851-2917 or 415-345-5900. (Feb '92)

AgentDA  

AgentDA is an appointment- and-reminder utility that handles most scheduling tasks quite well. The desk accessory provides a handy Find function for locating specific appointments. Has both a calendar view (to check overall schedules) and a time view that arranges appointments in a column format that mimics appointment diaries. Alarm scheduling for important appointments is weak. Can't set up recurring appointments automatically. Version 2.0 reviewed. Version 2.11 shipping. Requires Macintosh Plus or later and System 6.05. $129. Team Building Technologies.
836 Bloomfield Ave., Montreal, Quebec H2V 3S6 Canada. 514-278-3010. (Mar '92)

Alarming Events

Alarming Events is a DA that provides an integrated electronic appointment book. Its interface resembles a monthly calendar, where the dates act as buttons and open up to your daily schedule; a five-day view is also available. You can set alarms to go off at specified times, and you can keep track of events that are automatically kept in an ongoing-to-do list. It can provide advance warning of upcoming events, and you can designate recurring events. Version 1.0 reviewed. Version 1.1 shipping. Requires System 6.04 or later, and a hard drive. $99.95. CE Software, Inc., 1801 Industrial Cir., P.O. Box 65580, West Des Moines, IA 50265. 800-523-7638 or 515-224-1995. (Sept '89)

Calendar Maker

Calendar Maker is a utility that creates a variety of calendars. Excellent printing routines. Calendars can be customized with graphics and icons. Version 3.0 reviewed. Version 3.01 shipping. Requires Macintosh Plus or later and System 4.2 or later; hard drive recommended. $49.95. CE Software, Inc., 1801 Industrial Cir., P.O. Box 65580, West Des Moines, IA 50265. 800-523-7638 or 515-224-1995. (Sept '89)

Cathy Daily Planner

If you follow the daily comic strip “Cathy,” you know that the title character is constantly trying to get her life in order. You can start getting organized too by installing the latest of Amaze’s daily planners, which features Cathy Guise-white’s cartoon strips, some fun animations, and a straightforward icon-based interface. For alarm feature to operate, application must be running. Requires Mac Plus or later, System 6.03 or later, and 4 MB of RAM. $59.95. Amaze, Inc., 11810 115th Ave. N.E., Kirkland, WA 98034. 206-820-7007. (Dec '92)

Date Book

Date Book is an easily customized calendar manager that handles appointment scheduling, reminder alarms, and to-do lists. Includes a file-sharing option for network use, but is primarily a single-user product. Excellent attention to detail. Interface switches quickly between daily, weekly, monthly, and yearly views. Provides a list view of scheduled events and to-do items. Doesn’t handle overlapping events. Supports OneLink and TouchBase address-book manager. Printing options cover wide range of formats such as DayTimer, FiloFax, and DayRunner. Version 1.5 reviewed. Requires System 7 or later. $125. After Hours Software, Tri Center Plaza, 5990 Sepulveda Blvd., Van Nuys, CA 91411. 818-780-2220. (Nov '92)

Dynamex

Dynamex is a fast, powerful name-and-address manager. Complex, multifield data-entry screen is extensively customizable. Good phone-dialing features. Includes FiloFax-binder-sized paper for printouts. Easily manages printing on both sides of the paper. Other-binder-paper formats are available. Imports data from tab- or comma-delimited text files, and includes DA to access data while you’re in other applications. Has HyperCard stack for preparing HyperCard address stacks. No network capability. Version 2.07 reviewed. Requires Macintosh Plus or later and PostScript or QuickDraw printer. $89.95. Portfolio Systems, Inc., 10062 Miller Ave., Ste. 201, Cupertino, CA 95014. 800-729-3966 or 408-252-0420. (Dec '92)

Easy Alarms

This personal-scheduling program can both remember and perform many of the routine tasks you perform with your Mac. Traditional reminder features include advance notifications, a snooze button, sound attachments to reminders, flexible repeating-alarms settings, and pop-up menus for viewing reminders. Provides to-do list and network access to lists and calendar files. Scripting feature, although poorly documented, lets you launch applications, send Apple events, type text, autosave, restart or shut down, and control user-defined procedures. Sample scripts are included. Supports Notify! program (from Ex Machina), which lets you automate sending of messages to remote pagers. Version 1.51 reviewed. Version 2.03 shipping. Requires Macintosh Plus or later, System 6.03 or later, and a hard drive. $99; 5-user pack, $299; 10-user pack, $499. Essential Software, 28 Mulford Ave., P.O. Box 402, Staatsburg, NY 12582. 914-889-8365. (Aug '92)

First Things

This excellent time manager helps users track tasks, appointments, projects and events with visual and audible reminders. Unusual interface has icon that always floats in view on the desktop, no matter what else you’re doing. Free demo version available from on-line services can be upgraded by calling Visionary Software and purchasing unique serial number. Version 2.0 reviewed. Version 3.0 shipping. Requires Macintosh Plus or later and System 6.04 or later. $79.95; demo upgrade, $39.95. Visionary Software, Inc., P.O. Box 69447, Portland, OR 97201.

MINIFINDERS

C•A•T

C•A•T is a personal-information manager that tracks contacts, activities, and times. Has documentation and user-interface problems. Features include capacity for an unlimited number of contacts for each account. 16 pages of notes for each, letter writing, drawing, simple math calculation, and even dialing the phone. Difficult to use. Version 1.0 reviewed. Version 1.2 shipping. Requires Macintosh Plus or later and a hard drive. $495. Chang Laboratories, Inc., 10228 N. Stelling Rd., Cupertino, CA 95014. 408-727-8096. (Oct '90)

CalendA•R

CalendA•R is a reliable, innovative DA that manages your appointments and important reminders. Isn’t as full-featured as competing packages but offers a unified interface and excellent control of recorded or system sounds. These sound enhancements include the ability to create repeating reminders or single alarms with your voice, which is digitized and saved with Farallon’s MacRecorder driver. Inconvenient for exporting or archiving a record of past activities. Version 1.0 reviewed. Version 1.13 shipping. Requires System 6.07 or later. $60. Psybron Systems, Inc., 1116 Smith St., Ste. 206, P.O. Box 431, Charleston, WV 25322. 800-866-4260 or 304-340-4260. (June '91)

CalendarMaker

Calendar Maker is a utility that creates a variety of calendars. Excellent printing routines. Calendars can be customized with graphics and icons. Version 3.0 reviewed. Version 3.01 shipping. Requires Macintosh Plus or later and System 4.2 or later; hard drive recommended. $49.95. CE Software, Inc., 1801 Industrial Cir., P.O. Box 65580, West Des Moines, IA 50265. 800-523-7638 or 515-224-1995. (Sept '89)

Diet Balancer

Diet Balancer makes it easy to keep a food diary, a useful tool if you’re trying to lose weight, watch your cholesterol or sodium intake, or just keep track of the kind of food you’re eating. A nice feature is that it takes into account your activity level; it also includes sample meal plans for low-fat, low-sodium, low-cholesterol, diabetic, and low-calorie meals. $69.95. Nutridata Software, P.O. Box 769, 1215 Route 9, Wappingers Falls, NY 12590. 914-298-1308. (Dec '92)

Dynodex

Dynodex is a fast, powerful name-and-address manager. Complex, multifield data-entry screen is extensively customizable. Good phone-dialing features. Includes FiloFax-binder-sized paper for printouts. Easily manages printing on both sides of the paper. Other-binder-paper formats are available. Imports data from tab- or comma-delimited text files, and includes DA to access data while you’re in other applications. Has HyperCard stack for preparing HyperCard address stacks. No network capability. Version 2.07 reviewed. Requires Macintosh Plus or later and PostScript or QuickDraw printer. $89.95. Portfolio Systems, Inc., 10062 Miller Ave., Ste. 201, Cupertino, CA 95014. 800-729-3966 or 408-252-0420. (Dec '92)
800-877-1832 or 503-246-6200. (Dec '92)

**Front Desk MultiUser***

Front Desk MultiUser is a scheduling and resource manager best suited for small professional offices. Can be used in a networked multiuser environment. Basic functionality but simple and capable. Version 3.0 reviewed. Version 6.10 shipping. Requires Macintosh Plus or later, System 4.2 or later, and hard drive. $99.95; $225 for three users; $500 for 10 users. PeachesTree software, 1505 Pavilion Place, Norcross, GA 30093. (800) 247-3224 or (404) 304-5850. (Jan '90)

**Columns, type styling, complex match and sort functions, and custom layouts. Allows user-defined categories for different types of information. Manages to-do lists reliably and efficiently. Printing options are unlimited and inflexible. Version 1.0 reviewed. Version 1.1 shipping. Requires Macintosh Plus or later, System 6.05 or later, and a hard drive. $129.95. Attain Corp., 48 Grove St., Somerville, MA 02144. 617-776-1110. (Aug '92)

**MacClaimChek***

This HyperCard-based package can help organize your health records and simplify filing claims with health insurers. Lets you keep all your insurance, payer, and claim information in one place. Excellent tech support. Version 2.0 reviewed. Requires HyperCard 2.1 or later. $44.99; add-on claim-form modules, $29.95. Te Corp., P.O. Box 140, Campton, NH 03223. 603-755-2522. (Sep '91)

**MacPhonebook***

MacPhonebook handles name-and-address lists with up to 1,600 entries. Best at printing lists in large, medium, and small (Little Black Book) formats. Good for constant data updating. Version 1.0 reviewed. Version 3.0 reviewed. Requires Macintosh Plus or later. $49.95. Synex, 692 Tenth St., Brooklyn, NY 11215. 800-447-9639 or 718-499-6293. (Oct '89)

**MeetingMaker***

This multiuser group-scheduling package is fully featured. Includes basic messaging system, flexible control of recurring meetings, and useful printing formats for group schedules. Performance is reliable but sometimes sluggish. Complex interface has steep learning curve. Allows designation of other network users as proxies for scheduling meetings. Version 1.0 reviewed. Version 1.5 shipped. Requires Macintosh Plus or later. 5 users, $495; 10 users, $895. ON Technology, Inc., 155 Second St., Cambridge, MA 02141. 617-876-0900. (Nov '91)

**My Time Manager***

My Time Manager is a complete time-management system with a full range of nicely implemented tools. Includes an appointment and reminder book, to-do list, and daily or monthly reports. New version planned for System 7.0 compatibility. Performance is good, and the publisher support is excellent. Version 2.0 reviewed. Version 3.5 shipping. Requires Macintosh Plus or later and System 6.03 or later. $79.95; free upgrades ($15 for new manual). MacShark Enterprises, 19 Harrington Rd., Cambridge, MA 02140. 617-876-6343. (Apr '90)

**MyAdvancedMailList***

MyAdvancedMailList is a simple mailing-list manager that allows 16 fields and 4 categories. Performs three-field sorting. Layout and text-format options are limited. Provides 25 predefined output forms for labels, envelopes, cards, and personal orders, plus some basic options for custom layouts. Doesn't support Postnet bar codes on envelopes. Version 2.0 reviewed. Version 3.02 shipping. Requires Macintosh Plus or later and System 6.03 or later. $39.95. MySoftware Company, 1259 El Camino Real, Ste. 167, Menlo Park, CA 94025. 415-325-9372. (Sep '91)

**Nolo's Living Trust***

This program guides you through creating a living trust, which, unlike a will, lets your heirs avoid probate—a costly, sometimes unnecessary process. You answer a series of questions and then review a document automatically generated by the software. Online help offers clear examples and detailed explanations of every step. Flags some logical or legal inconsistencies. Includes excellent manual and reference book. Version 1.02 reviewed. Requires Macintosh Plus or later and System 6.03 or later. $55.95. Nolo Press, 500 Parker St., Berkeley, CA 94710. 800-992-6656 or 510-549-1976. (Dec '92)

**Nolo's Personal Record Keeper***

Nolo's Personal Record Keeper (formerly For the Record) is a database program designed for legal, financial, and personal records. Allows password-locking for screens containing sensitive personal data. The program is comprehensive and easy to learn. Database fields can be modified, and summary reports can be generated and printed. Good documentation. Version 2.0 reviewed. Version 3.0 shipping. Requires Macintosh Plus or later and System 6.03 or later. $49.95. Nolo Press, 950 Parker St., Berkeley, CA 94710. 800-992-6656 or 510-549-1976. (June '91)

**Now Up-To-Date***

Now Up-To-Date scores high as a personal and workgroup appointment scheduler. Full-featured but elegantly simple, with good network performance and a superb interface. Doesn't require you to connect to a server for personal scheduling, but lets you save group appointments into your calendar. Perfect for portable Macs users who frequently leave the office and yet need to update shared schedule information. Server setup is a no-brainer, but access controls provide inadequate security. Lacks warning device for schedule conflicts. Version 1.1 reviewed. Requires Macintosh Plus or later with System 6.05 or later. $99; 5-user pack, $399; 10-user pack, $599. Now Software, Inc., 319 S.W. Washington St., 11th floor, Portland, OR 97204. 800-237-3611 or 503-274-2800. (Dec '92)

**Nutrition Stack, The***


**QuickDEX II***

QuickDEX II is an easy-to-use, intuitive name-and-address manager. Interface resembles cards in a deck, with text entry permitted into fields in any order. A single card (record) can hold any amount of text, limited only by available

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**MICE RATINGS**

**Version 2.0**

- **MacClaimChek**: Excellent
- **MacPhonebook**: Excellent
- **MeetingMaker**: Excellent
- **My Time Manager**: Excellent
- **MyAdvancedMailList**: Excellent
- **Nolo's Living Trust**: Excellent
- **Nolo's Personal Record Keeper**: Excellent
- **Now Up-To-Date**: Excellent
- **Nutrition Stack, The**: Excellent
- **QuickDEX II**: Excellent

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**MacUser 223**
RAM. Very fast. Up to eight database decks can be open simultaneously. Flexible phone-dialing options, but no record-sorting capability or printing support in version reviewed. Can export text files for use in other programs. Has no network capability. Version 2.3 reviewed. Requires Macintosh Plus or later (hard drive recommended). $60. Casady & Greene, Inc., 22734 Portola Dr., Salinas, CA 93908. 800-359-4920 or 408484-9228. (Feb '92)

Remember?  

Remember? is a shareware INIT that lets your Mac remind you of important items. At startup it presents a window with any daily notes. Easy-to-maintain free-form occasion list. Lets you check your calendar in advance. Implementation is clean. Version 1.3 reviewed. Version 2.32 shipping. Requires System 6.03 or later. Shareware fee, $20; $5 on disk. David Warker, 1330 W. North St., Egg Harbor, NJ 08215. 609-965-4357. (July '90)

Rendezvous  

Rendezvous is a classy personal organizer with good printing abilities. Useful and well-designed calendar, planner, diary, and to-do-list forms. Lacks a name-and-address section and needs automatic transfer of data between sections. Version 2.5 reviewed. Version 3.5/Plus shipping. Requires Macintosh Plus or later and System 6.03 or later. $200. PMC TeleSystems, Inc., P.O. Box 5127, Vancouver, British Columbia V6B 4A9 Canada. 800-667-0456 or 604-255-9949. (Feb '90)

Reunion  

This HyperCard stack is a good genealogy program. Supports GEDCOM. Includes space for adding digitized photos, an index, and a birthday file. A complex program with an excellent manual. Easy to use. Includes HyperCard. Version 1.5 reviewed. Version 3.0 shipping. Requires Macintosh Plus or later and System 6.05 or later. $169. Leister Productions, P.O. Box 289, Mechanicsburg, PA 17055. 717-697-1378. (Oct '90)

Schedule+  

This multiuser group-scheduling package can be integrated into the Microsoft Mail E-mail system. Simple, easy-to-use, but bare-bones interface. Works for both personal and group scheduling. User is dependent upon reliable network access to Mail server. Version 1.00a reviewed. Requires Macintosh Plus or later and Microsoft Mail server on network. 5 users, $195; 20 users, $775 (doesn’t include Microsoft Mail). Microsoft Corp., One Microsoft Way, Redmond, WA 98052. 800-426-9400 or 206-882-8080. (Nov '91)

Smart Alarms and Appointment Diary  

Smart Alarms and Appointment Diary are two bundled DAs that provide separate electronic appointment books. Smart Alarms lets you set simple, reliable reminders for events (including recurrent projects), and these reminders pop up no matter what application you’re using. Appointment Diary is equivalent to a calendar, with dates that act as buttons and open up to a daily schedule. Information can be copied from Appointment Diary to Smart Alarms, but the two DAs are not linked. A networked, multiuser version of Appointment Diary is available. Version 3.0/3.1 reviewed. Version 3.1 Plus Pack shipping. Requires Macintosh Plus or later. $90; discounted multiuser licenses available. JAM Software, P.O. Box 4036, Meriden, CT 06450. 203-630-0035. (Feb '91)

Take Control of Cholesterol  

Take Control of Cholesterol is one of a series of health- and food-related programs. It’s clearly a simple port from something less friendly than a Mac, but it’s a good tool. Designed for use with Eaton’s Choice, a cholesterol-reduction book. Provides workbooks and meal plans but has no complete food database. Version 1.0 reviewed. Version 2.1 shipping. Requires Macintosh Plus or later and System 4.2 or later. $19.95. Lifestyle Software Group, 63 Orange St., St. Augustine, FL 32084. 800-289-1157 or 904-825-0220. (Aug '90)

ThoughtPattern  

ThoughtPattern is an innovative, free-form database for managing personal informa- tion. Has powerful search-and-retrieval capabilities that work much like an electronic index card file. Can link information to documents created in other applications. Poorly written manual, but application has good on-line help. Marred by a few bugs, but still a useful tool for users who find conventional databases too rigid. Version 1.1 reviewed. Version 1.3 shipping. Requires Macintosh Plus or later, System 6.03 or later, and a hard drive. $149.5. BananaNafish Software, 730 Central Ave., San Francisco, CA 94117. 415-929-8135. (Oct '91)

TouchBASE  

TouchBASE is a fast DA that provides sophisticated, multi-criteria search capabilities in personal-address-book databases. Supports phone dialing. Has wide range of printing options and templates for labels, envelopes, and double-sided address books. Works well in networked multiuser mode. Version 2.0 reviewed. Version 2.01 shipping. Requires Macintosh Plus or later, System 6.05 or later, and a hard drive; network use requires dedicated AppleShare server. $125 per user. After Hours Software, Tri Center Plaza, 5990 Sepalveda Blvd., Van Nuys, CA 91411. 818-780-2220. (Dec '92)

ThoughtPattern is an innovative, free-form database for managing personal information. Has powerful search-and-retrieval capabilities that work much like an electronic index card file. Can link information to documents created in other applications. Poorly written manual, but application has good on-line help. Marred by a few bugs, but still a useful tool for users who find conventional databases too rigid. Version 1.1 reviewed. Version 1.3 shipping. Requires Macintosh Plus or later, System 6.03 or later, and a hard drive. $149.5. BananaNafish Software, 730 Central Ave., San Francisco, CA 94117. 415-929-8135. (Oct '91)

TouchBASE is a fast DA that provides sophisticated, multi-criteria search capabilities in personal-address-book databases. Supports phone dialing. Has wide range of printing options and templates for labels, envelopes, and double-sided address books. Works well in networked multiuser mode. Version 2.0 reviewed. Version 2.01 shipping. Requires Macintosh Plus or later, System 6.05 or later, and a hard drive; network use requires dedicated AppleShare server. $125 per user. After Hours Software, Tri Center Plaza, 5990 Sepalveda Blvd., Van Nuys, CA 91411. 818-780-2220. (Dec '92)

Visions  

This astrological program is easy to use and comes with data for celebrities such as Hugh Hefner, Princess Diana, and Zsa Zsa Gabor. You can enter your own date, time, and place of birth to get a personal daily horoscope. The information you get is not nearly as interesting as your horoscope in the newspaper, but serious students of astrology will probably appreciate this program.$39.95. Lifestyle Software Group, 63 Orange St., St. Augustine, FL 32084. 800-289-1157 or 904-825-0220. (Dec '92)

WillMaker  

WillMaker is a simple, valuable program for creating wills. Not elegant but does the job reliably and well. It can present a series of straightforward questions for you to answer or full information screens that explain legal issues. Printed output is fairly plain, but text can be exported for use in a word-processing or page-layout program. The program cannot handle conditional bequests. Includes an excellent manual that deals with the software, wills, estate planning, and professional advice. Version 4.0 reviewed. Version 4.01 shipping. Requires Macintosh Plus or later and System 6.03 or later. $59.95. Nolo Press, 950 Parker St., Berkeley, CA 94710. 800-992-6656 or 510-549-1976. (Apr '91)
Business Plan Toolkit

Tim Berry's Business Plan Toolkit is an integrated set of Excel macros and templates with HyperCard-based text that makes creating business plans and forecasts relatively easy. Excellent manual. Version 2.0 reviewed. Version 4.0 shipping. Requires Macintosh Plus or later, System 4.2 or later, and Microsoft Excel or Lotus 1-2-3. $149.50. Palo Alto Software, 2641 Columbia St., Eugene, OR 97403. 800-229-7526 or 503-683-6612. (Sept '89)

FastTrack Resource

This project-management software combines Gantt charts with good ad hoc tools for resource management. No CPM support or integration with AEC Information Manager. Customizable reports are excellent and easy to use. Ideal for managers whose projects include more than just people. Version 1.0 reviewed. Requires Macintosh Plus or later and a hard drive. $249. AEC Software, Inc., 22611 Markey Ct., Bldg. 113, Sterling, VA 20166, 800-346-9413 or 703-450-1980. (Oct '92)

FastTrack Schedule

FastTrack Schedule is a flexible Gantt-based project scheduler that uses a hierarchical outline format. Provides a high degree of functionality and excellent on-screen and printed-graphics abilities. A good project-management system for the Macintosh. Lacks spreadsheet and graphing tools. Well suited for reporting slipped start or completion dates. Version 1.5 reviewed. Version 2.0 shipping. Requires Macintosh Plus or later and a hard drive. $279. AEC Software, Inc., 22611 Markey Ct., Bldg. 113, Sterling, VA 20166, 800-346-9413 or 703-450-1980. (June '91)

FlowChart Express

This fast, easy-to-understand flowcharting program has basic drawing tools and automatic labeling of chart components. Creates flowcharts, structure charts, and family trees. Supports charts as big as 76 x 81 inches, which can be printed in sections. Not suitable for documenting complex hierarchical processes (such as charts within charts). Lacks a few text-formatting features and a magnifying-glass tool. Version 1.0 reviewed. Requires Macintosh Plus or later and System 6.04 or later; hard drive recommended. $149. Kaetron Software Corp., 12777 Jones Rd., Ste. 445, Houston, TX 77070, 713-890-3434. (Dec '92)

FlowMaster

FlowMaster is a flowcharting package that charts your ad dollars in print, TV, billboard, and other media. Analyzes costs/benefits of a campaign in innovative terms. Includes bar-chart and tabular output as well as a color-drawing package that lets you create Gantt charts. Version 2.01 reviewed. Version 2.5i shipping. Requires Macintosh Plus or later and a hard drive. $1,200/year license fee. Telmar Information Services Corp., 902 Broadway, New York, NY 10010. 212-460-9000. (June '90)

KeyPlan

KeyPlan is an outline/project planner that creates good reports and graphs. Lacks some high-end tools. Easy to use. Doesn't support actual data. Flexible and suited for managers who need quick planning help but don't need to track a project once it's started. Version 1.07 reviewed. Requires Macintosh Plus or later and System 6.03 or later, 2 MB of RAM, and a hard drive. $249. Micro Planning International, 3801 E. Florida Ave., Ste. 601, Denver, CO 80210. 303-757-2216. (Oct '92)

MacFlow

MacFlow is a specialized flowchart tool. Creates a variety of general business diagrams, including decision trees and project-schedule charts. Top-level chart objects work like buttons in HyperCard, revealing underlying details or even launching separate applications. Good hierarchical nesting capabilities plus flexible control of connection or intersection of lines and symbols. Imports art for conversion to custom symbols. Version 3.5 reviewed. Version 3.7 shipping. Requires Macintosh Plus or later and System 6.03 or later. $345. Mainstay, 5311-B Derry Ave., Agoura Hills, CA 91301. 818-991-6540. (July '91)

MacProject II

MacProject II is a well-executed PERT and CPM project-management system with time and expense reporting. Intuitive interface. Can manage small- or medium-sized projects and produce good management reports. Can't retain custom table formats. Excellent documentation. Version 2.5 reviewed. Version Pro 1.0 shipping. Requires Macintosh Plus or later, 2 MB of RAM, and a hard drive. $499. Claris Corp., 5201 Valley Arroyo Blvd. Santa Clara, CA 95052. 408-727-8227. (Oct '92)

MacSchedule

MacSchedule is a simple Gantt-based project-management and outliner system. Offers advanced project-time scaling but isn't for advanced Gantt users. Limited color, graphics, and printing capabilities. Useful spreadsheet and graphing tools. Interface complicated by too many hierarchical menus, which could be combined into dialog boxes. Tracks slipped start or completion dates. Version 2.5 reviewed. Version 3.0 shipping. Requires Macintosh Plus or later and System 6.03 or later. $295. Mainstay, 5311-B Derry Ave., Agoura Hills, CA 91301. 818-991-6540. (June '91)

MetaDesign


Micro Planner Manager

Micro Planner Manager provides full PERT and CPM implementations with advanced resource leveling and management reporting. Printed output can be easily customized for management presentations. Stringent logic requirements take time to grasp and implement. Ideal for project-management pros. Version 1.0 reviewed. Version 1.03 shipping. Requires Macintosh Plus or later, System 6.03 or later, 2 MB of RAM, and a hard drive. $695. Micro Planning International, 3801 E. Florida Ave., Ste. 601, Denver, CO 80210. 303-757-2216. (Oct '92)

PERT & Critical Path Techniques

PERT & Critical Path Techniques is a technically sophisticated project-management system. Has full Gantt and CPM implementation, including all second-order slack and activity calendars. Doesn't make good use of the Mac interface. Version 4.0 reviewed. Version 6.0 shipping. Requires Macintosh Plus or later. $145 direct. Lionheart Press, Inc., P.O. Box 4055, Allentown, PA 18105. 514-933-4918. (Oct '89)

Project

This project-management tool is powerful and flexible. Provides excellent control of custom reports, scheduling algorithms, and PERT or Gantt charts. Extensive customizing options can be intimidating. Good for presenting and tracking projects. Version 3.0 reviewed. Requires Macintosh Plus or later and a hard drive. $695. Microsoft Corp., One Microsoft Way, Redmond, WA 98052. 800-426-9400 or 206-882-8080. (Oct '92)

Project Scheduler

This project-management software is frustratingly non-intuitive, but it has several advantages for full-time project planners (especially if they need WBS or OBS codes). A variety of time lines and reports are possible. Someone familiar with the DOS version might forgive the Macintosh version's unfriendly interface. Version 4 reviewed. Version 5 shipping. Requires Macintosh Plus or later and System 6.03 or later. $695. Scitor Corp., 393 Vintage Park Dr., Ste. 140, Foster City, CA 94404. 415-570-7700. (Jan '91)
Schedule Maker is a dedicated shift scheduling program. It is useful for organizing complicated work-shift schedules. It supports multiple useful features, such as automated or manual scheduling, and alerts users to scheduling conflicts. It is adequate for small businesses, includes HyperCard 2.1, Version 2.0 reviewed. Version 2.5 reviewed. Requires Macintosh Plus or later. $395. Craig Systems, 16717 Monitor Ave., Baton Rouge, LA 70817. 504-756-2322. (Oct '89)

Shift Worker is a quick, accurate program for organizing complicated work-shift schedules. It uses expert-system logic well but has a relatively crude interface. Data entry is simple. Handles a maximum of ten work shifts, defined by start time, meal breaks, and end time. Tracks details of work absences, leave time, and an employee's shift requirements and requests such as overtime. Adequate for small businesses. Version 1.04 reviewed. Requires Macintosh Plus or later and a hard drive. $229. Expert Systems, Inc., 2616 Quebec Ave., Melbourne, FL 32935. 407-242-0140. (June '92)

STELLA II is a simulation tool for modeling and analyzing complex business systems. Handles a wide variety of variables and conditions. Requires that you master a discipline called system dynamics. Version 1.0 reviewed. Version 2.21 shipping. Requires Macintosh Plus or later, 2 MB of RAM, System 6.04 or later, and a hard drive. $695; volume and academic discounts available. High Performance Systems, Inc., 45 Lyme Rd., Ste. 300, Hanover, NH 03755. 800-332-1202 or 603-643-9636. (June '88)

Swing Shift is a powerful HyperCard-based system for organizing complicated work-shift schedules. It has a busy, complicated interface that obscures its many useful features. Data entry involves creating work shifts, defining work patterns, entering employee information, and overall scheduling. Support of work patterns means that complex requirements for individual employees are automatically incorporated into schedules. Handles up to 250 employees and a maximum of 150 work shifts. Allows either automated or manual scheduling, and alerts users to scheduling conflicts. Adequate for small businesses. Includes HyperCard 2.1. Version 2.0 reviewed. Version 2.5 reviewed. Requires Macintosh Plus or later with 2 MB of RAM, HyperCard 2.0 or later, and a hard drive. $395. Computer Designs Inc., P.O. Box 802, Temple City, CA 91780. 818-287-5496. (June '92)

Topdown is a strong flowchart and organization-chart tool with a choice of connection modes for each individual line. It can generate text-based reports with support for color output. Excellent right-angle reconnection capability, even with major object shifts. Excellent navigation throughout hierarchy, view to view, and page to page. Comes with a complete set of ANSI flowchart symbols, Yordon-style data-flow diagram symbols, and a custom set of symbols that combines business icons with text boxes. Also supports up to 48 user-defined symbols, including EPS-format graphics. Good choice for systems analysts, information consultants, and general business planners. Version 3.0 reviewed. Version 3.1 shipping. Requires Macintosh Plus or later and System 6.04 or later; hard drive recommended. $345. Kaetron Software Corp., 12777 Jones Rd., Ste. 445, Houston, TX 77070. 713-890-3434. (Jan '92)

Abaton LaserWriter LX is a 300-dpi PostScript-clone personal laser printer that has faster and cheaper laser than its predecessor, the IINTX. Includes support for PostScript Level 2. Based on Canon SX laser engine. Adding at least 4 MB of RAM enables PhotoGrade, Apple's excellent technology for improved printing of halftone photos. Supports PostScript Level 2. Based on Canon SX laser engine. Built-in FinePrint type-enhancement feature works but doesn't measure up to the quality of Hewlett-Packard's new RET system. Includes Ethernet, LocalTalk, serial, and parallel ports. SCSI hard drive can be connected for PostScript level 2 printers, this machine was one of the best choices for price and performance. Memory is expandable to 12 MB, and it can accommodate a CSOr hard drive for font storage. Comes with toner cartridge and envelope cassette but lacks paper-feed options. $4,999. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014. 800-776-2333 or 408-996-1010. (Sept '92)

Apple LaserWriter IIF is a black-and-white, 300-dpi PostScript laser printer that's faster and cheaper than its predecessor, the IINTX. Includes support for PostScript Level 2. Based on Canon SX laser engine. Adding at least 4 MB of RAM enables PhotoGrade, Apple's excellent technology for improved printing of halftone photos. Built-in FinePrint type-enhancement feature works but doesn't measure up to the quality of Hewlett-Packard's new RET system. Includes LocalTalk, serial, and parallel ports. SCSI hard drive can be connected for PostScript level 2 printers, this machine was one of the best choices for price and performance. Memory is expandable to 12 MB, and it can accommodate a CSOr hard drive for font storage. Comes with toner cartridge and envelope cassette but lacks paper-feed options. $4,999. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014. 800-776-2333 or 408-996-1010. (Sept '92)

Apple Personal LaserWriter LS is a 300-dpi laser printer that does not support PostScript. Slow, and no PostScript upgrade is possible. Easy-to-install consumables. Comes with 13 TrueType fonts. Output quality is excellent with Adobe Type Manager or TrueType fonts. $1,199. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014. 800-776-2333 or 408-996-1010. (Sept '91)

Apple Personal LaserWriter NT is a 300-dpi PostScript personal laser printer that is slow with complex graphics files but is easy to set up. Produces good text quality. Standard 2 MB of RAM is upgradable to 6 MB. The toner and drum come in a sleeve cartridge. Uses a Canon LX laser engine. Comes with 35 Adobe fonts. Has a 250-page sheet tray. A PIC chip helps this printer's performance with AppleTalk-intensive applications. $2,199.

Mice Ratings

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Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014. 800-776-2333 or 408-996-1010. (Sept '92)

Apple Personal LaserWriter NTR 444 4 This 300-dpi PostScript Level 2 laser printer is based on the same 4-ppm Canon LX engine as its predecessor, the Personal LaserWriter NT, but is almost 50 percent faster when printing complex graphics. Has 36 built-in PostScript type fonts and 3 MB of RAM. Standard paper tray only holds 50 sheets. Includes simultaneously active and auto-sensing LocalTalk, serial, and parallel ports, which allow Macs and PCs to print at the same time. $2,199; optional 250-sheet paper tray, $200. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014. 800-776-2333 or 408-996-1010. (Oct '92)

Apple StyleWriter 4 This compact personal inkjet printer has excellent 360-dpi output. Requires cumbersome setup. Upgraded software driver significantly boosts speed and allows background operation with PrintMonitor. Includes 13 TrueType fonts. Version 7.22 driver reviewed. Requires System 6.07 or later. $399. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014. 800-776-2333 or 408-996-1010. (Sept '92)

Avery Personal Label Printer 4444 444 The Personal Label Printer includes hardware identical to the CoStar LabelWriter II but suffers from poor software. Stationary thermal print head produces text or graphics at 138-dpi resolution on 1.125- x-3.5-inch standard 4150 labels. Included DA software is cumbersome and time-consuming. DA lacks database capability for sorting and retrieving names and addresses but can include simple graphics on labels. Bundled MacLabelPro application is unnecessarily powerful and doesn't include a template for the 4150 label format. Requires Macintosh Plus or later. $279.95. Avery Dennison Corp., 818 Oak Park Rd., Covina, CA 91724. 800-541-5507 or 818-915-3851. (Feb '92)

BezeQ BP4040 4 444 4 This 300-dpi PostScript-clone personal laser printer has driver-compatibility problems but is easy to set up. Uses TrueImage 1.1 interpreter and a Canon LX laser engine. Good text quality. Standard 2 MB of RAM is not upgradeable. The toner and drum come in a sealed cartridge. Comes with 35 fonts. Standard 50-sheet paper tray is flimsy. An optional 250-sheet tray is available. $1,895. BezeQ Systems, Inc., 1190 Saratoga Ave., San Jose, CA 95129. 408-345-0345. (Sept '92)

Brother HL-4PS 4 444 4 This 300-dpi PostScript-clone personal laser printer has driver-compatibility problems but is easy to set up. Uses BRscript interpreter and a Canon LX engine. Standard 2 MB of RAM is upgradable to 6 MB. The toner and drum come in a sealed cartridge. Comes with 35 fonts. Standard 50-sheet paper tray is available. $2,595. Brother International Corp., 200 Cotontail Lane, Somerset, NJ 08875. 908-356-8880. (Sept '92)


CoStar LabelWriter II 444 444 4 The LabelWriter II has a stationary thermal print head that produces text or graphics at 138-dpi resolution on 1.125- x-3.5-inch standard 4150 labels. Included DA software is fast, easy to use, and supplies a powerful database engine for names and addresses. Bundled application can create customized label templates that use your existing mailing lists and works with other output devices, including laser printers. Optional AppleTalk Network Box lets you share the printer with other networked Macs. Version 1.01 reviewed. Version 1.02B1 shipping. Requires Macintosh Plus or later. $249.95; AppleTalk Network Box, $199. CoStar Corp., 22 Bridge St., Greenwich, CT 06830. 800-426-7827 or 203-661-9700. (Feb '92)


Dayna EtherPrint 4444 444 44444 EtherPrint is not an EtherTalk/LocalTalk router, but it lets LaserWriters connected on AppleTalk act like Ethernet devices. When you look at the Chooser on your Ethernet-networked Mac, the printer with EtherPrint attached appears as an available device. EtherPrint has Ethernet and LocalTalk ports. Version 1.05 ROM reviewed. Version 1.06 shipping. Requires LocalTalk-compatible printer. $499. Dayna Communications, Inc., 50 S. Main St., Salt Lake City, UT 84144. 801-531-0600. (Apr '91)

Du Pont PPI 600 4444444 44444 This 600-dpi 12-mm black-and-white laser printer is extremely fast and creates superb sharp images. Uses HP PostScript-clone RIP in a separate unit. Features auto-sensing serial, parallel, and LocalTalk ports — a real plus for multipplatform environments. Prints on paper as large as tabloid sized. $189.90. Du Pont Printing and Publishing, Barley Mill Plaza #15, Wilmingtont, DE 19890. 800-538-7668 or 302-733-9480. (Sept '92)

Epson EPL-7500 444 444 4 This 300-dpi PostScript personal laser printer is easy to set up. Produces good text quality. Standard 2 MB of RAM is upgradeable to 6 MB. The toner and drum come in a sealed cartridge. Uses a Minolta SP101 engine. Comes with 35 Adobe fonts. Has a 250-sheet paper tray. Two-year warranty. $2,999. Epson America, Inc., 20770 Madrona Ave., Torrance, CA 90503. 800-922-8911 or 310-782-0770. (Sept '92)

Fujitsu RX-7100PS 444 444 444 This PostScript personal laser printer comes with a dual-bin paper tray. Bundled with software that lets you choose different bins for different pages in a document. Competitive speed but nonstandard interface. RX-7100PS uses a Fujitsu LED engine, comes with a DB-9 LocalTalk connector, and has 35 built-in Adobe fonts. Two paper trays hold 150 pages each. $3,190. Fujitsu America, Inc., 2904 Orchard Pkwy., San Jose, CA 95134. 800-626-4686 or 408-432-1300. (Mar '91)

Fujitsu RX-7100PS+ 444 444 444 4 This PostScript laser printer has above-average performance. Has two paper bins. Nice software. $3,790. Fujitsu America, Inc., 2904 Orchard Pkwy., San Jose, CA 95134. 800-626-4686 or 408-432-1300. (Oct '90)

GCC BLP Elite 444 444 444 444 This 300-dpi PostScript personal laser printer produces adequate print quality. Standard 2 MB of RAM is upgradable to 4 MB. Bundled Quick-Envelope software is reliable and useful. Toner cartridge and drum are separate from each other. Uses an OkI Laser 400 engine. Comes with 17 Adobe fonts. Has a 200-sheet paper tray. $1,399 direct. GCC Technologies, Inc., 580 Winter St., Waltham, MA 02154. 800-422-7777 or 617-890-0880. (Sept '92)

GCC BLP Elite 8 444 444 444 444 This 300-dpi PostScript...
Hewlett-Packard Macintaid
kard wows the Mac crowd.

HP’s Mac-compatible products win five first-place awards.

Hewlett-Packard? Yes, indeed. Not only does HP make a wide range of printers and scanners for the Macintosh. We make products that are real winners with Mac enthusiasts.

The recent Macworld World-Class Awards competition proved this conclusively. The result of the vote by subscribers: “Hewlett-Packard products took unprecedented top honors in every printer and scanner category—five in all.”

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personal laser printer has good performance. Produces adequate print quality. Standard 2 MB of RAM is upgradeable to 4 MB. Bundled Quick-Envelope software is reliable and useful. Toner cartridge and drum are separate from each other. Uses an OkiLaser 800 engine. Comes with 17 built-in Adobe fonts. Has a 200-sheet paper tray. $1,699 direct. GCC Technologies, Inc., 580 Winter St., Waltham, MA 02154. 800-422-7777 or 617-890-0880. (Sept '92)

GCC BLP II  
This 300-dpi PostScript personal laser printer produces adequate print quality. Standard 2 MB of RAM is upgradeable to 4 MB. Offers edge-to-edge printing with standard RAM but may not handle complex graphics without RAM upgrade. Bundled Quick-Envelope software is reliable and useful. Toner cartridge and drum are separate from each other. Uses an OkiLaser 800 engine. Comes with 35 Adobe fonts. Has a 200-sheet paper tray. Includes SCSI port to attach hard drive for font storage. Noisy. Goes into a quiet sleep mode when left idle. $1,799 direct. GCC Technologies, Inc., 580 Winter St., Waltham, MA 02154. 800-422-7777 or 617-890-0880. (Sept '92)

GCC BLP IIS  
This 300-dpi PostScript personal laser printer produces adequate print quality. Standard 4 MB of RAM; no RAM upgrade available. Offers edge-to-edge printing. Bundled QuickEnvelope software is reliable and useful. Toner cartridge and drum are separate from each other. Uses an OkiLaser 800 engine. Comes with 35 Adobe fonts. Has a 200-sheet paper tray. Includes SCSI port to attach hard drive for font storage. Noise varies widely. Depending on paper and ink used. Limited printable area. Bundled with QuickEnvelope and QuickSpool II. Requires Macintosh Plus or later and a hard drive. $499 direct. GCC Technologies, Inc., 580 Winter St., Waltham, MA 02154. 800-422-7777 or 617-890-0880. (Sept '91)

General Parameters
SpectraStar 430 is a 300-dpi, thermal-wax-transfer color printer with excellent output. Uses PipeLine's PowerPage PostScript clone, which is slower than true Adobe PostScript Level 2. Accepts PostScript, HPGL, TARGA, and NAPLPS files. Options include slide printer and internal hard drive. $6,995. General Parametrics Corp., 1250 Ninth St., Berkeley, CA 94710. 800-223-0999 or 510-524-3950. (May '92)

Hewlett-Packard ColorPro Graphics Plotter  
The ColorPro Graphics Plotter is an eight- pen desktop plotter that requires third-party software. Fonts are limited to an optional GraphicsEnhancement Cartridge that requires some BASIC programming. $1,295. Hewlett-Packard (Direct Marketing). P.O. Box 58059, MS#511-SJ, Santa Clara, CA 95051. 800-752-0900 (USA) or 800-387-3867 (Canada). (Mar '91)

Mice Ratings

Hewlett-Packard DeskWriter C  
This affordable 300-dpi color inkjet printer provides good image quality. Can be slow for complex color layouts, because Mac does all imaging and spooling. No built-in PostScript support. Provides direct serial link or LocalTalk network connection. Setup but switching cartridges (for either black-and-white or color modes) complicates use when alternating between text-only and color print jobs. Full-page color images leave plain paper damp and wrinkled; special coated papers for inkjet printers provide better color and more-stable images. Can print on 3M transparencies. Requires Macintosh with 4 MB of RAM and a hard drive. $1,095. Hewlett-Packard (Direct Marketing). P.O. Box 58059, MS#511-SJ, Santa Clara, CA 95051. 800-752-0900 (USA) or 800-387-3867 (Canada). (May '92)

Hewlett-Packard LaserJet III  
The HP LaserJet IIP, when configured as an Adobe PostScript printer, is slow. Has a 50-sheet standard paper tray (an optional 250-sheet tray is available). Configuration is somewhat difficult because the manual lacks clear instructions about installing the PostScript cartridge, the LocalTalk card, and extra 2 MB of RAM. Version IIP reviewed. Version IIP Plus shipping, $2,195; 250- sheet paper tray, $195. Hewlett-Packard (Direct Marketing). P.O. Box 58059, MS#511-SJ, Santa Clara, CA 95051. 800-752-0900 (USA) or 800-387-3867 (Canada). (Mar '91)

Hewlett-Packard LaserJet II  
This black-and-white, 300-dpi PostScript laser printer is slow. Based on Canon SX laser engine. Hewlett-Packard's new RET system provides excellent text rendition. Includes AppleTalk, serial, and parallel ports. Equipped with one 200-sheet paper tray. $3,395 with AppleTalk interface and 2 MB of RAM. Hewlett-Packard (Direct Marketing). P.O. Box 58059, MS#511-SJ, Santa Clara, CA 95051. 800-752-0900 (USA) or 800-387-3867 (Canada). (Sept '92)
This inexpensive inkjet printer is slow, with entry-level print quality. Limited color range with all colored inks in one cartridge. Separate power supply. Requires Macintosh PrintKit, $1,395; Macintosh PrintKit, $1,250. Hewlett-Packard LaserJet 1100 (Direct Marketing), P.O. Box 58059, MS#511L-SI, Santa Clara, CA 95051. 800-752-0900 (USA) or 800-387-3867 (Canada). (Feb '92)

Hewlett-Packard LaserJet IIIP

This 300-dpi PostScript Level 2 personal laser printer is slow but easy to set up. Produces excellent text quality. Standard 2 MB of RAM is insufficient for some complex graphics. Upgradeable to 4 MB. The toner and drum come in a sealed cartridge. Uses a Canon L8 laser engine. Comes with 35 Adobe fonts. Includes a flimsy 50-sheet paper tray. An optional 250-sheet tray is available. $2,495 with PostScript Level 2 cartridge. Hewlett-Packard (Direct Marketing), P.O. Box 58059, MS#511L-SI, Santa Clara, CA 95051. 800-752-0900 (USA) or 800-387-3867 (Canada). (May '90)

Hewlett-Packard PaintWriter

This color inkjet printer is quiet and compact. Produces bright, saturated transparencies. Colors come in separate ink cartridges. Resolution is 180 dpi, maximum printable area is 8 x 10.7 inches. Doesn't include PostScript, so Mac processes images for printer. Requires 32-bit QuickDraw. $995. Hewlett-Packard (Direct Marketing), P.O. Box 58059, MS#511L-SI, Santa Clara, CA 95051. 800-752-0900 (USA) or 800-387-3867 (Canada). (Feb '92)

Hewlett-Packard LaserJet IIIIS

The LaserJet IIIIS is a black-and-white, 300-dpi, PostScript laser printer that delivers fast performance and excellent text rendition. Hewlett-Packard's new RET (Resolution Enhancement Technology) system is built in. Based on Canon NX laser engine. Includes AppleTalk port. Equipped with two 500-sheet paper trays. Bulkly. $6,995 with AppleTalk interface and 5 MB of RAM. Hewlett-Packard (Direct Marketing), P.O. Box 58059, MS#511L-SI, Santa Clara, CA 95051. 800-752-0900 (USA) or 800-387-3867 (Canada). (Sept '92)

Hewlett-Packard LaserJet IIP

This inexpensive inkjet printer is slow, with entry-level print quality. Limited color range with all colored inks in one cartridge. Separate power supply. Requires Macintosh PrintKit, $1,395; Macintosh PrintKit, $1,250. Hewlett-Packard LaserJet (Direct Marketing), P.O. Box 58059, MS#511L-SI, Santa Clara, CA 95051. 800-752-0900 (USA) or 800-387-3867 (Canada). (May '90)

Hewlett-Packard PaintJet

This inkjet printer is slow, with entry-level print quality. Limited color range with all colored inks in one cartridge. Separate power supply. Requires Macintosh PrintKit, $1,395; Macintosh PrintKit, $1,250. Hewlett-Packard LaserJet (Direct Marketing), P.O. Box 58059, MS#511L-SI, Santa Clara, CA 95051. 800-752-0900 (USA) or 800-387-3867 (Canada). (May '90)

Hewlett-Packard PaintJet XL

The HP PaintJet XL is an inkjet printer with low-resolution QuickDraw (180-dpi) quality, but it produces good-looking output. Can't reproduce all colors. Fast. Paper handling is good, and it can print B-size sheets. Requires Macintosh PrintKit, $2,495; Macintosh PrintKit, $1,250. Hewlett-Packard (Direct Marketing), P.O. Box 58059, MS#511L-SI, Santa Clara, CA 95051. 800-752-0900 (USA) or 800-387-3867 (Canada). (May '90)

Hewlett-Packard PaintWriter XL

This color inkjet printer is quiet. Produces bright, saturated transparencies. Colors come in separate ink cartridges. Resolution is 180 dpi, and maximum printable area is 10.7 x 16.6 inches. Doesn't include PostScript, so Mac processes images for printer. Requires 32-bit QuickDraw. $2,595. Hewlett-Packard (Direct Marketing), P.O. Box 58059, MS#511L-SI, Santa Clara, CA 95051. 800-752-0900 (USA) or 800-387-3867 (Canada). (Oct '91)

Hewlett-Packard Graflex

Graflex is a dot-matrix-printer interface cartridge that emulates the ImageWriter LQ for maximum capability. Lacks special features of custom printer-driver software. No support for inkjet or laser printers. No network support. Requires Macintosh Plus or later and dot-matrix printer. $99.95. ICD, Inc., 1220 Rock St., Rockford, IL 61101. 815-968-2228. (July '92)

Kodak Diconix Color 4

Diconix Color 4 is a quiet, compact, affordable 192-dpi color inkjet printer with poor print quality and limited print area. Accepts plain paper. Provides serial port but no LocalTalk port. Requires Macintosh Plus or later with 2 MB of RAM and a hard drive. $985. Eastman Kodak (Printer Products Division), 901 Elmgrove Rd., Rochester, NY 14653. 800-255-3434 or 716-263-6640. (May '92)

Kodak Diconix M150 Plus

The Diconix M150 Plus is a tiny inkjet printer that runs on batteries or AC and fits easily in a briefcase. Slow and doesn't have PostScript's page-description language but comes with ATM and 13 Adobe fonts. Its 192-dpi image quality could be better. Limited printable area. $549. Eastman Kodak (Printer Products Division), 901 Elmgrove Rd., Rochester, NY 14653. 800-255-3434 or 716-253-0740. (Sept '91)

Kodak Ektaplate 7016

This networkable printer doubles as a plain-paper copier. Offers excellent image quality. Installation and setup are simple, and plug-in emulations are available. Comes with ATM and 13 Adobe fonts. $4,995. 1,000-sheet paper tray, $985. Kyocera Electronics, Inc., 100 Randolph Rd., Somerset, NJ 08875. 800-621-6777 or 908-560-3400. (Sept '91)

LaserMaster 1000

The LaserMaster 1000 is a black-and-white, 1,000-x-400-dpi laser printer that ties up host Macintosh and, as a consequence, is a bit slow. Provides good image quality, especially for halftones. Uses its own NuBus card and LaserMaster EFT interpreter (PostScript clone). Based on Canon SX laser engine. Equipped with one 250-sheet paper tray. Version 3.0 (software) reviewed. Version 3.11 shipping. Requires NuBus-capable Mac. $5,995 direct. LaserMasterCorp., 6900 Shady Oak Rd., Eden Prairie, MN 55344. 800-950-6868 or 612-944-0522. (Feb '92)

Lexmark IBM LaserPrinter 6A

This 300-dpi PostScript laser printer is based on a 6-ppm engine but uses a slow 10-MHz 68000 processor. Processor upgrade boosts engine speed to 10 ppm. Uses proprietary PQET smoothing to produce excellent image quality.
MINIFINDERS


MacFriends Quickor TS

This 300-dpi PostScript Level 2 personal laser printer produces good text quality. Standard 2 MB of RAM is insufficient for complex graphics. Upgradable to 10 MB of RAM.

Mitsubishi G370-10

This compact thermal-wax-transfer printer has excellent image quality, but version reviewed did not include Mac interface. $5,495. Mitsubishi Electronics America, 5665 Plaza Dr., Cypress, CA 90630. 800-843-2515 or 714-220-2500. (May '90)

Mitsubishi International CHC-S445

The CHC-S445 is a 300-dpi, continuous-tone color printer. Produces near-photographic images with realistic colors. Slow. Useful as proofing device. Includes external RIP (raster-image processor) to support true Adobe PostScript. Internal dyesublimation technology heats and transfers colors from continuous CMYK ribbons to a special medium resembling photographic paper. Small footprint. Planned upgrade will have faster built-in RIP, slots for PostScript or clone function cards, and automatic emulation switching among several ports. Requires Macintosh II series or higher, 4 MB of RAM, 32-bit QuickDraw, and a hard drive. $18,750. Mitsubishi International Corp., 701 Westminster Ave., White Plains, NY 10604. 914-997-4999. (May '92)

Mitsubishi S340-10

This sublimal-dye-transfer printer creates excellent proofs. Superb print quality. Color range is limited, although the gradients are excellent. Would have received 4.5 mice if Mac interface were included. $13,995. Mitsubishi Electronics America, 5665 Plaza Dr., Cypress, CA 90630. 800-843-2515 or 714-220-2500. (May '90)

NEC Colormate PS Model 80

Offering true PostScript, the Colormate PS Model 80 was the fastest thermal-wax-transfer color printer that we tested for our May '91 lab report. Standard RAM configuration is 8 MB. Halftoning is poor, but overall image quality and color registration are good. The optional hard drive stores printer fonts and helps boost performance. $8,995; optional 20-MB hard drive, $995. NEC Technologies, Inc., 1414 Massachusetts Ave., Boxborough, MA 01719. 800-632-4636 or 508-264-8000. (May '91)

NEC Silencer Laser 2

Model 90

The fast Silencer Laser 2 Model 90 is a true Adobe PostScript printer with a low price. Speed is six pages per minute. The printer uses a Minolta laser engine, has 35 built-in Adobe fonts, and has a 250-sheet paper tray. The toner and drum come in a sealed cartridge. Its only drawback is its large size, exacerbated by the paper tray projecting 10 inches from the front of the printer. $2,495. NEC Technologies, Inc., 1414 Massachusetts Ave., Boxborough, MA 01719. 800-632-4636 or 508-264-8000. (Mar '91)

NEC Silencer Laser Model 95


NewGen Personal Series Turbo PS/300P

This 300-dpi PostScript-clone personal laser printer is easy to set up. Produces mediocre image quality. Standard 2 MB of RAM is insufficient for some complex graphics. Upgradable to 16 MB. The toner and drum come in a sealed cartridge. Uses a Weitek interpreter and a Canon LX laser engine. Comes with 35 fonts and a f limsy 50-sheet paper tray. An optional 250-sheet tray is available. $1,495. NewGen Systems Corp., 17580 Newhope St., Fountain Valley, CA 92708. 800-888-1689 or 714-641-8600. (Sept '92)

NewGen Personal Series Turbo PS/400P

This 400-dpi PostScript-clone personal laser printer is easy to set up. Produces excellent image quality. Standard 4 MB of RAM is upgradable to 16 MB. Halftoning is poor, but overall image quality is good. A SCPS port is included for use with third-party hard drives. Best quality when printing black type. $6,990. NewGen Graphics USA, Inc., Box 7169, Mountain View, CA 94039. 800-545-5445 or 415-964-7900. (May '91)

Okidata OL-830

This 300-dpi PostScript personal laser printer produces good text quality. Standard 2 MB of RAM is upgradable to 4 MB. Toner cartridge and drum are separate from each other. Bundled with LaserTools software. Use an OK-Laser 800 laser engine. Comes with 17 built-in fonts and a 200-sheet paper tray, $1,999; required LocalTalk/serial interface, $199. Okidata, 532 Fellowship Rd., Mount Laurel, NJ 08054. 800-654-3282 or 609-235-2600. (Sept '92)

Okidata OL-840


Orange Micro

Grappler 9 Pin

The Grappler 9 Pin is a dot-matrix-printer interface cartridge that emulates the ImageWriter LQ for maximum compatibility. Lacks special features of custom printer-driver software. Doesn't support inkjet and laser printers. Uses control panel as well as some what quirky LQ driver. Upgraded version includes networking and spooling software that allows multiple users. Version 1.0 reviewed. Version II shipping. Requires Macintosh Plus or later. $139. Orange Micro, Inc., 1400 N. Lakeview Ave., Anaheim, CA 92807. 714-779-2772. (July '92)

Orange Micro

Grappler lsp

The Grappler lsp is a dot-matrix-printer interface cartridge that emulates the ImageWriter LQ for maximum compatibility. Includes networking and spooling software that allows multiple users. Lacks

Orange Micro Grappler LS


Panasonic KX-P4455

This 300-dpi PostScript personal laser printer is fast on straight-text files but slow producing graphics. Adequate image quality. Standard 2 MB of RAM is upgradeable to 4 MB. Lacks ATM font rasterizer. Uses Panasonic laser engine. Comes with 39 Adobe fonts and two 250-page paper trays. Toner replenishment system is inconvenient. $2,995. Panasonic, Two Panasonic Way, Secaucus, NJ 07094. 800-742-8086 or 201-348-7000. (Sept '92)

Printware 720 IQ

Laser Imager


QMS ColorScript 100

Model 10

The ColorScript 100 Model 10 was the first four-color thermal-wax-transfer PostScript printer. Fast and simple to install and use. Excellent typographic capability. Standard RAM configuration is 5 MB, upgradable to 8 MB. A SCSI port is included for use with third-party hard drives. Overall image quality was worst among printers we tested for our May '91 lab report. $6,995. QMS, Inc., One Magnum Pass, Mobile, AL 36618. 800-523-2696 or 205-633-4300. (May '91) ★ '92

QMS PS-810 turbo

This QMS PS-810 turbo is a good alternative to the LaserWriter IINTX PostScript printer and has equivalent output quality. Comes with two 200-sheet paper trays. With 6 MB of RAM, $5,495. QMS, Inc., One Magnum Pass, Mobile, AL 36618. 800-523-2696 or 205-633-4300. (Feb '92)

QMS PS-820 turbo

The fast QMS PS-820 turbo is a good alternative to the LaserWriter IINTX PostScript printer and has equivalent output quality. Comes with two 200-sheet paper trays. With 6 MB of RAM, $6,495; 40-MB hard drive, $1,495. QMS, Inc., One Magnum Pass, Mobile, AL 36618. 800-523-2696 or 205-633-4300. (Sept '91)

QMS PS-815 MR

The QMS PS-815 MR is a black-and-white PostScript laser printer that delivers good image quality. Resolution can be set to 300 or 600 dpi. Based on Canon SX laser engine. Includes AppleTalk, serial, and parallel ports. Equipped with one 200-sheet paper tray. $3,995. Qume Corp., 260 S. Milpitas Blvd., Milpitas, CA 95035. 408-942-4000. (Sept '89) ★ '88 Eddy

RealTech Laser 4

This 300-dpi PostScript Level 2 personal laser printer produces good text quality. Standard 2 MB of RAM is insufficient for complex graphics. Upgradable to 10 MB of RAM. Uses a Sharp engine. Comes with 35 built-in Adobe fonts and has a 250-sheet paper tray. Includes SCSI port to attach hard drive for font storage. Two-year warranty. $1,695.

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MINI FINDERS

408-922-5900. (May '91)

Seiko ColorPoint PSX Model 14

The ColorPoint PSX Model 14 is a 300-dpi, thermal-wax-transfer color printer. Uses PhoenixPage (PostScript Level I clone), which is slower than true Adobe PostScript Level 2. Can do full-bleed tabloid pages and letter-sized output. Uses a wide range of media, but uses it on rolls, which causes waste when installed and when images are trimmed. Small footprint, given its large output. Can use optional iron-on transfer media. $1,179. Seiko Instruments USA, Inc., 1130 Ringwood Ct., San Jose, CA 95131. 408-922-5900. (May '92)

Seiko Personal ColorPoint PS $99

Personal ColorPoint PS is an affordable, 300-dpi, thermal-wax-transfer color printer. Uses PhoenixPage (PostScript Level I clone), which is slower than true Adobe PostScript Level 2. Easy to set up and use. Small footprint. Poor printing quality on plain paper. Version PS reviewed. Version PSM shipping. $3,699. Seiko Instruments USA, Inc., 1130 Ringwood Ct., San Jose, CA 95131. 408-922-5900. (May '92)

Seiko Smart Label Printer Plus $199

The Smart Label Printer Plus uses a dynamic thermal print head that can produce text at 78-x-100 dpi or 150-x-200 dpi resolution on 1.125-x-3.5-inch standard 4150 labels. Included DA software offers no frills but is easy to use. Provides simple database capability for sorting and retrieving names and addresses. Can't include graphics on labels without resorting to separate application. No advanced labeling application is bundled. Recommended if your labeling requirements won't grow. Requires Macintosh Plus or later. $295. Seiko Instruments USA, Inc., 1130 Ringwood Ct., San Jose, CA 95131. 408-922-5900. (Feb '92)

Sharp JX-730 Color Ink Jet $399

This inkjet printer is slow and has mediocre print quality. Color range is good, but ink on paper and transparency papers smears and bleeds. Resolution is 180 dpi. Maximum printable area is 13.6 x 21 inches. Doesn't include PostScript, so Mac processes images for printer. Requires 32-bit QuickDraw and Mac II or later with Parallink cable (Jonathan Free­man Technologies) or Hurdler II-CPI NuBus card (Creative Solutions). $1,995; cut-sheet feeder, $480; paper-roll feeder, $40; tractor feeder, $290. Sharp Electronics Corp., Sharp Plaza, Mahwah, NJ 07430. 800-237-4277 or 201-529-8200. (Oct '91)

Shinko CHC Series $299

This 300-dpi, thermal-wax-transfer printer has excellent image quality but is slow, with poor line resolution on transparencies. Limited color range. Requires Macintosh II series or higher with 2 MB of RAM. System 6.03 or later, and a hard drive. Shinko CHC-445, $4,500; Shinko CHC-745, $5,800; Shinko CHC-445 PS, $5,800; Shinko CHC-745 PS, $9,700. Mitsubishi International Corp., 701 Westchester Ave., White Plains, NY 10604. 914-997-4999. (May '92)

Tektronix ColorQuick $399

This color inkjet printer offers relatively high resolution (216 dpi) and comes bundled with powerful color-matching software. Fast. Printing on clay-coated paper produces brilliant colors. Maximum printable area is 11 x 17 inches. Doesn't include PostScript, so Mac processes images for printer. Allows manual, roll, or cut-sheet paper feeds; tractor feeder is optional. Version 2.0 driver reviewed. Version 3.0 shipping. Requires 32-bit QuickDraw and Mac Accessory Kit (software and manuals) plus third-party SCSI cable. $2,345; Mac Accessory Kit, $150; tractor feeder, $300. Tektronix, Inc. (G.P.I.D.), P.O. Box 1000, MS63-583, Wilsonville, OR 97070. 800-835-6100 or 503-627-7111. (Oct '91)

Tektronix Phaser II PXI $999

The Phaser II PXI is a fast, 300-dpi, thermal-wax-transfer color printer. Offers excellent output, including exceptional transparencies. Uses true Adobe PostScript Level 2. Version 2.0 firmware reviewed. Version 2.08 shipping. $7,995. Tektronix, Inc. (G.P.I.D.), P.O. Box 1000, MS63-583, Wilsonville, OR 97070. 800-835-6100 or 503-627-7111. (May '92)

Tektronix Phaser III PXI $7,995

The Phaser III PXI is a 300-dpi, phase-change color printer. Very good image quality, with bright colors. Transparency output, however, is mediocre. Uses true Adobe PostScript Level 2. Internal technology is similar to thermal-wax-transfer printers but instead uses dye-impregnated wax that is melted and sprayed on the page. After imaging, the paper is cold-pressed at 3,000 psi to bond the wax securely and smooth its surface. Using plain paper, can print tabloid pages or letter-sized output. Performance was below average when tested with out Adobe's Final Level 2 driver software. Large footprint. Version 2.0 firmware reviewed. Version 2.08 shipping. $9,995. Tektronix, Inc. (G.P.I.D.), P.O. Box 1000, MS63-583, Wilsonville, OR 97070. 800-835-6100 or 503-627-7111. (Oct '92) ★ '91 Eddy

Texas Instruments microLaser Plus PS35 $2,995

This compact 300-dpi PostScript personal laser printer is fast for text and simple graphics. Uses a Sharp engine and has 35 built-in Adobe fonts. Has a 250-sheet tray. Standard 1.5 MB of RAM is insufficient for complex graphics. Upgradable to 4.5 MB. Modular design simplifies upgrading. Excellent on-board help and diagnostics. $1,549. Texas Instruments, Inc., 5701 Airport Rd., Temple, TX 76503. 800-527-3500 or 214-955-2079. (Sept '92)

Xante Accell-a-Writer $1,695

The Accell-a-Writer acceler­ator board upgrades Apple's LaserWriter II series. Offers about 10-percent speed boost over the LaserWriter IINTX's performance. More than doubles the LaserWriter IINTX's performance. Uses PhoenixPage 2.3 (PostScript clone) interpreter. Standard resolution is 600 dpi but also supports 300 dpi or 1,200 x 300 dpi. Built-in fonts are from Bitstream. Two-year warranty. Requires Apple LaserWriter II or PostScript laser printer. $1,695 direct with 6 MB of RAM. Xante Corp., 2559 Emogene St., Mobile, AL 36606. 800-926-8839 or 205-476-8189. (Feb '92)
Performance Enhancers

Apple Macintosh IIci Logic Board Upgrade

This acceleration option provides a significant performance boost over the IIcx but requires 80-nanosecond or faster RAM SIMMs. Requires Macintosh IIx or Iic. $1,499. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014. 800-776-2333 or 408-996-1010. (Aug '90)

Apple Macintosh IIx Upgrade

Apple's motherboard replacement boosts a 40-MHz CPU and outperforms many other add-ons at reasonable cost. SRAM cache and fast DMA SCSI. Special IIfx DRAM must be purchased (minimum 4 MB). This acceleration option provides excellent performance for Mac II and IIx owners. Requires Macintosh II or IIx and 4 MB of DRAM. $2,599. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014. 800-776-2333 or 408-996-1010. (Aug '90)

Appie Macintosh SE/30 Logic Board Upgrade

This acceleration option offers color QuickDraw and stereo sound features. Capability for 8 MB of RAM distinguishes it from other SE-accelerator options. Requires Macintosh SE (FDHD upgrade and System 6.05 software recommended). $999; FDHD upgrade, $449. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014. 800-776-2333 or 408-996-1010. (Aug '90)

Apple Quadra 700 Upgrade

Apple's Quadra 700 Upgrade is one of the best ways to boost the performance and speed of a stock IIx or IIci. Offers advantages of a fast SCSI controller, 24-bit color support, a sound-in-port, and the often reassuring Apple seal of approval. Factory-installed. Use 25-MHz 68040 CPU and a cache-disabled mode for applications not yet compatible with the 68040 processor. $3,499. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014. 800-776-2333 or 408-996-1010. (June '92)

Apple Quadra 950 Upgrade

Based on the 33-MHz 68040 chip, this upgrade transforms a Quadra 900 into a 950. Boosts overall performance approximately 30 percent. Provides faster Ethernet transfers and video redraw plus 16-bit-color support on two-page displays. FCC Class B-certified. Lacks automatic cache-switching software for applications not yet compatible with the 68040 processor (Cache-Out control-panel freeware is available from ZiffNet/Mac). Requires Quadra 900. $1,499. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014. 800-776-2333 or 408-996-1010. (Nov '92)

Applied Engineering TransWarp 040

Based on the 33-MHz 68040 chip, this accelerator works with any member of the Mac II family. Occupies one NuBus slot. Boosts a IIci's overall performance approximately 180 percent. Incompatible with parity RAM. Acceleration is always enabled until restart and can then be disabled. Includes automatic cache-switching software for applications that are not yet compatible with the 68040 processor. Requires Macintosh II series; standard Mac II uses 68851 PPMU chip. $3,599. Applied Engineering. 3210 Bettline Rd., Dallas, TX 75234. 800-554-6227 or 214-241-6060. (Nov '92)

ATTO SiliconExpress II

SiliconExpress II is a fast SCSI-2 NuBus card that's built for the future (when the Mac will take better advantage of multitasking). Can serve as bus-master card and has coprocessor to speed input/output for the Mac's CPU. Bus-master feature works with AppleShare 3.0. Sustained data-transfer rate is 10 MB/sec. Uses 25-pin external SCSI connectors. Supports any hard drive and SyQuest drives. Includes Express control panel, SCSI Director, and ExpressMirror. Requires Macintosh II series or higher. $995 direct. ATTO Technology, Inc., 1576 Sweet Home Rd., Athens, NY 14613. 716-688-4259. (July '92)

DayStar FastCache

The FastCache is a full-height cache card that fits into the processor-direct slot of a IIci or IIci. The cache card has 25-nanosecond static RAM that increases the IIci's overall performance by approximately 30 percent. This speed booster is economical, easy upgrade requiring no software. SANE patch provided for extra speed with some kinds of math computation; INIT and control panel provided allow cache disabling. Benchmark software is bundled. Requires Macintosh IIci, IIx, or Quadra. $189 to $449. DayStar Digital, Inc., 5556 Atlanta Hwy., Flowery Branch, GA 30542. 800-962-2077 or 404-967-2077. (June '92)

DayStar FastCache Quadra 700/900

This moderately priced 128K cache card boosts overall performance in a Quadra 700 or 900 approximately 10 percent. Performance increase is usually higher with programs that do heavy math calculation, such as spreadsheets. Easy to install. Incomplete documentation. Requires Quadra 700 or 900. $299. DayStar Digital, Inc., 5556 Atlanta Hwy., Flowery Branch, GA 30542. 800-962-2077 or 404-967-2077. (Nov '92)

DayStar FastCache Quadra 700/900/950

This moderately priced 128K cache card boosts overall performance in a Quadra 900 or 950 approximately 10 percent. Performance increase is usually higher with programs that do heavy math calculation, such as spreadsheets. Easy to install. Incomplete documentation. Requires Quadra 900, $499. DayStar Digital, Inc., 5556 Atlanta Hwy., Flowery Branch, GA 30542. 800-962-2077 or 404-967-2077. (Nov '92)

DayStar PowerCache

The PowerCache accelerated cache card almost doubles the performance of a IIcx under some conditions. Available for 40- to 50-MHz 68030 CPU. A 20- to 35-MHz 68040 CPU. A 68882 FPU is available for this card. The FPU is helpful for math-intensive applications such as CAD, 3-D rendering, and financial modeling. Installation is easy, and the card's setup is managed via control-panel software. Includes second PDS for other cards. Acceleration can't be disabled without removing card, but cache can be disabled with software. Requires Macintosh IIci or (with adapter) Classic, SE, SE/30, LC, or II series. $479 to $1,599; adapter, $49. DayStar Digital, Inc., 5556 Atlanta Hwy., Flowery Branch, GA 30542. 800-962-2077 or 404-967-2077. (June '92)

Fusion Data TokaMac ic

Installed in a Mac Iici, the TokaMac ic delivers raw performance right up there with the Quadra 700. Some software is not compatible with the 25-MHz 68040 CPU, but included software can disable acceleration and the CPU's cache. Requires Macintosh Iici. $2,595 (or $1,945 direct). Fusion Data Systems, 8920 Business Park Dr., Ste. 350, Austin, TX 78759. 800-285-8313 or 512-338-5326. (June '92)

Fusion Data TokaMac II FX 33

Based on the 33-MHz 68040 chip, this upgrade more than doubles a IIfx's performance to approximately 110 percent of a Quadra 950's. Uses both the PDS and a NuBus slot. Includes 128K CPU cache and high-speed NuBus controller. Lacks write-through mode, but acceleration can be disabled without restarting. Includes automatic cache-switching software for applications not yet compatible with the 68040 processor. Incomplete documentation. Requires Macintosh IIfx and installation by vendor. $3,995. Fusion Data Systems, 8920 Business Park Dr., Ste. 350, Austin, TX 78759. 800-285-8313 or 512-338-5326. (Nov '92)

Fusion Data TokaMac LC

Installed in a Mac LC, the TokaMac LC is a PDS card...
that delivers raw performance equivalent to that of a IIfx. Some software is not compatible with the 25-MHz 68040 CPU, but included software can disable acceleration and the CPU’s cache. Requires Macintosh LC or LC II. $2,495 (or $1,895 direct), Fusion Data Systems, 8920 Business Park Dr., Ste. 350, Austin, TX 78759. 800-285-8313 or 512-338-5326. (June ’92)

**Fusion Data TokaMac SX**

Installed in a Mac SE/30 or IIci, the TokaMac SX is a PDS card that delivers more than triple the Mac’s normal performance. Some software is not compatible with the 25-MHz 68040 CPU, but included software can disable acceleration and the CPU’s cache. Requires Macintosh IIIs or SE/30. $2,595 (or $1,945 direct). Fusion Data Systems, 8920 Business Park Dr., Ste. 350, Austin, TX 78759. 800-285-8313 or 512-338-5326. (June ’92)

**tir Cache Card 32**

The tir Cache Card 32 is a half-height cache card that fits into the IIci’s processor-direct slot. The cache card has 32K of 25-nanosecond static RAM that increases the IIci’s overall performance by approximately 30 percent. This speed booster is economical, easy upgrade requiring no software. Because no control panel software is provided to allow cache disabling, if any software proves incompatible, the only option is to remove the cache card temporarily. Requires Macintosh Ici. $325. Impulse Technology, 210 Dahloenega St., Ste. 204, Cumming, GA 30130. 404-889-8294. (June ’91)

**Impulse Performance/040**

Based on the 33-MHz 68040 chip, this accelerator works with any member of the Mac II family. Occupies one NuBus slot. Boosts an IIci’s overall performance approximately 150 percent. Incompatible with any RAM. Acceleration is always enabled until restart and can then be disabled. Includes automatic cache-switching software for applications not yet compatible with the 68040 processor. Requires Macintosh II series; standard Mac II requires 68851 PMMU chip as well. $2,399. Impulse Technology, 210 Dahloenega St., Ste. 204, Cumming, GA 30130. 404-889-8294. (Nov ’92)

**MacProducts ’030**

**RailGun-25 MHz**

This railgun accelerator has the same basic design as the Novy Quik30/Plus-33MHz. Limited SCSI 25-speed controller with support for the Mac 128K, 512K, 512Kc, Plus, SE, and Classic. Without FPU, $599 direct; with FPU, $699; for Plus and Classic, add $99. MacProducts USA, Inc., 608 W. 22nd St., Austin, TX 78705. 800-622-3475 or 512-472-8881. (Aug ’90)

**Micron Xceeed Ici**

The Xceeed Ici is a full-height cache card that fits into the IIci’s processor-direct slot. The cache card has 128K of 25-nanosecond static RAM that increases the IIci’s overall performance by approximately 30 percent. This speed booster is an economical, easy upgrade requiring no software. SANE patch provided for extra speed with some kinds of math computation; INIT and control panel provided to allow cache disabling. Benchmark and Fkeys software are bundled. Requires Mac Ici. $329. Micron Technology, Inc., 2805 E. Columbia Rd., Boise, ID 83706. 800-642-7661 or 208-365-3800. (June ’91)

**MicroNet NuPORT-II**


**Newer fx/Overdrive**

This fx/Overdrive is a CPU-socket board that boosts performance on a IIfx about 20 percent. Includes a 50-MHz 68030 CPU (clock speed can be selected in software) and 68882 FPU. Uses 60 ns RAM SIMMs. May not be compatible with all IIfx motherboards. Money-back guarantee. Version 1 reviewed. Version II shipping. Requires Macintosh IIx. $850. Newer Technology, 7803 E. Osie St., Ste. 105, Wichita, KS 67207. 800-678-3726 or 316-685-4904. (June ’92)

**NewLife Accelerator!**

The 68030-based NewLife Accelerator! card can boost a Mac Classic’s performance to nearly four times normal processing speed. Performance with optional 68882 FPU chip installed is nearly double that of a Classic II, or equivalent to that of an SE/30. Includes card that clips to the Classic’s 68000 CPU plus power supply that attaches inside the Mac’s metal chassis. Can hold 16 MB of RAM. Sound output is somewhat distorted, which planned control-panel upgrade should fix along with minor software incompatibilities. Allows interrupt-key disabling of card at startup. Includes SANE patch to help math calculation speed. Affordable alternative to Apple’s Classic II upgrade, if you can do without color support and 32-bit-clean ROMs. Version 1.0 reviewed. Requires Macintosh Classic. $529; with optional FPU chip, $599; optional video port (for monochrome monitors), $266. NewLife Computer Corp., 603 March Rd., Kanata, Ontario K2K 2M5 Canada. 800-663-6395 or 613-592-5080. (May ’92)

**Novy Systems Quik30/Plus-33MHz**

This accelerator gives Mac 512Kc, Plus, or SE owners IIci computing power. Limited SCSI 25-speed controller. Requires Macintosh 512Kc, Plus, or SE. With 16-MHz FPU, $785; other configurations available. Novy Systems, 1862 Fern Palm Dr., Edgewater, FL 33414. 800-553-2038 or 904-427-2358. (Aug ’90)

**Orchid MacSprint II**

This accelerator is a good buy. Simple upgrade offers moderate performance increase for little money. There’s a control panel that disables cache for incompatible software. Version 2.1 shipping. Requires Macintosh II, $99. Orchid Technology, 45365 Northport Loop W., Fremont, CA 94538. 800-767-2443 or 510-683-0300. (Aug ’90)

**Perspect Nexus fx**

The factory-installed Perspect Nexus fx is an upgrade to the original IIfx motherboard. Boosts performance about 40 percent. Voids Apple warranty if it still applies, but Perspect covers entire upgraded motherboard with its own one-year warranty. Uses 60 ns RAM SIMMs. Requires Macintosh IIx, $1,295 direct. Perspect Systems, Inc., 630 Venice Blvd., Venice, CA 90291. 800-736-1546 or 310-821-7884. (June ’92)

**PLI QuickSCSI**

The QuickSCSI is a fast, affordable SCSI-2 NuBus card. Sustained data-transfer rate is 4.4 MB/sec. Uses 50-pin external SCSI connector. Supports any hard drive and SCSI removable-cartridge drives. Cannot use the Mac’s Startup control panel. Includes QuickSCSI Formatter, proprietary extension software, and QuickSCSI Manager. Five-year warranty. Requires NuBus-capable Mac. $399. PLI (Peripheral Land, Inc.), 47421 Bayside Pkwy., Fremont, CA 94538. 800-288-8754 or 510-657-2211. (July ’92)

**Radius Rocket**

The original Radius Rocket is a single NuBus accelerator card with a 25-MHz MC68040 CPU and advanced memory-management features. Significantly boosts the host Mac’s CPU and video performance. Triples the overall speed of a Mac IIX. Can hold up to 128 MB of RAM, which can be configured as a RAM disk using Maxima software (from Connectix). Has 32-bit processor-direct slot for special-function daughterboards such as disk controllers, high-speed video interfaces, or JPEG compression cards. Rated at 4.5 amps at 5 volts with 8 MB of RAM. The Rocket may overload Macs already running...
multiple NuBus cards. Acceleration and cache can be disabled by included software. Version 1.0 software reviewed. Version 1.2 shipping. Requires NuBus-capable Mac. $1,999; Rocket 25i (without math coprocessor), $1,499.

San Jose, CA 95131. 800-227-

$1,999; Rocket 25i (without Radius, Inc., 17 IOFortune Dr., math coprocessor), $1,499.

radiates not yet compatible with Ufx and Ilsi) . $2,499. Radi­

Orci. Occupies one NuBus slot. Boosts a Ilci's overall perfor­

ance approximately 180 percent. Supports parity RAM. Acceleration is always enabled until restart and can then be disabled. FCC Class B-certified. Includes automatic cache-switching software for applications not yet compatible with the 68040 processor. Good documentation. Re­

quires Macintosh II series (except IIx and IIsi). $2,499. Ra­

dius, Inc., 1710 Fortune Dr., San Jose, CA 95131. 800-227­

2795 or 408-434-1010. (June '92)

Radius Rocket 33

Based on the 33-MHz 68040 chip, this accelerator works with any member of the Mac II family except the IIx and IIsi. Occupies one NuBus slot. Boosts a Ilci's overall perfor­

ance approximately 180 percent. Supports parity RAM. Acceleration is always enabled until restart and can then be disabled. FCC Class B-certified. Includes automatic cache-switching software for applications not yet compat­
Table:

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**Programming & Systems**

101 Scripts and Buttons for HyperCard

101 Script and Buttons for HyperCard: a collection of scripts, buttons, fields, graphics, utilities, XCMDs, XFCNs, icons, cursors, and more for creating HyperCard stacks. Version 1.1 reviewed. Requires Macintosh Plus or later, HyperCard, and a hard drive. $49.95. Components Software, P.O. Box 201, Rocky Hill, NJ 08553. 800-633-4252 or 609-497-4501. (June '89)

AAIS Prolog

AAIS Prolog is a fast standard Prolog with excellent debugging and error handling. Good for serious program development. Poor documentation. Version 1.0 reviewed. Version 3.0 shipping. Requires Macin­

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AAIS Prolog is a fast standard Prolog with excellent debugging and error handling. Good for serious program development. Poor documentation. Version 1.0 reviewed. Version 3.0 shipping. Requires Macin­
Apple's implementation of UNIX for the Mac offers the best features of the Mac interface and operating system along with full UNIX functionality. We found only a few minor bugs, which are being fixed by aggressive maintenance upgrades. A/UX is now getting full tech support from Apple.

**Caution**

Cause is a database-programming environment designed for nonprogrammers. Non-standard formats. Unable to create a true Mac interface. Projects are portable between Mac and PC versions. Version 2.1 reviewed. Version 2.13 shipping. Requires Macintosh Plus or later with System 6.0.3 or later. $295.

**Pluma Software**

Pluma contains XFCNs for fields, XCMDs, and field numbers. The resulting files will be much larger in TooLBook for nonprogrammers. Able to move Mac-to-PC text between systems, in Symantec's THINK C. It adds several menus and an icon bar that provides a large, varied set of functions. Highly recommended for serious programmers. Version 1.05 reviewed. Version 1.09 shipping. Requires THINK C and System 6.05 or later. $699.50 direct. Jersey Scientific, Inc., 958 Ninth Ave., 10th floor, New York, NY 10018. 212-736-0406. (Aug '92)

**Dialoger Professional**

Dialoger Professional is a HyperTalk compiler that creates and then either exports or installs XCMDs and XFCNs. Programming language is HyperTalk. Fast. Creates XCMDs that work with HyperCard, SuperCard, Authorware, Macromedia Director, and other programs. Has easy-to-use debugging tool. DebugIt! is excellent and includes many useful features beyond HyperTalk. Version 2.0 reviewed. Version 2.1 shipping. Requires Macintosh Plus or later with 2 MB of available RAM. HyperCard, and a hard drive. $149. Heizer Software, P.O. Box 232019, Pleasant Hill, CA 94523, 800-888-7667 or 510-943-7667. (June '91)

**Course Builder**


**Debugger V2 and MacNosy**

The Debugger V2 is a runtime debugger. MacNosy is a well-established global interactive debugger. These powerful tools are not aimed at casual users. The Debugger is great if you have two screens available. A new feature is its IBS (Interactive Build System), which can save a great deal of testing time. Both parts of the package work well with all common environments, including THINK Pascal and C and all flavors of MPW (Macintosh Programmer's Workshop). The manual can be confusing. Version 1.5 reviewed. Version 2.45 shipping. Requires Mac Plus or later. $495. ExperTelligence, Inc., 5638 Holister Ave., Goleta, CA 93117, 805-967-1797. (Aug '87)

**ExperProlog II**

ExperProlog II is a Prolrog based on the Prolog II standard. Handles infinite trees and allows user-defined functions that operate conditionally. Has nonstandard Mac interface. Poor documentation. Version 2.4 shipping. Requires Mac Plus or later. $495. ExperTelligence, Inc., 5638 Holister Ave., Goleta, CA 93117, 805-967-1797. (Mar '87)

**Frontier**

Frontier is an innovative scripting tool that lets you create or control utilities for managing the Mac desktop. Similar to batch files on DOS machines, Frontier scripts act like handy miniprograms to work with the Finder or to link functions of IAC-aware applications. Several sample scripts are included, and others can be downloaded from on-line services. Frontier's programming language, UserTalk, derives from C and is somewhat more difficult to master than HyperTalk. Not for careless novices or for true applications programming.
but perfect for power users who need to automate complex systems. Version 1.0 reviewed. Requires 1 MB of available RAM and System 7. $249. UserLand Software, 400 Seaport Ct., Redwood City, CA 94063. 415-369-6600. (Sept '88)

HookUp! HookUp! is an iconic software-programming utility. It teaches the basic concepts of programming, simple animation, sound manipulation, and even a few more-sophisticated functions. Version 1.0 reviewed. $149. Hip Software Corp., c/o VPL Research, Inc., 656 Bair Island Rd., Redwood City, CA 94063. 415-306-1150 or 415-361-1710. (Jan '91)

HyperAnimator HyperAnimator lets you create talking heads for HyperCard stacks, using MacintoshTalk or digitized sound resources. Easy to implement for those who know HyperCard well. Version 1.0 reviewed. Version 1.5.2 shipping. Requires Macintosh Plus or later and HyperCard. $199.95. Bright Star Technology, Inc., 325 118th Ave. S.E., Ste. 300, Bellevue, WA 98005. 206-451-3697. (Feb '89)

HyperBASIC HyperBASIC (formerly from Teknosys) is a stand-alone XCMD-compiler application. You must be able to program in BASIC to use it. Its BASIC is pretty standard and gives access to 352 Toolbox traps. There's no debugging ability worth using, and the manual is poor. This is not a good system for HyperCard XCMD creation. Version 1.05 reviewed. Version 1.20 shipping. Requires Macintosh Plus or later, HyperCard 1.2.1 or later, and a hard drive. $99. System Technology Corp., 1860 Fern Palm Dr., Edgewater, FL 33414. 800-638-4784 or 904-428-0411. (May '90)

HyperBundle HyperBundle is a set of five HyperCard utilities. The most promising is the handy SuperPalette, which manages floating windows and customized check boxes, radio buttons, menus, and other interface goodies. The other stacks provide sophisticated control of icons, scripts, and access to non-HyperCard files and applications. Version 2.0 reviewed. Requires Macintosh Plus or later and HyperCard 2.0. $249. Components Software, P.O. Box 201, Rocky Hill, NJ 08553. 800-633-4252 or 609-497-4501. (Nov '91)

HyperCard HyperCard 2.0 is a huge improvement over earlier versions. There are some nice additions to graphics and scripting capabilities. Text formatting, text handling, and printing are significantly improved. Now you can open one stack and can now be open at a time, and windows can be resized. Version 2.0 reviewed. Version 2.1 shipping. Requires Macintosh Plus or later with System 6.05 or later, 2 MB of RAM, and a hard drive. Development Kit, $199. Claris Corp., 5201 Patrick Henry Dr., Santa Clara, CA 95052. 408-727-8227. (Dec '90) "87 Eddy HyperDA HyperDA lets you browse through HyperCard stacks via a DA. Lets 512K Macs access stackware. Doesn't support global variables. Version 1.12 reviewed. Version 2.1 shipping. Requires Macintosh 512K or later. $129; upgrade, $29. Symmetry Software Corp., 6003 E. Royal Palm Rd., Ste. 110, Scottsdale, AZ 85258. 800-624-6042 or 602-998-9106. (May '88)

INIThound INIThound is a developers' tool that carefully monitors the startup process and reports exactly what transpires. A handy tool for eliminating INIT (extension) conflicts. Simplifies debugging. Version 1.0 reviewed. Version 1.1 shipping. Requires Macintosh Plus or later. $129. Cambridge Information Ware, P.O. Box 1296, Cambridge, MA 02238. 617-484-8364. (Mar '90)

Instant-Expert Instant-Expert is an excellent way to learn the mechanics of creating an expert system. The inference engine (which ultimately finds the answer) is visible. Interface is weak. Version 2.0 shipping. $69.5. Human Intellect Systems, 3261 Ash St., Palo Alto, CA 94306. 415-571-5939. (Jan '88)

interFACE interFACE is a good tool for building interactive educational software. At first the program seems dedicated to creating animated "talking heads" with facial gestures synchronized to speech or other sounds. However, interFACE lets you build interactive programs, using recorded sounds and bit-mapped graphics. The program can create speech by using text input and Macintalk or by synchronizing sounds from Farallon's MacRecorderId. Version 1.0 reviewed. Requires Macintosh Plus or later with 2 MB of RAM. $499.95. Bright Star Technology, Inc., 325 118th Ave. S.E., Ste. 300, Bellevue, WA 98005. 206-451-3697. (Feb '91)

Just Enough Pascal Just Enough Pascal is a Pascal tutorial. It has an excellent manual and 20 well-planned lessons. Good for learning how to program Macs. Requires Macintosh Plus or later, System 6.03 or later, and THINK Pascal 2.0 or later; hard drive recommended. $75. Symantec Corp., 10201 Torre Ave., Cupertino, CA 95014. 800-441-7234 or 408-253-9600. (Sept '89)

Macintosh Common LISP Macintosh Common LISP is an excellent development environment with an EMACS-style editor that implements most Common LISP editing and debugging functions. Version 1.21 reviewed. Version 2.0 shipping. Requires Macintosh Plus or later, System 6.04 or later (or A/UX), 4 MB of RAM, and a hard drive: CD-ROM drive recommended. $495. APDA (Apple Programmers & Developers Association), P.O. Box 319, Buffalo, NY 14207. 800-282-2732 or 716-871-6555. (Nov '88) "88 Eddy Masquerade Masquerade is a full-featured spreadsheet program that also compiles spreadsheet documents (even from other programs) and from them creates stand-alone applications. These applications can run without the parent program and can't be modified accidentally by users. Provides in-cell text editing, integrated charting, linking, and other features. Works well with most but not all Excel 3.0 files, which often contain problematic macros, dialog boxes, commands, and functions. Version 1.1 reviewed. Requires Macintosh Plus or later with 2 MB of RAM and a hard drive. $695. Night Diamonds Software, P.O. Box 1608, Huntington Beach, CA 92647. 714-842-2474. (Mar '90)

Nexpert Object Nexpert Object is a powerful C-based expert-system shell for the Mac. The system is rule- and object-based, with an excellent editing interface. The inference engine chains backward and forward, and inheritance is bidirectional between classes and objects. Knowledge bases can be ported to other platforms without rewriting. Not copy-protected but installation is limited to one per package. No Cut and Copy commands. Version 1.1 reviewed. Version 3.0 shipping. Requires Macintosh Plus or later and System 6.03 or later; hard drive and color monitor recommended. $5,000. Neuron Data, Inc., 156 University Ave., Palo Alto, CA 94301. 800-876-4900 or 415-321-4488. (Sept '89)


MICE RATINGS
PostShow is an interactive set of modules that lets programmers see the effects of PostScript code. Operation is straightforward. Adequate speed. Supports the most common PostScript commands. Version 1.0 reviewed. Version 1.1 shipping. Requires Macintosh Plus or later with 2 MB of RAM for use under MultiFinder (hard drive recommended). $224.95. PostShow Professional (22 extra fonts), $294.90. Lincoln & Co., 29 Domino Dr., Concord, CA 94519. 415-780-7469 or 508-369-1441. (Apr '90)

Preditor is a programming editor that performs rectangular editing — it manipulates blocks of text that aren't a full page width. Marred by different performance, an odd interface, and a weak manual. Version 1.0 reviewed. Version 2.0 shipping. Requires Macintosh Plus or later and System 6.04 or later. $120. Evatec, P.O. Box 3792, Reston, VA 22091. 703-255-0999, (Mar '90)

Prograph is a completely visual, object-oriented programming language that automates the generation of 32-bit-clean C code. Programs constructed by connecting special icons; the linking icons represent two ways logically in the program. Includes an interpreter (for use during program design) and its own compiler for creating stand-alone applications. Supports System 7, outline fonts, and IAC. Excellent management of Balloon Help coding. Not powerful enough for commercial applications but heartily recommended for budding C programmers and in-house corporate developers. Good documentation and support. Version 2.5 reviewed. Requires Macintosh Plus or later, System 6.04 or later, 2 MB of RAM, and a hard drive. $495. Components Software, P.O. Box 201, Rocky Hill, NJ 08853. 800-633-4252 or 609-497-4501. (Oct '88)

ScriptExpert is a HyperTalk helper for constructing HyperCard scripts. Version 1.0 reviewed. Version 2.0 shipping. Requires Macintosh Plus or later and HyperCard 1.2.5 or 2.0 (package includes software for both versions). $99.95. Components Software, P.O. Box 201, Rocky Hill, NJ 08853. 800-633-4252 or 609-497-4501. (Oct '88)

Spinnaker PLUS is a HyperCard-like development environment. Uses concept of hyperobject with limitations. Good use of object graphics and color. Has unique specialized fields for word-processing and database text. Supports multiple platforms. Version 2.5 shipping. Requires Macintosh Plus or later, System 6.03 or later, and 2 MB of RAM. $495. Spinnaker Software Corp., 201 Broadway, Cambridge, MA 02139. 800-826-0706 or 617-494-1200. (Dec '90)

SuperCard offers capabilities that HyperCard lacks. An excellent tool for developing animated presentations and other graphically rich applications. Its control over user interface and its ability to produce stand-alone applications distinguish it from most dedicated animation multimedia products. Development environment has improved significantly. Latest version is System 7.0-savvy. Version 1.1 reviewed. Version 1.6 shipping. Requires Macintosh Plus or later, System 6.04 or later, and 2 MB of RAM. $299. Aldus Corp., 411 First Ave., Seattle, WA 98104. 800-333-2538 or 206-628-2350. (Dec '90)

Think C is a hypercard speedC is an object-oriented programming environment based on the C language. Features rapid turnaround time for development and testing of programs through use of an integrated compiler, linker, and editor. Source-level debugger steps through code to examine variables' values and can save expressions in a data window that can be reused later. Has new optimizer and expanded object extensions with some C++ features. Includes significantly improved, easy-to-learn Think Class Library. Version 5.0 reviewed. Requires Macintosh Plus or later and System 6.03 or later; hard drive recommended. $299. Symantec Corp., 10201 Torre Ave., Cupertino, CA 95014. 800-441-7234 or 408-253-9600. (Sept '90) * '90 Eddy

THINK Pascal is at the cutting edge of software development for the Mac. Has full support for OOP (object-oriented programming) and has an exemplary development environment that includes integrated source-level debugging and extraordinarily fast compile-and-link times. Version 3.0 reviewed. Version 4.0 shipping. Requires Macintosh Plus or later and System 6.03 or later. $249; upgrade, $69. Symantec Corp., 10201 Torre Ave., Cupertino, CA 95014. 800-441-7234 or 408-253-9600. (Sept '90) * '90 Eddy

TMON Professional This popular low-level debugger displays memory in hexadecimal and ASCII, disassembles code (68000 up to 68040), and displays all blocks of text that aren't a full page width. Marred by different performance, an odd interface, and a weak manual. Version 1.0 reviewed. Version 2.0 shipping. Requires Macintosh Plus or later and System 6.03 or later. $600. TMON Professional, 201 Broadway, Cambridge, MA 02139. 800-826-0706 or 617-494-1200. (Dec '90)
$149.95. Mainstay, 5311-B Derry Ave., Agoura Hills, CA 91301. 818-991-6540. (June '87)

Wild Things

Wild Things is a set of 40 XCMDs that also teaches you about XCMDs. Comes on four disks, with two devoted entirely to source code. Code is provided in Pascal (MPW, TML, and Lightspeed), C (MPW and Lightspeed), and FORTRAN (MPW) for each of the 40 XCMDs. Includes HyperCard. Version 1.0 reviewed. Version 1.11 shipping. Requires Macintosh Plus or later, System 5.0 or later, and a hard drive. $150. Language Systems Corp., 441 Carlisle Dr., Herndon, VA 22070. 800-252-6479 or 703-478-0181. (Dec '89)

Resources


Art of Darkness: The After Dark Companion

To experienced Mac users, Berkeley Systems' After Dark screen saver may be the ultimate in fritterware (yes, it also extends the life of your screen phosphors). You can easily spend hours playing with the modules — covering your screen with underwater toasters or having the mower man chase Boris the cat around your monitor, for example. When you run out of ideas, turn to this entertaining book from Erfert Fenton, who tells you how to create dozens of effects. Includes a disk with nine new modules. $19.95. Peachpit Press, 2414 Sixth St., Berkeley, CA 94710. 800-283-8444 or 510-527-8555. (Dec '92)

Correct Quotes

Correct Quotes is a user-modifiable database of famous quotes. Good interface. Quickly searches by topic or by author. Not very comprehensive, but you can incorporate new quotes from celebrities such as yourself. Needs better variety of searchable topics. Version 1.0 reviewed. Requires Macintosh Plus or later, System 5.0 or later, and a hard drive. $49. WordStar International, Inc., 201 Alameda del Prado, Novato, CA 94949. 800-523-3520 or 415-382-8800. (July '92)

Creepy Crawlies

Spiders, snakes, bugs, and lizards are the subject of this fascinating and slightly odd CD-ROM. Organized into categories such as Wet Stuff, Killers, Pests, and Strange Habits, each entry includes a brief description of habits and habitat as well as a close-up photograph and a video clip. Good for school projects or just browsing. Version 2.0 reviewed. $149. Educorp Computer Services, 7434 Trade St., San Diego, CA 92121. 800-843-9497 or 619-536-9999. (Dec '92)

Danny Goodman's Macintosh Handbook Featuring System 7

HyperCard guru Danny Goodman and designer Richard Saul Wurman have created a guide to using your Mac that goes beyond most handbooks. Visual approach shows — rather than merely describes — the information most users want to know. Format is unusual, but you'll get a lot out of this book. $29.95. Bantam Computer Books, 666 Fifth Avenue, New York, NY 10103. 800-223-6834, ext. 9666 or 212-765-6500. (Dec '92)

Dead Mac Scrolls, The

Subtitled "How to Fix Hundreds of Hardware Problems Without Going Bankrupt," this book takes the fear out of fixing your Mac yourself. Describes hundreds of symptoms and possible repairs. Compares the cost (in time and money) of fixing your Mac yourself versus seeking outside help. Not a book for beginners. Should appeal to anyone with a little technical savvy and a tight budget. $32. Peachpit Press, 2414 Sixth St., Berkeley, CA 94710. 800-283-8444 or 510-527-8555. (Dec '92)

Design Essentials

Ambitious new users of Adobe Illustrator or Photoshop need this book. Concise text is direct and practical. Step-by-step illustrations are superb. Describes setting up the optimal system. Also covers details such as creating hand-tinted photographs and special type or 3-D effects. Recommended for professional as well as amateur designers. $39.95. Adobe Press, 11711 North College Ave., Carmel, IN 46032. 800-428-5331 or 317-573-2500. (Dec '92)

Digital Gourmet, The

For those who have a Mac and a printer within reach of their kitchen, this HyperCard-based collection of more than 1000 recipes is certainly easy to use. You're not going to find haute cuisine here (the recipes are more in the Spanish-rice and stewed-prunes class), but thorough nutritional data is provided for each recipe, you can mark your favorites, and you can search for recipes by ingredient. $49. Books-On-Disk, 311 Harvard St., Brookline, MA 02146. 617-734-9700. (Dec '92)

Dr. Macintosh


Ecocycling

Don Rittner's guide to on-line services, databases, and resources useful for anyone who wants to learn how digital telecommunications can protect the environment. One of the first books we've seen that spotlights the personal computer's role in political activism. $18.95. Peachpit Press, 2414 Sixth St., Berkeley, CA 94710. 800-283-8444 or 510-527-8555. (Dec '92)

Educorp CD-ROM

Educorp CD-ROM contains more than a gigabyte of shareware, public-domain software, and demoware in 23 categories such as business education, music, and fonts. Has an electronic bulletin-board system. Includes HyperCard 2.1 and QuickTime extension. Version 3.0 reviewed. Version 7.0 shipping. $199 (two-disc set). Educorp Computer Services, 7434 Trade St., San Diego, CA 92121. 800-843-9497 or 619-536-9999. (July '92)

Expanded Books

The Expanded Books series includes modern works and classics from authors such as Ken Kesey and Lewis Carroll. A great way to use your PowerBook for leisure reading. Published for use with HyperCard, the series lets you make notes or read annotations. Requires HyperCard 2.1 or later. $19.95 each. The Voyager Company, 1351 Pacific Coast Hwy., Santa Monica, CA 90401. 800-446-2001 or 310-451-1383. (Dec '92)

Family Doctor

Answering almost 2,000 of the most commonly asked questions about family health, this CD-ROM packs in a lot of information. Describes the action and side effects of commonly prescribed medications. Provides a guided tour of the human body. Uses intimidating medical terminology to categorize information, but there's plenty of useful material to explore. $79.99. Creative Multimedia Corp., 514 N.W. 11th St., Ste. 203, Portland, OR 97209. 800-262-7668 or 503-241-4351. (Dec '92)

FamilyCare

FamilyCare is a software handbook of childhood diseases from acne and appendicitis to whooping and yeast infections. The rule-based expert system gives advice based on symptoms. Lacks graphics. Version 1.0 reviewed.
**MiniFinders**


Grolier New Electronic Encyclopedia  
This CD-ROM is a clear winner, with 33,000 articles (ten million words) covering lots of up-to-date information. Certainly not all-inclusive, but major subjects generally have at least a few paragraphs of useful data. Minor subjects get a one-paragraph treatment. Innovative design includes many high-quality color maps, animations, famous paintings, photographs, and digitized sounds. Version 1991 Edition 2.0 reviewed. Version 4.0 shipping, Requires Macintosh Plus or later, System 6.07 or later, 2 MB of RAM, and a CD-ROM drive. $395. Grolier Electronic Publishing, Inc., Sherman Turnpike, Danbury, CT 06816. 800-356-5590 or 203-797-3500. (July '92)

GV: A Geographic Perspective on American History  
This interactive package, published by the National Geographic Society, includes a HyperCard stack on a floppy and multiple video clips on two videodiscs. Covers American history from before the Revolutionary War to the present. Intended for elementary and junior-high-school students, the stack is primarily a directory of the videodiscs’ contents. Video clips are good quality but derive mostly from still images. Requires the Mac to the role of a simple fast-forward control. If you skip around chronologically, be prepared to swap and flip videodiscs frequently. Requires Macintosh Plus or later, HyperCard, videodisc player, and color TV monitor. $79.50. Optical Data Corp., 30 Technology Dr., Warren, NJ 07059. 800-524-2481 or 908-668-0022. (Dec '91)

Mac Made Easy, The  
Martin Matthews’ book is a pared-down manual that gets new Mac users up and running fast. Definitely recommended if you already have Mac experience. Covers all the basics. Includes useful introduction to all Mac models available at time of book’s most recent revision. $19.95. Osborne/McGraw-Hill, 2600 Tenth St., Berkeley, CA 94710. 510-548-2805. (Dec ‘92)

Mac Shareware 500, The  
On-line services such as CompuServe and America Online and user groups are terrific sources of free (or nearly free) public-domain software. This comprehensive guidebook by Ruffin Prevost and Rob Terrell explains just what shareware is and how you can get it. A trial membership to America Online and four disks containing shareware programs are included. $39.95. Ventana Press, P.O. Box 2468, Chapel Hill, NC 27515. 919-942-0220. (Dec '92)

**HyperAtlas**  
HyperAtlas is a HyperCard collection of U.S. and world maps that are networked to stacks containing economic, political, and population data. Requires Macintosh Plus or later, HyperCard, and a hard drive. $99. MicroMaps Software, P.O. Box 757, Lambertville, NJ 08530. 800-334-4291 or 609-397-1611. (Oct '88)

HyperBible  
HyperBible includes more than nine megabytes of easily searchable Bible text. There are several different ways to find desired material. Has audible pronunciation of more than 400 Bible names. Cluttered and inelegant interface. Version 2.0 reviewed. Version 2.04 “Thompson Chain” shipping. Requires Macintosh Plus or later with System 6.05 or later and a hard drive. $49. Kirkbride Technology, P.O. Box 606, 335 W. 9th St., Indianapolis, IN 46206. 800-428-4385 or 317-633-1900. (July '92)

Macintosh Dictionary, The  
Mac users are as guilty of using jargon and TLAs (three-letter acronyms) as any other group is, so if you’re not up to speed on the lingo, get a copy of this dictionary. Written in a casual, easy-to-read style, The Macintosh Dictionary covers the basics and is small enough to tote along to conferences and other meetings. $10.95. Addison-Wesley Publishing Co., Inc., 1 Jacob Way, Reading, MA 01867. 617-944-3700. (Dec '92)

**Ozlar Plus**  
This substantial HyperCard stack of Jewish wit and wisdom is fun and informative. Has well-designed interface. Database needs more topics and better explanation of stack icons. Version 1.0 reviewed. Requires HyperCard. $39.95. Davka Corp., 7074 N. Western Ave., Chicago, IL 60645. 312-465-4071. (July '92)

**Picture It!**  
This foreign-language picture dictionary contains more than 1,000 words. Lets you develop your foreign vocabulary (Spanish, French, Italian, and German are available) by presenting pictures, words, and sounds on your Mac’s screen. Creates custom tutorials by grouping certain flash cards together or by adding your own words. Definitions and help are available in both English and the foreign language. $69.95 each. Penton Overseas, 2091 Las Palmas Dr., Ste. A, Carlsbad, CA 92009. 619-431-0060. (Dec '92)

**Point of View**  
Point of View is a dynamic history program that makes exploring American history interesting and fun. Comes with more than 2,000 pages of documents, hundreds of graphics, and 140 census tables, with tools for searching, accessing, and displaying the data. Contains many typographical errors and does not cite source quotations for any of its documents. Version 1.0 reviewed. Requires Macintosh Plus or later (hard drive recommended), $199.95. Scholastic Software, 2531 E. McCoy St., P.O. Box 7502, Jefferson City, MO 65102. 800-541-5513. (Nov '90)

Roger Ebert’s Movie Home Companion  
This CD-ROM includes a ton of information about movies released between 1986 and 1992. Lacks tinkets such as theme music, QuickTime clips, and interactive doodads. Movie reviews have star ratings. Includes full text of interviews Ebert has conducted with stars and directors. Can
search for phrases and do Boolean searches (find Woody Allen and Diane Keaton but not Mia Farrow), $79.95. Quanta Press, 1313 Fifth St. S.E., Ste. 208C, Minneapolis, MN 55414. 612-379-3956. (Dec '92)

Shakespeare 
What’s stored in this CD-ROM are all the Bard’s sonnets and poems plus his plays in both modern and Queen’s English. Includes CMC’s wickedly fast rapid-access DiscPassage software. This and other CMC discs (such as Audubon’s Birds and Mammals, various medical resources, and even Sherlock Holmes) use only the seemingly unsophisticated Geneva type font — which every Mac operating system includes. $29.99. Creative Multimedia Corp., 115 Connecticut St., Ste. 203, Portland, OR 97209. 800-262-7668 or 503-241-4351. (July ’92)

Sports Illustrated CD-ROM 

Sports Almanac 

Review the sports highlights and low moments of 1991 with this glossy CD produced by Sports Illustrated magazine and its sister company Warner New Media. Has plenty of statistics backed up by excellent photography and overview articles on a range of sports. A good gift item for sports freaks (but don’t expect to see any swimsuits). Version 1991 (year) reviewed. $59.99. Warner New Media, 3500 W. Olive Ave., Ste. 1050, Burbank, CA 91505. 818-955-9999. (Dec ’92)

State Data 

State Data is a series of HyperCard stacks (a Microsoft Works file is also available) that present information about the 50 states. These well-designed and -integrated documents can be a useful resource for teachers. Data should be more up-to-date. Sports focus is entirely on professional teams. Requires HyperCard or Microsoft Works. $40. Data Disc International, 1430 Willamette, Ste. 236, Eugene, OR 97401. 503-686-9859. (July ’90)

Sun Clock 

A little like System 7’s Map DA, Sun Clock tells you what time it is anywhere in the world. Places a readout on the screen that tells time in another time zone. Useful if you make a lot of overseas phone calls. Can’t simultaneously track more than one time zone. Version 3.0 reviewed. $40; modules for After Dark and Pyro screen savers, $20 each. MTL Software, P.O. Box 19787, Portland, OR 97280. 503-452-0632. (Dec ’92)

Time Table of History: Science and Innovation 

Time Table of History: Science and Innovation presents events from the history of technology on a HyperCard-based CD-ROM. Text, graphics, and sound are nicely integrated, and related events are well linked. Includes HyperCard. Version 1.0 reviewed. Version 2.0 shipping. Requires Macintosh Plus or later, HyperCard 2.0, and a CD-ROM drive. $125.95. Xiphias, 8785 Venice Blvd., Los Angeles, CA 90034. 310-841-2790. (May ’89)

Vietnam War, The 

The Vietnam War is a stack that uses HyperCard fully and brilliantly to provide an excellent history through the use of sounds, animation, generally superior graphics, and unobtrusive but extensive links. Version 2.0 reviewed. Version 2.1 shipping. Requires Macintosh Plus or later, HyperCard 2.0, and a hard drive. $24.95 direct. Regeneration Software, 377 Collado Dr., Scotts Valley, CA 95066. 408-438-5791. (Apr ’90)

View from Earth, The 

This CD-ROM tracks the solar eclipse of July 11, 1991, and provides audiovisual information about the sun, earth, moon, and eclipses in general. If you’re planning to fly down to South America to view the November 1994 solar eclipse, this CD-ROM is good preparation. Best used in conjunction with the Voyager Through the Universe series from Time-Life Books. $79.98. Warner New Media, 3500 W. Olive Ave., Ste. 1050, Burbank, CA 91505. 818-955-9999. (Dec ’92)

Voyager, the Interactive Desktop Planetarium 

Voyager, the Interactive Desktop Planetarium, lets you view the sky as a star chart, as a celestial sphere, or as seen from anywhere in the universe. Includes an extensive astronomical database. Terrific learning tool. Version 1.0 reviewed. Version 1.2 shipping. Requires Mac Plus or later and System 6.03 or later. $124.50. Carina Software, 830 Williams St., San Leandro, CA 94577. 510-352-7328. (Sept ’89)

Webster’s Ninth New Collegiate Dictionary 

This CD-ROM includes a complete electronic version of the standard hardcover dictionary. Type can be viewed at any size. Has pronounceable speech engine. Can pronounce selected words, but poor audio fidelity makes comprehension difficult. Version 1.05 reviewed. $199.95. Highlighted Data, Inc., 4350 N. Fairfax Dr., Suite 450, Arlington, VA 22203. 703-516-9211. (July ’92)

Zen and the Art of Resource Editing 

Apple’s ResEdit application is used to create and edit such Mac resources as menus, dialog boxes, and icons. If you’ve ever wanted to tinker with ResEdit, this guide from the Berkeley Macintosh Users Group is a great place to start. Editors Derrick Schneider, Hans Hansen, and Noah Potkin explain how experienced, careful Mac users can customize their system software. Includes disk containing the latest version of ResEdit. $24.95. Peachpit Press, 2414 Sixth St., Berkeley, CA 94710. 800-283-9444 or 510-527-8555. (Dec ’92)

Scanners

Abaton 8-bit Apple Scanner Upgrade 

This upgrade greatly improves the gray-scale capabilities of the Apple Scanner. Requires Macintosh Plus or later and Apple Scanner. $59.50. Abaton (Everex Systems), 48431 Milmont Dr., Fremont, CA 94538. 800-628-3837 or 510-498-1111. (Sept ’90)

Abaton Scan 300/GS 

This 300-dpi monochrome scanner creates good halftone images. Includes ImageStudio software. Requires Macintosh Plus or later. $1,595. Abaton (Everex Systems), 48431 Milmont Dr., Fremont, CA 94538. 800-628-3837 or 510-498-1111. (Sept ’90)

Agfa Focus II S800GSE 

This 8-bit grayscale-only flatbed scanner has high resolution. Optional, excellent software is highly intuitive. Requires Macintosh Plus or later. $3,750; McView software, $495. Agfa Division, Miles, Inc. (Business Imaging Systems), 200 Ballardvale St., Wilmington, MA 01887. 800-685-4271 or 508-658-5600. (Sept ’90)

Agfa Focus S800GS 

The Focus S800GS is a 400-dpi, 6-bit grayscale scanner that simulates resolutions up to 800 dpi. It has superior resolution and good halftone quality. Professional-quality software has extensive editing features and printing options. Users requiring 8-bit (256 grayscale) resolution will need Agfa’s Focus II S800GSE. Requires Macintosh Plus or later and McView software. $2,495; McView software, $495. Agfa Division, Miles, Inc. (Business Imaging Systems), 200 Ballardvale St., Wilmington, MA 01887. 800-685-4271 or 508-658-5600. (June ’89) ★ ’88 Eddy

Apple OneScanner 

The Apple OneScanner is not state-of-the-art but is adequate for scanner neophytes. The 8-bit grayscale scanner comes with AppleScan software and HyperScan, written by Bill Atkinson. Also works well with Ofoto software from Light Source. Requires SCSI cables, hard drive, and System 6.03 or later. $1,295. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014. 800-776-2333 or 408-996-1010. (Sept ’90)

AVR 3000/CL Plus 

This 24-bit, 300-dpi, flatbed color scanner has a maximum...
### MINIFINDERS

Image area of 8.5 x 14 inches. Colors are not saturated, and Easy Scan DA software is hard to use. Comes with a SCSI interface and cable. External SCSI termination. Two-year warranty. Bundled with Limited Edition version of Photoshop plus plug-ins for Photoshop and ColorStudio. Maximum software-interpolated resolution is 1,600 dpi for color scans and line art. Requires Macintosh with 24-bit-color display system. $1,890. Advanced Vision Research, Inc., 562 S. Milpas Blvd., Milpitas, CA 95035. 800-544-6243 or 408-956-0350. (Dec '91)

**BarneyScan CIS-3515 **

This 35mm slide scanner is fast and easy to set up. Good image quality. Includes excellent CIS QuickScan software and Photoshop plug-in. Manual focus is difficult to use. Image preview is in gray scale only. Uses NuBus interface card. Requires regular calibration. Requires Macintosh II series or higher, System 6.05 or later, 4 MB of RAM, and a color display system. $4,495. BarneyScan Corp., P.O. Box 14467, Oakland, CA 94614. 510-562-2480. (Nov '92)

**BarneyScan CIS-4520RS **

This color film scanner provides excellent prepress-quality images with good resolution and color range. Focus is automatic without manual override. Bundled with excellent QuickScan and CIS Color Access separation software. Large footprint. Supports mounted 35mm slides plus 2.25-x-2.25-inch, 6-x-7-cm, and 4-x-5-inch film. Includes Photoshop plug-in. Requires Macintosh II series or higher, System 6.05 or later, 8 MB of RAM, and a 24-bit color display system. $19,995. BarneyScan Corp., P.O. Box 14467, Oakland, CA 94614. 510-562-2480. (Nov '92)

**Chinon DS-3000 **

This 300-dpi black-and-white overhead scanner has poor resolvability. Good OCR. Ambient lighting is troublesome. Inexpensive but slow. Requires Mac Plus or later.

$695. Chinon America, Inc., 660 Maple Ave., Torrance, CA 90503. 800-441-0222 or 310-533-0274. (Sept '90)

**Complete PC Half-Page Scanner/400 **

This hand-held scanner has very good resolution. True 400-dpi scans. Excellent OCR. Version 1.0 reviewed. Version 2.0 shipping. Requires Mac Plus or later and System 6.03 or later. $399. Complete PC, 1983 Concourse Dr., Sunnyvale, CA 95131. 800-634-5558 or 408-434-0145. (Sept '90)

**Epson ES-300C **

This 24-bit, 300-dpi, flatbed color scanner has a maximum image area of 8.5 x 11.7 inches. ScanDo DA software produces unreliable colors. Comes with a SCSI interface and cable. Internal SCSI termination. Bundled with ColorStudio 1.5 and ImageStudio 1.7 plus plug-ins for Photoshop, ColorStudio, and ImageStudio. Maximum software-interpolated resolution is 300 dpi for color scans and 600 dpi for line art. Has color-preview mode. Requires Macintosh with 24-bit-color display system. $1,994 (includes Mac interface kit).

Epson America, Inc., 20770 Madrona Ave., Torrance, CA 90503. 800-922-8911 or 310-782-0770. (Dec '91)

**Howlett-Packard ScanJet llc **

The ScanJet llc is a fast, affordable, 400-dpi color flatbed scanner. Provides accurate color rendition and can interpolate to a resolution of 1,600 dpi. Standard resolution is excellent for use in OCR. Software provides time-saving color preview that dynamically displays proposed changes to scanned image. Uses lever instead of removable screw to lock scan head during transport. Bundled DeskScan II software has handy self-installer and makes calibration or contrast correction a breeze. Does not include software plug-ins for Photoshop or ColorStudio. Requires 24-bit color display system, $1,995: automatic sheet feeder, $695; Mac interface kit, $400. Hewlett-Packard (Direct Marketing), P.O. Box 58059, MS#11L-SJ, Santa Clara, CA 95051. 800-752-0900 (USA) or 800-387-3867 (Canada). (Apr '92)

**Howlett-Packard ScanJet llp **

This moderately priced grayscale scanner delivers excellent image quality, especially with the auto-exposure feature. Doesn't require SCSI interface box. Bundled DeskScan II software is easy to use and lets you calibrate scanner to a specific printer. Bundled DeskPaint software from Zedcor lets you acquire text or images for direct transfer into another application. Flimsy scanner cover can snap off accidentally. Poor documentation and on-line help. Requires 2 MB of available RAM, a hard drive, and System 6.05 or later. $1,995; optional sheet feeder, $395. Hewlett-Packard (Direct Marketing), P.O. Box 58059, MS#11L-SJ, Santa Clara, CA 95051. 800-752-0900 (USA) or 800-387-3867 (Canada). (Nov '92)

**Howlett Personal Color Scanner s **

This 24-bit, 300-dpi, flatbed color scanner has a maximum image area of 8.5 x 14 inches. Has fast-scan mode for preliminary setup before final scan. Normal-scan mode has better quality but is very slow. Comes with a Centronics NuBus interface and cable. Bundled with Limited Edition version of Photoshop plus Photoshop plug-in. Maximum software-interpolated resolution is 600 dpi for color scans and line art. Software has color-preview mode. Requires NuBus-capable Mac and 24-bit-color display system. $1,295 direct. Howtek, Inc., 21 Park Ave., Hudson, NH 03051. 800-444-6983 or 603-882-5200. (Dec '91)

**Leaf Systems Leafscan 35 **

This well-built 35mm slide scanner offers excellent film output quality, with good shadow detail and color. Automatic focus without manual override. Color preview. Supports mounted 35mm slides or strip film. Includes Photoshop plug-in. Requires Macintosh II series or higher, System 6.03 or later, 8 MB of RAM, and a 24-bit color display system. $6,995. Howtek, Inc., 21 Park Ave., Hudson, NH 03051. 800-444-6983 or 603-882-5200. (Sept '90)

**La Cie Silverscanner **

This 24-bit, 300-dpi, flatbed color scanner has a maximum image area of 8.5 x 11.7 inches. Colors suffer from Epson scan engine, but powerful software provides complete image control. Bundled with Color ll, ColorStudio 1.5, or complete Photoshop version 2.0; also includes plug-ins for Photoshop, ColorStudio, Digital Darkroom, ImageStudio, and RagTime. Comes with a SCSI interface and cable. Internal SCSI termination. Maximum software-interpolated resolution is 1,200 dpi for color scans and line art. Has color-preview mode. Requires Macintosh Plus or higher with 4 MB of RAM. Bundled with either Photoshop or ColorStudio, $1,799; with Color ll, $1,399. La Cie Ltd., 8700 S.W. Creekside Place, Beaverton, OR 97005. 800-999-0143 or 503-520-9000. (Dec '91)

**Leaf Systems Leafscan 35 **

This well-built 35mm slide scanner offers excellent film output quality, with good shadow detail and color. Automatic focus without manual override. Color preview. Supports mounted 35mm slides or strip film. Includes Photoshop plug-in. Requires Macintosh II series or higher, System 6.03 or later, 8 MB of RAM, and a 24-bit color display system. $6,995. Howtek, Inc., 21 Park Ave., Hudson, NH 03051. 800-444-6983 or 603-882-5200. (Sept '90)

**Howtek Scanmaster 35 **

This slide scanner has one major appeal: low price. Given its slow scan times, poor color fidelity, and unfriendly software, the savings fail to compensate for overall poor performance. Scans at 2,048 x 3,000 pixels. Images from the scanner are usable after tweaking with an application such as Photoshop. Version 35/II reviewed. Version 35 Plus shipping. Requires Macintosh II series or higher and color display system. $6,995. Howtek, Inc., 21 Park Ave., Hudson, NH 03051. 800-444-6983 or 603-882-5200. (Sept '90)

**La Cie Silverscanner **

This 24-bit, 300-dpi, flatbed color scanner has a maximum image area of 8.5 x 11.7 inches. Colors suffer from Epson scan engine, but powerful software provides complete image control. Bundled with Color ll, ColorStudio 1.5, or complete Photoshop version 2.0; also includes plug-ins for Photoshop, ColorStudio, Digital Darkroom, ImageStudio, and RagTime. Comes with a SCSI interface and cable. Internal SCSI termination. Maximum software-interpolated resolution is 1,200 dpi for color scans and line art. Has color-preview mode. Requires Macintosh Plus or higher with 4 MB of RAM. Bundled with either Photoshop or ColorStudio, $1,799; with Color ll, $1,399. La Cie Ltd., 8700 S.W. Creekside Place, Beaverton, OR 97005. 800-999-0143 or 503-520-9000. (Dec '91)

**Leaf Systems Leafscan 35 **

This well-built 35mm slide scanner offers excellent film output quality, with good shadow detail and color. Automatic focus without manual override. Color preview. Supports mounted 35mm slides or strip film. Includes Photoshop plug-in. Requires Macintosh II series or higher, System 6.03 or later, 8 MB of RAM, and a 24-bit color display system. $6,995. Howtek, Inc., 21 Park Ave., Hudson, NH 03051. 800-444-6983 or 603-882-5200. (Sept '90)

**Howtek Scanmaster 35 **

This slide scanner has one major appeal: low price. Given its slow scan times, poor color fidelity, and unfriendly software, the savings fail to compensate for overall poor performance. Scans at 2,048 x 3,000 pixels. Images from the scanner are usable after tweaking with an application such as Photoshop. Version 35/II reviewed. Version 35 Plus shipping. Requires Macintosh II series or higher and color display system. $6,995. Howtek, Inc., 21 Park Ave., Hudson, NH 03051. 800-444-6983 or 603-882-5200. (Sept '90)
This hand-held scanner works well with 8-bit, 256-level grayscale images. Includes excellent ThunderWorks and Enhance image-processing software programs. For OCR, scanner is somewhat fuzzy about input speed and scanner-head positioning. Under System 7, ReadiPro OCR software (included) allows scanner to send text data directly into an open application, but it works erratically. Connects anywhere in SCSI chain via included converter box. Version 1.32 reviewed. Requires Macintosh Plus or later with 2 MB of available RAM, System 6.07 or later, and a hard drive. $649.

Thunderware, Inc., 21 Orinda Way, Orinda, CA 94563. 800-445-1166 or 510-254-6381. (Sept '92)

**LogicTeck ScanMan Model 32**

This hand-held gray-scale scanner supports resolutions as high as 400 dpi but only 32 levels of gray. Software handles basic OCR adequately, but scanned text must be exported to a separate document and then opened with a word processor. Supports image and text stitching. Included SCSI-connector box has internal termination, so scanner must be located at end of SCSI chain, or the box must be opened to remove termination. Bundled with CatchWord Pro OCR software. Version 2.1 reviewed. Requires Macintosh Plus or later with 2 MB of available RAM and a hard drive. $599.

LogicTeck, Inc., 6505 Kaiser Dr., Fremont, CA 94555. 800-231-7717 or 510-795-8500. (Sept '92)

**Microtek ScanMaker 1865S**

This easy-to-use, affordable 35mm slide scanner provides good images, moderate resolution, and decent color. Images often require color correction in an image-editing program. Adequate for multimedia, video production, and FPO page-layout production but not for high-end prepress work. Focus and calibration are automatic without manual override. Small footprint. Supports mounted 35mm slides includes Photoshop plug-in and handy DA software. Requires Mac II series or higher, System 6.03 or later, 4 MB of RAM, and a color display system. $2199.

Microtek Lab, Inc., 680 Knox St., Torrance, CA 90502. 800-654-4160 or 213-321-2121. (Nov '92)

**Microtek ScanMaker 6002S**

This 24-bit, 300-dpi, flatbed color scanner has a maximum image area of 8.5 x 13.5 inches. Mediocre scan quality but can adjust scans, with bundled Photoshop 2.0. Comes with a SCSI interface and cable. External SCSI termination. Includes DA scanning software and Photoshop plug-in. Maximum software-interpolated resolution is 600 dpi for color scans and line art. Has color-preview mode. Requires Macintosh with 24-bit-color display system. $1999.

Microtek Lab, Inc., 680 Knox St., Torrance, CA 90502. 800-654-4160 or 213-321-2121. (Dec '91)

**Nikon LS-3510AF**

This fast slide scanner needs friendlier software but offers variable input resolution and a wide range of controls. Delivers high resolution and good color. Focusing is either automatic or manual. Automatic calibration. Color preview. Powerful software but not for novices. Supports 35mm or 40mm (SuperSlide) formats either mounted or as strip film. Bundled with either Photoshop or ColorStudio. Includes Photoshop plug-in. Excellent documentation. Requires Macintosh II series or higher with System 6.03 or later, 8 MB of RAM, and a 24-bit color display system. 8-bit version, $9,535; 12-bit version, $11,316. Nikon Electronic Imaging, 1300 Walt Whitman Rd., Melville, NY 11747. 800-526-4566 or 516-547-4355. (Nov '92)

NISCA Nisan Spectra Mac

This 24-bit, 200-dpi, portable flatbed color scanner allows a maximum image area of 4 x 6 inches. Compact and offers good scan quality for a portable slide scanner. Uses serial interface and modem cable. Extremely slow. Lacks bundled scanning or image-retouching application and plug-ins. Maximum software-interpolated resolution is 400 dpi for color scans and line art. ScanDo DA software has color-preview mode. Requires Macintosh SE or higher and third-party modem (serial) cable. $995. NISCA, Inc., 1919 Old Denton Rd., Ste. 104, Carrollton, TX 75006. 800-245-7226 or 214-242-9696. (Dec '91)

PageBrush Professional

This 6-bit, gray-scale, hand-held scanner reads 64 shades of gray at resolutions as high as 300 dpi. Saves images in 8-bit format. Uses dedicated NuBus card and transparent acetate grid (placed over artwork). Can double as overgrown two-button optical mouse. Scanner head has brightness control that's adjustable on the fly. Innovative software, which automatically stitches images together during scanning, is painfully slow but can export images in TIFF, PICT, EPS, and MacPaint formats. Version 1.0 reviewed. Version 1.02 shipping. Requires Macintosh II series or higher with 2 MB of available RAM and a hard drive. $795.

Mitsubishi International Corp., 50 California St., Ste. 3000, San Francisco, CA 94111. 415-544-2781. (Feb '92)

**PC Scan 3000**

This flatbed scanner has excellent 300-dpi resolvability. Provides very even illumination and 8-bit gray-scale capability. Requires Macintosh Plus or later. Scanner with imaging software only, $1,275; bundled with Publish Pac and Recognize! OCR software, $1,935. DEST, 1015 E. Brokaw Rd., San Jose, CA 95131. 408-436-2700. (Sept '90)

**Polaroid CS-500 Digital Photo Scanner**

This 24-bit color scanner quickly and efficiently processes images as large as 4 x 6 inches. Resulting images are sharp and detailed. Highest resolution setting is 300 dpi. Bundled software includes a system extension, the SprintScan application, and a Photoshop plug-in. Software allows for easily customized color-value settings. Includes several preconfigured settings files to handle different types of photos. Requires Macintosh II series or higher, System 6.03 or later, and a 24-bit color display system. $3,995. Polaroid Corp., 575 Technology Square, Cambridge, MA 02139. 800-225-1618 or 617-577-2000. (Oct '92)

**Tamarack ArtiScan 3000C**

This 24-bit, 300-dpi, flatbed color scanner has a maximum image area of 8.5 x 11.75 inches. Fast. Offers good color quality. Confusing software interface. Comes with a SCSI interface and cable. Internal SCSI termination. Bundled with Photoshop 1.07 plus Photoshop plug-in. Maximum software-interpolated resolution is 300 dpi for color scans and line art. Lacks color-preview mode. Requires Macintosh II series or higher with 2 MB of RAM, System 6.04 or later, a hard drive, and a 24-bit color display system. $995 direct. Artix Technologies, Inc. (Tamarack Telecom), 1544 Centre Pointe Dr., Milpitas, CA 95035. 800-643-0666 or 408-956-0144. (Dec '91)

**MICE RATINGS**

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*This well-built film scanner offers excellent film-output quality, with good shadow detail and color. Automatic focus without manual override. Large footprint. Color preview. Supports mounted and unmounted 35mm, 2.25x2.25-inch, and 4x5-inch film. Includes Photoshop plug-in. Requires Macintosh II series or higher, System 6.03 or later, 8 MB of RAM, and a 24-bit color display system. $14,995. Leaf Systems, Inc., 250 Turnpike Rd., Southborough, MA 01772, 508-460-8300. (Nov '92) |

**LightningScan Pro 256**

This hand-held scanner works well with 8-bit, 256-level grayscale images. Includes excellent ThunderWorks and Enhance image-processing software programs. For OCR, scanner is somewhat fuzzy about input speed and scanner-head positioning. Under System 7, ReadiPro OCR software (included) allows scanner to send text data directly into an open application, but it works erratically. Connects anywhere in SCSI chain via included converter box. Version 1.32 reviewed. Requires Macintosh Plus or later with 2 MB of available RAM, System 6.07 or later, and a hard drive. $649.

Thunderware, Inc., 21 Orinda Way, Orinda, CA 94563. 800-445-1166 or 510-254-6381. (Sept '92)
ThunderScan Plus 

The ThunderScan was the original Mac scanner. It still does the job, albeit slowly. Can scan only materials that can be fed through a printer. Excellent software. Can scan up to 32 levels of gray. Scanned images are bitmapped but can also be saved as PostScript files. Version 1.05 reviewed. Version 1.31 shipping. Requires Macintosh Plus or later and ImageWriter or ImageWriter II; requires separate power supply for use with Mac II series. $249. Thunderware, Inc., 21 Orinda Way, Orinda, CA 94563. 800-445-1166 or 510-254-6581. (Mar '90) ★ ★ ★ ★

Thunderware

LightningScan 400

This hand-held gray-scale scanner combines good hardware performance and excellent software. Scans at up to 400 dpi. Snap-on guide. Externally terminated SCSI box. Requires Macintosh Plus or later. $495. ThunderWorks 1.31 software upgrade, $24. Thunderware, Inc., 21 Orinda Way, Orinda, CA 94563. 800-445-1166 or 510-254-6581. (Sept '90) ★ ★ ★ ★

Typist Plus Graphics

This hand-held scanner can handle both OCR and 1-bit black-and-white graphics. Gray-scale images are interpolated through software. Text-character recognition is good, although slow and somewhat finicky compared with industrial-strength software-only OCR packages such as OmniPage Pro. Can input text directly into a Mac application. Can stitch together text but not graphics. Scan head is 5.25 inches wide. Version 2.0 reviewed. Requires Macintosh SE or later with 4 MB of RAM, MultiFinder or System 7, and a hard drive. $695. Caere Corp., 100 Cooper Ct., Los Gatos, CA 95030. 800-535-7226 or 408-395-7000. (Sept '92) ★ ★ ★ ★

UMAX UC1200S

This fast, affordable, 24-bit color flatbed scanner uses software interpolation to boost its 600-dpi resolution up to 1,200 dpi. Accurate colors and no registration problems. Uses a one-pass scanning engine and a 2-MB image buffer. Included software is easy to use but has weak interface and confusing dialog boxes. Requires Macintosh II series or higher, 8 MB of RAM, and a 24-bit color display system. $5,495. UMAX Technologies, Inc., 3170 Coronado Dr., Santa Clara, CA 95054. 800-562-0311 or 408-982-0771. (Oct '92)

UMAX UC630

This 24-bit, flatbed color scanner has a maximum image area of 8.5 x 14 inches. Resolution is 300 x 600 dpi. Fast. Offers good color quality and registration. Confusing software interface. Comes with a SCSI interface and cable. Internal SCSI termination, and only one port is provided. Bundled with Photoshop 2.0 plus Photoshop plug-in. Maximum software-interpolated resolution is 600 dpi for color scans and line art. Lacks color-preview mode. Requires Macintosh with minimum 4 MB of RAM. $1,095. UMAX Technologies, Inc., 3170 Coronado Dr., Santa Clara, CA 95054. 800-562-0311 or 408-982-0771. (Dec '91)

UMAX UG630

This 300-dpi flatbed scanner has excellent resolvability and gray scale quality. Convenient and easy to maintain. Includes Scanner Interface Kit. Requires Macintosh Plus or later with 2 MB of RAM. $1,550. UMAX Technologies, Inc., 3170 Coronado Dr., Santa Clara, CA 95054. 800-562-0311 or 408-982-0771. (Sept '90) ★ ★ ★ ★

Varityper 1200

High-resolution, 400-dpi scanner with excellent OCR capabilities. Powerful software controls. Price includes Mac IIX with 8 MB of RAM. $29,000. Varityper, 11 Mt. Pleasant Ave., East Hanover, NJ 07936. 800-631-8134 or 201-887-8000. (Sept '90)

Calculator Construction Set

Calculator Construction Set lets you build almost any sort of calculator imaginable. The finished calculators are genuine working DAs. Takes some effort and you need to read the manual, but the results are worth it. Version 2.0 reviewed. Version 2.096 shipping. Requires Macintosh Plus or later; hard drive recommended. $99.95. Dubl-Click Software, Inc., 22521 Styies St., Woodland Hills, CA 91367. 800-775-2068 or 818-888-2068. (Feb '90)

Data Desk

DataDesk, a business statistics package, is excellent for sophisticated analyses. Features great exploratory interactive graphics and solid data handling. Easy to use. Good documentation and on-line help. Lacks econometric procedures and presentation-enhancement features. Importing restrictions may cause problem. Version 3.0 reviewed. Requires Macintosh Plus or later and System 6.03 or later. $595. Data Description, Inc., P.O. Box 4555, Ithaca, NY 14852. 607-257-1000. (Apr '90)

DataMerge

DataMerge simplifies manipulating tabular data. It works with all major spreadsheet programs and can merge up to nine files. The files can be larger than existing RAM. Excellent performance. Version 2.0 reviewed. Version 2.03 shipping. Requires Mac Plus or later and a hard drive. $99 direct. Seawell Micro-Systems, Inc., 3808 39th Ave. S.W., Seattle, WA 98116. 206-322-3123. (May '90)

DataPivot

DataPivot is an intuitive, easy-to-use program for data analysis. Lets you create a variety of cross-tabular reports from the same worksheet or data record without the arduous task of writing complex spreadsheet formulas and macros. Provides many simple report formats and views of numerical or textual data. Automatically recalculates formulas and totals when you pivot a report by interchanging columns and rows. Includes many “gadget” tools for quickly manipulating data, and can import or export data in a variety of formats. Can’t substitute for specialized statistical-analysis packages, and...

DeltaGraph Professional

DeltaGraph Pro is a powerful color charting and graphics tool. Creates many types of 2- and 3-D charts. Easy to use and can import data from most sources. Has fairly complete spreadsheet features, but real strength is transforming imported spreadsheets into high-quality color business graphics. Good graphics exporting. Slide-show presentation module supports QuickTime movies and digitized sound. Presentations can have wide variety of special effects, timing controls, and automated continuous loops. No support for combination graphs, data recoding, or pictures. Version 2.0 reviewed. Version 2.01 shipping. Requires Macintosh Plus or later with 2 MB of RAM. System 6.03 or later, and a hard drive. $295. DeltaPoint, Inc., 2 Harris Court, Ste. B-1, Monterey, CA 93940. 800-367-4334 or 408-648-4000. (July '92) ★ 87, '89 Eddy

DeskCalc

The DeskCalc spreadsheet part is a part of Desk, a collection of powerful DAs that also includes DeskPaint, DeskDraw, DeskWrite, DeskSecretary (appointment calendar), DeskCom (modem control), and DeskFile (minidatabase). Like other DAs, DeskCalc can be accessed from within any application. Offers charting plus many functions and formatting capabilities. It has its own menu bar within the spreadsheet window. Allows only one open spreadsheet at a time. Adequate for most spreadsheet tasks. Version 3.03 reviewed. Version 3.07 shipping. Requires Macintosh Plus or later and a hard drive. $399.95 for complete Desk bundle. Zedicor, 4500 E. Speedway, Tucson, AZ 85712. 520-848-4560 or 602-881-8101. (Oct '91)

DigiMatic

digiMatic analyzes chart graphics displayed on-screen in other programs. Transposes chart taped to screen or paper chart on digitizing tablet can also be used as template. Saves extracted numerical data in tab-delimited format. Has no automatic mode, but this simple DA is fast and easy to use. Compensates for incorrect chart alignment by mathematically adjusting data. Preview mode lets you check results before generating final numbers. Painting program may be necessary to clean up digitized graphics before conversion. Latest version is an application instead of DA and adds several features. Version 1.02 reviewed. Version 2.0 shipping. Requires Macintosh Plus or later and System 6.03 or later. $249. Famous Engineer Brand Software, 4855 Finlay St., Richmond, VA 23231. 804-222-2215. (Nov '91)

Excel

This full-featured high-end spreadsheet package has multipurpose tool bars and major interface improvements. Most frequently used functions are now logically clustered. Has global search-and-replace and rows-into-columns transposition capabilities. Integral linking within documents or to other documents. Customizes menus and creates dialog and alert boxes. Strong statistical functions and matrix-math abilities. Enhanced graphics and charting capabilities. Powerful outlining, macro programming, and style sheets. Can create simple worksheets as well as large sophisticated systems. Version 4.0 reviewed. Requires Macintosh Plus or later with 2 MB of RAM and a hard drive. $495. Microsoft Corp., One Microsoft Way, Redmond, WA 98052, 800-426-9400 or 206-882-8080. (Sept '92) ★ 85 Eddy

Extastix


Fastat

Fastat is a statistics package with a good Mac interface. Useful data analysis and range testing. Can display results graphically and numerically. Graphing abilities aren't presentation quality and can be hard to manipulate. Easy to learn. Optional modules add many specialized features. Version 1.0 reviewed. Version 2.0 shipping. Requires Macintosh Plus or later. System 6.03 or later, 2 MB of RAM, and a hard drive. $495 direct; Design, Logi, Probit, and Teststat modules, $110 each. Systat, Inc., 1800 Sherman Ave., Evanston, IL 60201. 708-864-5670. (Nov '89)

FlexiGraphs

FlexiGraphs lets you start with basic charts that you can modify in a staggering variety of ways. The simple but elegant interface lets you add attractive details and modify certain parts of charts while locking other areas down. Derives numerical data from graphs drawn on the screen. Version 1.0 reviewed. Version 1.13 shipping. Requires Macintosh Plus or later and System 6.05 or later. $149 direct. Tree Star, Inc., 20 Winding Way, San Carlos, CA 94070. 800-366-6045 or 415-508-9349. (Apr '90)

FlexiTrace

FlexiTrace automatically converts digitized chart graphics into numerical data. Saves extracted data in tab-delimited format. Can handle line, column, area, and scatter charts. Charts are imported as scanned images or by selecting, copying, and pasting from other applications. Reads PICT files. To ensure correct chart alignment before extracting data, clever plumb-bob tool rotates imported graphs. Requires digitizing tablets and speedup of graph-ics before conversion. Version 1.01 reviewed. Version 1.03 shipping. Requires Macintosh Plus or later. $249. Tree Star, Inc., 20 Winding Way, San Carlos, CA 94070. 800-366-6045 or 415-508-9349. (Nov '91)

Full Impact

Full Impact is a high-end spreadsheet program with impressive capabilities. The program (originally from Ashton-Tate) can now import and export Excel files directly and provides global search-and-replace, virtual memory, and programmable buttons. It has excellent 3-D charts and text integration as well as 32-bit-color and presentation capabilities. Product support uncertain. Version 2.0 reviewed. Requires Macintosh Plus or later. $295. Borland International, Inc., 1800 Green Hills Rd., Scotts Valley, CA 95066. 800-333-0877 or 408-438-5300. (Feb '91) ★ 88 Eddy

GraphMaster

GraphMaster is a powerful color charting tool with many useful features for presenting a variety of 2-D or scaling 3-D graphs. Good editing tools and built-in programming language. Allows use of pictograms—repeating pieces of artwork that are stacked, stretched, or scaled according to linked numerical values. Can save documents as PICT and Illustrator files. Imports data in many formats and can export tabbed text, CSV, and SYLK files. Support for color gradients is excellent. Version 1.31 reviewed. Version 1.33 shipping. Requires Macintosh Plus or later with 2 MB of RAM. System 6.03 or later, and a hard drive. $195. Visual Business Systems, Inc., 380 Interstate N. Pkwy., Ste. 190, Atlanta, GA 30339. 404-956-0325. (July '92)

Igor

Igor is a data-visualization and -analysis program. Offers reasonably complete set of options and tests. Doesn't have

MICE RATINGS

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MICE RATINGS


Minitab 4 Macintosh. Minitab is a fast, high-end statistics package that can share data with the popular PC-, minicomputer-, and mainframe-based versions of this program. Broad range of statistical procedures should satisfy all but the most technically advanced users. Rared interface is significant improvement over previous versions, but scrolling Session window and character-based command structure still dominate. Adds standard Mac menus and dialog boxes for accessing all but the program’s most complex functions. New spreadsheet-like Data Editor facilitates data entry and editing. Creates adequate graphs and charts, but these do not automatically update as source data changes. Version 8.2 reviewed. Requires Macintosh Plus or later and a hard drive; Mac II series or higher with math coprocessor recommended. $695; academic discounts available. Minitab, Inc., 3081 Enterprise Dr., State College, PA 16801. 800-448-3555 or 814-238-3280. (June ’92)

Model-It!!! Model-It! is a good tool for mathematical modeling and simulating small dynamic systems. Good manual. Performance is adequate — input is mediocre, and output is basic. Requires prior knowledge of modeling — there’s no AI. Version 1.0 reviewed. Version 2.0 shipped. Requires Macintosh Plus or later, System 6.05 or later, and a hard drive. $395. Norris Software Systems, 8201 Cortland Dr., Knoxville, TN 37790. 615-693-3132. (June ’90)

MUSE Blendex elements of spreadsheet and database software into a unique program that explores multidimensional data in a variety of ways. Searches for needed information and subsequent manipulation of data is easy. Natural query language uses...
English-like commands in a script-writing window. Built-in dictionary enables program to interpret user queries. Interface is often confusing. Provides basic charting and simple animations. Imports files in many formats, including Excel 3.0, WKS, WK1, DBF, DIF, SYLK, and text files using standard database delimiters. Proper organization of data before importing is crucial and may require expert assistance. Good documentation. Version 1.01 reviewed. Requires 68020 CPU or higher with System 6.05 or later, 4 MB of RAM, and a hard drive; math coprocessor recommended. $695. Occam Research Corp., 42 Pleasant St., Watertown, MA 02172. 617-923-3545. (July '92)

**One Shot Worksheet**

One Shot Worksheet is a DA forms generator with sophisticated calculation capabilities. Has limited drawing tools and restricts number of objects per page. Provides basic support for designing labels, data fields, and graphic objects. Inadequate documentation. Version 1.0 reviewed. Requires Macintosh Plus or later and a hard drive. $99.95. Baseline Publishing, Inc., 1770 Moriah Woods Blvd., Ste. 14, Memphis, TN 38117. 800-926-9677 or 901-682-9676. (Oct '91)

**Parameter Manager Plus**

Parameter Manager Plus analyzes data in real time, using a spreadsheet-like interface. Handles both hand-entered and imported data. Includes statistical quality control, equation fitting, predictive maintenance, histograms, drawing, and presentation. Version 3.0 reviewed. Version 3.6 shipping. Requires Macintosh Plus or later. $795. BlackHawk Technology, P.O. Box 2013, Morgan Hill, CA 95038. 800-528-9333 or 408-776-1106. (July '89)

**PowerMacros for the Excelerator**

PowerMacros offers all the power of macros without your having to learn how to write them. Includes a search-and-replace macro and a macro to transpose rows and columns. Improves Excel performance. Version 2.1 shipping. Requires Microsoft Excel version 1.5, 2.2, or later. $49.95. Individual Software, Inc., 5870 Stone-Ridge Dr., Ste. 1, Pleasanton, CA 94588. 800-331-3313 or 510-734-6767. (July '88)

**PowerPlay**

PowerPlay is a decision-support package designed for graphically exploring and analyzing multidimensional data. Easy to use, but structuring data to be imported is slow and tedious. Has built-in DAL compatibility. Can extract ASCII data from networked sources such as corporate SQL-based mainframe databases. Limited data-selection and -export options. Version 1.0 reviewed. Requires Macintosh II series or higher with 8 MB of RAM, a hard drive, and a color display system. $695 direct. Cognos Corp., 67 S. Bedford St., Burlington, MA 01803. 800-426-4667 or 617-229-6600. (Aug '92)

**Resolve**

This spreadsheet program offers an accessible 3-D-charting feature. Lacks a few sophisticated features (such as style sheets) found in Excel 3.0 but uses a straightforward scripting language unlike Excel's complex macros. Includes MacDraw-like drawing tools. Auto-Save option can back up worksheets automatically. Supports wide variety of file formats for importing and exporting data. Good documentation and on-line context-sensitive help. Despite some tedious limitations, ideal for custom-built complex applications or for users of other Claris products. Version 1.03 reviewed. Version 1.1 shipping. Requires Macintosh Plus or later, System 6.02 or later, and a hard drive. $399. Claris Corp., 5201 Patrick Henry Dr., Santa Clara, CA 95052. 408-727-8227. (June '92)

**@Risk**

This add-in for Excel provides Monte Carlo simulation. Risk-analysis functions and a series of new menus give you an accurate picture of how even the most uncertain estimates and projections are likely to affect your business. Decision analysis is based on 24 distributions. Generates summary Excel worksheets with statistical information for all output cells. Charting capabilities are adequate. Performance is sluggish on low-end Macs. Interface is difficult but offers integration with standard Excel environment. Version 1.01 reviewed. Version 1.10 shipping. Requires Microsoft Excel 3.0 or later, Mac SE/30 or higher, 2 MB of RAM, and a hard drive. $395 direct. Palisade Corp., 31 Decker Rd., Newfield, NY 14467. 800-432-7475 or 607-277-8000. (Apr '92)

**SPSS for the Macintosh**

SPSS for the Macintosh provides most of the procedures needed by professional statistical analysts. Has excellent on-line help, useful Command Generator, and clear documentation. Non-Mac interface. Has some graphics flaws. Text is editable. Version 1.5 reviewed. Version 4.0 shipping. Requires Macintosh Plus or later, 2 MB of RAM, and a hard drive. $795; Advanced Statistics, Trends, Table, and Categories modules, $395 each. SPSS, Inc., 444 N. Michigan Ave., Chicago, IL 60611. 800-543-6609 or 312-329-2400. (Nov '90)

**Spyglass Dicer**

Spyglass Dicer provides a 3-D, full-color, detailed perspective view of statistical data. Although its implementation is weaker than other data-visualization tools from Spyglass, Dicer does create useful images from huge amounts of information in HDF (Hierarchical Data Format), the public-domain format invented at the National Center for Supercomputing Applications. It comes with MPW C 3.1 and FORTRAN libraries. Dicer can import raw binary data in many formats and accepts data in the netCDF interface. Version 1.0 reviewed. Version 1.1 shipping. Requires Macintosh SE/30, Mac II series, or LC; 4 MB of RAM; System 6.03 or later; color monitor; and a hard drive. Math coprocessor recommended. $495; educational and volume discounts available. Spyglass, Inc., 1800 Woodfield Dr., Savoy, IL 61874. 217-355-6000. (Feb '91)

**Spyglass Transform**

Spyglass Transform is a data-analysis package that lets you display huge arrays of numbers as pictures. Can draw complex 3-D color surfaces, contours, and vector plots. Allows overlays of different images and interpolations of missing data, and opens and saves standard HDF spreadsheets. Can import data in a variety of workstation and mainframe formats; as an ASCII list of triplets; or as PICT, TIFF, or FITS files. Includes Spyglass View, which creates animations of data evolving over time. Operates as a stand-alone application or with Spyglass Dicer and Spyglass Transform. Requires some knowledge of FORTRAN. Version 2.0 reviewed. Version 2.1 shipping. Requires Macintosh II series, System 6.03 or later, 4 MB of RAM, an 8-bit-color display, and hard drive. $495; educational and volume discounts available. Spyglass, Inc., 1800 Woodfield Dr., Savoy, IL 61874. 217-355-6000. (Sept '91)

**StatView**

This powerful, intuitive statistical-analysis package offers complete data management and excellent presentation-quality output. Elegant interface provides user with a "dataset" environment (for entering and formatting data) and a view window for data analysis and detailed graphic design. Can import data from spreadsheet, word-processing, or database programs. Excellent variety of charts and 2-D graphs are possible. No 3-D graph support. Includes several dozen templates and can create custom templates. Concise, well-written documentation with on-line help. Version 4.0 reviewed. Requires Macintosh SE/30, or II series or higher with FPU. $595. Abacus Concepts, Inc., 1984 Bonita Ave., Berkeley,
MINIFINDERS

CA 94704. 800-666-7828 or 510-540-1949. (Dec '92)


SuperANOVA ******

SYSTAT for the Macintosh ******

Theorist ******
Theorist is an elegant equation solver that's versatile, full-featured, and powerful. There are no procedures — everything is done with user-created propositions that are easy to build. Superb interface. Dozens of math functions and transformations are automatically activated by a few menu commands. Can visualize equations and theories through graphs and animation, including 3-D and color. Version 1.01 reviewed. Version 1.11 shipping. Requires Macintosh Plus or later and System 6.03 or later. $399.50. Prescience Corp., 939 Howard St., San Francisco, CA 94103. 800-827-6284 or 415-543-2252. (June '90) ★ ’89 Eddy

Wingz ******
Wingz is a high-end spreadsheet program with strong 3-D charting features. Hyper-Script language lets you change menus, options, and functions by editing the master script file. Requires a lot of custom macro programming to perform linking operations. Well-intentioned minimal-recalculating option can take longer than recalculating an entire spreadsheet. Version 1.0 reviewed. Version 1.1a shipping. Requires Macintosh Plus or later with 2 MB of RAM and a hard drive. $399. Informix Software, Inc., 4100 Bohannon Dr., Menlo Park, CA 94025. 800-331-1763 or 415-926-6300. (July '90) ★ ’89 Eddy

Storage Systems

Applied Engineering

MacRAM Portable ******
The MacRAM Portable was the first memory-expansion card for the Mac Portable. Can hold from 1 to 8 MB of RAM and creates little additional drain on the battery, so you can open several applications at once without problems. Comes with a grounding wrist strap to prevent electrostatic damage to your Mac when you install the card. Versatile way to upgrade memory. Requires Macintosh Portable. $399; each additional SIMM, $250. Applied Engineering, 3210 Beltline Rd., Dallas, TX 75234. 800-554-6227 or 214-241-6606. (Mar '91)

ATTO SiliconDisk PRO ******
The SiliconDisk PRO is a large, high-performance, dedicated RAM disk with access times 300 times faster than that of an average SCSI hard drive. Easy to hook up and use. Extremely fast for applications requiring intensive throughput from SCSI drive. CPU-intensive applications generally unaffected. Data disappears when power is turned off, so uninterruptible power supply is advisable. $3,995 to $5,995, depending on capacity. ATTO Technologies, Inc., 1576 Sweet Home Rd., Amherst, NY 14228. 716-688-2459. (Feb '90)

DiskTwin ******
DiskTwin simultaneously and transparently writes data to two SCSI drives at once, thereby providing up-to-the-millisecond backup. Consists of proprietary software and either a NuBus or PDS card. Hardware operates independently of Mac's SCSI chain and doesn't hurt performance. Works with removable-cartridge drives. Includes PartitionTwin software that backs up only important data, even to a drive of different capacity. Version 2.0 reviewed. Version 2.06 shipping. Requires PDS- or NuBus-capable Mac. $995. Golden Triangle Computers, Inc., 4849 Ronson Ct., San Diego, CA 92111. 619-589-1752 or 800-235-2750 or 816-478-8300. (Nov '91)

TechWorks 3-Meg Static RAM Card ******
The 3-Meg Static RAM Card is an excellent, even necessary, addition to every Mac Portable. Uses no extra power and allows maximum operating speed. With true static RAM, the Portable's battery lasts longer in Sleep mode. Easy to install. Lifetime warranty. Requires Macintosh Portable. $995. Technology Works, Inc. (TechWorks), 4030 Braker Lane W., Ste. 350, Austin, TX 78750. 800-926-3148 or 512-794-8533. (Oct '90)

Storage Systems/Hard-Disk Drives

Apple Hard Disk 80SC ******

APS 105 MB ******
This affordable external hard drive uses a Quantum LP105S internal mechanism and offers average performance. Includes built-in AC power outlets. No software bundled. Actual formatted capacity is 102 MB. Formatting utility provided is Nuvo Labs 1.13, $429 direct. APS (Alliance Peripheral Systems), 2900 S. 291 Hwy., Independence, MO 64057. 800-235-2750 or 816-478-8300. (Nov '91)

APS Maxtor 213 ZFP ******
This affordable external hard drive is well built, includes good SCSI cable, and has good documentation. Average performance. Internal mechanism is Maxtor LXT-213SY. Actual capacity using included Alliance Power Tools formatter is 200.6 MB. Bundled with 18 MB of shareware. Includes AC outlets. Two-year warranty. Version 213SY reviewed. Version 7213 Maxtor shipping, S569 direct. APS (Alliance Peripheral Systems), 2900 S. 291 Hwy., Independence, MO 64057. 800-235-2750 or 816-478-8300. (Apr '92)

APS Quantum 210 Portable ******
This affordable, compact SCSI hard drive includes good SCSI cable and has good documentation. Has no fan, nor is it internal. Good performance. Internal mechanism is Quantum ProDrive 210S. Actual capacity using included Alliance Power Tools formatter is…

CD Technology HD Porta-Drive 200 $$$
This portable SCSI hard drive has average construction and doesn’t include SCSI cable. Average performance. Internal mechanism is Conner CP-3200F. Actual capacity using included Disk Manager Mac format is 200.9 MB.Fuse is internal. $1,399, CD Technology, Inc., 766 San Aleso Ave., Sunnyvale, CA 94086. 408-752-8500. (Apr '92)

CMS PD 100S $$$
This external hard drive uses a Seagate ST1126N internal mechanism. Slow. Actual formatted capacity is 109 MB. Bundled with excellent SUM II software. Formatting utility provided is CMS Utilities 7.01. Has internal fuse. $1,199. CMS Enhancements, Inc., 2722 Michelson Dr., Irvine, CA 92715. 714-222-6000. (Dec '90)

CMS PD 1000S $$$
The CMS PD 1000S is a 1-gigabyte hard drive with a formatted capacity of 990 MB and average seek time of 15 milliseconds. Based on the Micropolis 1598-15 mechanism. Good performance with the CMS Utility 6.01 SCSI driver. SCSI-ID selection is via external button, and SCSI termination uses an external plug. Bundled with Symantec Utilities for the Macintosh. $7,199. CMS Enhancements, Inc., 2722 Michelson Dr., Irvine, CA 92715. 714-222-6000. (July '91)

CMS Platinum 200 $$$
This SCSI hard drive has average construction but slow performance. Good documentation and formatting software. Internal mechanism is Conner CP-3200F. Actual capacity using included CMS Utilities format is 200.9 MB. Bundled with SUM II. Fuse is internal. Version 7.02 software reviewed. $1,639. CMS Enhancements, Inc., 2722 Michelson Dr., Irvine, CA 92715. 714-222-6000. (Apr '92)

CMS Platinum 40MB $$$
The CMS Platinum 40MB is a 40-MB external SCSI hard drive based on the slow, older (and reliable) Conner CP3040 mechanism. For the price, this drive has poor performance and a stark design, but it includes an auto-sensing power supply for use with North American or European voltages. Good bundled software, including SUM II. SCSI termination is internal, making daisy-chaining SCSI devices difficult. $919. CMS Enhancements, Inc., 2722 Michelson Dr., Irvine, CA 92715. 714-222-6000. (Apr '91)

CMS Platinum Series PDS 300 $$$
The CMS Platinum Series PD 300 hard drive has a capacity of 291 MB. It has slow seek times and low throughput. Good software. $3,299. CMS Enhancements, Inc., 2722 Michelson Dr., Irvine, CA 92715. 714-222-6000. (Dec '90)

Core Optima 200 $$
This fast SCSI hard drive is poorly built. Internal mechanism is Hewlett-Packard C2233. Actual capacity using included Core Format software is 221.6 MB. Bundled with SUM II. Fuse is internal. Five-year warranty. Version 3.2 software reviewed. $1,429. Core International, Inc., 1711 N. Federal Hwy., Boca Raton, FL 33437. 407-997-6044. (Apr '92)

Cranel 330MB $$$

Deltic DS400 $$
The Deltic DS40Q is a 40 MB external SCSI hard drive based on the fast, reliable Quantum P40S mechanism. The drive is inexpensive, has a low profile, and has external SCSI-ID selection and SCSI termination. Little software is provided, and the permitted SCSI IDs include illegal numbers 7 through 9. Our test unit's fan rattled when the power supply cord experienced extensive distortion pressure. $449. Deltic Systems, 1701 Junction Ct., Ste. 302B, San Jose, CA 95112, 800-745-1240 or 408-441-1240. (Apr '91)

Deltic Server 1000 $$
This external hard drive uses a Quantum LP1055 internal mechanism. Average performance. Actual formatted capacity is 100 MB. No software bundled. Formatting utility provided is Deltic System Installer 2.01. Disk-access and power-status indicator LEDs hard to see. $699 direct. Deltic Systems, 1701 Junction Ct., Ste. 302B, San Jose, CA 95112, 800-745-1240 or 408-441-1240. (Nov '91)

Deltic Server 1G $$
The Deltic Server 1G is a I-gigabyte hard drive with a formatted capacity of 990 MB. Has an average seek time of 15 milliseconds. Based on the Micropolis 1598-15 mechanism. Provide good performance with the Deltic 2.01 SCSI driver. SCSI-ID selection is via external button, and SCSI termination uses an external plug. No bundled software. $3,199. Deltic Systems, 1701 Junction Ct., Ste. 302B, San Jose, CA 95112, 800-745-1240 or 408-441-1240. (July '91)

Deltic Server 2000 $$
This affordable SCSI hard drive is well built but has an unshielded power supply. Good documentation and performance. Internal mechanism is Quantum ProDrive 210S. Actual capacity using included Deltic System Installer formatter is 197.3 MB. Two-year warranty. $749 direct. Deltic Systems, 1701 Junction Ct., Ste. 302B, San Jose, CA 95112, 800-745-1240 or 408-441-1240. (Apr '92)

Deltic Server 3000 $$
Deltic Server 3000 is a 326-MB hard drive with short seek times. Average throughput performance. $1,899. Deltic Systems, 1701 Junction Ct., Ste. 302B, San Jose, CA 95112, 800-745-1240 or 408-441-1240. (Dec '90)

DynaTek HDA 234 $$
This fast SCSI hard drive is well built but has an unshielded power supply. Internal mechanism is Hewlett-Packard C2233. Actual capacity using included ComPass Utilities formatter is 221.6 MB. Two-year warranty. $1,329. DynaTek Automation Systems, Inc., 15 Tangiers Rd., Toronto, Ontario M3J 2B1 Canada. 416-636-3000. (Apr '92)

FWB Hammer 1000 $$
The FWB Hammer 1000 is a 1-gigabyte hard drive with a formatted capacity of 988 MB and average seek time of 15 milliseconds. Based on the Seagate ST41200NM mechanism. Provides good performance with the Hammer 1.4 SCSI driver. SCSI-ID selection is via external button, and SCSI termination uses an external plug. Software provides partitioning, user-selectable-interleave, data-encryption, and password-protection capabilities. Two-year warranty. $3,319. FWB, Inc., 2040 Polk St., Ste. 215, San Francisco, CA 94109. 415-474-8055. (July '91)

FWB Hammer 300 $$$
The FWB Hammer 300 is a hard drive with a formatted capacity of 323 MB. Short seek times and high throughput. Good for equipping a network server. Includes Hard Disk ToolKit SCSI utility. Two-year warranty. $2,209. FWB, Inc., 2040 Polk St., Ste. 215, San Francisco, CA 94109. 415-474-8055. (Dec '90)

FWB PocketHammer 50 $$$
The FWB PocketHammer 50 is a well-designed, 50-MB external SCSI hard drive based on the fast Quantum LP52S mechanism. Excellent performance. Compact construction doesn’t skimp on desirable features. SCSI-ID selection and SCSI termination are external, the case is durable, and both power-on and drive-activity indicator lights are provided. Includes Hard Disk ToolKit SCSI utility. Two-year warranty. $659. FWB, Inc., 2040 Polk St., Ste. 215, San Francisco, CA 94109. 415-474-8055. (Apr '91)
FWB PocketHammer 100

This affordable SCSI hard drive is well built but has an unshielded power supply. Both SCSI termination and fuse are internal. Good performance. Internal mechanism is Maxtor LXT-213SY. Actual capacity using included Disk Manager Mac format is 200.7 MB. Version 200 reviewed. Version 210 shipping. $629 direct. HDI (Hard Drives International), 1912 W. Fourth St., Tempe, AZ 85281. 800-488-0001 or 602-350-1128. (Apr '92)

HDI PowerDrive 200 (Maxtor) 4

This affordable SCSI hard drive is well built but has an unshielded power supply. Both SCSI termination and fuse are internal. Good performance. Internal mechanism is Maxtor LXT-213SY. Actual capacity using included Disk Manager Mac format is 200.7 MB. Version 200 reviewed. Version 210 shipping. $629 direct. HDI (Hard Drives International), 1912 W. Fourth St., Tempe, AZ 85281. 800-488-0001 or 602-350-1128. (Apr '92)

La Cie Tsunami 50 4

This well-designed La Cie Tsunami 50 is an external, 50-MB SCSI hard drive based on the fast Quantum LP52S mechanism. Excellent performance. Compact construction allows vertical or horizontal orientation. Unfortunately, SCSI termination is internal, and SCSI-ID selection is via unlabeled DIP switches. The case is durable, power-on as well as drive-activity indicator lights are provided, and bundled software is excellent. Be careful when buying cables for this drive — it has 25-pin SCSI connectors. $299 direct. La Cie Ltd., 8700 S.W. Creekside Place, Beaverton, OR 97005, 800-999-0143 or 503-520-9000. (Apr '92)

La Cie Tsunami 100 4

This portable La Cie Tsunami 100 hard drive uses a Quantum LP105S internal mechanism and offers fast performance. The actual formatted capacity is 101 MB. Includes one AC power outlet. SCSI termination is externally switchable, but SCSI-ID is set via DIP switches, and SCSI cable included is 25-pin. Fuse is internal. Bundled software includes Norton Utilities for the Macintosh and 10 MB of shareware. Norton Utilities for the Macintosh, $1,999 direct. La Cie Ltd., 8700 S.W. Creekside Place, Beaverton, OR 97005, 800-999-0143 or 503-520-9000. (Nov '91)

Liberty 70 Series 1050

This portable hard drive uses a Quantum LP105S internal mechanism and offers fast performance. Actual formatted capacity is 102 MB. SCSI termination is internal. Has no fan. No software bundled. Formatting utility provided is Software Architect's 3.29, $799. Liberty Systems, Inc., 160 Saratoga Ave., Ste. 38, Santa Clara, CA 95051. 408-983-1127. (Nov '91)

Liberty 70210Q 4

This portable SCSI hard drive has adequate construction quality and includes a carrying case but has poor documentation. SCSI termination and fuse are internal. Good performance. Internal mechanism is Plus Impulse 210S. Actual capacity using included SCSI Director formatter is 197.3 MB. Version 70210Q reviewed. Version 50240Q shipping, $1,199 direct. Liberty Systems, Inc., 160 Saratoga Ave., Ste. 38, Santa Clara, CA 95051. 408-983-1127. (Dec '92)

Loviól M2100UP 4

This portable SCSI hard drive is poorly built but offers good performance. Both SCSI termination and fuse are internal. Internal mechanism is Plus Impulse 210S. Actual capacity using included SCSI Director formatter is 197.3 MB. Two-year warranty, $1,299. Loviól Computer Corp., 5599 W. 78th St., Edina, MN 55439. 612-835-3553. (Apr '92)

Loviól M2100U7F 4

This SCSI hard drive is poorly built but offers good performance. Both SCSI termination and fuse are internal. Internal mechanism is Plus Impulse 210S. Actual capacity using included SCSI Director formatter is 197.3 MB. Two-year warranty, $1,299. Loviól Computer Corp., 5599 W. 78th St., Edina, MN 55439. 612-835-3553. (Apr '92)

Mice Ratings

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built but offers good performance. Both SCSI termination and fuse are internal. Internal mechanism is Plus Impulse 210S. Actual capacity using included SCSI Director format is 197.3 MB. Two-year warranty. $1,299. Loviël Computer Corp., 5599 W. 78th St., Edina, MN 55439. 612-835-5553. (Apr ’92)

**Loviël Maxcress 105e ****

This portable hard drive uses a Quantum LP105S internal mechanism and offers fast performance. Actual formatted capacity is 100 MB. Fuse is internal. Software bundled is excellent Norton Utilities. Formatting utility provided is SCSI Director 1.7.3. $740. Loviël Computer Corp., 5599 W. 78th St., Edina, MN 55439. 612-835-5553. (Nov ’91)

**MacDirect 105MB ****

This affordable external hard drive uses a Quantum LP105S internal mechanism. Slow. Actual formatted capacity is 101 MB. Bundled with SCSI Commander software. Formatting utility provided is Dataware 2.0. $495 direct. MacDirect Corp., 5251 W. 73rd St., Edina, MN 55439. (800) 621-8461 or (612) 832-5706. (Apr ’92)

**MacProducts Magic 1.2 Gigabyte HD ****

The MacProducts Magic 1.2 Gigabyte HD hard drive has a formatted capacity of 988 MB and an average seek time of 15 milliseconds. Based on the Seagate ST41200NM mechanism. Provides good performance with the Disk Manager Mac 2.23 SCSI driver. Software provides backup and password-protection features. SCSI-ID selection is via external button or software, and SCSI termination uses an external plug. Includes 10 MB of shareware. $1,999 direct. MacProducts USA, Inc., 608 W. 22nd St., Austin, TX 78705. 800-622-3475 or 512-472-8881. (Apr ’92)

**MacProducts MagicDrive 105LP External ****

This affordable hard drive uses a Quantum LP105S internal mechanism and offers fast performance. Actual formatted capacity is 101 MB. Fuse and SCSI termination are internal. Bundled with SCSI bus software, StuffIt, Disinfector, and 10 MB of shareware. Formatting utility provided is Disk Manager Mac 2.24. $470 direct. MacProducts USA, Inc., 608 W. 22nd St., Austin, TX 78705. 800-622-3475 or 512-472-8881. (Nov ’91)

**MacTel HD Index 210MB ****

This affordable SCSI hard drive has adequate construction but poor documentation. Internal mechanism is Quantum ProDrive 210S. Actual capacity after formatting with included Index HD Utilities Installer is 197.3 MB. Bundled with Backmatic and AutoSave. Two-year warranty. $749 direct. MacTel Corp., 3007 N. Lamar Blvd., Austin, TX 78705. 800-950-8411 or 512-451-2600. (Apr ’92)

**MacTel HD Index 105MB ****

This affordable external hard drive uses a Quantum LP105S internal mechanism. Average performance. Actual formatted capacity is 101 MB. SCSI termination can be external or internal. Bundled with Backmatic, AutoSave, and 14 MB of shareware. Formatting provided is Index HD Utilities. $449 direct. MacTel Technology, 3007 N. Lamar Blvd., Austin, TX 78705. 800-950-8411 or 512-451-2600. (Nov ’91)

**MacTown DataStor 210 MB ****

This affordable SCSI hard drive is well built but has poor documentation. Good performance. Internal mechanism is Quantum ProDrive 210S. SCSI termination is internal. Actual capacity using included Dataware formatter is 197.3 MB. Includes AC Cables, $659 direct. MacTown, 1431 S. Cherryvale Rd., Boulder, CO 80303. 800-338-4273 or 303-442-6767. (Apr ’92)

**MacTown DataStor 213 MB ****

This affordable SCSI hard drive is well built but has poor documentation. Adequate performance. Internal mechanism is Quantum ProDrive 210S. SCSI termination is internal. Actual capacity using included Dataware formatter is 200.6 MB. Includes AC Cables, $699 direct. MacTown, 1431 S. Cherryvale Rd., Boulder, CO 80303. 800-338-4273 or 303-442-6767. (Apr ’92)

**MicroNet DataStor HM1.2/15M ****


**MicroNet SBT-1288NP ****

The elegant Microtech Europa SCSI-ID selection is external, Commerce St., East Haven, CT 06512. 800-626-4276 or 203-468-6223. (Apr '91)

Microtech N320 The Microtech N320 is a compact hard drive with a formatted capacity of 330 MB. Average seek times and throughput rate. Good software and support. $2,299. Microtech International, Inc., 158 Commerce St., East Haven, CT 06512. 800-626-4276 or 203-468-6223. (Apr '91)


Microtech Nova N200 This well-built SCSI hard drive includes good SCSI cable and good documentation. Internal mechanism is Quantum ProDrive 2105. Actual capacity used by included Hard Disk Formatter is 197.3 MB. Bundled with excellent Norton Utilities. Five-year warranty. $1,699. Microtech International, Inc., 158 Commerce St., East Haven, CT 06512. 800-626-4276 or 203-468-6223. (Apr '92)

Microtech Nova N1000 The Microtech Nova N1000 is a 1-gigabyte hard drive with a formatted capacity of 988 MB and average seek time of 15 milliseconds. Based on the Seagate ST412000N mechanism. Provides good performance with the Microtech HDF 3.27 SCSI driver. Bundled software includes Norton Utilities for the Macintosh and Total Recall. SCSI-ID selection is via external button, but SCSI termination is internal. Five-year warranty. $4,899. Microtech International, Inc., 158 Commerce St., East Haven, CT 06512. 800-654-5294 or 612-633-4450. (Nov '91)


Optima Concorde 1050 The Optima Concorde 1050 is a 1-gigabyte hard drive with a formatted capacity of 988 MB and average seek time of 15 milliseconds. Based on the Seagate ST412000N mechanism. Provides good performance with the DiskInit 2.1 SCSI driver. Software provides partitioning, password protection, and file-recovery capabilities. SCSI-ID selection is via external button, and SCSI termination uses an external plug. $2,495. Optimata Technology, 17526 Von Karman, Irvine, CA 92714. 714-476-0515. (July '91)

Optima DiskOvery 200 This SCSI hard drive is poorly built and has an internal fuse but includes good SCSI cable and good documentation. Good performance. Internal mechanism is Maxtor LXT-2135Y. Actual capacity using included Optimata DiskMount formatter is 200.6 MB. Bundled with disk-mirroring software. $995. Optimata Technology, 17526 Von Karman, Irvine, CA 92714. 714-476-0515. (Apr '92)

Optima MiniPak 200 This compact SCSI hard drive is poorly built and has an internal fuse but includes good SCSI cable and good documentation. Good performance. Internal mechanism is Maxtor LXT-2135Y. Actual capacity using included Optimata DiskMount formatter is 200.6 MB. Bundled with disk-mirroring software. $995. Optimata Technology, 17526 Von Karman, Irvine, CA 92714. 714-476-0515. (Apr '92)

Optima MiniPak 310 The Optima MiniPak 310 is a compact 311-MB hard drive. Long seek times. Good software. Small case. $1,195. Optimata Technology, 17526 Von Karman, Irvine, CA 92714. 714-476-0515. (Dec '90)

PCPC MacBottom 105 This rugged external hard drive uses a Quantum LP105S internal mechanism. Good performance. Actual formatted capacity is 101 MB. Has internal fuse and permanently-attached 25-pin SCSI cable. Bundled with HFS Backup 3.5. SuperDisk Lite, and TouchBase. Formatting utility provided is SCSTools 2.1, 3-19. $594 direct. PCPC (Personal Computer Peripherals Corp.), 4 Daniels Farm Rd., Ste. 326, Trumbull, CT 06611. 800-626-2888. (Nov '90)

PCPC MacBottom 50 The well-designed, inexpensive MacBottom 50MB is a 50-MB external SCSI hard drive based on the fast Quantum LP52S mechanism. The low-profile case fits well under a Mac Classic. SCSI-ID selection is external, but SCSI termination is internal. Power-on and drive-activity indicator lights are provided. Unfortunately, this single-port drive has a 25-pin non-detachable cable and the SCSI-ID switch allows "illegal" numbers 7 through 9. $399. PCPC (Personal Computer Peripherals Corp.), 4 Daniels Farm Rd., Ste. 326, Trumbull, CT 06611. 800-626-2888. (Apr '91)

PLI PL1.2 Gigabyte This PLI PL 1.2 Gigabyte is a hard drive with a formatted capacity of 990 MB and average seek time of 15 milliseconds. Based on the Seagate ST412000N mechanism. Provides good performance with the PLI Formatter 3.0 SCSI driver. SCSI-ID selection is via external dial, and SCSI termination uses external DIP switches. Includes PLI Turbo Utilities for partitioning, optimizing, and backup functions. $4,999. PLI (Peripheral Land, Inc.). 47421 Bayside Pkwy., Fremont, CA 94538. 800-288-8754 or 510-657-2211. (July '91)

PLI PL40 Turbo This PLI PL40 Turbo-40 MB external SCSI hard drive is based on the fast, reliable...
The Unrivaled Standard of Excellence

The Leafscan 35 and 45 are state-of-the-art scanners for color or black and white transparencies and negative films, offering the user unsurpassed dynamic range and resolution at a very affordable price. They are capable of capturing all the information from an image down to the film grain. Their superb sensitivity allows them to record the finest gradations at both ends of the spectrum, within the highlights and within the shadows of a photograph. The Leafscan 45 is designed to handle a variety of industry-standard formats, ranging from 35mm to 4"x5". The Leafscan 35 and 45 operate as intelligent computer peripherals through industry standard interfaces. Their architecture is designed for maximum efficiency, with a high-speed internal DSP (Digital Signal Processor) offloading the central Intel 80188 Command Processor to allow automatic operation and superfast data throughput.

Leaf Systems, Inc.
250 Turnpike Road • Southborough, MA 01772 • (508) 460 8300 • FAX (508) 460 8304
PHYSICAL & ELECTRICAL

- Convenient desktop footprint:
  Leafscan 45 = 16"x16"x 29" (height).
  Leafscan 35 = 14" by 10"x 19" (height).
- Weight:
  Leafscan 45 = 80 lbs.
  Leafscan 35 = 30 lbs.
- Leafscan 45 includes 3 standard Beseler negative carriers:
  a) 35mm. film, b) 2.4" film, c) 4"x5" film. Extra cost options:
  a) Beseler carrier for 35mm. mounted slides,
  b) custom Leaf rotating carrier from 35mm up to 4"x5" film.
  This custom holder allows slides to be physically rotated in
  the scanner in infinite increments, eliminating the need to
  electronically rotate images in the computer.
- Leafscan 35 includes 2 film holders:
  a) 35mm. mounted slides, b) 35mm film strips.
- Leafscan 35: Autoswitching 110-220 vac, 50-60 Hz.
  Leafscan 45: Specify 110 vac or 220 vac, 200 W.
- FCC Class A approved.
  Designed to comply with UL, CSA, VDE.
- Designed to operate in a 70 degrees Fahrenheit
  environment, non-condensing. Rapid changes in
  temperature and extended operation above 80 or
  below 50 degrees Fahrenheit should be avoided.

OPTICAL

- 6000 element Loral CCD, with 16 bits output
  per color per pixel.
- High quality color-corrected Rodenstock
  Apo-Rodagon 75mm. flat field copying lens.
- Triband Phosphorescent lamp with narrowband emissions
  matched to the characteristics of film. The built-in
  calibration process eliminates any color cast in the
  illumination.
- Red, Green, Blue and Neutral Density filters.

SOFTWARE TO OPERATE SCANNER WITH A HOST COMPUTER:

- Available for both standard platforms: Macintosh (24-bit
  color systems only, 8MB RAM recommended) and IBM-
  PC or Compatibles (24-bit, Windows 3.1 or later only).
- Operates scanner, performs calibration, sets black and
  white level automatically before each scan, allows fast
  preview of full frame, arbitrary user cropping, and
  highlight, midtone and shadow adjustment independently
  for each color. Allows users to exclude unwanted
  highlights or shadows in the “Autoranging” calculation.
  Creates industry standard TIFF files.

INTERNAL PROCESSORS

- Intel 80188 Command Processor.
- Motorola 56000 DSP for Data Correction and Averaging.

SCANNER PERFORMANCE

- Variable spatial resolution to a maximum of up to 5080 dpi.
  Typical resolution at 1:1 magnification is 45 line pairs/mm
  for color, and 50 line pairs/mm for black-and-white.
- The scanner records 48 bits per pixel, with the software
  enabling users to accept all 48 bits, or to select the lookup
  table desired to convert 48 bits to 24 bits (custom lookup
  tables can be created for each image). The minimal
  dynamic range is 3,000:1 (densities to 3.5), and the typical
  dynamic range is 5,000:1 (densities of 3.7). The scanner
  calibrates dark level automatically before each scan which,
  combined with the built-in calibration feature and
  exceptional dynamic range, results in scans free of artifacts (e.g.,
  streaking) even in extreme shadow and highlight areas.
- Scanner operates at high speed: 12 ms. per scan line in
  most cases.

COMPUTER INTERFACE

- GPIB for both user commands to the scanner,
  and data back from the scanner to the host.
- User accessible switch on the rear panel allows a specific
  ID to be set, enabling daisy-chaining of multiple
  peripherals on a single GPIB interface card.
- SCSI interface.
- Superfast transfer at 400Kbytes per second for GPIB
  interface, 600Kbytes per second for SCSI.

CUSTOMIZABLE

- Both the Leafscan 35 and Leafscan 45 can be easily
  adapted for special applications, allowing custom film
  holders, lenses, etc.
- Leafscan software comes in a user-replaceable ROM
  (Read Only Memory) cartridge, installed at the rear of
  the unit. As Leaf Systems further improves the scanner
  performance, upgrades can be installed directly by users
  without removing any panels or parts, simply by
  replacing the cartridge with an updated one.
**MINIFINDERS**


**PLI PL200 Turbo Quantum $1,199**

This SCSI hard drive is well built but has poor documentation. Good performance. Internal mechanism is Quantum ProDrive 210S. Fuse is internal. Actual capacity using included PLI FormatMover software is 197.3 MB. Bundled with 12 MB of bundled shareware. $1,199. PLI (Peripheral Land, Inc.), 47421 Bayside Pkwy., Fremont, CA 94538. 800-288-8754 or 510-657-2211. (Apr '92)

**PLI PL320F Turbo $889**

The PLI PL320F Turbo is a fast 320-MB hard drive with short seek times and average throughput rate. Large case. Good support. $2,799. PLI (Peripheral Land, Inc.), 47421 Bayside Pkwy., Fremont, CA 94538. 800-288-8754 or 510-657-2211. (Dec '90)

**PLI Quantum 105 $599**

This external hard drive uses a Quantum LP105S internal mechanism. Good performance. Actual formatted capacity is 105 MB. SCSI termination is externally switchable. Software bundled is Turbo Back, Turbo Cache, Turbo Optimizer, Turbo Spool, and 16 MB of shareware. Formatting utility provided is PLI FormatMover 3.1. $899. PLI (Peripheral Land, Inc.), 47421 Bayside Pkwy., Fremont, CA 94538. 800-288-8754 or 510-657-2211. (Nov '91)

**Procom MD 320 $599**

The Procom MD 320 is a 323-MB hard drive. Short seek times and high throughput rate. $1,995. Procom Technology, Inc., 2181 Dupont Dr., Irvine, CA 92715. 800-800-8600 or 714-852-1000. (Dec '90)

**Relax Hard Plus 1.0 Gigabyte $1,800**

The Relax Hard Plus 1.0 Giga­byte hard drive has a formatted capacity of 1,000 MB and average seek time of 15 milliseconds. Based on the Seagate ST41200NM mechanism. Provides good performance with the Relax 1.10 SCSI driver. Software provides password-protection, encryption, and backup functions. SCSI-ID selection is via external button, and SCSI termination uses an external plug. Diversified 1/2 4.01 SCSI driver necessary for partitioning. Version 1.0 Gig Plus reviewed. Version 1.0 Gig Vista shipping. $1,699 direct; SCSI driver, $59. Relax Technology, Inc., 3011 Whipple Rd., Ste. 22, Union City, CA 94587. 510-471-6112. (July '91)

**Rodime Cobra 100e $889**

This external hard drive uses a Quantum LS125ST internal mechanism. Slow. Actual formatted capacity is 105 MB. Includes two AC power outlets. SCSI termination and fuse are internal. Bundled with excellent Redux backup software. Formatting utility provided is Cobra Driver 1.14, $889. Rodime Systems, Inc., 7700 W. Camino Real, Boca Raton, FL 33433. 800-227-4144 or 407-391-7333. (Nov '91)

**Rodime Cobra 210e $950**

This SCSI hard drive is poorly built but has good documentation. Good performance. Internal mechanism is Hewlett-Packard C2233. Actual capacity using included Dataware formatter is 221.6 MB. Includes AC outlets. Five-year warranty. Version 200 reviewed. Version 220Hz shipping. $819 direct. Saturae Corp., 148 Rich­dale Ave., Cambridge, MA 02140. 800-782-8723 or 617-661-8166. (Apr '92)

**Storage Dimensions MacinStor 205 $1,419**

This SCSI hard drive has adequate construction quality but includes good SCSI cable and good documentation. Good performance. Internal mechanism is Maxtor LXT-2135Y. Actual capacity using included MacinStor formatter is 200.7 MB. Fuse is internal. Two-year warranty. Version 3.02 reviewed. $1,509. Storage Dimensions, Inc., 1656 McCarthy Blvd., Milpitas, CA 95035. 408-954-0710. (Apr '92)

**Total Peripherals Q40X $649**

The Total Peripherals Q40X is a 40-MB external SCSI hard drive based on the fast, reliable Quantum P40S mechanism. The model we tested had a sturdy metal case and good performance. SCSI-ID selection is via external push button or software. However, SCSI termination is internal, and SCSI connectors are 25-pin instead of the more conventional 50-pin. $529. Total Peripherals, Inc., 1 Brigham St., Marlboro, MA 01752. 508-460-0764. (Apr '91)

**Tuln A-Hive Hard Drive 1GB $599**

The Tuln A-Hive Hard Drive 1GB is a 1-gigabyte hard drive with a formatted capacity of 990 MB and average seek time of 15 milliseconds. Based on the Seagate ST41200NM mechanism. Provides good performance with the Cobra 1.1.3 SCSI driver. SCSI-ID selection is via external DIP switches. Internal SCSI termination includes Redux software for partitioning, password protection, encryption, and backup. $4,299. Rodime Systems, Inc., 7700 W. Camino Real, Boca Raton, FL 33433. 800-227-4144 or 407-391-7333. (July '91)

**Tuln Tujin A-Hive Hard Drive 1GB $599**

The MacinStor 1020-S1 is a 1-gigabyte hard drive with a formatted capacity of 990 MB and average seek time of 15 milliseconds. Based on the Seagate ST41200NM mechanism. Provides good performance with the MacinStor 3.0 SCSI driver. SCSI-ID selection is via external DIP switches. Internal SCSI termination uses an external plug. Includes MacTools Deluxe for file recovery, backup, optimizing, password protection, and partitioning software. Mounts all partitions properly under AppleShare. Two-year warranty. Excellent manual. $6,799.

**Third Wave 210 MB Hard Drive $1,995**

This SCSI hard drive is poorly built but has good documentation and good performance. Internal mechanism is Quantum ProDrive 210S. SCSI termination is internal. Actual capacity using included Disk Manager Mac formatter is 197.3 MB. Two-year warranty. $749 direct.

**TMS Peripherals Pro210 $4,299**

This affordable SCSI hard drive is well built but has poor documentation. SCSI termination is internal. Good performance. Internal mechanism is Quantum ProDrive 210S. Actual capacity when formatted using included TMS Diskwriter/formatter software is 197.3 MB. Bundled with 26 MB of shareware. Includes AC outlets. Two-year warranty. Version Pro210 reviewed. Version Pro240LP shipping. $649 direct. TMS Peripherals, 1120 Holland Dr., Ste. 16, Boca Raton, FL 33487. 800-275-4867 or 407-998-9928. (Apr '92)

**Tuln A-Hive Hard Drive 1GB $599**

The MacinStor 1020-S1 is a 1-gigabyte hard drive with a formatted capacity of 990 MB and average seek time of 15 milliseconds. Based on the Seagate ST41200NM mechanism. Provides good performance with the Cobra 1.1.3 SCSI driver. SCSI-ID selection is via external DIP switches. Internal SCSI termination includes Redux software for partitioning, password protection, encryption, and backup. $4,299. Rodime Systems, Inc., 7700 W. Camino Real, Boca Raton, FL 33433. 800-227-4144 or 407-391-7333. (July '91)

**Third Wave 210 MB Hard Drive $1,995**

This SCSI hard drive is poorly built but has good documentation and good performance. Internal mechanism is Quantum ProDrive 210S. SCSI termination is internal. Actual capacity using included Disk Manager Mac formatter is 197.3 MB. Two-year warranty. $749 direct.

**TMS Peripherals Pro210 $4,299**

This affordable SCSI hard drive is well built but has poor documentation. SCSI termination is internal. Good performance. Internal mechanism is Quantum ProDrive 210S. Actual capacity when formatted using included TMS Diskwriter/formatter software is 197.3 MB. Bundled with 26 MB of shareware. Includes AC outlets. Two-year warranty. Version Pro210 reviewed. Version Pro240LP shipping. $649 direct. TMS Peripherals, 1120 Holland Dr., Ste. 16, Boca Raton, FL 33487. 800-275-4867 or 407-998-9928. (Apr '92)

**Total Peripherals Q40X $649**

The Total Peripherals Q40X is a 40-MB external SCSI hard drive based on the fast, reliable Quantum P40S mechanism. The model we tested had a sturdy metal case and good performance. SCSI-ID selection is via external push button or software. However, SCSI termination is internal, and SCSI connectors are 25-pin instead of the more conventional 50-pin. $529. Total Peripherals, Inc., 1 Brigham St., Marlboro, MA 01752. 508-460-0764. (Apr '91)
with a formatted capacity of 990 MB and a transfer seek time of 15 milliseconds. Based on the Micropolis 1598-15 mechanism, provides good performance with the DataWare 1,3b13 SCSI driver. Software provides user-selectable interleave and partitioning capabilities. SCSI-ID selection is via external DIP switches, and SCSI termination uses an external plug. Choice of 36-inch or 72-inch SCSI cabling. $1,959. Tulin Technology, 2156 H'OToole Ave., San Jose, CA 95131. 408-432-9057. (July '91)

**Tulin A-Hive Jr 120 MB**
This portable hard drive uses a Quantum ProDrive 120S internal mechanism. Average performance. Actual formatted capacity is 120 MB. Internal fuse. No software bundled. Formatting utility provided is SCSICommander 2.0. $5499. Tulin Technology, 2156 H'OToole Ave., San Jose, CA 95131. 408-432-9057. (July '91)

**Tulin Hive Jr 210 MB**
This SCSI hard drive is poorly built and has poor documentation. Good performance. Internal mechanism is Quantum ProDrive 210S. Actual capacity using included Spot On formatter is 197 MB. Fuse is internal. $5699. Tulin Technology, 2156 H'OToole Ave., San Jose, CA 95131. 408-432-9057. (Apr '92)

**VCP 105**
This affordable external hard drive uses a Quantum LP105S internal mechanism. Good performance. Actual formatted capacity is 105 MB. Includes two AC power outlets. SCSI termination is internal. No software bundled. Formatting utility provided is Neuron Inc. Installer. Poor documentation. $529 direct. VCP Computer Products, 1320-A Hancock St., Anaheim, CA 92807. 800-447-6350 or 714-779-9600. (Nov '91)

**WholeSale 54 1060**
This affordable external hard drive uses a Quantum ProDrive 105S internal mechanism. Adequate performance. Actual formatted capacity is 1065 MB. SCSI termination and fuse are internal. No software bundled. Formatting utility provided is Disk Manager Mac 2.24. $389 direct. WholeSale 54, 2415 S. Roosevelt, Tempe, AZ 85282. 800-659-0054. (Nov '91)

**STORAGE SYSTEMS/REMOVABLES**

**ADIC MacBack DAT**
ADIC MacBack DAT includes MacBack network backup-server software, client software, and the solidly built ADIC MacBack DAT cassette drive. Can restore to clients over the network and allows client-controlled file selection. Slow and heavy, and requires both client and backup-server applications to be running. Software supports other tape drives. Version 2.02 software is reviewed. Requires Macintosh Plus or later and a harddrive. $4,995. ADIC (Advanced Digital Information Corp.), 14737 N.E. 87th St., Redmond, WA 98073. 800-336-1233 or 206-881-8004. (Oct '91)

**APS Archive Python**
APS Archive Python includes the fast, compact Archive 4330 DAT cassette drive and Retrospect 1.2 backup software. Requires Macintosh Plus or later and a hard drive, $1,399 direct. APS (Alliance Peripheral Systems), 2900 S. 291 Hwy., Independence, MO 64057. 800-235-2750 or 816-478-8300. (Feb '91)

**APL SyQuest 80 MB Drive**
Based on the SyQuest SQ5110 mechanism, this magnetic-cartridge drive offers excellent performance. Includes 2 AC outlets. Poor SCSI-cable design. Driver software formats cartridges at 83-MB capacity and supports partitioning and password protection. Comes with 18 MB of public-domain software. $539 direct. APS (Alliance Peripheral Systems), 2900 S. 291 Hwy., Independence, MO 64057. 800-235-2750 or 816-478-8300. (Jan '92)

**CD Technology Porta-Drive**
This is a small, well-built, portable CD-ROM drive that offers good performance. Good audio software but limited volume control (upgrade to rotary switch planned). SCSI-ID selection is via push-pull. External SCSI termination. On/off switch for external power supply. Version T3301 shipping. $795. CD Technology, Inc., 766 San Aleso Ave., Sunnyvale, CA 94086. 408-752-8500. (June '91)

**Chinon CDA-431**
This small, portable CD-ROM drive is well built but offers mediocre speed. SCSI-ID selection is via DIP switch. External SCSI-termination switch. $795. Chinon America, Inc., 660 Maple Ave., Torrance, CA 90053. 800-441-0222 or 310-533-0274. (June '91)

**ClubMac 44 MB**
This Syquest removable-cartridge drive can translate files almost as fast as a floppy drive. Requires System 6.0.5 or later and a hard drive, $1,399 direct. ClubMac, 3 Music, Irvine, CA 92718. 800-258-2622 or 714-768-8130. (Feb '91)

**CMS Enhancements**
CMS Enhancements MacStack SD45RM
This SyQuest removable-cartridge drive comes with excellent documentation and has an auto-switching power supply. Cartridge capacity is about 44 MB. Extended warranty is optional. This drive’s SCSI ID is changed via external DIP switches. SyQuest technology offers speed and compatibility with an industry standard. $999; extended warranty, $119 a year. CMS Enhancements, Inc., 2722 Michelson Dr., Irvine, CA 92715. 714-222-6000. (Feb '91)

**CMS Platinum DAT**
CMS Platinum DAT includes the WangDAT 1330 DAT-cassette drive and AD-Mac Backup 1.1 backup software. Excellent hardware manual. Software has limited features and no activity log. Requires Macintosh Plus or later and a hard drive. $3,399. CMS Enhancements, Inc., 2722 Michelson Dr., Irvine, CA 92715. 714-222-6000. (Oct '91)

**CubeFloppy**
The CubeFloppy is a compact 3.5-inch floppy drive that can be used with NeXT computers. Can initialize, mount, and unmount UNIX floppy's via NeXT's Shell. Some UNIX knowledge required. Good manual. Reads DOS 720K and 1.4-MB disks — doesn’t read or write Mac-formatted disks. Software can translate files being transferred and also format DOS disks. Version 1.4 reviewed. Version 2.9 shipping. Requires NeXT computer. With software, $90; without software, only $550. Digital Instrumentation Technology, Inc., 127 Eastgate Dr., Ste. 20500, Los Alamitos, NM 87544, 505-662-1482. (Oct '90)
You can manage a whole heap of things with Helix Express.*

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**Except babies. For that, you're on your own.**
DaynaFile II
DaynaFile II drive lets Macs read 3.5- and 5.25-inch DOS floppy disks. Supports Mac high-density disks and all PC formats. Using a special INIT, the drive's volume icon appears on the desktop and is accessed like any other external drive. New DaynaFile II version replaces popular — but heavy — original hardware design. Bundled DOS Mounter software lets Apple FDHD drives mount PC disks on the desktop. Version 2.0 software reviewed. Version 3.0 shipping. Requires Mac Plus or later. Dual drive, any configuration, $599. Dayna Communications, Inc., 50 S. Main St., Salt Lake City, UT 84144, 801-531-0600. (Oct '89) ★ ★ ★ ★ ★

Deltic OptiServer 600
OptiServer 600 is an erasable optical drive with software that maps out bad sectors and parks read/write heads. Extremely quiet. Few software utilities. Includes two switched AC outlets. Cartridge capacity after formatting, $5,499. Deltaic Systems, 1701 7810. (Mar '90)

HammerDisk 44
The HammerDisk 44 is an excellent SyQuest removable-cartridge drive. Cartridge capacity is about 44 MB. It has a high-quality, well-designed power supply, external SCSI termination, effective cooling system, high-quality formatting software, and easy-to-use documentation. Outstanding speed. SyQuest technology offers compatibility with an industry standard. Includes Hard Disk ToolKit SCSI utility. Two-year warranty. $869. FWB, Inc., 2040 Polk St., Ste. 215, San Francisco, CA 94109. 415-474-8055. (Feb '91)

HammerDisk 600S

DynaTek DAT 1300
DynaTek DAT 1300 includes the fast Archive 4520NT DAT-cassette drive and Retrospect 1.2 backup software. Requires Mac Plus or later and a hard drive. $1,795. DynaTek Information Systems, 226 Targers Rd., Toronto, Ontario M3J 2B1 Canada. 416-636-3000. (Oct '91)

EMAC Metro 88R
Based on the SyQuest SQ5110 mechanism, this magnetic-cartridge drive offers limited software and poor documentation. Includes two AC outlets. Driver software formats cartridges at 85-MB capacity and provides diagnostics. $599; upgrade for 44-MB drive, $599. ETC Peripherals, Inc., 5426 Beaumont Ctr. Blvd., Tampa, FL 33634, 800-876-4382 or 813-884-2863. (Jan '92)

FastBack Tape
The FastBack Tape package includes an FB120 tape drive (128-MB capacity), FastBack II 2.10, manuals for both, a SCSI terminator block, a preformatted DC 2110 mini-cartridge, and all necessary cables. Cosy and a little slow compared with other devices, but if tape is your backup medium of choice, you’d be hard-pressed to find a more polished product. Requires Mac Plus or later. $1,395. Fifth Generation Systems, 10049 N. Reiger Rd., Baton Rouge, LA 70809, 800-873-4384 or 504-291-7221. (July '90)

FWB HammerDAT 2000

HammerDisk 44
The HammerDisk 44 is an excellent SyQuest removable-cartridge drive. Cartridge capacity is about 44 MB. It has a high-quality, well-designed power supply, external SCSI termination, effective cooling system, high-quality formatting software, and easy-to-use documentation. Outstanding speed. SyQuest technology offers compatibility with an industry standard. Includes Hard Disk ToolKit SCSI utility. Two-year warranty. $869. FWB, Inc., 2040 Polk St., Ste. 215, San Francisco, CA 94109. 415-474-8055. (Feb '91)

Deltic OptiServer 600
OptiServer 600 is an erasable optical drive with software that maps out bad sectors and parks read/write heads. Extremely quiet. Few software utilities. Includes two switched AC outlets. Cartridge capacity after formatting, $3,499. Deltaic Systems, 1701 Junction Ct., Ste. 302B, San Jose, CA 95112, 800-745-1240 or 408-441-1240. (Nov '90)

Denon DR-253
This CD-ROM drive has ponderous performance, lagging far behind most other drives. The built-in speaker provides good audio. Lacks audio software. Can be used as a stand-alone audio-CD player. A regulatory mechanism, this magnetic-cassette drive is reliable but slow. Includes portable, completely sealed hard-disk module and a stationary SCSI docking bay. Does not auto-mount. Uses formatting software or utility to mount volume after module insertion in docking bay. Good documentation. Requires Mac Plus or later. $1,179. ETC Peripherals, Inc., 5426 Beaumont Ctr. Blvd., Tampa, FL 33634, 800-876-4382 or 813-884-2863. (Nov '92)

EMAC Metro CD
This CD-ROM drive is solidly built but has very slow disc access. It has good audio software and an internal speaker. Caddy is difficult to insert. SCSI-ID selection is done via pushwheel. External SCSI termination. $599. EMAC (Everex Systems), 48431 Milimont Dr., Fremont, CA 94538, 800-628-3837 or 510-498-1111. (Jan '92)

DGR 128REM
This affordable magneto-optical cartridge drive uses reliable, compact 3.5-inch optical discs and offers good construction. Internal mechanism is a MOST RMD-3100-S. Includes two switched AC outlets and one cartridge. Cartridge capacity after formatting is approximately 119 MB. Poor documentation. Bundled with Hard Disk ToolKit and Retrospect RemoteFormatter is HDI Primer. Version 1.0 reviewed. Version 2.0 shipping. $1,199 direct. DGR Technologies, Inc., 1219 W. Sixth St., Austin, TX 78703, 800-235-9748 or 512-476-9855. (July '92)

DPI 44 Removable
The vertically mounted DPI 44 Removable is a SyQuest removable-cartridge drive with a sturdy metal case. Its diode-regulated fan ensures cool operation. Included cartridge has a capacity of about 44 MB. SyQuest technology offers speed and compatibility with an industry-standard S570. PL1 (Philipp Land, Inc.), 47421 Bayside Pkwy., Fremont, CA 94538, 800-288-8754 or 510-657-2211. (Feb '91)

ETC DataPort 210
Based on an older Quantum 210 MB mechanism, this moderately priced removable hard drive is reliable but slow. Includes portable, completely sealed hard-disk module and a stationary SCSI docking bay. Does not auto-mount. Uses formatting software or utility to mount volume after module insertion in docking bay. Good documentation. Requires Mac Plus or later. $1,179. ETC Peripherals, Inc., 5426 Beaumont Ctr. Blvd., Tampa, FL 33634, 800-876-4382 or 813-884-2863. (Nov '92)

FastBack Tape
The FastBack Tape package includes an FB120 tape drive (128-MB capacity), FastBack II 2.10, manuals for both, a SCSI terminator block, a preformatted DC 2110 mini-cartridge, and all necessary cables. Cosy and a little slow compared with other devices, but if tape is your backup medium of choice, you’d be hard-pressed to find a more polished product. Requires Mac Plus or later. $1,395. Fifth Generation Systems, 10049 N. Reiger Rd., Baton Rouge, LA 70809, 800-873-4384 or 504-291-7221. (July '90)

HammerDisk 44
The HammerDisk 44 is an excellent SyQuest removable-cartridge drive. Cartridge capacity is about 44 MB. It has a high-quality, well-designed power supply, external SCSI termination, effective cooling system, high-quality formatting software, and easy-to-use documentation. Outstanding speed. SyQuest technology offers compatibility with an industry standard. Includes Hard Disk ToolKit SCSI utility. Two-year warranty. $869. FWB, Inc., 2040 Polk St., Ste. 215, San Francisco, CA 94109. 415-474-8055. (Feb '91)

FWB HammerDisk 600S

HDI CD-ROM
An inexpensive CD-ROM drive with good data performance, No preamp audio output and limited volume control. The SCSI-ID selection via DIP switch or jumpers is clumsy. External SCSI termination. Version 1.2 Chicon
Tracker makes mayhem manageable!

Heelix Tracker: the only document management program of its kind based on the team approach to workflow. Tracker was designed specifically to help you work together effectively—to transform chaos into cooperation and collaboration. Designed for workgroups of 4 to 20 people, Tracker allows users in a workgroup to exchange ideas and documents by creating and assigning tasks...and by routing those tasks through the workflow process.

Tracker improves group productivity by tracking projects' progress as they move from user to user. You can check and track a task's status at any time. Maintain a complete audit trail for all tasks. Automatically save each version of a document, then store and retrieve it by keyword.

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CIRCLE 176 ON READER SERVICE CARD.
This SyQuest removable-cartridge drive has a sturdy metal case and comes with good software, toll-free technical support, and a cartridge. The test version lacked shielding on SCSI connectors. It comes with a cartridge that has a capacity of about 44 MB.

SyQuest technology offers speed and compatibility with an industry standard. $449 direct; each additional cartridge, $79. HDI (Hard Drives International), 1912 W. Fourth St., Tempe, AZ 85281, 800-488-0001 or 602-350-1128. (June '91)

**HDI PowerDrive**

**44 Removable $577**

This SyQuest removable-cartridge drive is solidly built and has an auto-switching power supply. The drive is bundled with Norton Utilities for the Mac and powerful Silverlining disk-management software. Cartridges have a capacity of about 44 MB.

Based on the SyQuest SQ5110 mechanism, this affordable magnetic-cartridge drive has poor construction but good overall design. $1,126. Liberty Systems, Inc., 160 Saratoga Ave., Ste. 38, Santa Clara, CA 95051, 408-983-1127. (July '92)

**HDI PowerDrive**

**1.3 Gig DAT $799**

The HDI POWERDrive 1.3 Gig DAT includes the Archive 4520NT DAT-cassette drive and Retrospect 1.2 backup software. Internal SCSI termination. Fast performance. Version 1.3-GB reviewed. Version 2-GB shipping. Requires Mac Plus or later and a hard drive. $1,299 direct. HDI (Hard Drives International), 1912 W. Fourth St., Tempe, AZ 85281, 800-488-0001 or 602-350-1128. (Oct '91)

**HDI PowerDrive**

**Removable 88MB $799**

Based on the SyQuest SQ5110 mechanism, this magnetic-cartridge drive has poor construction and limited software. SCSI termination is internal but accessible. Fuse is internal. Driver software formats cartridges at 80-MB capacity and supports partitioning. Toll-free phone support. $599 direct. HDI (Hard Drives International), 1912 W. Fourth St., Tempe, AZ 85281, 800-488-0001 or 602-350-1128. (Jan '92)

**Iomega Bernoulli 90 $875**

Based on the reliable Bernoulli 90 mechanism, this magnetic-cartridge drive offers good construction and documentation, lots of bundled software, and good SCSI-cable design. Not compatible with SyQuest technology. SCSI termination is externally switchable. Fuse is internal. Driver software formats cartridges at 90-MB capacity and supports partitioning, backup, and diagnostics. Comes with 33 MB of public-domain software. Good support. Requires Macintosh Plus or later and Mac Interface Kit. $1,149; Mac Interface Kit, $49 (includes backup software from Central Point) or $129 (includes Retrospect from Dantz Development); upgrade from 44-MB Bernoulli drive, $725. Iomega Corp., 1821 W. 4000 S., Roy, UT 84067, 800-456-5522 or 801-778-1000. (Jan '92)

**Iomega Transportable 44 $875**

For maximum reliability in a removable-cartridge drive — albeit with a high price, heavy weight, and slower performance — the Bernoulli Transportable 44 is an excellent choice. Best used for data transport, storage, and backup but not for constant spinning for hours or days at a time. Software can be set to spin down cartridges after a user-determined period of system inactivity. Software can also format a cartridge in the background. Bernoulli technology is established, but if you share data with many other users, a SyQuest drive might be preferable. Can be upgraded to the new Bernoulli 90 Transportable. $1,399; upgrade, $725. Iomega Corp., 1821 W. 4000 S., Roy, UT 84067, 800-456-5522 or 801-778-1000. (Feb '91)

**Irwin 9131Se $875**

The Irwin 9131Se (formerly from Irwin Magnetic Systems) includes the Archive 4330 DAT-cassette drive and Retrospect 1.2 backup software. Compact case. Fast performance. Requires Mac Plus or later and a hard drive. $3,297. Maynard Electronics, Inc., 36 Skyline Dr., Lake Mary, FL 32746, 800-821-8782 or 407-263-3500. (Oct '91)

**Kenneck Drive 2.4 $1,095**

The Drive 2.4 is a connector/drive combination when used with the Rapport connector attached to the external disk-drive port of a Mac Plus or SE. DOS 3.5-inch disks can be inserted into the Mac’s internal drive and read through AFE. Supports Mac and PC. A control panel is used to manage all drive formats. Not compatible with Mac II fx or Portable. Requires Mac Plus or later. Drive 2.4, $495; Rapport, $295. Kenneck Technology, 3801 Charter Park Ct., Ste. D, San Jose, CA 95136. (Feb '90)

**La Cie 45 MB Removable $979**

This SyQuest removable-cartridge drive is sold solidly built and has an auto-switching power supply. The drive is bundled with Norton Utilities for the Mac and powerful Silverlining disk-management software. Cartridges have a capacity of about 44 MB.

Based on the SyQuest SQ5110 mechanism, this magnetic-cartridge drive has poor design and construction. SCSI termination and fuse are internal. Driver software formats cartridges at 83-MB capacity and supports partitioning, backup, password protection, data encryption, data recovery, and diagnostics. $1,126. Loviël Computer Corp., 5599 W. 78th St., Edina, MN 55439, 612-835-3533. (Jan '92)

**MacLand SyQuest 44 MB $979**

This moderately priced removable-cartridge drive has average performance and is bundled with archiving and file-restoration utilities. Comes with a cartridge that has a capacity of about 44 MB.

SyQuest technology offers speed and compatibility with an industry standard. $399 without cartridge. MacLand, Inc., 4683 S. Ash Ave., Ste. H-5, Tempe, AZ 85282, 800-333-3353 or 602-820-5802. (Feb '91)

**MacProducts Magic 128REM $1,199**

This affordable magneto-optical-cartridge drive uses reliable, compact 3.5-inch optical discs. Comes with a carrying case. Internal mechanism is a MOST RMD-5100-S. SCSI termination and fuse are internal. Cartridge capacity after formatting is approximately 119 MB. Poor documentation. May need a Macintoshsoftware. Formatter is SCSI Director. $1,499 direct. Liberty Systems, Inc., 160 Saratoga Ave., Ste. 38, Santa Clara, CA 95051, 408-983-1127. (July '92)

**Liberty 88MB Removable Drive $1,299**

Based on the SyQuest SQ5110 mechanism, this affordable magnetic-cartridge drive has poor construction but good overall design. Fuse is internal. Driver software formats cartridges at 83-MB capacity and supports partitioning and diagnostics. Does not include cartridge. $799. Liberty Systems, Inc., 160 Saratoga Ave., Ste. 38, Santa Clara, CA 95051, 408-983-1127. (July '92)

**Loviel Maxcess 88SYZF $1,348**

Based on the SyQuest SQ5110 mechanism, this magnetic-cartridge drive has poor design and construction. SCSI termination and fuse are internal. Driver software formats cartridges at 83-MB capacity and supports partitioning, backup, password protection, data encryption, data recovery, and diagnostics. $1,126. Loviël Computer Corp., 5599 W. 78th St., Edina, MN 55439, 612-835-3533. (Jan '92)

**MacLand SyQuest 44 MB $979**

This moderately priced removable-cartridge drive has average performance and is bundled with archiving and file-restoration utilities. Comes with a cartridge that has a capacity of about 44 MB.

SyQuest technology offers speed and compatibility with an industry standard. $399 without cartridge. MacLand, Inc., 4683 S. Ash Ave., Ste. H-5, Tempe, AZ 85282, 800-333-3353 or 602-820-5802. (Feb '91)

**MacProducts Magic 128REM $1,199**

This affordable magneto-optical-cartridge drive uses reliable, compact 3.5-inch optical discs and offers good construction. Internal mechanism is a MOST RMD-5100-S. Includes two switched AC outlets. Cartridge capacity after formatting is approximately 119 MB. Poor documentation. May need Macintosh software. Bundled with Hard Disk ToolKit and Retrospect Remote. With one cartridge, $1,199 direct; Turbo version, $1,299. MacProducts USA,
State-of-the-optical
Epson’s MO drive

Transport, store and access multi-megabyte documents on low-cost, high-density MO cartridges with Epson’s Magneto Optical Drive system. As an alternative to tape back up or other removable cartridge archive systems, Epson’s MO stores 128MB on durable $48 diskettes. Carry them in your pocket, drop them in the mail to your output service—these cartridges can take a beating.

Three-pass write assures data security
With the dependable security of a three-pass write, keep copies of scanned artwork, multimedia or large documents for future reference or emergency back up.

Easy-access archiving
Based on Epson’s OMD-5010 mechanism, this state-of-the-art drive supports an average seek time of 35ms and sustained read times approaching 700KB per second.

The three-pass write occurs at approximately 250KB per second in a Mac environment, making it among the fastest 128MB MO units currently shipping.

Fully compatible with other MOs
This Epson MO is fully compatible with all ISO and ANSI specifications, so cartridges can be readily accessed on other-brand MO drives.

An internal version for Mac Quadra 900 or 950 is $1099. Additional cartridges are available at $48; or $200 for a package of five.

The APS Epson MO carries a one-year manufacturer’s warranty. Throw in APS’s award-winning service and unlimited toll-free technical support and you’ve got the makings of a really great offer.

Go ahead and buy it
Move up to this next-generation, transportable storage solution. Call APS to order an Epson MO today!

It’s here! Call today for a copy of APS’s new accessories and supplies catalog, packed with the products you need for your Mac or PC. Check out APS’s full selection of media, cables and desktop essentials. We stand behind each offering—because these are items we test and use in our own office!

1-800 235-2750
Macworld selected this TEAC I55 tape unit as its Editors’ Choice in the personal backup category. With a back-up rate of 4.5MB per minute, this compact tape unit backs up 145MB per 60m cassette. Each unit includes Retrospect by Dantz, one 60m tape and a premium SCSI cable. With TEAC’s one-year warranty plus APS’s legendary service and support, what more could you ask?

**Personality yours for $499**

With data files consuming space on your hard drive as you update monthly reports—or finish chapters of your Great American Novel—you need a backup system to ease disk congestion and your mind.

At $499, this TEAC I55 measures up to *Macworld*'s most stringent standards for personal backup products, offering both value and performance.

**Back up before you proceed**

Your valuable data deserves to be securely archived. And this tape unit is the one to buy for individual needs at home—or at the office.

The TEAC I55 is covered by a one-year manufacturer's warranty, APS's exclusive drive-for-drive replacement policy and a 30-day, money-back guarantee.

Bundled with Retrospect, the standard in tape back-up software from Dantz Development (we include Sytos Plus with PC versions), this drive arrives on your desk with all necessary cables and one 155MB tape cartridge.

Plus you get the benefit of APS’s knowledgeable technical support staff—on call toll-free to answer your questions six days a week.

**Don't forget extra cartridges**

Order additional Maxell 155MB cartridges when you order your TEAC I55.

At $19 each, or $170 for 10, you'll be set to back up months of financials—or the rewrite, sequel, treatment and screenplay of that new novel.

**Stock up and save**

On computer supplies and accessories now available through APS’s new catalog. We have great prices on premium diskette and tape media. Ask your sales associate to send out a copy—or inquire about any cabling, drive, media or backup product you currently need or use.

APS Technologies
The Macworld Editors' Choice for high-capacity back up, APS's Compression DAT stores up to 5GB per 90m tape cartridge. Need fast, high-capacity back-up? This $1699 DAT offers one of the best archiving solutions on the market. Internal models for Quadra 900 and 950 are just $1599. Only need to squeeze 1.2 to 2GB onto a cartridge? Take a look at APS's non-compression DAT, now just $1399.

High-quality, high-density storage
This Archive Python-based SCSI digital audio tape drive which combines high capacity with exceptional performance is available in external configurations as well as internal options for Mac Quadra 900 and 950 models.

Quick access, dependable performance
Consistently rated tops by the leading computer magazines, APS's Compression DAT backs up at a rate as high as 14MB per minute, with non-compression units docking in at up to 10MB per minute.

APS DATs carry a two-year manufacturer's warranty and APS's drive-for-drive replacement guarantee. These DATs also come bundled with Retrospect, the standard in tape back up software from Dantz Development (we include Sytos Plus with PC versions).

Easy-to-follow installation instructions for internal models, all necessary cables and one 60m tape cartridge are also included with each DAT.

Tech support six days a week
You also get the peace of mind of knowing that APS's knowledgeable technical support staff is ready and available to answer your questions — toll-free — six days a week.

Load up on media
If your emergency back up scheme requires that multiple tapes be stored off-site, make sure you start out with plenty of cartridges. Maxell DAT tapes are available in 60m and 90m 10-packs for $110 and $130, respectively. Call APS today; add an APS DAT to your desktop or network tomorrow.

Be prepared for winter weather and intermittent power outages with a SOLA uninterruptible power supply. For as little as $140, you can buy yourself crucial minutes to save work and shut down your Mac. Call APS Technologies today for details on SOLA's entire line.
APS's Maxtor LXT-340 offers a 128KB split RAM cache which speeds both reading and writing. At 16ms average seek and nearly 1.8 MB per second transfer rate, this is a real performance bargain.

The perfect external companion to any Macintosh at $769—or install it internally in most late model modular Macs for just $699. Don't miss this opportunity to get high performance storage and at a bargain price!

Maxtor has the power
With a formatted capacity of nearly 325MB, Maxtor's LXT-340 gives you room to spread out and expand your desktop.

Quicker and quieter than most drives in its size and price class, the 340 is one plug-and-play peripheral to consider for your ever-busier Mac.

Quick and easy access to your data
According to APS's own internal bench testing, this unit's average seek time of 16ms and average transfer rate approaching 1.8MB per second, makes it an ideal solution for many Macs facing a storage shortage.

As an internal drive, the Maxtor LXT-340 is perfect for the Mac you depend on most. The zero footprint external version fits comfortably under your Classic-styled Mac or neatly next to any other Mac model.

Satisfaction guaranteed
Each Maxtor LXT-340 is covered by the manufacturer's two-year warranty, APS's disk-for-disk replacement guarantee and a 30-day, no-questions-asked return policy.

Getting set up and ready to work with an APS drive is a snap thanks to easy-to-follow, illustrated installation instructions. Have a question? APS's award-winning technical support staff is as near as your phone six days a week.

Need this fast?
Put the speed and power of this drive to work for you. Call APS today for delivery as soon as tomorrow.

DiskFit Direct by Dantz Development, now ships with every APS hard disk drive and removable media drive product. You get an easy to use, back up utility to help you protect those precious files and documents. With DiskFit Direct, there's no longer any excuse not to back up.

APS Technologies
Pack the power of electronic communication into your PowerBook with an APSModem, fax/data modems for your Powerbook. For as little as $99 (regularly $129) with your purchase of any other APS PowerBook accessory, outfit your notebook with a 2400 baud Hayes-compatible data modem that sends faxes at up to 9600bps and receives at up to 4800bps. Order one today, fax with it tomorrow.

Have modem, will travel
Your PowerBook will be your most efficient communications tool on the road anywhere once you’ve installed an APSModem in your PowerBook. With one of these modems on board, you can send and receive faxes or data from anywhere in the world. Use a hotel fax machine as your remote printer to send yourself a hard copy of documents you’ve written while traveling.

For each, the right modem
The APSModem series starts with a 2400 baud model, which sends data at 2400bps or faxes at 9600bps (4800bps receive). When you buy any APS Power Book accessory—from a GO•80 drive to a PowerBook screwdriver toolkit—you’re eligible to purchase this modem for just $99!

Need more speed and efficiency? Consider the 9600bps or the 14.4kbps models, priced at $279 and $349 respectively.

Guaranteed quality
You get our easy-to-follow installation instructions, a comprehensive operation manual and APS’s legendary service and toll-free technical support. These premium-brand fax modems carry a one-year manufacturer’s warranty and APS’s 30-day, no-questions-asked money-back guarantee.

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(U.S. & Canada) Monday through Friday 6 a.m. to 10 p.m. and Sat & Sun 6 a.m. to 6 p.m., Pacific Time.
MacProducts Magic 88
Based on the SyQuest SQ5110 mechanism, this magnetic-cartridge drive offers good documentation and support. Poor SCSI-cable design. Driver software formats cartridges at 44-MB capacity and supports partitioning, password protection, and diagnostics. No cartridge included. $499 direct. MacProducts USA, Inc., 608 W. 22nd St., Austin, TX 78705, 800-622-3475 or 512-472-8881. (Jan '92)

MacProducts Magic 45 Removable
An overall good buy, the Magic 45 is a SyQuest 44-MB removable-cartridge drive that has excellent speed. Documentation is outdated. SyQuest technology offers speed and compatibility with an industry standard. Comes with one cartridge that has a capacity of about 44 MB. $449 direct; cartridge, $69. MacProducts USA, Inc., 608 W. 22nd St., Austin, TX 78705, 800-622-3475 or 512-472-8881. (Jan '92)

MacTel Index 45 Removable
Although not the fastest SyQuest removable-cartridge drive, this solidly built product has complete hardware features. Excellent software includes BackMatic and AutoSave II for backup. Drive supports A/UX partitions and comes with one cartridge that has a capacity of about 44 MB. SyQuest technology offers speed and compatibility with an industry standard. $499 direct with one cartridge. MacTel Technology, 3007 N. Lamar Blvd., Austin, TX 78705, 800-950-8411 or 512-451-2600. (Feb '91)

MacTel Index 88 R
Based on the SyQuest SQ5110 mechanism, this magnetic-cartridge drive offers good documentation and bundled software. Poor SCSI cable and overall design. SCSI termination is internal. Driver software formats cartridges at 88-MB capacity and supports partitioning, backup, password protection, and diagnostics. Comes with 14 MB of public-domain software. Good support. $899 direct. MacTel Technology, 3007 N. Lamar Blvd., Austin, TX 78705, 800-950-8411 or 512-451-2600. (Jan '92)

MacTown DataStor 88
Based on the SyQuest SQ5110 mechanism, this magnetic-cartridge drive offers good design and construction. SCSI termination is internal. Includes two AC outlets. Driver software formats cartridges at 88-MB capacity and supports partitioning. $589. MacTown, 1431 S. Cherryvale Rd., Boulder, CO 80303, 303-338-4273 or 303-442-6767. (Jan '92)

MacTown DataStor DS44/25MR

Mass Microsystems DataPak 45
This well-built, SyQuest removable-cartridge drive comes with excellent documentation and is bundled with Disk Doubler software. Has two switched AC outlets and internal SCSI termination. $1,199. Mass Microsystems, Inc., 810 W. Maude Ave., Sunnyvale, CA 94086, 800-522-7979 or 408-522-1200. (Feb '91)

Mass Microsystems DataPak 88
Based on the SyQuest SQ5110 mechanism, this magnetic-cartridge drive offers good documentation and bundled software. Includes two AC outlets. Driver software formats cartridges at 85-MB capacity and supports partitioning and password protection. $1,799. Mass Microsystems, Inc., 810 W. Maude Ave., Sunnyvale, CA 94086, 800-522-7979 or 408-522-1200. (Jan '92)

Mass Microsystems DataPak MO/128
This magneto-optical-cartridge drive uses reliable, compact 3.5-inch optical discs and offers good construction and documentation. Internal mechanism is a Sony SMO-F501. Includes two switched AC outlets. Cartridge capacity after formatting is approximately 119 MB. Bundled with SuperDisk and DiskDoubler. Formatting utility is DataPak MO/128 Formatter. $1,799 with one cartridge. Mass Microsystems, Inc., 810 W. Maude Ave., Sunnyvale, CA 94086, 800-522-7979 or 408-522-1200. (July '92)

MicroDrive Mercury 240
Based on a Quantum 240-MB mechanism, this removable hard drive is fast and ruggedly built. Includes portable, completely sealed hard-disk module and a stationary SCSI docking bay. If module is not manually locked in place, it can be accidentally removed from docking bay during operation. Auto-mounts volumes on desktop only if included Steadfast driver software is already installed on startup volume. Does not auto-eject hard-disk module when its icon is dragged into Trash. $1,999. Mega Drive Systems, 489 S. Robertson Blvd., Beverly Hills, CA 90211, 310-247-0006. (Nov '91)

MicroNet CPKD-2000

MicroNet Micro/Online SB-SM0-1

MicroNet MR-45
The MR-45 is a good choice among SyQuest removable-cartridge drives. It has excellent documentation, powerful software, and a well-shielded power supply. Both SCSI-ID selection and SCSI termination are external. With cartridge, $795; with Retrospect Remote, $995. MicroNet Technology, Inc., 20 Mason, Irvine, CA 92718. 714-837-6033. (Feb '91)

MicroNet MR-90
Based on the SyQuest SQ5110 mechanism, this magnetic-cartridge drive has limited bundled software. Good SCSI-cable design. Fuse is internal. Driver software formats cartridges at 84-MB capacity and supports partitioning and password protection. $995. MicroNet Technology, Inc., 20 Mason, Irvine, CA 92718. 714-837-6033. (Jan '92)

Microtech CD600
This CD-ROM drive is well built and offers good performance. It has no prepaid output, and volume control is limited. SCSI-ID selection is via pushwheel. External SCSI termination. $899. Microtech International, Inc., 158 Commerce St., East Haven, CT 06512, 800-626-4276 or 203-468-6223. (June '91)

Microtech OR120
This slow magneto-optical-cartridge drive uses reliable, compact 3.5-inch optical discs and offers good construction and documentation. Internal mechanism, an IBM MD3125A, was scheduled for replacement by faster IBM MD3125B. Cartridge capacity after formatting is approximately 119 MB. Bundled with excellent Norton Utilities and LifeGuard. Formatting utility is OR 120 Formatter. Two-year warranty. Version OR120 reviewed. Version Genesis 120 shipping. $1,899 with one cartridge. Microtech International, Inc., 158 Commerce St., East Haven, CT 06512, 800-626-4276 or 203-468-6223. (July '92)

Microtech OR650
The Microtech OR650 is an...

Microtech R50 ★★★★
Because it uses Ricoh’s new magnetic-disc-cartridge technology, this drive offers a potentially more durable cartridge design than the older, established (and incompatible) SyQuest technology. Good for storing and transporting large files, Ricoh 50-MB cartridges may also offer better dust resistance. Doesn’t match SyQuest drives’ speed, however. If you want to be an early adopter of this promising new standard, the R50 is a good choice. It comes with a cartridge and excellent utilities and formatting software. $1,299. Microtech International, Inc., 158 Commerce St., East Haven, CT 06512. 800-626-4276 or 203-468-6223. (Feb '91)

Mirror CD-ROM ★★★★★
This solidly built CD-ROM drive offers good performance. It has good audio software, but volume control is limited. SCSI-ID selection is via pushwheel. External SCSI termination. No bundled CD-ROMs, AC outlet provided. $697. Mirror Technologies, Inc., 2644 Patton Rd., Roseville, MN 55113. 800-654-5294 or 612-633-4450. (June '91)

Mirror RM42 ★★★
The RM42 is a well-built, SyQuest removable-cartridge drive. It comes with QuicKeys, DiskTop, Package+, and 10 MB of public-domain software. SCSI-ID selection and termination are external. $497. Mirror Technologies, Inc., 2644 Patton Rd., Roseville, MN 55113. 800-654-5294 or 612-633-4450. (Feb '91)

Mirror RM600 Optical ★★★★★

NEC Intersect CDR-72 ★★★★★
This CD-ROM drive is well built and has fast Photoshop performance but slow disc access. SCSI-ID selection is via DIP switch. External SCSI-termination. No bundled CD-ROM discs, $799. NEC Technologies, Inc., 1414 Massachusetts Ave., Boxborough, MA 01719, 800-632-4636 or 508-264-8000. (June '91)

NEC Intersect CDR-73M ★★★★★
By automatically switching to a higher rotational speed when accessing data tracks instead of audio tracks, this CD-ROM drive can offer twice the throughput of the older CDR-73 model. Performance improvement makes running QuickTime movies directly from CD-ROMs practical. Older multimedia discs using different graphics and sound formats may not show any speed boost. Uses awkward DIP-switch arrangement to change SCSI-address number, whose presetting to 0 conflicts with internal hard drive’s setting. Has power switch, volume-control dial, and mono and stereo output jacks. External SCSI termination. Version CDR-73M reviewed. Version CDR-74 shipping. $684. NEC Technologies, Inc., 1414 Massachusetts Ave., Boxborough, MA 01719, 800-632-4636 or 508-264-8000. (Sept '92)

Ocean Tidalwave 650 ★★★★★
The Tidalwave 650 is a fast erasable optical drive. Includes MacTools Deluxe, plus software to find and mount Ocean drives on a SCSI chain. With SCSI cable and one cartridge, $2,695 direct. Ocean Microsystems, Inc., 246 E. Hacienda Ave., Campbell, CA 95008. 800-262-3261 or 408-374-8300. (Nov '90)

Ocean Vista 128 ★★★★★
This magneto-optical-cartridge drive uses reliable, compact 3.5-inch optical discs and offers good documentation. Internal mechanism is a MOST RMD-5100S. Cartridge capacity after formatting is approximately 119 MB. No bundled software. Includes bare-bones formatting utility, Compass Works. With SCSI cable and one cartridge, $1,499 direct. Ocean Microsystems, Inc., 246 E. Hacienda Ave., Campbell, CA 95008. 800-262-3261 or 408-374-8300. (July '92)

OMI CDP-18 CD-ROM ★★★★★
This CD-ROM drive is well built and offers fast Photoshop performance. Includes HyperCard audio software, SCSI-ID selection via pushwheel. External SCSI termination. $795. Optical Media International (OMI), 180 Knowles Dr., Los Gatos, CA 95030. (800) 347-2664 or (408) 376-3511. (June '91)

Optical Access International CM 231 ★★★★★
This CD-ROM drive is well built and has good audio features. Its nonstandard disc caddy is difficult to load. SCSI-ID selection is done via DIP switch. External SCSI termination. Two-year warranty. $1,049. Optical Access International, 800 W. Cunningham Pk., Ste. 2050, Woburn, MA 01801. 800-433-5133 or 617-937-3910. (June '91)

Optima DiskKover 128MO ★★★★★
This magneto-optical-cartridge drive uses reliable, compact 3.5-inch optical discs. Internal mechanism is a Sony SMO-P301. Fuse is internal. Cartridge capacity after formatting is approximately 119 MB. Good documentation. No bundled software. Includes bare-bones formatting utility, REO Formatter. $1,995. Pinnacl Micro, Inc., 19 Technology, Irvine, CA 92718. 800-553-7070 or 714-727-3300. (July '92)

Pinnacl Micro REO-6500 ★★★★★
The REO-6500 optical jukebox combines a Sony magneto-optical disc drive with a robotic media changer that can handle ten cartridges containing 650 MB each. Users can mount each cartridge as a separate volume, and volumes can be combined up to 2 gigabytes. All disc-changer operations are automatic and transparent to users. Uses two SCSI-ID numbers in SCSI chain; three jukeboxes can be daisy-chained to the Mac. Excellent Jukebox Admin software simplifies cartridge handling. Version 2.0 reviewed. Requires Mac Plus or later and a hard drive. $9,995; software, cables, powercord, $995; disc, $199. Pinnacl Micro, Inc., 19 Technology, Irvine, CA

MINIFINDERS

MICE RATINGS

PCPC DATStream★★★★★★

Pinnacl Micro REO-1303 ★★★★★
This portable magneto-optical-cartridge drive uses reliable, compact 3.5-inch optical discs. Internal mechanism is a Sony SMO-P301. Fuse is internal. Cartridge capacity after formatting is approximately 119 MB. Good documentation. No bundled software. Includes bare-bones formatting utility, REO Formatter. $1,995. Pinnacl Micro, Inc., 19 Technology, Irvine, CA 92718. 800-553-7070 or 714-727-3300. (July '92)

270 MacUser
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—Becky Waring, MacUser, June 1992

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92715. 800-553-7070 or 714-727-3300. (Aug ’91)

**Pinnacle Micro REO-650 [2-3]**


**PLI DAT Drive [4-5]**


**PLI Infinity Optical 5.25” Drive [4]**

The PLI Infinity Optical is a fast erasable optical drive. 5.25-inch cartridges. A/U/X option allows 1,024-byte-sector discs. Includes TurboStream print spooler and a vertical stand. $4,999. PLI (Peripheral Land, Inc.), 47421 Bayside Pkwy., Fremont, CA 94538, 800-288-8754 or 510-657-2211. (July ’92)

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**PLI Jukebox Junior [4]**

The Jukebox Junior optical jukebox combines Sony magneto-optical disc drive with a robotic media changer that can handle ten cartridges containing 650 MB each. Users can mount each cartridge as a separate volume, and volumes can be combined up to 4 gigabyte maximum. Uses two SCSI-ID numbers in SCSI chain; three jukeboxes can be daisy-chained to the Mac. Cartridge-handling software is adequate but inconvenient. Optional built-in hard drive boosts performance. Version 1.0 reviewed. Requires Macintosh Plus or later and a hard drive. $9,999; hard drive and caching software, $1,999; ten cartridges, $1,999. PLI (Peripheral Land, Inc.), 47421 Bayside Pkwy., Fremont, CA 94538, 800-288-8754 or 510-657-2211. (Jan ’92)

**PLI Infinity Optical 3.5” Drive [4]**

This magneto-optical-cartridge drive employs reliable, compact 3.5-inch optical discs. Offers good construction and documentation. Internal mechanism is a Sony SMO-P301. SCSI termination is external with internal switch. Cartridge capacity after formatting is approximately 119 MB. No bundled software. PLI Formatter is good value. $1,999 with one cartridge. PLI (Peripheral Land, Inc.), 47421 Bayside Pkwy., Fremont, CA 94538, 800-288-8754 or 510-657-2211. (June ’91)

**PMI.44 Floppy Drive [4]**

The PMI.44 Floppy Drive is used with NeXT computers. Can read Mac 1.4-MB disks. Can read and write DOS- and UNIX-formatted disks, but UNIX disks must be initialized by the PMI.44 drive. Fits under or on top of the NeXT CPU cube. Common-Link software is bundled, which also writes to Mac disks. Requires NeXT computer. $395. Pacific Microelectronics, 201 San Antonio Cir., Ste. C250, Mountain View, CA 94040. 800-628-3475 or 415-948-6200. (Oct ’90)

**Procom MCD 650 [4]**

This solidly built CD-ROM drive has good performance, but volume control is limited and there’s no preamp output. SCSI-ID selector, front rotary switch. External SCSI termination. Version MCD 650 reviewed. Version MacCD/LX shipping. $595. Procom Technology, Inc., 2181 Dupont Dr., Irvine, CA 92715, 800-800-8600 or 714-852-1000. (June ’91)

**Procom MDAT1300/M [4]**


**Relax Mobile 44 Vista [4]**

The Mobile 44 Vista is a SyQuest removable-cartridge drive with an auto-switching power supply, quiet fan, and built-in surge protection. Comes with a cartridge. The formatting software is powerful but difficult to use. SCSI-ID selection and SCSI termination are external. Documentation is poorly written. $429. Relax Technology, Inc., 3101 Whipple Rd., Ste. 22, Union City, CA 94587, 510-471-6112. (Feb ’91)

**Relax Optical 600 Plus [4]**

New Microsoft Word 5.1 for the Macintosh. This new upgrade has such great shortcuts to work, that taking it home should be easier, too.

So for a limited time, as a special reward to all of our registered users of version 5.0, you can upgrade to 5.1 for only $14.95. And for users of any earlier versions of Microsoft Word, you can upgrade right now for $129.

For more information about this terrific offer, you can give us a call at (800) 323-3577, Department HY2. And discover for yourself why new Microsoft Word 5.1 won't be easy to pass up.
Relax Vista 88R ★★★★
Based on the SyQuest SQ5110 mechanism, this magnetic-cartridge drive offers good documentation. Limited software bundled. Poor SCSI-cable design. Fuse is internal. This CD-ROM drive can hold six discs and is well built. Its performance is slow, even when you’re not jumping between discs. Good volume control. SCSI-ID selection is via DIP switch. Internal SCSI termination. Version DRM-600A reviewed. Version DRM-600A shipped. $99 direct. Relax Technology, Inc., 3101 Whipple Rd., Ste. 22, Union City, CA 94587. 510-471-6112. (Jan ‘92)

Relax/Pioneer DRM-600 ★★★★
This CD-ROM drive can hold six discs and is well built. Its performance is slow, even when you’re not jumping between discs. Good volume control. SCSI-ID selection is via DIP switch. Internal SCSI termination. Version DRM-600A reviewed. Version DRM-600A shipped. $99 direct. Relax Technology, Inc., 3101 Whipple Rd., Ste. 22, Union City, CA 94587. 510-471-6112. (Jan ‘92)

Rodime R45 Plus ★★★★
This SyQuest removable-cartridge drive lacks software features, but it offers good performance. Plastic case is relatively flexible. Cartridges have 44-MB capacity. SCSI-ID selection and SCSI termination are external. $729. Rodime Systems, Inc., 7700 W. Camino Real, Boca Raton, FL 33433. 800-227-4144 or 407-391-7333. (Feb ‘91)

Saturea Academy 2402/ro ★★★★
Based on a Quantum 240-MB mechanism, this removable hard drive is fast and is affordable. Includes portable, completely sealed hard-disk module and a stationary SCSI docking bay. Does not auto-mount. Uses formatting software or utility such as SCSI Probe to mount volume after module insertion in docking bay. Good documentation. $994 direct. Saturea Corp., 148 Richdale Ave., Cambridge, MA 02140. 800-728-8723 or 617-661-8166. (Nov ‘92)

Sumo RSSM600-B ★★★★
The Sumo RSSM600-B is an erasable optical drive. Meager software. Its default format is not ISO. Requires an Option-key sequence to format it as ISO standard. Slow. $2,982. Sumo Systems, 1580 Old Oakland Rd., Ste. C-103, San Jose, CA 95131. 408-453-5744. (Nov ‘90)

Sumo SS 50 Removable ★★★★
Using Ricoh’s new magnetic-disk-cartridge technology, this drive offers a potentially more durable cartridge design than the older, better established (and incompatible) SyQuest technology. Good for storing and transporting large files. Ricoh 50-MB cartridges may also offer better dust resistance. Doesn’t match SyQuest drives’ speed, however. Good documentation. It supports A/UX partitions and is bundled with Retrospect software. $1,229. Sumo Systems, 1580 Old Oakland Rd., Ste. C-103, San Jose, CA 95131. 408-453-5744. (Feb ‘91)

Tecmar DatalVault ★★★★

Tecmar THS-2200 ★★★★
The THS-2200 is a 2.2-giga-byte-capacity backup tape drive built around an Exabyte 8-millimeter tape mechanism. Average transfer rate is 129.2 K per second. Requires Macintosh Plus or later, a hard drive, and Mac interface kit. $4,995; Mac interface kit, $195. Tecmar, Inc., 6225 Cochran Rd., Solon, OH 44139. 800-624-8560 or 216-349-0600. (Oct ‘91)

Third Wave 220R ★★★★
The TCDR6050 2.0 GB!!! This CD-ROM drive offers good overall performance, even when used with Photoshop. No preamp audio output. Internal SCSI-ID selection and external SCSI termination. AC cable permanently attached. $1,010 with cable and heavy. Version 2.04 supporting software. $799 direct. Third Wave Computing, Inc., 826-B Kramer Ln., Austin, TX 78758. 800-284-0486 or 512-832-8282. (Feb ‘91)

Third Wave DATdrive 2.0 GB ★★★★
The DATdrive 2.0 GB!!! Based on the SyQuest SQ5110 mechanism, this magnetic-cartridge drive has poor design and construction. Poor SCSI cable. Internal SCSI termination. Driving software formats cartridges at 84-MB capacity and supports partitioning, password protection, and diagnostics. Good support. $799 direct. Third Wave Computing, Inc., 1826-B Kramer Ln., Austin, TX 78758. 800-284-0486 or 512-832-8282. (Feb ‘91)

Third Wave DATdrive 2.0 GB ★★★★
The DATdrive 2.0 GB!!! The DATdrive 2.0 GB!!! includes the WangTek 6130HS DAT-cassette drive and QTBackup software. Slow performance. Requires Macintosh Plus or later and a hard drive. $1,395 direct. Third Wave Computing, Inc., 826-B Kramer Ln., Austin, TX 78758. 800-284-0486 or 512-832-8282. (Oct ‘91)

Tod Enterprises TCDR6050 2.0 GB★★★★
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Tullin Technology 2156H ★★★★
Based on the SyQuest SQ5110 mechanism, this affordable magnetic-cartridge drive is poorly designed. Has minimal documentation, support, and bundled software. Driver software formats cartridges at 84-MB capacity and supports partitioning. Large case. $539. Tullin Technology, 2156H O'Toole Ave., San Jose, CA 95131. 408-432-9057. (Jan ‘92)

Xyxis XY600RW ★★★★
The Xyxis XY600RW is a slow, reliable erasable optical drive. Has dynamic partitioning. $4,000. Xyxis Corp., 14631 Martin Dr., Eden Prairie, MN 55344. 612-949-2388. (Nov ‘90)

TELECOMMUNICATIONS

Abaton InterFax 24/96 ★★★★
The InterFax 24/96 fax modem is capable of either 2,400-bps datatransmission or 9,600-bps facsimile transmission.
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*Plus $7.00 S&H. For retail purchase attach a copy of sales receipt and send to $7.00 U.S. for shipping and handling. (Check or money order payable to ChipSoft.) Send to: ChipSoft, SimCity offer, P.O. Box #5291, San Diego, CA 92138-0966. All prices in U.S. dollars. Dealer prices may vary. ©1992 ChipSoft, Inc. All trademarks are the property of their respective manufacturers. SimCity is the award-winning city simulator from MAXIS.**
Fax mode allows sending as well as receiving. Incorporates automatic data/fax switching, polling support, activity reports, good print times, and good regain-control times. Error correction is MNP Class 4, and data compression is supported.

**Fax Line Manager**
Fax Line Manager (formerly Phone Line Manager) lets you connect a phone, a fax, and a modem to the same phone line. Two- and three-device versions are available. It's intelligent enough to route incoming calls correctly. Outside callers can be given codes to override it, which saves time. No software needed. Two-device version, $169; three-device version, $199. Technology Concepts, 158 Conifer St., P.O. Box 20003, Milpitas, CA 95035. 408-262-1277.

**Digicom ScoutPlus**
This well-engineered V.32bis modem offers average performance. Flow-control cable not included. Poor technical support. Supports Group 3 fax, MNP 5, V.42, and V.42bis standards. Includes Quick Link II software. Five-year warranty. $545. Digicom Systems, Inc., 188 Topaz St., Milpitas, CA 95035. 800-833-8900 or 408-262-1277. (Nov '89)

**DoveFax Desktop**
The DoveFax Desktop is an external fax modem capable of either 2,400-bps data transmission or 9,600-bps facsimile transmission. Fax mode allows sending as well as receiving. The compact DoveFax Desktop allows flexible coverage and provides fast off-hook and print times as well as good regain-control times. At test time it lacked an enveloping option (the ability to send several faxes to different destinations) and directory export/import capability. Version 2.0 reviewed. Version 2.0 shipping. Requires Macintosh Plus or later. Requires Macintosh Plus or later with 2 MB of RAM, System 6.03 or later, and a hard drive. $299; internal NuBus-card version; $349. Dove Computer Corp., 1200 N. 23rd St., Winton, NC 28405. 800-849-3297 or 919-763-7918. (May '91)

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This well-engineered V.32bis modem offers average performance. Flow-control cable not included. Poor technical support. Supports Group 3 fax, MNP 5, V.42, and V.42bis standards. Includes Quick Link II software. Five-year warranty. $545. Digicom Systems, Inc., 188 Topaz St., Milpitas, CA 95035. 800-833-8900 or 408-262-1277. (Nov '89)

**DoveFax Desktop**
The DoveFax Desktop is an external fax modem capable of either 2,400-bps data transmission or 9,600-bps facsimile transmission. Fax mode allows sending as well as receiving. The compact DoveFax Desktop allows flexible coverage and provides fast off-hook and print times as well as good regain-control times. At test time it lacked an enveloping option (the ability to send several faxes to different destinations) and directory export/import capability. Version 2.0 reviewed. Version 2.0 shipping. Requires Macintosh Plus or later. Requires Macintosh Plus or later with 2 MB of RAM, System 6.03 or later, and a hard drive. $299; internal NuBus-card version; $349. Dove Computer Corp., 1200 N. 23rd St., Winton, NC 28405. 800-849-3297 or 919-763-7918. (May '91)
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Hayes ULTRA 144

This V.32bis modem has poor performance, excellent technical support, and good documentation. CCL file for AppleTalk Remote Access available on Hayes BBS. Supports Bell 103, MNP 5, V.42, and V.42bis standards. Software included is for PC-compatibles only. Two-year warranty. $999. Hayes Microcomputer Products, Inc., 5835 Peachtree Corners E., Norcross, GA 30092. 404-840-9200. (Nov '92)

Hayes V-series

Smartmodem 9600

The V-series Smartmodem 9600 is one of the fastest modems available for the Mac. To achieve high speeds, you need a special cable and software that supports the V.42 and X.25 protocols. Requires Macintosh 512Ke or later, Mac-to-modem cable, and communications software. $999; with cable, Smartcom II for the Mac, and HayesConnect software, $1,049. Hayes Microcomputer Products, Inc., 5835 Peachtree Corners E., Norcross, GA 30092. 404-840-9200. (Jan '89)

HyperDialer

HyperDialer provides an interface between a phone and your Mac so you can dial a number by using a Rolodex-type program such as SideKick, Focal Point, or QuickDex. Connects between the Mac's sound port and a telephone handset. Works with any Mac except SE/30, Classic, LC, or IIsi. $49.95; adapter for Mac II series, $5. DataDesk International (Prometheus Products), 9524 S.W. Tualatin Sherwood Rd., Tualatin, OR 97062. 503-477-3473 or 503-692-9600. (Sept '88)

Image TWINCOM 14.4/DF

This V.32bis modem performs well. Flow-control cable not included. Poor technical support. Supports Bell 103, Group 3 fax, V.17 fax, MNP 5, V.42, and V.42bis standards. Includes Quick Link II software. Two-year warranty. Version 2.02 software reviewed. $549. Image Communications, 6 Caesar Place, Moonachie, NJ 07046. 800-666-2496 or 201-935-8880. (Nov '92)

Intel 2400EX MNP-

Macintosh

This 2,400-bps modem delivers average performance. Its software requires manual setup for data compression and error correction. Before buying, double-check to see that it includes the right cable for hardware flow control. The modem has a five-year warranty. $369. Intel Corp., 5200 N.E. Elam Young Pkwy., Hillsboro, OR 97124. 800-538-3373 or 503-696-8080. (Jan '91)

Logicode QuickTel Xebra M14.4XV Fax

This V.32bis modem offers good performance and technical support. Poorly organized documentation. Supports Bell 103, Group 3 fax, MNP 5, V.42, and V.42bis standards. Includes FAXstf software. Five-year warranty. Version 2.09 software reviewed. $589. Logicode Technology, Inc., 1817 De Havilland Dr., Newbury Park, CA 91320. 805-499-4443. (Nov '92)

MicroPhone II

This powerful telecommunications program has a wide range of user options and customizable features. Supports virtually all protocols and modems. Many features can be thoroughly automated with scripts. Excellent terminal-emulation capabilities. Program complexity and a busy interface can be drawbacks for novices, but its new graphical front end to remote computer services helps considerably. Good for mixed Mac/PC environments. Excellent documentation. Version 4.0 reviewed. Version 4.02 shipping. Requires Macintosh Plus or later, System 6.03 or later, a hard drive, and a modem. $195. Software Ventures Corp., 2907 Claremont Ave., Berkeley, CA 94705. 510-644-3232. (Oct '92) ★ ★ ★

NetModem/E

This sleek, compact 14,400-bps modem provides shared-modem functions to Macs and PCs on an Ethernet network. Uses AppleTalk protocols for Macintoshes and IPX protocols for Novell NetWare-based PCs. Interface options include thinnet, thicknet, AAU1, and 10BASE-T. Supports V.32bis and V.42bis protocols. Doesn't require a dedicated Mac as a communications server. Requires Ethernet network. $1,669. Shiva Corp., One Cambridge Center, Cambridge, MA 02142. 800-458-3550 or 617-252-6300. (Sept '92)

Orchid OrchidFAX

The OrchidFAX is a fax modem capable of either 2,400-bps data transmission or 9,600-bps facsimile transmission. Fax mode allows sending as well as receiving. The OrchidFAX can send Mac files at 9,600 bps to other OrchidFAX modems or to an AppleFax, and it has fast regain-control times, along with LQ fonts and a two-year warranty. However, these capabilities aren't enough to compensate for the lack of features in the software provided (a customized version of the venerable BackFAX from Solutions). Performance isn't good over impaired phone lines, and printing is slow. $599. Orchid Technology, 45363 Northport Loop W., Fremont, CA 94538. 800-767-2443 or 510-683-0300. (May '91)

PhonePro

This programmable voice-mail system integrates sound files with the Mac environment and E-mail networks. Includes software, a headset, and a special modem that also supports standard 2,400-bps data mode. The modem connects to the Mac's serial port and digitizes sound received over phone lines. Can also connect to an analog PBX, key system, or an ISDN NuBus card. Can't send faxes and doesn't yet support time-scheduled events. Version 1.02 reviewed. Requires System 7 or later, 4 MB of available RAM, and a fast, large-capacity hard drive. $950. Cypress Research Corp., 200 E. Caribbean Dr., Sunnyvale, CA 94089. 408-752-2700. (Dec '92)

PowerPort/Gold

This internal send/receive fax modem for PowerBooks is reliable, doesn't require external hardware, and is well suited for use with AppleTalk Remote Access. Supports 14.4-Kbps data transfer using the V.32bis standard. Supports V.42 and MNP Class 4 error correction as well as V.42bis and MNP Class 5 data compression. Uses V.29 Group 3 fax protocol at 9,600 bps for maximum compatibility worldwide. Includes control-panel software to set preferences such as modem-speaker volume and ability to receive faxes. In conjunction with a "Wake Up on Modem Ring" feature, it lets you use a PowerBook as an unattended fax receiver. Includes handy Fax Center DA to automate, schedule, and address faxes. Requires PowerBook 140 or higher. $795. Global Village Communications, Inc., 685 E. Middlefield Rd., Bldg. B, Mountain View, CA 94043. 800-736-4821 or 415-390-8200. (Nov '92)

PowerPort/Silver

This internal send/receive fax modem for PowerBooks is reliable, doesn't require external hardware, and is well suited for use with AppleTalk Remote Access. Supports 9,600-bps data transfer using the V.32 standard. Supports V.42 and MNP Class 4 error correction as well as V.42bis and MNP Class 5 data compression. Uses V.29 Group 3 fax protocol at 9,600 bps for maximum compatibility worldwide. Includes control-panel software to set preferences such as modem-speaker volume and ability to receive faxes. In conjunction with a "Wake Up on Modem Ring" feature, it lets you use a PowerBook as an unattended fax receiver. Includes handy Fax Center DA to automate, schedule, and address faxes. Requires PowerBook 140 or higher. $795. Global Village Communications, Inc., 685 E. Middlefield Rd., Bldg. B, Mountain View, CA 94043. 800-736-4821 or 415-390-8200. (Nov '92)

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V.32bis modem performs well on impaired lines. Excellent display clearly indicates transmission status; Supports Bell 103, Group 3 fax, MNP 5, V.42, and V.42bis standards. Includes Quick Link II software. Lifetime warranty. Version 1.01 software reviewed. $579, PSI Integration, 851 E. Hamilton Ave., Ste. 200, Campbell, CA 95008. 800-622-1722 or 408-559-8544. (Nov ‘92)

Racial-Datacom RMD 3222

This V.32bis modem has poor performance and technical support. Good LCD display indicates transmission status. Supports Bell 103, MNP 5, V.42, and V.42bis standards. Doesn’t include software. Complex documentation. Two-year warranty. $1,145, Racial-Datacom, 1601 N. Harrison Pkwy., Sunrise, FL 33323. 800-722-2555 or 305-846-1601. (Nov ‘92)

Remote/WakeUp

Remote/WakeUp is a slick hardware/software combination that lets you turn an ADB-capable Mac on from a modem and that also shuts down the Mac after a specified period of inactivity. Use a special modem cable that plugs into the modem serial port and the Mac’s ADB port. AutoShutDown is an INIT. Version 1.0 reviewed. Version 1.01 shipping. Requires MacIntosh II series or higher. $49.95, Farallon Computing, Inc., 2000 Powell St., Ste. 600, Emeryville, CA 94608. 510-596-9000. (Aug ‘91)

Prometheus ProModem

Although this modem has only average performance, its operation and bundled software are hassle-free. Software (MackNOWLEDGE 2.0) installation is straightforward and lets you easily set up the modem for error correction and slow-but-reliable MNP 5 data compression. $299, Prometheus Products, Inc., 9524 S.W. Tualatin Sherwood Rd., Tualatin, OR 97062. 800-477-3473 or 503-692-9600. (May ‘91)

Prometheus MaxFax

The MaxFax is a fax modem capable of either 2,400-bps data transmission or 9,600-bps facsimile transmission. Fax mode allows sending as well as receiving. The inexpensive MaxFax incorporates unique gray-scale capability and is bundled with good telecommunications software. This product had the longest times for regain-control, off-hook, and printing when tested against comparable units. Cover-page options are limited, and enveloping capability for different fax destinations isn’t available. $449, Prometheus Products, Inc., 9524 S.W. Tualatin Sherwood Rd., Tualatin, OR 97062. 800-477-3473 or 503-692-9600. (May ‘91)

Prometheus ProModem 2400M Plus

Although this modem has only average performance, its operation and bundled software are hassle-free. Software (MackNOWLEDGE 2.0) installation is straightforward and lets you easily set up the modem for error correction and slow-but-reliable MNP 5 data compression. $299, Prometheus Products, Inc., 9524 S.W. Tualatin Sherwood Rd., Tualatin, OR 97062. 800-477-3473 or 503-692-9600. (Jan ‘91)

PSI Integration COMStation Five

This well-engineered V.32bis modem offers good performance and superior documentation. Supports Bell 103, Group 3 fax, V.17 fax, MNP 5, V.42, and V.42bis standards. Includes COMStation FAX software and CCL file for AppleTalk Remote Access. Five-year warranty. Version 2.2 software reviewed. $799, PSI Integration, 851 E. Hamilton Ave., Ste. 200, Campbell, CA 95008. 800-622-1722 or 408-559-8544. (Nov ‘92)

Racial-Datacom RMD 3222

This V.32bis modem has poor performance and technical support. Good LCD display indicates transmission status. Supports Bell 103, MNP 5, V.42, and V.42bis standards. Doesn’t include software. Complex documentation. Two-year warranty. $1,145, Racial-Datacom, 1601 N. Harrison Pkwy., Sunrise, FL 33323. 800-722-2555 or 305-846-1601. (Nov ‘92)

Remote/WakeUp

Remote/WakeUp is a slick hardware/software combination that lets you turn an ADB-capable Mac on from a modem and that also shuts down the Mac after a specified period of inactivity. Use a special modem cable that plugs into the modem serial port and the Mac’s ADB port. AutoShutDown is an INIT. Version 1.0 reviewed. Version 1.01 shipping. Requires MacIntosh II series or higher. $49.95, Farallon Computing, Inc., 2000 Powell St., Ste. 600, Emeryville, CA 94608. 510-596-9000. (Aug ‘91)

Smartcom II

Smartcom II balances power and ease of use. It’s capable of unattended operation and has a powerful command language. It has the fastest screen updating available, which can work at 9,600 bps. The large-screen buffer can easily be archived. Version 3.0 reviewed. Version 3.2 shipping. Requires MacIntosh 512K or later, $149, Hayes Microcomputer Products, Inc., 5835 Peachtree Corners E., Norcross, GA 30092. 404-840-9200. (Jan ‘90) ★ ★ ★ 85 Eddy Supra FAXModem V.32bis

This moderately priced, compact V.32bis modem performs well on impaired lines. Excellent display clearly indicates transmission status. CCL file for AppleTalk Remote Access available on Supra BBS. Supports Bell 103, Group 3 fax, V.17 fax, MNP 5, V.42, and V.42bis standards. Includes FAXtools software and Micro-Phone (from Software Ventures), Five-year warranty. Version 2.2 software reviewed. $399 direct, Supra Corp., 7101 Supra Drive S.W., Albany, OR 97321. 800-944-8772 or 503-967-2400. (Nov ‘92)

TekFax RA2110M

The TekFax RA2110M is a combination regular fax machine/fax modem. Although this sounds like the best of both worlds, this unit lacks some fax-machine features (such as a paper cutter), and the fax-modem software (a custom version of BackFAX) needs improvement. You might do better to buy a fax machine and a separate fax modem. Version RA2110M reviewed. Version RA2123 shipping. Requires MacIntosh Plus or later, System 6.03 or later, and a hard drive. $995, Relisys, 320 S. Milpitas Blvd., Milpitas, CA 95035. 408-945-9000. (June ‘90)

TeleFinder Pro

TeleFinder Pro is an innovative telecommunications program with an interface resembling that of the Mac’s Finder. Offers some of the features of AppleTalk Remote Access under System 7.0. Connections to a TeleFinder BBS or to other TeleFinder Pro users are easy, with remote volumes appearing as hard-disk volumes within the interface. Has useful macro-scripting and auto-dial features that can work with major on-line services. However, terminal emulation and text-handling capabilities are weak, Version 1.02 reviewed. Requires MacIntosh Plus or later, a hard drive, and a modem. $79.95, Spider Island Software, 4790 Irvine Blvd., Ste. 103-347, Irvine, CA 92720. 714-730-5785. (Mar ‘92)

Teleglobe DAS2141

This well-engineered V.32bis modem has average performance. Poor technical support. Doesn’t include software, Front panel handles diagnostic self-testing. Supports MNP 5 (without data compression), V.42, and V.42bis standards. $1,095. Teleglobe, Inc., 40 High St., North Andover, MA 01845. 800-296-3225 or 508-681-0600. (Nov ‘92)

TelePort/FAX 9600

The TelePort/FAX 9600 is a send-only, miniature fax modem that uses the ADB instead of the modem port. Can transmit Mac documents in the background in Group 3 fax format at 9,600 bps. Also functions as a Hayes-compatible data modem, sending and receiving data as many as 2,400 bps. Requires MNP Level 5 compression. Software works well with ATM, Type 1 PostScript, and TrueType fonts as well as graphics. Fast and easy to use but lacks Receive mode and other features available with other fax modems. Version 1.05 reviewed. Requires Macintosh SE or later. $295; fax upgrade for TelePort A3200 data modem, $60. Global Village Communications, Inc., 685 E. Middlefield Rd., Bldg. B, Mountain View, CA 94043. 800-736-4821 or 415-390-8200. (Aug ‘91)

TFLX

TFLX is a sophisticated, programmable, single-line voice-mail system with features that go beyond those of expensive multiline systems. Merges a phone line with the computer’s automated handling of voice-response systems. Professional-level package includes custom hardware (that connects the Mac and a phone line) plus easy-to-use software modules for handling multiple voice-mail boxes, fax transmission, and remote control from a separate phone. Version 3.0 reviewed. Version 4.0 shipping. Requires dedicated Mac with 2.5 MB of RAM, System 6.05 or later, and a hard drive. Entry-level system, $495 direct; professional-level system, $1,750. Magnan Software, 21115 Devonshire St., Ste. 337, Chatsworth, CA 91311. 818-701-5051. (Jan ‘93)

Timbuktu/Remote

Timbuktu/Remote is an easy-to-install screen-sharing program that lets one user observe and/or control another user’s Mac by modem. The
"Asante builds networking products to industry standards, commanding between 40% and 50% of the Macintosh market through two-tier distribution.

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U.S.D. Motorola V.32.29

This V.32.29 modem offers exceptional performance and reliability under all conditions. Doesn’t include software or flow-control cable. Poor technical support. Requires Bell 103, Group 3 fax, V.17 fax, MNP 5, V.42, and V.42bis standards. Two-year warranty. $1,145. U.S.D. Motorola, 5000 Bradford Dr., Huntsville, AL 35805. 800-451-2369 or 205-430-8000. (Nov '92)

VersaTerm-PRO

VersaTerm-PRO is the first telecommunications package that uses the Apple Communications Toolbox’s add-on modules. Performance is excellent. Includes a serial module and supports Xmodem, Ymodem, and Kermit transfers. Doesn’t have an extensive command or scripting language. Version 3.0 reviewed. Version 3.6 shipping. Requires Macintosh Plus or later, System 6.05 or later, and modern or network connection. $295. Synergy Software, 2457 Perkiomen Ave., Reading, PA 19606. 800-876-8376 or 215-779-0522. (Sept '90)

White Knight

White Knight is the new name for Red Ryder (1987 Eddy winner). Although this completely rewritten telecommunications program is now more powerful, the interface has taken a step backward. The manual is new and much improved. Software extensions called RCMDs (similar to HyperCard XCMDs) are now supported. Version 11.02 reviewed. Version 11.14 shipping. Requires Macintosh Plus or later and a modem. $139. FreeSoft Co., 105 McKinley Rd., Beaver Falls, PA 15010. 412-846-2700. (May '90) * 87 Eddy

Zoom FaxModem V.32bis

This V.32bis modem performs well. Poor technical support. Supports Bell 103, Group 3 fax, V.17 fax, MNP 5, V.42, and V.42bis standards. Includes FAXstuff and Quick Link II software. Seven-year warranty. Version 2.2 (FAXstuff) and 1.2 (Quick Link) reviewed. $449. Zoom Telecommunications, Inc., 207 South St., Boston, MA 02111. 800-666-6191 or 617-423-1072. (Nov '92)

Zoom Zoom/Modem V.42bis

The Zoom/Modem is a reasonably priced 2,400-bps modem with excellent performance. It uses V.42bis compression, which reduces transfer times. Transmission rate came close to 9,600 bps in some of our tests. The bundled cable supports data-flow control. Requires Macintosh Plus or later and a hard drive. $169; cable, $12. Zoom Telecommunications, Inc., 207 South St., Boston, MA 02111. 800-666-6191 or 617-423-1072. (Jan '91)

ZTerm

ZTerm is a good, cheap telecommunications program. Rich in features. Interface is intuitive. Xmodem, Ymodem, and Zmodem transfers are possible. Has simple macro capability, capture buffer, keyboard buffering, and dial set ups. Excellent performance. Easy to use if you have some telecommunications experiences. Version 0.8 reviewed. Version 0.9 shipping. Requires Macintosh Plus or later, System 4.1 or later, a modem, and cables. Shareware; downloadable, $30; on-disk, $40. D. P. Alverson Software, 5635 Cross Creek Ct., Mason, OH 45040. (Sept '90)

Zyxel USA U1496E

This V.32bis modem performs well. Supports Bell 103, Group 3 fax, V.17 fax, MNP 5, V.42, and V.42bis standards. Includes FAXstuff software. Five-year warranty. Version 2.12 software reviewed. $469.

ZyXEL USA, 4920 E. La Palma Ave., Anaheim, CA 92807. 800-255-4101 or 714-693-0808. (Nov '92)

Utilities

After Dark

After Dark is the excellent screen saver that introduced the concept of display modules. Allows easy control of module speed, sound level, and delay before screen saver activates. Can be set to stay awake during any CPU activity except MIDP throughput. Some modules do not work in black-and-white mode. 31 color modules provided include the popular Fish! aquarium, Flying Toasters, Rainstorm, and the psychedelic Satori. Others are available from on-line services and BBS libraries. Add-on package, More After Dark, contains 25 extra modules, including the innovative Lunatic Fringe space game. Version 2.0 reviewed. Requires Macintosh Plus or later; sound requires System 6.03 or later. $49.95; More After Dark, $39.95; both bundled, $69.95. Berkeley Systems, Inc., 2955 Rose St., Berkeley, CA 94709. 510-540-5535. (Oct '91)

AutoSave II

AutoSave II provides insurance against system crashes. It saves your work automatically at intervals from 1 to 99 minutes. Compatible with many applications but not recommended for use with database versions. Version 1.01 reviewed. Version 2.0 shipping. Requires System 6.03 or later. $49.95. Magic Software, Inc., 2239 Franklin St., Bellevue, NE 68005. 800-342-6243 or 402-291-0670. (Dec '89)

Blesser

Blesser allows you to switch between various System Folder configurations on your hard disk, without conflicts during startup. Prevents access to the Set Startup defaults BBS libraries. Requires System 5 or later. Version 1.0 reviewed. Version 1.1 shipping. Freeware (Dave McGary); available from online services such as ZiffNet/Mac. (Oct '90)

Comment

Comment is an electronic version of Post-it notes. This mini word processor lets you attach notes to a spreadsheet cell, to words in a text document, or to a window on the desktop. Version 2.0 reviewed. Version 2.03 shipping. Requires Macintosh Plus or later and System 5.1 or later. $99.95. Deneba Software, 7400 S.W.
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The ETC DataPress is the first "smart" peripherals SCSI data compression interface used to work external of the Macintosh. The DataPress features hardware data compression and allows seven additional SCSI devices to be added to your Macintosh. The DataPress won't interfere with virtual memory and can be added to the ETC DataPort Family of removable cartridge drives. On average, the ETC DataPress doubles the capacity of your drive. It can compress some files as high as 15 to 1. If you need lots of disk space, adding a DataPress to your Macintosh is less expensive than adding another hard drive.

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MINIFINDERS

87th Ave., Miami, FL 33173.
305-596-5644. (Dec '88)

Crash Barrier \\
Crash Barrier is a control panel that lets you recover from a variety of system crashes without always having to restart.

Also minimizes data loss when restarts are necessary. Works for about half the crashes you're likely to encounter.

Replaces your Mac's generic, usually uninformative bomb dialog box with a dialog box that identifies the problem and, if possible, offers various crash-recovery routes. Has Beginner and Expert modes.

Includes some memory-management tools and a sophisticated auto-save option. Version 1.01 reviewed. Requires Macintosh Plus or later and System 6.03 or later. $79.95.

Cassy & Greene, Inc., 22734 Portola Dr., Salinas, CA 93908. 800-359-4920 or 408-484-9228. (June '92)

Electric Dvorak \\
Electric Dvorak is an excellent Dvorak-keyboard implementation for the Mac. The basic program is an installer that puts the small (3K or so) necessary resources into your System file. Once that's done, you can toggle between the standard key mapping and a Dvorak arrangement with a keyboard-command equivalent. Either keyboard can be set as the default startup arrangement. The documenta-
tion, which is all electronic, is brief but excellent. A small chart of the Key Caps layout is provided. Version 1.0 shipping. Works with any Mac. Free on many on-line services.

Tom Phoenix, Box 265-ed, Portland, OR 97207, 503-289-1253. (Aug '90)

Help! \\
This technical-support software package analyzes Mac systems, highlights potential problems, and suggests possible solutions. Creates detailed diagnostic reports covering one or more hard drives, servers, or floppies. Configuration section of reports describes System Folder contents, applications, SCSI devices, video and other hardware setups, and a wide variety of software details.

Doesn't fix problems, but contains a wealth of advice about proven software conflicts or any damaged files. Uses regularly-updated Knowledgebase component to keep track of the always-expanding Mac universe. Version 1.0 reviewed. Requires Macintosh Plus or later and 2 MB of RAM, System 6.03 or later, and a hard drive. $149. Yearly Knowledgebase subscription, $75.

Teknosys, Inc., 3923 Coconut Palm Dr., Ste. 111, Tampa, FL 33619. 800-873-3494 or 813-620-3494. (Apr '92)

Icon-It! \\
Icon-It! lets you design icons to use as alternatives to menu commands. You can use its 100 icon templates or create your own. Version 2.0 reviewed. Requires Macintosh Plus or later. $129.

Olduvai Corp., 7520 Red Rd., Ste. A, South Miami, FL 33143. 800-822-0772 or 305-665-4665. (Feb '88)

Intermission \\
Intermission is an After Dark-like screen saver. Includes such great modules as a disco-dancing pig and dueling hand mixers, complete with sound effects. Along with reliable monitor-burnout prevention, provides totally nonproductive fun on your Mac. Version 2.0 reviewed. Requires Macintosh Plus or later; sound requires System 6.03 or later. $49.95.

ICOM Simulations, Inc., 648 S. Wheeling Rd., Wheeling, IL 60090. 800-877-4266 or 708-520-4440. (Dec '92)

Kiwi POWER WINDOWS \\
Kiwi POWER WINDOWS efficiently manages the placement and size of desktop windows for multiple applications under System 7. Uses special menu in Finder to create and launch Work Sets, user-defined clusters of applications and files to be opened simultaneously. Overrides applications that normally employ a default window location for all documents when opened. Provides useful Window Selection menu that lists all document windows for all open applications. Planned upgrade will fix minor bugs and add Work Set submenus to the Apple menu. Version 1.0 reviewed. Version 1.52 shipping. Requires System 7.0 or later. $79.95.


LifeGuard \\
LifeGuard is an INIT that acts like an electronic alarm clock, letting you know when a user-defined length of time has elapsed. You control the frequency of breaks as well as the interval allowed before it's time to resume work. Audible sounds or flashing on-screen signals serve as warnings, and a "snooze" function can override the alarm. Some basic information on exercise and ergonomics is also provided.

Version 1.0 reviewed. Version 1.2 shipping. Requires Mac Plus or later and System 6.04 or later. $59.95.

Visionary Software, Inc., P.O. Box 69447, Portland, OR 97201. 800-877-1832 or 503-246-6200. (Feb '91)

MacEKG \\
Aimed at power users and computer-repair specialists, MacEKG is a system extension that loads into RAM at startup. Administers a complete suite of diagnostic tests and compares current system performance with a log of previous test results. Includes a control panel to customize test procedures. Also includes Reset, which repeatedly reboots the Mac and accumulates diagnostic information.

Planned upgrade will include Periscope, which graphs performance data and identifies specific problems. Version 1.0 reviewed. Version 2.05 shipping. $150. MicroMAT Computer Systems, 7075 Redwood Blvd., Novato, CA 94945. 415-898-6227. (July '90)

MockPackage Plus \\
MockPackage Plus Utilities is a set of extremely powerful DAs. Includes a text editor, text printer (supports LaserWriter), chart, terminal, EZmenus, and several other useful tools. Version 1.2 reviewed. Version 4.4 shipping. Requires System 4.1 or later and System 6.1 or later; high drive recommended. $49.95.

MicroRXSEI \\
MicroRXSEI is a HyperCard stack that diagnoses your SE's problems. The details are meant for qualified service techs, but anyone using it can gain better knowledge of what's inside the SE. Well done and easy to use. Version 1.01 shipping. Requires HyperCard 2.1 or later. $99.

MicroMat Computer Systems, 7075 Redwood Blvd., Novato, CA 94945. 415-898-6227. (July '90)

MockPackage Plus \\
MockPackage Plus Utilities is a set of extremely powerful DAs. Includes a text editor, text printer (supports LaserWriter), chart, terminal, EZmenus, and several other useful tools. Version 1.2 reviewed. Version 4.4 shipping. Requires System 4.1 or later and System 6.1 or later; high drive recommended. $49.95.

CE Software, Inc., 1801 Industrial Cir., P.O. Box 65580, West Des Moines, IA 50265. 800-523-7683 or 515-224-1995. (Mar '87)

MugShot \\
MugShot is a simple program that analyzes and informs you about your Mac's hardware and operating system, in addition to hardware data. MugShot lists all installed DAs, INITS, cdevs, and ndevs. This data can be vital if your Mac has software conflicts or problems.

Version 1.1 reviewed.
The LogiCache 50MHz '030 Accelerator.

You can't buy a faster, more powerful accelerator for the money. Benchmark tests show that the LogiCache Accelerator out-performs DayStar's PowerCache 50MHz by up to 30% and is virtually identical in real world performance to the Radius Rocket. In some cases, LogiCache beats the Rocket by over 150%! At a retail price of only $1199 with 50MHz FPU, you can't get a better deal. LogiCache also supports twelve different Macs--the II, IIX, IICX, IICI, IISI, IIVX/VI, SE/30, LC, LC II, and the new Performa 400 and 600. As with all Logica products, you'll get a 30 day money back guarantee, 5 year warranty, and toll-free tech support. For additional product information or the name of your Logica dealer, call 1 800/880-0988. Dealer inquiries invited.

MacWorld Lab tests show that 50 MHz 68030 accelerators perform as well as 25 MHz 68040 accelerators, and often cost $1000 to $1500 less.

—June 1992 MacWorld

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*Some CPUs require PDS adapters

Logica Research
8700 Research Blvd, Ste 313
Austin, TX 78758
512-839-2168
FAX 512-832-4533

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MINIFINDERS

Version 1.33 shipping. Free from on-line services or $5 from author. Mi Concepts, P.O. Box 8822, Kentwood, MI 49508. Written inquiries only. (Sept '89)

NANO DISK 
NANO DISK is a utility that breaks the 8-MB limit on an SE/30 or Mac II. Provides a functional RAM disk with powerful write-through protection. Version 1.1 reviewed. Requires SE/30 or Mac II $89; bundled with the 16-MB upgrade, $1,195. Technology Works, Inc. (TechWorks), 4030 Braker Lane W., Ste. 330, Austin, TX 78759. 800-926-9677 or 512-794-8533. (Sept '90)

NEW UTILITIES 
Now Utilities is a superb collection of ergonomic enhancement tools: StartUp Manager (controls extensions, control panels, and Chooser documents); Super Boomager (adds navigation features to Open and Save dialog boxes and to the Apple menu); Profiler (hardware/software analysis); NowMenus (hierarchical submenus); WYSIwyG Menus (typeface menus actually formatted with your available type fonts); MultiMaster (desktop and menu bar management); DeskPicture (custom desktop background); AlarmsClock; NowSave (automatically saves documents at regular intervals); and SreenL eaker (a moderately secure password system). Version 3.0 reviewed. Version 4.1 shipping. Requires Macintosh Plus or later. $39.95. Fifth Generation Systems, 10049 N. Reiger Rd., Baton Rouge, LA 70809, 800-877-4384 or 504-291-7221. (July '92)

QuickKeys 
QuicKeys lets you make full use of your Apple extended keyboard. Assign any command (menu choices, DAs, and the like) or series of text blocks and/or commands to any key or key combination. Enormously powerful. This new version has added the capability to run macros that trigger sequences of tasks, but QuicKeys 2 still can't handle conditional macros. Some applications, INITs, or control panels may have incompatibility problems. Version 2.0 reviewed. Version 2.12 shipping. Requires Macintosh Plus or later, System 6.04 or later, and hard drive. $149. CE Software, Inc., 1801 Industrial Cir., P.O. Box 65580, West Des Moines, IA 50265. 800-523-7638 or 515-224-1995. (May '91) ★ '87 Eddy

QuickTools 
QuickTools is a well-programmed set of eight simple utilities. Each operates as a System 7-compatible control panel. PowerStrip offers a NeXT-like, customizable file-launching palette. The handy DialPower! modifies dialog-box activation from a keyboard. Sunset is a modular screen saver that resembles Pyrol. Snipper is a well-implemented screen-capture/print utility. Barricade is a moderately secure password system. Instant Menus lets you reposition the menu bar on large monitors. Work Saver can set many applications to auto-save work at user-defined regular intervals. Functionality activates some function keys on an Extended Keyboard. QuickToolbox assigns more RAM to the Mac's system heap. Version 1.01 reviewed. Requires Macintosh Plus or later with System 6.03 or later and a hard drive. $79.95. Advanced Software, Inc., 1095 E. Duane Ave., Ste. 103, Sunnyvale, CA 94086. 800-346-5392 or 408-733-0745. (Feb '92)

Screen Gems 
Screen Gems is a package of five color utilities for the Mac II. Color Desk puts art onto your desktop. Dinner dims the screen when the Mac is inactive, and Switch-a-Roo lets you switch between any two color modes instantly. Globe is a neat demo, and TN3 lets you customize the Finder's Color menu. Version 1.0 reviewed. Requires Macintosh Plus or later. $39.95. Super I. Color Generation Systems, 10049 N. Reiger Rd., Baton Rouge, LA 70809. 800-877-4384 or 504-291-7221. (July '92) ★ '87 Eddy

SuperGlue II 
SuperGlue II, an excellent print-to-disk program, offers superior operation along with many nice touches, such as Glue Notes (Post-it-like notes) and One-Timer, an eykey that makes operation immensely easier. Version 2.1 shipping. Requires Macintosh Plus or later and System 6.03 or later. $39.95. Portfolio Systems, Inc., 1000 Charted Rd., Lakeville, CT 06039. 800-453-7671 or 203-435-4995. (Sept '89)

SPEEDOMETER 
SPEEDOMETER gives you information on how a particular INIT or set of startup documents is affecting your Mac's performance. Easy to use and fairly comprehensive. Wide range of tests and instructions. Charted results let you compare your system's performance with that of another machine. Version 1.0 reviewed. Version 3.11 shipping. Requires System 6.05 or later. Shareware, $30; available from on-line services such as ZiffNet/Mac. Scott Berfield, 26043 Gushue St., Hayward, CA 94544. (Oct '90)

Stepping Out II 
Stepping Out II is a software alternative to a large-screen monitor. Lets you create a virtual screen (as large as memory allows) inside the Mac's 9-inch screen. Automatically scrolls to new document position as you type or draw. Version 2.0 reviewed. Version 2.02 shipping. Requires Macintosh Plus or later. $95. Berkeley Systems, Inc., 2095 Rose St., Berkeley, CA 94709. 510-540-5535. (Oct '88)

Suitcase II 
Suitcase II has excellent resource-management capabilities that let you open 99 font, DA, sound, or FKey files at a time. Can display any installed font in any style. Fonts can also appear in their proper typefaces on the font menus. Includes Font Harmony for resolving font-ID conflicts, and Font & Sound Valet for font and sound compression. Although not completely intuitive, has convenient twowindow interface and menu bar. Sets feature lets you group font/DA suites into logical sets for special projects and then deactivate sets when not needed. Documentation and HyperCard tutorial are superb. Version 2.0 reviewed. Requires Macintosh Plus or later and System 6.03 or later. $79. Fifth Generation Systems, 10049 N. Reiger Rd., Baton Rouge, LA 70809. 800-877-4384 or 504-291-7221. (July '92) ★ '87 Eddy

TEMPO II PLUS 
TEMPO II Plus is a powerful macro program designed for owners of extended keyboards. Especially good for building sequential macros. Unique features include conditional branching and the ability to remember menu selections by name. TEMPO II Plus' use of several separate files is potentially confusing, but the bundled installer application helps a lot. Version 2.01 reviewed. Version 2.03 shipping, $169.95 for a single user;
That's 'B' As In Best

Introducing
NewGen's B Series
Large Format Laser Printers

Finally! A large format laser printer that offers affordable PostScript® compatible printing and the best resolution that money can buy—NewGen's B Series family of laser printers.

Best Resolution
The B Series includes NewGen's Image Enhancement Technology (IET)™ which gives you the sharpest graphics and high resolution up to 1200 dpi.

Image Enhancement Technology
Shown below is 12 point Courier enlarged to 250%.

Best Networking
The B Series with Network ART™ allows Mac, Sun, and PC users to send documents via ethernet to the same printer and automatically switches EtherTalk®, TCP/IP, and Novell® protocols.

Best Paper Handling
The B Series also offers Automatic Paper Tray Sensing which instantly selects and sends the right size paper.

Best Value
Dollar for dollar there are no better large format laser printers than the B Series, currently available in the following models:

- TurboPS/440 B* 400 dpi +IET
- TurboPS/660 B 600 dpi +IET
- TurboPS/1212 B 1200 dpi +IET

For more information about the B Series, or for the dealer nearest you, call us today at:

1-800-756-0556

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DEALERS CIRCLE 32 ON READER SERVICE CARD.
COLORSQUEEZE


AutoBack

AutoBack creates copies of data files on another hard drive (or on selected tape drives) whenever you save or activate a file. Doesn't back up applications and System files. Can be set to back up only selected files, although these options are limited. Performance is good. Version 2.0 reviewed. Version 3.2 shipping. Requires Macintosh Plus or later. Version 3.4 shipping. $125; 10-user pack, $900; 25-user package, $1,900.

TerraNetics, 2773 Westshire Dr., Los Angeles, CA 90068. 213-463-6491. (Aug '90)

AutoDoubler

AutoDoubler provides efficient, automatic, and completely transparent file compression and decompression from storage devices. Fast and reliable. Installs as control panel, with many useful options for extent and frequency of compression. Can exclude designated files, folders, or entire volumes from compression. Size of RAM cache used for normal operation can be adjusted to save memory or to accommodate large files. Extension-management utilities such as INITPicker or Apple's Extensions Manager can make sure that AutoDoubler doesn't inadvertently prevent other extensions or control panels from loading at startup. Version 1.04 reviewed. Version 2.0 shipping. Requires Macintosh Plus or later. 2 MB of RAM, System 6.04 or later, and a hard drive. $89.95. Salien Software, Inc., 124 University Ave., Ste. 300. Palo Alto, CA 94301. 415-321-5375. (July '92)

Backmate

Backmate is an INIT that scans your hard disk whenever you shut down and backs up all the changed files. Can back up to floppies, a folder on your hard disk, or a server.

Backmate is easy to use, automatic, and completely transparent to the Mac user. Includes documentation. Version 1.1 reviewed. Version 1.4 shipping. Requires Macintosh Plus or later and System 4.2 or later. $93.95. Masters Publishing Co., P.O. Box 1940. Ann Arbor, MI 48106. 313-996-8861. (Mar '92)

Cataloger

Cataloger is a utility that tracks the contents of floppy disks' contents and saves an index on your hard disk. Provides a comprehensive database for managing floppies. Can also index other removable media, hard drives, or file servers. Finder-like interface lets you check even Get Info comments of the contents of archived Stufflt files. Can print labels for disks. Version 1.1 reviewed. Version 1.1 shipping. Requires Macintosh Plus or later. S29.95. Master Manufacturing, Inc., 118 N. Cypress St., La Habra, CA 90631. 310-694-8681. (Aug '90)

Complete Undelete

Complete Undelete is a super file-recovery program. Excellent interface and very fast. Recovers all deleted files and fragments of partially overwritten files. Version 1.1 reviewed. Version 2.01 shipping. Requires Macintosh Plus or later and System 4.2 or later. $79.95. Microcom Utilities Product Group, P.O. Box 51489, Durham, NC 27717.

ColorSqueezer

ColorSqueezer is a file-compression program that shrinks photographic-quality color or gray-scale images. Allows high levels of JPEG compression for 24-bit PICT and TIFF images. Highest level of compression reduces file size by about 20:1, with some loss in image quality. Zoom feature lets you inspect details of photos at different compression ratios. Provides basic copy and paste functions, includes decompression-only utility for unlimited noncommercial distribution. Version 1.0 reviewed. Requires Macintosh II series with 2 MB of RAM, a 24-bit display system, and a hard drive. $179. Eastman Kodak Co., 343 State St., Rochester, NY 14650. 800-242-2424 or 716-724-4000. (Sept '91)

Compact Pro

Written by Bill Goodman, Compact Pro (formerly Compress) is a shareware application that quickly creates the smallest possible compressed files. It can also create self-extracting archives that open automatically when you double-click on their icons, even when the Compact Pro application isn't available. Self-extracting feature adds only 14K to an archive. Unstuff's Stufflt files up to version 1.51. Many compressed files available from on-line services have been created with Compact Pro. Version 1.21 reviewed. Version 1.33 shipping. Requires Macintosh Plus or later and System 4.2 or later. Shareware, $25 (from on-line services such as ZiffNet/Mac); on disk from Cyclos, S33, Cyclos Software, P.O. Box 31417, San Francisco, CA 94131. 415-821-1448. (Apr '91) *90 Eddy

Complete Undelete

Complete Undelete is a super file-recovery program. Excellent interface and very fast. Recovers all deleted files and fragments of partially overwritten files. Version 1.1 reviewed. Version 2.01 shipping. Requires Macintosh Plus or later and System 4.2 or later. $79.95. Microcom Utilities Product Group, P.O. Box 51489, Durham, NC 27717.

MICE RATINGS

290 MacUser
Another Great Moment In Connectivity.
A New Portable Ethernet Link from Dayna.

An unexpected connection with an Apple gave Sir Isaac Newton one of his greatest ideas. At Dayna, we've always had great ideas about connecting with Apple, and here's one of our latest, DaynaPORT SCSI/Link™—the world's smallest high-speed Ethernet connector for the Macintosh.

SCSI/Link's compact case houses two 25-pin SCSI ports as well as connectors for thick, thin and 10BASE-T Ethernet cables. We've also included internal SCSI termination and a SCSI cable for either desktop Macs or PowerBooks. No other SCSI connector gives you this much flexibility in such a small package.

An Ethernet connector this small and this versatile is ideal for PowerBook users on the go. Leave it behind as an Ethernet docking station on your desk or take it with you for portable Ethernet connections on the road. It's also the perfect solution for desktop Macs, such as the Classic and LC, that don't have a card slot available.

Like the rest of our full line of Ethernet adapters, SCSI/Link comes with our Easy Installer for System 6 or System 7 and free diagnostic software. We back all our Ethernet adapters with a lifetime warranty and unlimited free technical support.

So when you're contemplating Ethernet connections for your Mac, think of us first. Because you shouldn't trust a decision of such gravity to anyone but the connectivity experts at Dayna.

Dayna
We Connect People And The Computers They Use™
(801) 531-0600 ext.351
CIRCLE 134 ON READER SERVICE CARD.
## MacLand Hard Drives

### Quantum

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All MacLand Hard Drives come pre-tested, pre-formatted, and come with our own installation and reference manual, DiskMaster Plus™ formatting utility software, cables, and a one-year warranty. Internal hard drives also include bracket kits to fit your particular Mac.

### SyQuest

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Syquest Drives are the recipient of MacUser Magazine's prestigious Editors' Choice Award.

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### Monochrome Monitor Specials

- **Orion MacScan Ultra**: $349
  - One-Year Warranty
- **Magnavox**: $429
  - Two-Year Warranty
- **MacLand**: $399
  - Two-Year Warranty

**Orion Technologies**

- Complete Page Display: $329
- Dual Page Display: $699
  - One Year Warranty

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### Video Tapes

- 4th Dimension: $39 each
- Accountant Inc.: $39 each
- Canvas 3.0: $39 each
- ClarisWorks: $39 each
- Design & Layout: $39 each
- Dollars & Sense: $39 each
- Excel 3.0: $39 each
- Excel 4.0: $39 each
- FileMaker Pro 1.0: $39 each
- FileMaker Pro 2.0: $39 each
- Forte Management: $39 each
- FreeHand 3.1: $39 each
- HyperCard 2.0: $39 each
- Illustrator 3.2: $39 each
- Lotus 1-2-3: $39 each
- MacDrawPro 1.0: $39 each
- MacPaint 2.5: $39 each
- MacWrite II: $39 each
- Macintosh 6.0: $39 each
- Macintosh 7.0: $39 each
- MacroMind Director: $39 each
- Microsoft Works: $39 each
- Networking Small: $39 each
- PageMaker 4.2: $39 each
- Paint & Draw: $39 each
- Persuasion 2.0: $39 each
- Photoshop 2.0: $39 each
- QuickDraw 2.0: $39 each
- Quicksilver 3.1: $39 each
- QuickTime Player: $39 each
- Resolve: $39 each
- Superpaint 3.0: $39 each
- System 7: $39 each
- Utilities, CDEV'S & Inits: $39 each
- Word 5.0: $39 each
- WordPerfekt: $39 each
- WordPerfect: $39 each

---

For more information, call 1-800-333-3355.

---

**Sony Monitors**

- 1320: $399
- 1304: $599

---

**Magnavox Monitors**

- Complete Page Display: $329
- Dual Page Display: $699
  - One Year Warranty

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**Orion Monitors**

- Complete Page Display: $329
- Dual Page Display: $699
  - One Year Warranty
### SCANNERS

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<td><strong>Relisys:</strong></td>
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<td>$1099</td>
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**Limited Time Offer!**
From now until Dec. 31, 1992 you can purchase the MLI Cordless Supermouse and Symantec's Norton Utilities for **ONLY $129**!

**Introducing the MLI Cordless Supermouse!**
- Cordless Design
- Pin Point Accuracy
- 400 Dots Per Inch
- Uses Less Desktop Space

**Just $79**
MINIFINDERS

919-490-1277. (Jan '90)

COPY II MAC


DIRECTORY

DIReCtory is a fast, excellent file-cataloging tool. Easy-to-use Finder-like interface. Good printed reports. Includes actual icons and version numbers and a DA that can find files both on your disks and in a DIReCtory catalogs. Version 2.0 reviewed. Version 4.01 shipping. Requires Macintosh Plus or later. $99. Seagull Engineering, Inc., Box 509, Lund S-220 09, Sweden. 011-46-(06) 46-46-12-54-64. (Sept '90)

FIRST AIR

Apple's reliable Disk First Air is a simple diagnostic tool for floppy and hard drives. It has limited file-recovery abilities compared with block-buster utility packages such as Norton Utilities for the Macintosh, but you can't complain about the price. Free with every Mac. Apple Computer, Inc., 20525 Mariani Ave., Cupertino, CA 95014. 800-776-2333 or 408-996-1010. (Apr '91)

DIReCtory

DiR eCtory is primarily a file-cataloging program. It has a superb filtering abilities, plenty of useful sorting options, and good report-printing capability; and it works quickly. Comes with DA that reads catalog files created by the program; also searches effectively for files. Disk Ranger prints decent labels, on Image-Writers only. Can also defragment files of a user-specified size. Disk optimization is adequate. Version 1.0 reviewed. Version 4.76 shipping. Requires Macintosh Plus or later. $59.95. Graham Software Co., 8609 Ingalls Cir., Arvada, CO 80003. 303-422-0757. (July '90)

DiskDoubler

DiskDoubler consists of an INIT and an application for file compression and expansion. The INIT provides a simple interface, allowing a pull-down menu to the Finder and all your applications (in MultiFinder or System 7.0). You rarely need to access the application directly. Quick and efficient for compression. Other utilities, such as StuffIt or Compact Pro, are better for archiving applications. Version 3.0.1 reviewed. Version 3.7 shipping. Requires Macintosh Plus or later, System 6.04 or later, and a hard drive. $79.95. Salient Software, Inc., 124 University Ave., Ste. 300, Palo Alto, CA 94301. 415-321-5375. (Apr '91)

DiskExpress

DiskExpress II is much quicker and better than the original DiskExpress. One of the best hard-drive optimizers (or defragmenters) available, it can run automatically in the background, at a preset time or manually. It's capable of several levels of optimization. When used judiciously, does a perfect job. Version 1.8 reviewed. Version 2.10 shipping. Requires System 6.03 or later, $89.95. ALSOft, Inc., P.O. Box 927, Spring, TX 77383. 713-353-4090. (July '90)

DiskFinder


DiskTop

DiskTop is the quintessential Finder-replacement DA. It's easy to use, powerful, and has an excellent interface. Launches applications and performs batch copies and moves. The Find function's multiple options are excellent. It's very fast. Version 4.0 reviewed. Version 4.02 shipping. Requires Macintosh Plus or later and System 6.04 or later; hard drive recommended. $99.95. CE Software, Inc., 1801 Industrial Cir., P.O. Box 65580, West Des Moines, IA 50265. 800-523-7638 or 515-224-1995. (June '90)

DOS MOUNter

DOS Mounter is an INIT (extension) that lets the Mac desktop mount MS-DOS floppy disks, as well as PC-compatible removable cartridges with higher capacity. Assigns Macintosh Type and Creator codes to MS-DOS files, which lets specified Mac applications open them automatically without going through the Apple File Exchange utility. Works with DOS floppy drives from Apple, P.L.I., and Kennedy. Dayna's popular DaynaFile drives and DataViz's MacLinkPlus Translators come with DOS Mounter bundled. Version 2.03 reviewed. Version 3.0 shipping. Requires any Mac with FDDI SuperDrive (external DOS floppy drive, or removable-cartridge drive. $89. Dayna Communications, Inc., 50 S. Main St., Salt Lake City, UT 84144. 801-531-0600. (Aug '91)

DiskPlus

DiskPlus is a backup utility that supports incremental and differential backups and offers a choice of compression levels. Backup configurations can be saved as preference files. Macro language supports automated procedures. Nonstandard dialog boxes are unclear. Version 2.0 reviewed. Version 3.0 shipping. Requires Mac 512Ke or later and System 4.2 or later. $189; upgrades, $30. Fifth Generation Systems, 10049 N. Reiger Rd., Baton Rouge, LA 70809. 800-873-4384 or 504-291-7221. (Oct '89)

Diskwells

Diskwells is a helpful, reliable utility that installs a new button in the Open dialog box of every Mac application. Click on the button, type a search string, and click on Find, then Diskwells searches for any files that match. Version 1.1 reviewed. Version 2.2 shipping. Requires Mac Plus or later. $29.95 direct. Working Software, Inc., P.O. Box 1844, Santa Cruz, CA 95061. 408-423-5696. (Nov '87) *87 Eddy

HAMI

HAM (hierarchical Apple menu) is a file-management utility intended for use with System 7. Creates hierarchical menus of the small-icon and diskname dialog boxes. This menu can be used to navigate your mounted drives or do other Finder-type operations. Performance is good. Excellent search capabilities. Version 2.01 reviewed. Version 3.0 shipping. Requires Macintosh Plus or later and System 6.03 or later. $39. CRA Z Software, P.O. Box 6379, Haverhill, MA 01831. 508-521-5262. (June '90)

File Director

File Director is an extremely easy-to-use, versatile, and powerful collection of utilities. It includes Disk Tools (for file management and searching), a File Director (an application launcher, formerly called PowerStation), Calendar (a basic monthly appointment and phone-number manager that attaches notes to entries), Phone Pad (a combination notepad and phone dialer), and RPN Calculator and Carbon Copy (two sophisticated improvements on Apple's Calculator DA). This package is a winner, especially if your hard drives contain many different files and applications. Version 1.0 reviewed. Version 1.1 shipping. Requires Macintosh Plus or later. $129. Fifth Generation Systems, 10049 N. Reiger Rd., Baton Rouge, LA 70809. 800-873-4384 or 504-291-7221. (Apr '91)

Findswell

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Now, MS-DOS Files Can Look Just Like Mac Files.

With AccessPC®, you just pop any DOS floppy in your drive, and in a couple of clicks, what you see on your desktop are Mac files.

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accessed files and applications. The HAMIet feature lets you create desktop icons that automatically launch all files and applications that were open when the HAMIet was created. Version 1.0 reviewed. Requires System 7.99. Inline Design, 308 Main St., Lakeville, CT 06039. 800-453-7671 or 203-435-4995. (Sept '92)

HAND-OFF II 
HAND-OFF II lets you launch documents, using applications other than those that created the documents. Works with a variety of document types (including graphics). Can remember preferred pixel depth (colors or gray) and volume settings for different programs. Can add a Launch menu that lets you access applications from the Finder menu bar. SuperMenu feature creates hierarchical submenus from the contents of folders kept in your Apple Menu Items folder. Version 2.25 reviewed. Requires Macintosh Plus or later with 2 MB of RAM and System 6.05 or later. $99. Connectx Corp., 2635 Campus Dr., San Mateo, CA 94403. 800-930-5880 or 415-571-5100. (Sept '92)

Hard Disk ToolKit
Hard Disk ToolKit is a powerful group of applications that lets you format, partition, diagnose, and optimize SCSI cartridge drives or hard drives. Not for the careless or casual user. The package includes HDT Primer, which controls standard hard-disk formatting options and sets disk-specific parameters such as block size; HDT World Control, an expert-only module that edits a drive controller's SCSI module page settings; BenchTest, for measuring disk performance; HDT Prober, a control panel that manages the SCSI chain; HDT Extension, which mounts recalibrate SCSI cartridges; and HDT Util, a mixed-bag manager of operating system parameters. Supports AUSX. Excellent manual explains the mysterious science of SCSI. Version 1.0 reviewed. Version 1.1 shipping. Requires Macintosh Plus or later, System 6.03 or later, and a SCSI cartridge drive or hard drive. $199.95. FWB, Inc., 2040 Polk St., Ste. 215, San Francisco, CA 94109. 415-474-8055. (May '92)

HFS Backup
HFS Backup is a top-class backup program. Quick and reliable. Includes everything from a virus checker to partial imaging capabilities. Can't back up removable-cartridge drives. Version 3.0 reviewed. Version 3.5 shipping. Requires Macintosh Plus or later. $99.99. PCPC (Personal Computer Peripherals Corp.), 4 Daniels Farm Rd., Ste. 326, Trumbull, CT 06611. 800-622-2888. (Oct '89)

ImpressIt
ImpressIt is a fast file-compression program that shrinks photographic-quality color or gray-scale images. Allows a wide range of PICT compression levels for 8-, 16-, and 32-bit PICT and TIFF images. Preview feature lets you inspect details of photos at different compression ratios. Includes plug-in module for Adobe Photoshop. Allows creation of self-decompressing files. Built-in virtual-memory capability uses excess hard-drive space when available RAM is insufficient. Version 1.1 reviewed. Requires Mac II series with 2 MB of RAM, a 24-bit display system, and a hard drive. $159. Radius, Inc., 1710 Fortune Dr., San Jose, CA 95131. 800-227-2795 or 408-434-1010. (Sept '91)

INIT-cdev
INIT-cdev is a no-frills freeware INIT manager that lets you turn INITs on and off simply by clicking on the names in a scrollable list. INIT-cdev is accessible at startup, but it cannot make temporary changes. Version 1.0 reviewed. Version 3.0 shipping. Requires Mac 512Ke or later. Freeware (John Rotenstein); available from on-line services such as ZipNet/Mac. (Aug '89)

INITPicker
INITPicker is a control panel that offers a scrollable list of INITs (extensions) in the System Folder so you can determine their loading order. Holding down a predetermined key combination at startup automatically shuts off all INITs and bypasses the INITPicker screen. Can be invoked at startup. Version 1.0 reviewed. Version 2.0 shipping. Requires Mac Plus or later and System 6.03 or later. $69. Inline Design, 308 Main St., Lakeville, CT 06039. 800-453-7671 or 203-435-4995. (Aug '89)

MacLinkPlus/PC
MacLinkPlus/PC offers document-translation capabilities between a vast number of PC and Mac applications. Its interface is friendly and translations are clean. In addition to translating locally or over a network, the package can connect to a PC serially or by modem. Translators also work with AFE. Includes DOS Mounter software from Dayna, which lets PC disks appear on the Mac desktop. Version 3.0 reviewed. Version 7.0 shipping. Requires Macintosh Plus or later, System 6.03 or later, and a hard drive. MacLinkPlus/PC (with telecommunications), $199; MacLinkPlus/Translators (desktop version only), $169; MacLinkPlus/Wang VS, $395; MacLinkPlus/Wang OIS, $495. DataViz, Inc., 55 Corporate Dr., Trumbull, CT 06611. 800-733-0030 or 203-268-0030. (Oct '89) ★ ★ 89 Eddy

MacLinkPlus/Translators
MacLinkPlus/Translators is a file-translation package that exchanges a wide variety of text, database, spreadsheet, and graphics files between Macs and PCs. Includes DOS Mounter software from Dayna, which lets PC disks appear on the Mac desktop. Translation of text-formatting elements, such as headers, footers, and even footnotes, is generally faithfully rendered. Good graphics conversion between PC formats such as PCX, TIFF, and Windows BMP as well as Mac equivalents. Easy to use. Provides more than 350 translator pairs. Version 5.0 reviewed. Version 7.0 shipping. Requires Apple File Exchange, System 6.03 or later, a hard drive, and either SuperDrive (or other PC-disk transfer) or network file-transfer drive. $169. DataViz, Inc., 55 Corporate Dr., Trumbull, CT 06611. 800-733-0030 or 203-268-0030. (July '91)

MacTools
This powerful collection of utilities provides data recovery, network-capable virus protection, excellent disk optimization, and backup. Consistent, well-engineered user interface. Large-scale data recovery can be slow and has minor bugs. Undelete feature works quickly and reliably on specific files or file types. Backup module manages tape drives, floppies, removable cartridges, and hard drives. Automatic, recurring backups can be scheduled, as can such options as compression, encryption, and virus scanning. Version 1.2 reviewed. Requires Macintosh Plus or later, System 6.05 or later, and 2 MB of RAM. $149. Central Point Software, Inc., 15220 N.W. Greenbriar Pkwy, Ste. 200, Beaverton, OR 97006. 800-445-4208 or 503-690-8088. (Nov '92)

MasterFinder
MasterFinder is a well-conceived program that offers several advantages even over System 7's version of the Finder. Comes as both a DA and an application, both of which let you navigate files and folders, using dynamically updated pop-up menus and scrolling lists of folder contents. Allows files to be automatically opened by an application even if it didn't create the file. Can display available network zones and the names of devices connected within each zone. Includes shutdown, restart, and support for Apple events. Version 1.2 reviewed. Version 1.21 shipping. Requires Macintosh Plus or later with 2 MB of RAM. $149. Olduvai Corp., 7520 Red Rd., Ste. A, South Miami, FL 33143. 800-822-0772 or 305-665-4665. (Dec '91)

Mr. File
This file-management DA has a hard time competing favorably with the Finder under either System 6 or 7. Its most useful feature is its ability to...
perform tasks in the background such as searching and copying. Ideal for users who frequently conduct time-consuming operations such as downloading large files over a network. Version 1.1 reviewed. Version 1.11 shipping. Requires Mac Plus or later, System 6.03 or later, and 2 MB of RAM. $99. Softways, 5066 El Roble, San Jose, CA 95118. 408-978-9167. (Dec '91)

MultiDisk

MultiDisk is an excellent software disk partitioner that allows partitions to be dynamically resized, password-protected, and even encrypted. Can't erase partitions from the Finder. Version 1.11 reviewed. Version 1.27 shipping. Requires System 6.03 or later. $49. Symantec Corp., 10201 Torre Ave., Cupertino, CA 95014. 800-441-7234 or 408-253-9600. (Sept '92)  * 90 Eddy

Offline

Offline is a utility that tracks floppy disk's contents and saves an index on your hard disk. Has a simple, well-designed interface but relatively few bells and whistles. File-search function is limited but adequate for most users. Can also track the contents of other removable media, file servers, and hard drives. Saves a unique serial number for each indexed volume and can print this number along with a list of volume contents on labels. Version 2.1 reviewed. Version 3.0 shipping. Requires Macintosh Plus or later and a hard drive. $99. SNA, Inc., P.O. Box 3662, Princeton, NJ 08543. 609-268-6452 or 609-790-9605. (Mar '92)

On Cue

On Cue lets you switch among files and applications without returning to the Finder. Under MultiFinder or System 7, user-specified applications are listed in a menu. Can launch directly to a specific document or to groups of files and applications. Shows contents of folders as hierarchical submenus. On Disk feature manages pop-up menus that let you create new folders from within standard Open and Save dialog boxes; duplicate and rename files; and find files, folders, and disks using comprehensive search criteria. Version 2.01 reviewed. Requires Mac Plus or later and System 6.03 or later. $99. ICOM Simulations, Inc., 648 S. Wheeling Rd., Wheeling, IL 60090. 800-877-4266 or 708-520-4440. (Sept '92)  * 90 Eddy

On Location

On Location finds files and text strings. Once they're found, you can view file contents (for most common document formats); open a file in its native application; or copy, delete, rename, or move a file. Main asset is blazing speed. Nonstandard interface. Has one-year, money-back guarantee. Version 2.0 reviewed. Requires Macintosh Plus or later, System 6.03 or later, and a hard drive. $129. ON Technology, Inc., 155 Second St., Cambridge, MA 02141. 617-876-0900. (Dec '92)

PickTure

PickTure is an INIT and control panel that serves as a virtual file selector. Presents rows of miniature screen shots of all files that a selected application can open. Double-clicking on the screen shots opens the desired file. Buttons customize navigation through folders. Latest version can create custom color icons. Version 1.0 reviewed. Version 1.1 shipping. Requires Macintosh Plus or later and System 6.03 or later. $89.95. Right Answers, Inc., P.O. Box 3699, Torrance, CA 90510. 818-840-8021. (July '91)

PicturePress

This file-compression program shrinks photographic-quality color or gray-scale images. Allows wide range of JPEG compression levels for 24-bit PICT or TIFF images. Plug-in module for Adobe Photoshop uses Photoshop's built-in virtual-memory capability. Includes free decompression-only utility for unlimited noncommercial distribution. Allows selected areas within images to be compressed at different ratios. Optional accelerator card reduces compression/decompression times to a few seconds. Version 1.03 reviewed. Version 2.04 shipping. Requires Macintosh II series or higher with 2 MB of RAM, a 24-bit display system, and a hard drive. $199; with Photoshop Flash accelerator, $999. Storm Technology, Inc., 1861 Landings Dr., Mountain View, CA 94039. 415-691-6600. (Sept '91)  * 91 Eddy

POWERIcons

POWERIcons creates duplicate application icons for simple and efficient hard-disk drive organization. POWERIcons can open sets of frequently used icons and print document batches. Easy and fast setup. Good manual. Version 2.0 shipping. Requires System 6.03 or later. $49.95. Magic Software, Inc., 2239 Franklin St., Bellevue, NE 68005. 800-342-6342 or 402-291-0670. (Feb '90)

QTBackup with QTShare


Redux

Redux is an excellent incremental backup program. Lets you back up files, folders, or entire volumes. You can write scripts, using BackTalk, the Redux Control Language. Comes with Redux Restore, a restore utility that can be distributed freely. Version 1.5 reviewed. Version 1.63 shipping. Requires Macintosh Plus or later and System 6.03 or later. $99. Inline Design, 308 Main St., Lakeville, CT 06039. 800-453-7671 or 203-435-4995. (July '89)

Retrieve II

This file-search utility can find words, phrases, or complex text combinations in documents and file names. Works with any file on any mounted floppy or SCSI volume. Can view contents of found text files without launching their parent applications. Powerful search operators let you define precise search criteria. Searches are interruptible. Good on-line help. Version 1.0 reviewed. $129. MVP

MICE RATINGS

This package provides complete tools for protecting and restoring data on your hard drive. Highly recommended.

298 MacUser
“SoftPC is the best selling software solution for bringing PC compatibility to the Macintosh. Thanks to its success, Insignia Solutions is growing at a phenomenal rate. We've been running one ad every month for quite a while in MacUser—which is a large commitment for a company of our size. But when you look at advertising as an investment in growth, there's no alternative. We concentrate on getting the most profitable return on that investment, which is why we never miss an issue of MacUser.

"With MacUser, the editors understand that product information is of utmost importance to business buyers who need to know about available products...and which ones they should purchase.

“Our MacUser advertising has been getting such overwhelming sales that we have to add phone lines on a regular basis to take the extra inquiries. It seems like every time we add a phone line, it's busy. So, that's how we know that MacUser is pulling. The ads work so well because MacUser is, first and foremost, a business publication. MacUser is the number one source for unbiased editorial reporting on the products that are vital to business. And based on the responses from people calling in, our marketing plans lean heavily toward MacUser. The ads that we've run have generated the response we need. We know the best way to go is by putting our dollars in MacUser.”
MiniFinders

Software, P.O. Box 282, Cupertino, CA 95015. 800-441-7234 or 408-253-5200. (Dec '92)

**SILVERLINING**


**SCRAPPER**

Scrapper provides three ways to delete files: all zeros, random ones and zeros, or the government specification 5220.22m. Included Scrubber application opens unused areas on your hard drive, preventing file-recovery programs from retrieving erased information. Dragging and dropping file or disk icons onto the Shredder or Scrubber application icons imitates use of the Finder's Trash icon. Allows automatic or scheduled erasing or scrubbing. Supports Apple-event access to programs such as HyperCard, QuickKeys, or Frontier. Ignores locked files. Cute but annoying sound effects can be disabled. Version 1.0 reviewed. Requires System 7 or later. $69. DLM Software, Inc., 3525 Del Mar Heights Rd., Ste. 319, San Diego, CA 92130. 619-283-2434. (Sept '92)

**MINIFINDERS**

MINIFINDERS is an easy-to-learn network-backup program lets users set their own backup preferences and access archives without the help of a network administrator. Included SnapBack Setup software lets administrator designate different space allocations for multiple users. SnapBack program on each Mac controls backup schedule, file and folder selection, and whether all data selected for backup will fit in their space allocation on the server. Has password protection for each user. Files are backed up as standard, uncompressed Mac documents instead of proprietary compressed format, so network backup or archive retrieval is slower but allows direct user access through Finder or SnapBack. Version 1.0 reviewed. Requires Macintosh Plus or later and System 6.03 or later. $79.95. Aladdin Systems, Inc., 165 Westridge Dr., Watsonville, CA 95076. 408-761-6200. (Sept '91)

**REPRODUCER**

Reproducer is a full-featured backup and archival package. Supports storage devices from floppy to DAT drives. Maintains AppleShare access privileges. Version 1.3 reviewed. Requires Mac Plus or later and System 6.03 or later. $249. Dantz Development Corp., 1400 Shattuck Ave., Ste. 1, Berkeley, CA 94709. 510-849-0293. (Dec '92)

**SUPERDISK**

SuperDisk is a file-compression program for Macs that doesn't require sharing or a network. Excellent tool for compressing and decompressing files. 300 MacUser
The next time you see a "sad Mac" on your screen or your Mac's performance isn't up to par, diagnose from your desk with SNOOPER, the revolutionary new standard for Mac diagnostic and testing tools. Snooper performs a comprehensive suite of tests, checks all your hardware and identifies any problems. And the same SNOOPER software runs on all Macs. SNOOPER is easy to use and saves time and money. Complete your Mac utilities with SNOOPER, the hardware diagnostic, and until Dec. 31, 1992, get Norton Utilities free.

MAXA Corporation 116 Maryland Avenue • Glendale, CA 91206 In the US and Canada Call: 800-788-6292
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CIRCLE 90 ON READER SERVICE CARD.
### Quantum Drives

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<th>Model</th>
<th>Description</th>
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ELS drives have 8KB cache, low power consumption, MBTF of 350,000 hrs and 2-Year Warranty. UPS drives have 64K - 256K cache, MTBF of 250,000 hrs, and 2-Year Warranty. PRO drives have 256K cache, MTBF of 150,000 hrs, and 2-Year Warranty. OES Drives have 8KB cache, low power consumption, MTBF of 150,000 hrs, and One Year Warranty.

### FUJITSU Drives

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### Seagate Drives

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### ClubMac Optical Drives

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<td>CMO-5030E2</td>
<td>Ricoh</td>
<td>594/652mb</td>
<td>5.25&quot; Full Height 67.6ms</td>
</tr>
</tbody>
</table>

All ClubMac Optical drives include ONE Year Warranty. Model 5.25" Drives include a Cruise Control. Model 3.5" Single Drive includes a 2-Year Warranty.

### Micropolis

<table>
<thead>
<tr>
<th>Capacity</th>
<th>Model</th>
<th>Description</th>
<th>Access</th>
<th>Internal</th>
<th>External</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0GIG</td>
<td>2112</td>
<td>3.5&quot; Half HT/Fast SCSI-2</td>
<td>10ms</td>
<td>$1959</td>
<td>$2019</td>
</tr>
<tr>
<td>2.0GIG</td>
<td>1904</td>
<td>5.25&quot; Full HT/Fast SCSI-2</td>
<td>11.5ms</td>
<td>$3129</td>
<td>$3299</td>
</tr>
</tbody>
</table>

### ClubMac Tape Backup Systems

<table>
<thead>
<tr>
<th>Capacity</th>
<th>Model</th>
<th>Description</th>
<th>Media</th>
<th>Access Time</th>
<th>External</th>
</tr>
</thead>
<tbody>
<tr>
<td>155mb</td>
<td>Teac MT25T/5N5</td>
<td>Analog</td>
<td>CT600/5N5 7 MB/s</td>
<td>40ms</td>
<td></td>
</tr>
<tr>
<td>600mb</td>
<td>Teac MT25T/5F50</td>
<td>Analog</td>
<td>CT600/7-10MB/s</td>
<td>40ms</td>
<td></td>
</tr>
<tr>
<td>2.0GIG</td>
<td>ARDAT</td>
<td>DAT, DDS</td>
<td>4mm</td>
<td>10-15 MB/s</td>
<td>$1249</td>
</tr>
<tr>
<td>2.0GIG</td>
<td>WangDAT 1300XL</td>
<td>DAT, DDS</td>
<td>4mm</td>
<td>10-15 MB/s</td>
<td>$1329</td>
</tr>
<tr>
<td>3.5GIG</td>
<td>WangDAT 3200</td>
<td>DAT, DDS-DC</td>
<td>4mm</td>
<td>10-15 MB/s</td>
<td>$1549</td>
</tr>
<tr>
<td>2.0GIG</td>
<td>HP 35470A</td>
<td>DAT, DDS</td>
<td>4mm</td>
<td>10-15 MB/s</td>
<td>$1389</td>
</tr>
<tr>
<td>3.5GIG</td>
<td>HP 35480A</td>
<td>DAT, DDS-DC</td>
<td>4mm</td>
<td>10-15 MB/s</td>
<td>$1569</td>
</tr>
<tr>
<td>2.2GIG</td>
<td>Exabyte ESB-6200</td>
<td>Digital/Digital</td>
<td>8mm</td>
<td>10-15 MB/s</td>
<td>$1949</td>
</tr>
<tr>
<td>5.0GIG</td>
<td>Exabyte ESB-8500</td>
<td>Digital/Digital</td>
<td>8mm</td>
<td>10-15 MB/s</td>
<td>$2299</td>
</tr>
</tbody>
</table>

Includes RetroSpect v1.3c Backup Software, One Tape and One Year Warranty.

### New ELS Series

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Actual MAC Internal Capacity</th>
<th>External Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>720XT</td>
<td></td>
<td>$329</td>
<td>$389</td>
</tr>
<tr>
<td>7212</td>
<td></td>
<td>$479</td>
<td>$539</td>
</tr>
<tr>
<td>630mb</td>
<td></td>
<td>$679</td>
<td>$739</td>
</tr>
<tr>
<td>535mb</td>
<td></td>
<td>$1029</td>
<td>$1089</td>
</tr>
<tr>
<td>645mb</td>
<td></td>
<td>$1229</td>
<td>$1329</td>
</tr>
<tr>
<td>1.2GIG</td>
<td></td>
<td>$1549</td>
<td>$1649</td>
</tr>
<tr>
<td>1.7GIG</td>
<td></td>
<td>$1779</td>
<td>$1879</td>
</tr>
</tbody>
</table>

### Seagate Elite Series

Seagate drives include a One Year Warranty.

### Hewlett-Packard

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>234mb</td>
<td></td>
<td>$749</td>
</tr>
<tr>
<td>422mb</td>
<td></td>
<td>$1159</td>
</tr>
<tr>
<td>677mb</td>
<td></td>
<td>$1399</td>
</tr>
</tbody>
</table>

HP Disk Drives feature SCSI-2 embedded controller + MBTF of 150,000 hour.
System 7's alias feature without using System 7. Works well with custom QuickKeys sequence macros. Uses more than 600K of RAM. Version 1.0 reviewed. Version 1.01 shipping. Requires Mac Plus or later, System 6.04 or later, 2 MB of RAM, and a hard drive. $99.95. CE Software, Inc., 1801 Industrial Cir., P.O. Box 65280, West Des Moines, IA 50265. 800-523-7638 or 515-224-1965. (June '92)

TrashMaster $$$
TrashMaster is a control panel that adds menu controls and filtering to Trash emptying. Transforms Empty Trash item on the Finder's Special menu into a hierarchical menu with many options, a feature that may not be worth the trouble. Trash filtering lets you control exactly when to empty specific parts of your Trash, something that System 7 doesn't do automatically. Special Incinerate filter erases specified files when deleted by TrashMaster or by an application. Allows option of erasing files to government specs, using three overwrites of random data. Version 1.1 reviewed. Requires System 7 or later. $69.95. Utilitron, Inc., P.O. Box 811, Allen, TX 75002. 800-428-8766 or 214-727-2329. (Sept '92)

Twint $$
Twint lets your Mac write the same data to two SCSI hard disk or cartridge drives simultaneously. Easy to use. Provides up-to-the-second backup in case one drive fails, but doesn't protect against software errors, viruses, or power interruptions. Doesn't support most tape drives. Reduces performance noticeably only with programs that access hard disks frequently. Version 1.0 reviewed. Requires two SCSI drives with identical capacities. $199. Golder Triangle Computers, Inc., 4849 Ronson Ct., San Diego, CA 92111. 800-326-1858 or 619-279-2100. (Sept '92)

Word for Word/Mac $$$
Word for Word/Mac is a straightforward, stand-alone, DOS/Mac file-translation application. Does good job of retaining original text formatting. Depending on your Mac hardware setup, you may need another programsuch as Apple File Exchange to convert PC-format files over to Mac binary format. Word for Word/Mac supports DOS-to-DOS translation as well as various graphics and spreadsheet formats. One of the program's strengths is that it tags formatting it was unable to convert. Documentation looks and reads as if it was written on a DOS machine. Version 1.2 reviewed. Version 4.2 shipping. Requires Mac Plus or later. $149.95. Software Toolworks, 60 Leveroni Ct., Novato, CA 94949. 800-234-3088 or 415-883-3000. (Mar '91)

Utilities/Printing

BulkMailer- $$
BulkMailer+ is a basic mail manager with many powerful sorting features. Port setup can be difficult. Can handle up to 90,000 names and addresses. Version 3.23 reviewed. Version 3.3 shipping. Requires Mac Plus or later; hard drive recommended. $350. Satori Software, 2815 Second Ave., Ste. 295, Seattle, WA 98121. 206-443-0765. (Oct '89)

DynoPage $$
DynoPage is an extremely practical utility that can save you lots of paper. Supports document printing in enlarged or reduced sizes, including minibags for personal organizers and appointment books. Handles double-sided output quickly and easily. Installs as control panel. Comes with more than 50 page-template forms, but altering them requires use of ResEdit; next version of DynoPage may include a forms editor. Includes a supply of preprinted personal-organizer laser paper. Version 1.0 reviewed. Requires Mac Plus or later and a hard drive. $99.95. Portfolio Systems, Inc., 10062 Millar Ave., Ste. 201, Cupertino, CA 95014. 800-729-3966 or 408-252-0420. (Mar '92)

FastEnvelope $$
This envelope-printing DA has powerful features and flexibility, but bugs and quickness diminish its utility. Includes unlimited number of records, full font control, graphics capability, postal-bar-code creation, dataimport/export, and print merge. You can customize envelope sizes or use ten predefined standard formats. Version 1.03 reviewed. Version 2.1 shipping. Requires Mac Plus or later, System 6.04 or later, and a hard drive. $59.95. Vertical Solutions, P.O. Box 1150, Beaverton, OR 97075. 800-942-4008 or 503-524-7402. (Apr '91)

FastLabel $$
FastLabel is a good label creator and printer. Excellent tools for designing labels. Can include graphics and icons. Prints envelopes by treating them as large labels. Weak list handling. Version 2.0 reviewed. Version 3.1 shipping. Requires Mac Plus or later, System 6.04 or later, and a hard drive. $79.95. Vertical Solutions, P.O. Box 1150, Beaverton, OR 97075. 800-942-4008 or 503-524-7402. (Oct '90)

Freedom of Press $$
Freedom of Press gives you PostScript-quality output on non-PostScript printers and is the best software-only PostScript clone available. The only limit to output quality is the printer's maximum resolution. Adobe Type 1 fonts and Adobe Type Manager are supported. Process is slow and creates large PostScript files, but output is nearly indistinguishable from true PostScript printer output. Background printing is possible running under MultiFinder. Some users would do just as well getting a PostScript cartridge for their printer, but Freedom of Press is a superb software-only PostScript clone. Version 3.0 reviewed. Version 3.03 shipping. Requires Mac Plus or later with 2 MB of RAM, a hard drive, and 1.5 MB of printer memory. $149. Custom Applications, Inc., 300 Technology Park Dr., Bldg. 8, Broomfield, CO 80020. 800-873-4367 or 503-667-8585. (Feb '91)

KiwiEnvelopes! $$
This DA has simple features for one-shot envelope printing, but it needs font flexibility. Features include unlimited number of records, graphics capability, and postal-bar-code creation. Envelope sizes are limited. Has on-line help. Version 3.1 reviewed. Version 3.16 shipping. Requires Macintosh Plus or later. $49.95. Kiwi Software, Inc., 6546 Pardall Rd., Santa Barbara, CA 93117. 805-685-4031. (Apr '91)

MacEnvelope $$
This combination DA/application has many powerful features for envelope printing and mail management, but it lacks full font flexibility and unlimited record capability. Features include graphics capability, postal-bar-code creation, data import/export, and print merge. You can customize envelope sizes or use 11 pre-defined standard formats as well as 150 label templates. Sorts by name or ZIP code. Version 5.0 reviewed. Version 5.1 shipping. Requires Macintosh Plus or later. $79.95. Synex, 692 Tenth St., Brooklyn, NY 11215. 800-447-9639 or 718-499-6293. (Apr '91)

MacEnvelope Plus $$
MacEnvelope Plus is one of...
the best envelope and mailing-list programs available. Intended for small-business and group users who do substantial mailing. Can print bar codes and FIMs automatically. Sorts and reports by ZIP code or carrier routes. Does everything necessary for your mailings to qualify for the lowest bulk- and regular-mail rates. Operation is fast and very, very slick. Includes a nice DA so envelopes can be printed on the fly from within other applications. Version 2.0 reviewed. Version 3.0 shipping. Requires Macintosh Plus or later. $350. Synex, 692 Tenth St., Brooklyn, NY 11215. 800-447-9639 or 718-499-6293. (Aug '90)

MacPrint

MacPrint is a printer driver that lets you print to non-PostScript HP-compatible printers. Provides screen fonts for every HP font cartridge and special Compugraphic screen fonts. Includes cable. Good manual. Check applica-
tion compatibility before buying. Version 1.0 reviewed. Version 1.3 shipping. Requires Macintosh Plus or later, System 6.0.3 or later, a hard drive, and an HP-compatible printer. $149. Insight Development Corp., 2200 Powell St., Ste. 500, Emeryville, CA 94608. 510-652-4115. (May '91)

MergeWrite

MergeWrite is a mail-merge program for MacWrite. It also works with ASCII files. Combines names and addresses from a data file into predefined fields in a form letter. Allows simple conditional IF/THEN/ELSE statements. Version 1.1 shipping. Requires Mac Plus or later. $49.95. Software Discov-
eries, Inc., 137 Krawski Dr., South Windsor, CT 06074. 203-644-9225. (Dec '87)

MyAdvancedLabelDesigner

MyAdvancedLabelDesigner (formerly MyAdvancedLabelMaker) is a label-man-
gagement utility that offers many features but suffers greatly from its unconven-
tional, nonintuitive interface. Learning its special method for designing and printing la-

bel. Takes time, and similar utilities provide equal or bet-
ter results. Version 1.0 reviewed. Requires Macintosh Plus or later and System 6.03 or later. $59.95. MySoftware Company, 1259 El Camino Real, Ste. 167, Menlo Park, CA 94025. 415-325-9372. (Sept '91)

QuickEnv

QuickEnv has limited features and flexibility for envelope printing, with 1,000-record capacity. Features include full font control and print merge. You can customize envelope size or use two predefined stan-
dard formats. Without features such as graphics-importing and postal-bar-code capability, QuickEnv can't compete with similar envelope-printing utilities. Version 1.0 reviewed. Version 1.02 shipping. Requires Mac Plus or later. $49. GCC Technologies, Inc., 580 Winter St., Waltham, MA 02154. 800-422-7777 or 617-890-0880. (Apr '91)

QuickLetter

QuickLetter is a well-designed and thoughtfully implemented DA for creating letters and envelopes. Creates stationery, complete with graphics, and maintains an address book that includes salutations. Version 1.0 reviewed. Version 2.0 shipping. Requires Mac Plus or later. $49.95 direct. Working Software, Inc., P.O. Box 1544, Santa Cruz, CA 95061. 408-433-5696. (Apr '91)

SuperLaserSpool

This handy print spooler supports a wide range of printers, including the HP DeskWriter and color devices. Compatible with many printers and applications that don't work with Apple’s PrintMonitor. Excellent performance, even when managing simultaneous output to multiple printers. Installation is a snap, and use is mostly transparent. Adds a Print Preview mode to applications without one. Included Laser Queue DA manages print jobs. Has minor problems with some fax-modem software and graphics embedded in Word 5 documents. Version 2.0 reviewed. Version 3.0 shipping. Requires MacIn-
tosh Plus or later and System 4.1 or later. $149. Fifth Ger-

TScript

TScript makes some non-PostScript laser printers PostScript-compatible. No frills. Can preview a PostScript file with any Adobe font. May suffer the jaggies if you try to reduce, apply fills, and con-
dense or expand text strings in some fonts. Remarkably quick performance. A low-cost alter-
native if you’re willing to suffer some severe limitations.

A. M. E. (Access Managed Environment)

This industrial-strength security system offers some of the most complete features available for the Mac, but its unfor-
ergying approach makes it suitable only for knowledge-

able users. System adminis-
trators will appreciate the Ac-

tivities Log feature, which re-

members any activity per-

formed on the protected Mac. You can assign access levels

MICE RATINGS

Adequate performance with HP LaserJet printers. Version 1.2 reviewed. Version 3.2 shipping. Requires Mac Plus or later and a hard drive. $145; Basic version, $85; Deluxe version, $495. TeleType-
sign Co., 311 Harvard St., Brookline, MA 02146. 617-
734-9700. (Aug '90)

TurboSpool

This spooler has a nice interface but forces you to load spooled files into the queue manually. Sometimes printing delay is unnecessarily long. Compatible with LaserWriter and MultiFinder. $69. PLI (Peripheral Land, Inc.), 47421 Bayside Pkwy., Fremont, CA 94538. 800-288-8734 or 510-657-2211. (Apr '90)

UltraScript

UltraScript provides software-only PostScript emulation that lets Mac applications get the maximum quality possible from non-PostScript printers. A serious disadvantage is that Adobe Type 1 fonts must be converted into a proprietary format in order to work with UltraScript. Adobe’s Type Man-
ager still works, but it doubles the hard-drive space used by fonts. Batch processing is not possible, and not all printers and film recorders are sup-
ported. Version 1.1 reviewed. Requires Macintosh Plus or later and 3 MB of RAM (hard drive recommended). $195; UltraScript Plus, $445 (includes network spooler and 43 fonts). QMS, Inc., One Magnum Pass, Mobile, AL 36618. 800-523-2696 or 205-
633-4300. (Feb '91)

Utilities/Security

This industrial-strength security system offers some of the most complete features available for the Mac, but its unfor-
ergying approach makes it suitable only for knowledge-

able users. System adminis-
trators will appreciate the Ac-

tivities Log feature, which re-

members any activity per-

formed on the protected Mac. You can assign access levels

MacUser 305
Our goal at NEC is the complete integration of computers and communications. The Silentwriter Model 95fx is just one of many innovative products that help us to realize this goal. For example, we not only developed the first notebook computer with a built-in phone and fax, we make satellite dishes capable of sending data worldwide.

Once upon a time, all faxes looked the same. Bad. But with the Silentwriter Model 95fx multifunction printer/fax, nothing gets lost in the transmission. Imagine PostScript™ language-quality faxes from your printer. It's no fairy tale. Now you can send and receive documents in all their original glory. You'll see beautiful fonts and graphics with none of the dirt and glitches, the jaggies and imperfections, that can turn a wonderful story into a tragedy. Why send a facsimile when you can send an original? Get the NEC Silentwriter Model 95fx multifunction printer/fax and live happily ever after.

The End
And these facts.

1. A state-of-the-art 6 PPM laser printer equipped with the latest in Mac® and PC® printer software support—Adobe's PostScript™ Level 2 and HP’s PCL5.
   Send and receive faxes in either conventional or PostScript-language formats anywhere in the world.

2. Patented Sharp Edge Technology delivers 600 DPI-equivalent clarity in a 300 DPI class.
   Ideal for shared use. Automatic interface switching supports both Macs and PCs simultaneously.

3. Under $2,349 (MSRP). Far less than you’d pay for any printer/fax multifunction combination. If you could even find a comparable product.

The Silentwriter Model 95fx Printer/Fax

Because up is the way you want to go. NEC

CIRCLE 203 ON READER SERVICE CARD.

about the Silentwriter Model 95fx, call NEC at 1-800-325-5500.
for users, and password protection is sophisticated. DES encryption is available. A.M.E. is effective but so sensitive to user error that it can irretrievably lose data. Version 1.1.3 reviewed. Version 2.0 shipping. Requires Mac Plus or later, System 6.02 to 6.08, and hard drive. $279 for a single user; $895 for 5 users; $1,495 for 10 users; site licenses available. Casady & Greene, Inc., 22734 Portola Dr., Salinas, CA 93908. 800-359-4920 or 408-484-9228. (May '91)

Disklock  

The easy-to-use security program DiskLock keeps the contents of your hard drive private. The important improvements in this version include the ability to do background processing, protection against the trashing of locked files and folders, and support for the U.S. Data Encryption Standard (a faster proprietary encryption is also provided). It doesn't offer customizable user levels, administrative functions, or a hierarchy of privileges, however. Like all security software, DiskLock works best for people who never forget their password. Version 2.0 reviewed. Version 2.12 shipping. Requires Macintosh Plus or later and System 4.1 or later. $189. Fifth Generation Systems, 10060 Reiger Rd., Baton Rouge, LA 70809. 800-873-4384 or 504-291-7221. (Mar '91)

Empower II  

Empower II is control-panel software offering a flexible, easy way to set up access privileges. Extends well beyond the capabilities of System 7's File Sharing. Provides data encryption of individual files, but can't protect applications, prevent the deleting and renaming of accessible files and folders, or provide automatic shutdown and data eradication. Good manual. Administrative controls include an activity log, disabling of floppy drives at startup or later, and protection of DAs on a person-by-person basis. Lets users maintain the privacy of their personal files. Version 4.07 reviewed. Version 4.08 shipping. Requires Macintosh Plus or later and a hard drive. $296; 10-user pack, $1,539. Magna, 332 Commercial St., San Jose, CA 95112. 408-282-0046. (May '92)

**FileGuard**

FileGuard is an excellent security package that operates primarily in the background. It is unique in that it can protect folders, applications, and data files, which it accomplishes by using an easily updated list of persons who have different levels of access. There is no DES encryption (a U.S. government standard), but its proprietary encryption is good. FileGuard provides support for the optional MaccassCard magnetic-identity-card reader that operates as part of the ADB circuitry. Version 2.5 reviewed. Version 2.72 shipping. Requires Macintosh Plus or later, or SE or later to use MaccassCard Reader. $249; 5-user office pack, $795; 10-user office pack, $1,295. ASD Software, Inc., 4650 Arrow Hwy., E-6, Montclair, CA 91763. 714-624-2594. (Apr '91)

**FolderBolt**

FolderBolt is a straightforward, easy-to-use utility that protects the contents of individual folders instead of an entire disk volume. Allows three levels of security: password-protected, read-only, and drop-only (lets users add to a folder's contents). Can set up and manage grouped sets of folders accessible simultaneously with one password. Includes FolderBolt Administrator program that lets users or network administrators override folder protections individually or by volume. FolderBolt Administrator can also be password-protected and provides an activity log with information about network traffic and any attempts at illegal folder access. Version 1.02 reviewed. Requires Mac Plus or later. $129.95. Kent Marsh Ltd., 3260 Sul Ross St., Houston, TX 77098. 800-325-3587 or 713-522-5625. (Mar '92)

**Fl. Knox**

Fl. Knox is an excellent, high-level security utility. Supports password protection and two forms of encryption. Files or volumes can be "sanitized" to U.S. top-secret standards. Ideal for classified government environments or high-level corporate and research facilities. May be overkill for normal business use. Easy to use and includes good manual. Version 1.05 reviewed. Requires Macintosh Plus or later and a hard drive. $195 direct. Transfinite Systems Co., Inc., P.O. Box N, M.I.T. Branch Post Office, Cambridge, MA 02139. 617-969-9570. (June '92)

**MaccassCard Reader**

MaccassCard is a magnetic-identity-card reader that operates as part of the ADB circuitry and requires ASD's excellent FileGuard software. In conjunction with FileGuard, the reader prevents unauthorized access to either a Mac's entire hard disk or a specified selection of files, folders, applications, and partitions. Requires Macintosh SE or later, with FileGuard software. $349. ASD Software, Inc., 4650 Arrow Hwy., E-6, Montclair, CA 91763. 714-624-2594. (Apr '91)

**MacSafe**

MacSafe is a data-file-security program that lets you put multiple files into a "safe," where you can protect them further through two types of encryption (including DES). Flexible and easy to use. Allows for installation on a hard drive. Version 1.0 reviewed. Version 2.0 shipping. Requires Macintosh Plus or later. $189.55. Kent Marsh Ltd., 3260 Sul Ross St., Houston, TX 77098. 800-325-3587 or 713-522-5625. (Mar '92)

**NightWatch**

NightWatch locks up your hard drive by using a floppy startup disk that acts as a key. Type in the correct password, and access to the hard drive is allowed. Version 1.02 reviewed. Version 2.01 shipping. Requires Macintosh Plus or later and a hard drive. $179. Kent Marsh Ltd., 3260 Sul Ross St., Houston, TX 77098. 800-325-3587 or 713-522-5625. (Sept '88)

**SAM (Symantec AntiVirus for Macintosh)**

SAM offers powerful, effective virus protection. An easy upgrade procedure lets registered users update SAM to fight new viruses by calling Symantec's 24-hour Virus Newsline. The INIT portion, SAM Intercept, can track and intercept up to 14 categories of Mac events, from relatively innocent operations (such as copying applications to disk) to potentially insidious code changes in files. Includes Virus Clinic, an application for batch-checking older files that may be infected. Easy to use and upgrade. New feature allows networked users to access single virus-definition file on central server. Version 3.0 reviewed. Requires Macintosh Plus or later and System 6.03 or later. $99. Symantec Corp., 10201 Torre Ave., Cupertino, CA 95014. 800-441-7234 or 408-253-9600. (Aug '91)
quires Macintosh Plus or later and a hard drive. $290. usrEZ DES, Double DES, and UltraSECURE’s own ultraCRYPT. Can use a key disk instead of passwords to provide access. Poor manual. Version 1.2 reviewed. Requires Macintosh Plus or later and System 5.0 or later, and a hard drive, $49. WordStar International, Inc., 201 Alameda del Prado, Novato, CA 94949, 800-523-3520 or 415-382-8000. (July ’92)

**Virex** 

Virex is a virus preventer, detector, and eradicator that works against known viruses. Excellent support and update history. Installation process is simple enough for novices. $39.95. Spinmaker Software Corp., 201 Broadway, Cambridge, MA 02139. (800) 826-0706 or (617) 494-1200. (July ’90)

**Bookends Mac II**

Bookends Mac II is a set of HyperCard stacks that provides bibliographic-database management in conjunction with a word processor. Creates a formatted bibliography from citations in a text document. Lacks flexibility in editing and use of formatting styles. Alerts users to unmatched or multiple-matched references. Can save compiled bibliography as an RTF text file (containing font and style variations) usable by most word processors. Offers fast but limited find and select capabilities. Version 2.0 reviewed. Version 2.1 shipping. Requires Macintosh Plus or later with 2 MB of RAM, HyperCard 2.1, and a hard drive. $129.95. Sensible Software, Inc., 20200 E. Nine Mile Rd., Ste. 150, St. Clair Shores, MI 48080. 800-394-4669 or 313-774-7215. (Sept ’91)

**Correct Letters**

Correct Letters is a good source of model business letters. Final writing can be done inside program or with separate word-processing application. Good interface. Needs more categories for letter searching. Version 1.0 reviewed. Requires Mac Plus or later, System 5.0 or later, and a hard drive. $49. WordStar International, Inc., 201 Alameda del Prado, Novato, CA 94949, 800-523-3520 or 415-382-8000. (July ’92)

**Correct Writing**

Correct Writing provides useful information on writing form, usage, and style. Can be used as a DA. Good interface and comprehensive index. Needs to cover more subjects and should include better cross-referencing. Version 1.0 reviewed. Requires Mac Plus or later, System 5.0 or later, and a hard drive, $49. WordStar International, Inc., 201 Alameda del Prado, Novato, CA 94949, 800-523-3520 or 415-382-8000. (July ’92)

**DocuComp**

DocuComp is a utility that lets you compare two versions of a word-processing document. Inserted text in the newer document is shown with underlining, and moved text appears in boldface. Older document shows deleted and moved text with strikeover characters. An excellent reporting feature details all revisions made to a document. A definite winner, version 1.0 reviewed. Requires Mac Plus or later and System 6.03 or later; hard drive recommended. $159.95. DocuComp II, $179.95. Advanced Software, Inc., 1095 E. Duane Ave., Ste. 103, Sunnyvale, CA 94086. 800-346-5392 or 408-733-0745. (Feb ’91)

**EndNote Plus**

EndNote Plus provides excellent bibliographic-database management in conjunction with a word processor. Allows for formatted-in-text citations to be pasted directly into a word-processing document and then creates a bibliography from the citations. Use of editable formatting styles allows global changes to all citations and the bibliography. Includes predefined reference types and publication styles for most common bibliographic formats. Compatible with Word, WordPerfect, Writer, WriteNow, MacWrite, and ASCII text documents. Runs as an application or as a DA. Offers fast find and sort capabilities. Version 1.0 reviewed. Version 1.21 shipping. Requires Mac Plus or later and a hard drive. $249. Niles & Associates, Inc., 2000 Hearst St., Ste. 200, Berkeley, CA 94709. 510-649-8176. (Sept ’91)

**Expressionist**

Expressionist is a sophisticated mathematical equation editor that’s extremely customizable and offers some unique tools. Works as a DA and an application. Steep learning curve. Handles basic mathematical formatting such as integral input, summations, set-theory symbols, matrices, Greek letters, trigonometric functions, delimiters, and a wide variety of special symbols. Supports PICT and EPS formats for exporting, or you can copy equations to the Clipboard. Poor documentation. Version 3.0 reviewed. Requires Macintosh Plus or later and System 6.03 or later. $199.95. Prescision Corp., 939 Howard St., San Francisco, CA 94103. 800-827-6284 or 415-543-2252. (Dec ’92)

**FullWrite Professional**

Stable and easier to use than previous versions, FullWrite Professional combines outlining and word-processing with page-layout and drawing capabilities, but it lacks some professional features. The program (originally from Ashton-Tate) can import documents created in some versions of Word, MacWrite, WordPerfect (for PCs or Macs), Multimate, and Advantage. Many of these conversions are made via the Word for Word program. Also included is Tycho Table Maker, which creates tables that are suitable for pasting into (but not editing in) FullWrite Professional. Product support uncertain. Version 1.3 reviewed. Requires Macintosh Plus or later with 2 MB of RAM and hard drive. $249. Borland International, Inc., 1800 Green Hills Rd., Scotts Valley, CA 95066. 800-331-0877 or 408-438-5300. (Apr ’91)

**Hot Keys (MacWrite II version)**

Hot Keys is a set of MacroMaker macros for MacWrite II. Versions for Works and PageMaker are also available. Includes utility macro software and a keyboard overlay. Has many useful macros,
Letter Writer Plus $$$
Letter Writer Plus is a DA for creating correspondence on the fly. It can use Address Book Plus files as well as text and comma- or tab-delimited files. The interface of this large DA has some rough edges. Excellent envelope printer and mail-merge facility. Good text handling. Version 1.0 reviewed. Version 1.02 shipping. Requires Mac Plus or later and System 6.03 or later. $89.95. Power Up Software, 2929 Campus Dr., San Mateo, CA 94403. 800-851-2971 or 415-345-5900. (May '90)

LetterWriter $$

MacWrite II $$$
MacWrite II offers useful word-processing features along with an excellent interface. Has search-and-replace, multiple-column, and mail-merge functions. Includes interactive spelling checker. Supports footnotes but not style sheets. Weak graphics and page-layout capabilities. With its open hooks for PC and Mac file translators, a good choice for mixed environments. Version 1.1v3 reviewed. Requires Macintosh Plus or later; hard drive recommended. $129. Claris Corp., 5201 Patrick Henry Dr., Santa Clara, CA 95052. 408-727-8227. (Sept '92) © '85 Eddy

MarkUp $$$
MarkUp is a multiuser editing and review tool that imports documents from many Mac applications. Poor performance. Inconsistent and time-consuming interface. Offers excellent security and organization. Version 1.01 reviewed. Version 2.0 shipping. Requires Mac Plus or later and System 6.03 or later. $195. Mainstay, 5311-B Derry Ave., Agoura Hills, CA 91301. 818-991-6540. (Mar '90)

MasterWord $4$$
This handy collection of enhancements for Microsoft Word is elegant, well designed, and fun to use. Easy installation. Adds many new commands to Word menus. Powerful CustomBar floating palette provides many buttons that activate predefined commands or can be user-customized. Pattern-Matching command performs complex search-and-replace GREP operations in text. Excellent support for envelope printing and table formatting. Simplifies creation of footnotes and fractions. Has illustrated on-line help with hypertext index capability. Includes three DAs: a calculator for complex math equations; an electronic artist's proportion wheel; and a GREP file finder. Bundled with Fish! screen saver (Bogus Software). Version 1.0 reviewed. Requires Word 5. $99.95. Akli Software Corp., 219 First Ave. N., Ste. 410, Seattle, WA 98109. 800-669-9673 or 206-286-2600. (Dec '92)

MathType $4$$
MathType is an elegant, easy-to-use equation editor that handles basic mathematical formatting: integral input, summations, set-theory symbols, matrices, Greek letters, trigonometric functions, delimiters, and a wide variety of special symbols. Limited options for customization. Supports PICT and EPS formats for exporting, or you can copy equations to the Clipboard. Good documentation. Version 3.0 reviewed. Requires Mac Plus or later and System 6.03 or later. $199. Design Science, Inc., 4028 Broadway, Long Beach, CA 90803. 800-827-0685 or 310-433-0685. (Dec '92)

MathWriter $$

minWriter $4$$
minWriter is a word-processing DA that has a slick feel and is easy to use. Features include smart (printer's) quotes, a Find function that works well, and the option to set the typeface and size for the whole document but not for individual words. Designed for dot-matrix printers, it prints very well on laser and inkjet printers too. Version 1.6 reviewed. Version 1.73 shipping. Shareware, $12. Maitreya Design, P.O. Box 12085, Eugene, OR 97440. 503-342-2834. (Oct '90)

Nisus $$
This high-end word processor has an intuitive design and is easy to learn, but its range of menu options can be intimidating. Good for technically proficient users who need extensive control over long documents. Graphics handling has been greatly improved and now includes Page Graphics, a surprisingly powerful system with basic DTP functions. Extensive search-and-replace and macro capabilities. File size is limited primarily by the Mac's available RAM. Supports multiple columns, footnotes, and style sheets. Has glossary, spelling checker, and good indexing. Version 3.06 reviewed. Requires Mac Plus or later; 2 MB of available RAM and a hard drive recommended. $395. Nisus Software, Inc., P.O. Box 1300, 107 S. Cedros, Solana Beach, CA 92075. 800-922-2993 or 619-481-1477. (Sept '92)

QUED/M $$
QUED/M is an excellent DA text editor. Saves documents in a form readable by most computers and printers. Doesn't support graphics or

ResumExpert $$$ ResumExpert is a set of resume templates with a superb manual. Requires Mac Plus or later, Microsoft Word, MacWrite, or WriteNow. $95. A Lasting Impression, 49 Thornberry Rd., Winchester, MA 01890. 617-721-2037. (Oct '89)

Sonar Bookends $$$ Sonar Bookends is designed to create indexes for long documents. Has some interface flaws and lacks editing tools. Provides a variety of Boolean selection options for creating phrase lists. Doesn't require special indexing characters or text-marking procedures. A good choice if your word processor lacks built-in indexing. Version 2.2 reviewed. Version 3.0 shipping. $129.95. Virginia Systems, Inc., 5509 W. Bay Ct., Midlothian, VA 23112. 804-739-3200. (Dec '91)

Stylist $$$ Stylist is a utility that declutters and fully describes formatting style sheets in Microsoft Word. Although you can't alter Word style sheets from within Stylist, you can dissect style sheets created by other Word users. A set of useful predesigned style sheets and a supplementary electronic dictionary of computer terms (to use with Word's spelling checker) is included. Version 1.0 reviewed. Requires Macintosh Plus or later, System 6.03 or later, and Word 4.0 or later. $279.95. SNA, Inc., P.O. Box 3662, Princeton, NJ 08543. 800-628-6442 or 609-799-9605. (Feb '91)

Taste $$$ This midrange word processor provides excellent color drawing tools and simple database functions. Graphics features include Bezier curves, color gradient fills, transparent editing while viewing the surrounding text, and automatic text wrap inside or outside graphic borders. Database features are oriented toward name-and-address management, and mail-merge capability is well implemented. Imports and exports most popular word-processing formats. Supports footnotes, multiple columns, and style sheets. Includes spelling checker. Lacks advanced features but easy to use. Version 1.02c reviewed. Requires Macintosh Plus or later with 2 MB of RAM, System 6.03 or later, and a hard drive. $149. DeltaPoint, Inc., 2 Harris Court, Suite B, Mill Valley, CA 94941. 415-381-9340, 800-367-4334 or 408-648-4000. (Sept '92)

Vantage $$$ Vantage is a text-editor DA and the commercial version of the shareware program McSink. Changes case; counts the number of lines, words, sentences, or paragraphs in a selection; and searches and replaces on character strings (including invisibles). Supports macros and external commands written in Pascal. Includes a spelling checker. Version 1.12 reviewed. Version 1.51 shipping. Requires Macintosh 512Ke or later. $99.95. Baseline Publishing, Inc., 1770 Moriah Woods Blvd., Ste. 14, Memphis, TN 38117. 800-926-9677 or 901-682-9676. (July '89)

Word $$$ Microsoft Word has a huge list of useful features, including simplified control of style sheets, outlining, and type fonts. Includes a Ribbon bar (above the ruler) that controls a drawing node, point-and-click character formatting, and the arrangement of text columns. Also includes sophisticated Find and Replace tools for complex searches through multiple documents. Table command lets you create multicolumn tables of text and graphics easily. Excellent speed. New version's interface is significantly more intuitive. Has hot links to Excel and Microsoft Mail. Includes enough basic DTP capabilities to format almost any document. Version 5.0 reviewed. Requires Macintosh Plus or later, System 6.03 or later, and a hard drive. $495. Microsoft Corp., One Microsoft Way, Redmond, WA 98052. 800-426-9400 or 206-882-8080. (Sept '92) * '89 Eddy Word Wrapper $$$ Word Wrapper is a useful program that wraps or breaks text files to a user-specified length so they can be sent or received by modem. Comes as an application and as a DA. Version 2.0 reviewed. Version 4.1 shipping. Requires Mac Plus or later. $39.95 direct. Open View, CA 94041. 415-962-4379 or 800-926-9677. (Sept '92) * '86, '88 Eddy WordPerfect $$$$ This substantially improved version of WordPerfect is a good choice for offices needing PC compatibility. Good internal file-management system, graphics manipulation, and macro-maker. WordPerfect excels at multiple, varied-width columns and basic page-layout functions. Limited typographic controls. Supports footnotes. Use of style sheets and mail-merge feature is awkward. Includes spelling checker but no glossary. Version 2.1 reviewed. Requires Mac Plus or later, System 6.05 or later, and a hard drive. $349.5

WriteNow $$$$ This speedy, compact word processor comes bundled with Grammatik Mac 2.0 (a 1.4-million-word thesaurus) and templates for Avery mailing labels. Easy to learn and use. Superbly designed style sheets. Allows multiple headers and footers. Weak graphics and page-layout functions. Doesn't support search attributes or endnotes. Version 3.0 reviewed. Requires Mac Plus or later and System 4.2 or later; hard drive recommended. $249. T/Maker Co., 1390 Villa St., Mountain View, CA 94041. 415-962-0195. (Sept '92) * '86, '88 Eddy


Word Processing/OCR

AccuText $$$$ AccuText is an automatic, omnifont OCR program built on several expert systems that combine shape and context analysis. Can read poorly copied, multipage documents. Has preview window for manually selecting and arranging blocks of text to recognize. Good page-format preservation. No built-in editor for viewing recognized text before saving to a file. Version 1.1 reviewed. Version 3.0 shipping. Requires accelerated Mac SE or higher with 4 MB of RAM, System 6.03 or later, and a hard drive. $995. Xerox Imaging Systems, Inc., 9 Centennial Dr.,

MacUser 311
Peabody, MA 01960. 800-248-6530 or 508-977-2000. (July '90)

**CDP 9000/TopScan for the Macintosh **

The CDP 9000/TopScan consists of the CDP 9000 (a large scanner that connects to your Mac with a SCSI cable) and TopScan software, which installs on your hard disk. Recognization processing is blazingly fast and highly accurate. Attractive Mac interface, including a window that previews the current page. Version CDP 9000 reviewed. Version MM2400/TopScan Plus shipping. Requires Macintosh Plus or later, System 6.05 or later, 4 MB of RAM, and a hard drive. Scanner and software, $34.495. Calera Recognition Systems, 475 Potrero Ave., Sunnyvale, CA 94086. 800-422-5372 or 408-720-8300. (Nov '90)

**OmniPage Direct **

This easy-to-use OCR program appears as an Apple menu item and scans text directly into any open application that supports the standard Paste keystroke combination Command-V. Reliable and fast, even with most dot-matrix text. Lacks spelling checker, deferred scanning, a graphics editor, and the ability to learn new characters or symbols. Handles variations in brightness, contrast, page orientation, and screened tints. Works with many scanners. Version 1.0 reviewed. Requires Macintosh II series or higher, System 7.0 or later, and a hard drive. $995. Caere Corp., 100 Cooper Ct., Los Gatos, CA 95030. 800-535-7226 or 408-395-7000. (June '92) * 89 Eddy

**OmniPage Professional **

OmniPage Professional is an automatic, omnifont OCR program. Works best on complex magazine pages. Strict adherence to shape analysis avoids most substitution errors. Fast and accurate on most pages. Supports a variety of scanners, languages, and output files. Allows designation of multiple zones for scanning and text recognition. Includes integrated spelling checker and module for dot-matrix text analysis. Supports deferred batch processing and saves training files for later use on pages with difficult typefaces or special characters. Comes with Graphic Editor program for processing gray-scale images and scanned graphics. Supports AccuPage contrast-control technology available in some Hewlett-Packard scanners. Version 2.0 Pro reviewed. Requires Macintosh II series or higher with 5 MB of RAM, System 7.0 or later, and a hard drive. $995. Caere Corp., 100 Cooper Ct., Los Gatos, CA 95030. 800-535-7226 or 408-395-7000. (June '92) * 89 Eddy

**Read-It! O.C.R. Pro **

Read-It! O.C.R. Pro is an affordable, capable OCR package that won't set any speed records. Omnifont capability recognizes most common typefaces and is available in Automatic mode. Recognizes multiple columns, italics, and some foreign characters but not underlined text. If your Mac is low on RAM, the program allows for slower Trainable mode, which may provide adequate speed and still adapts well to most foreign-language or special fonts. Provides no visual feedback to inform users of recognition problems as OCR progresses. Supports hand-held scanners. Version 3.0 reviewed, Version 4.0 shipping. Requires Mac Plus or later with 4 MB of RAM, and a hard drive, and a flatbed scanner. $595. Olduvai Corp., 7520 Red Rd., Ste. A, South Miami, FL 33143. 800-822-0772 or 305-665-4665. (Mar '92)

**ReadRight for Macintosh **

ReadRight is an affordable, capable OCR package that won't set any speed records. Provides accurate text recognition even of poor-quality material. Has some advanced features such as template support and page-decomposition tools. Provides Error Check window to inform users of recognition problems. Doesn't support hand-held scanners. Version 1.0 reviewed. Requires Mac SE or later with 5 MB of RAM, a hard drive, and a flatbed scanner. $495. OCR Systems, 1800 Byberry Rd., Ste. 1405, Huntingdon Valley, PA 19006. 215-938-7400. (Mar '92)

**TextPart **

TextPart is a trainable OCR package with acceptable accuracy. Needs to learn fonts. Supports more than 30 languages although in roman fonts only. Directly supports popular scanners. Version 3.0 reviewed. Version 3.5 shipping. Requires Mac Plus or later, high-resolution (minimum 200-dpi) scanner, and a hard drive. $695. CTA, Inc., 25 Science Park, New Haven, CT 06511. 800-252-1442. (Oct '89)

**TypeReader **

This powerful new OCR package is easy to use, accurate, and adapts well to a variety of type fonts and dot-matrix input. Excellent interface with almost no bugs. Custom settings can be saved for future use on similar documents. Lacks trainability features found in other high-end OCR packages. Can read scanned TIFF or PICT files, as well as image files received via fax. Has good controls for selective text recognition on complex pages. Graphics must be processed separately from text. Saves documents in many formats, including TIFF, PICT, Excel, Word, RTF, WordPerfect, WriteNow, MacWrite, and ASCII text. Supports a variety of scanners. Weak documentation. Version 1.0 reviewed. Requires Macintosh II series or higher, 5 MB of RAM, System 6.05 or later, and a hard drive. $695. ExpersVision, Inc., 3590 N. First St., San Jose, CA 95134. 800-732-3897 or 408-428-9444. (Dec '92)

**WordScan Plus **

WordScan Plus is a powerful OCR package that, despite its Windows heritage, adheres well to Mac software standards. Easy to use, very accurate and easily adapted to a variety of input. Can handle scanned TIFF, EPS, or PICT files, as well as image files received via fax. Handles graphics and complex page formats well, and preview mode lets you designate what to scan or ignore. Good automation features will enable this program to DTP service bureaus. Allows deferred batch processing of multiple scanned images. Supports a variety of scanners and automatic document feeders. Version 1.0 reviewed. Requires Mac Plus or later, System 6.05 or later, 4 MB of RAM, and a hard drive. $599. Calera Recognition Systems, 475 Potrero Ave., Sunnyvale, CA 94086. 800-422-5372 or 408-720-8300. (Feb '92) * 91 Eddy

**Word Processing/Spelling & Grammar Checkers**

**American Heritage Electronic Dictionary**

American Heritage Electronic Dictionary is a DA that accesses 116,000 entries from the standard office edition of the American Heritage Dictionary. Accurate and useful, but its clumsy interface doesn't integrate well with other applications. Also includes the complete Roget'sII Electronic Thesaurus and — for cryptic crossword-puzzle fans — an anagram creator. Has powerful search features, on-line help, and a basic writer's guide. Version 1.0 reviewed. Requires Mac Plus or later, System 6.03 or later, and a hard drive. $99. WordStar International, Inc., 201 Alameda

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**MICE RATINGS**

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Correct Grammar 

Correct Grammar is an excellent Mac grammar checker with a high error-detection rate. This rule-based application handles a wide variety of input. The interface is good, but some dialog box type is too small. Customization is easy and necessary. Version 2.0 reviewed. Version 3.01 shipping. Requires Mac Plus or later, System 5.0 or later, and a hard drive. $99. Wordstar International, 201 Alameda del Prado, Novato, CA 94949. 800-523-3520 or 415-382-8000. (Dec '92)

Sensible Grammar 


Sensible Dictionary 

Sensible Dictionary is a useful dictionary application for Microsoft Word. It can catch almost any misspelling, incorrect placement of tildes, and even incorrect accents. Version 3.0 reviewed. Version 5.0 "Foreign Proofing Tools" shipping. Requires Microsoft Word 5.0. $99.95 each (or $89.95 direct). Alki Software Corp., 219 First Ave. N., Ste. 410, Seattle, WA 98109. 800-669-9673 or 206-286-2600. (Feb '91)

Spelling Coach Professional 

Spelling Coach Professional is a good, powerful spelling checker. New features include a much improved control panel, clearer dialog boxes, greater flexibility in keyboard-command-equivalent assignments, and Deneba's Big-Dictionary. Coach can check spelling in batches or interactively. Main drawback is that it takes time and effort to learn. Version 3.0 reviewed. Version 4.0 shipping. Requires Mac Plus or later, System 6.07 or later, and a hard drive. $199. Deneba Software, 7400 S.W. 87th Ave., Miami, FL 33173. 305-596-5644. (May '90)

Word Finder 

Word Finder is an electronic thesaurus that won't replace your trusty Roget's but is useful for checking synonyms on the fly. Version 2.0 reviewed. Version 4.02 shipping. Requires Macintosh Plus or later, System 6.03 or later, and a hard drive. $69.96. Microlytics, Inc., Two Tobey Village Office Park, Pittsford, NY 14534. 800-828-6293 or 716-248-9150. (Feb '90)

Word Finder Plus 

Word Finder is an electronic thesaurus that won't replace your trusty Roget's but is useful for checking synonyms on the fly. Version 2.0 reviewed. Version 4.02 shipping. Requires Macintosh Plus or later, System 6.03 or later, and a hard drive. $69.96. Microlytics, Inc., Two Tobey Village Office Park, Pittsford, NY 14534. 800-828-6293 or 716-248-9150. (Feb '90)

Word Foreign-Language Dictionaries 

These electronic dictionaries are for use with Microsoft Word 4.0: British (as opposed to U.S. English), French, Spanish, German, Italian, Swedish, and Dutch. Each dictionary acts as a replacement for the standard U.S. English dictionary, so you can use only one dictionary at a time. Without trying to include every word in each available foreign language, these dictionaries can catch almost any misspelling, incorrect placement of tildes, and even incorrect accent marks. Version 3.0 reviewed. Version 5.0 "Foreign Proofing Tools" shipping. Requires Microsoft Word 5.0. $99.95 each (or $89.95 direct). Alki Software Corp., 219 First Ave. N., Ste. 410, Seattle, WA 98109. 800-669-9673 or 206-286-2600. (Feb '91)

Mice Ratings

Inside Information is a "hierarchical dictionary" that provides large categories of words you can search through in almost the same way as you do a thesaurus. But it lets you explore subjects, much like a library's traditional card catalog does. It has three search views: outline (with expandable/collapsible headings), the tree view, and the more intuitive graphic view. A Reverse Dictionary function lets you search for words according to your definition. This feature, as does the overall utility, needs to be refined and expanded. Version 1.0 reviewed. Requires Macintosh Plus or later, System 6.03 or later, and a hard drive. $119. Microlytics, Inc., Two Tobey Village Office Park, Pittsford, NY 14534. 800-828-6293 or 716-248-9150. (Feb '91)

Lookout

Lookout is an interactive, single-word spelling checker. Requires Macintosh Plus or later and a hard drive. $99.95 direct. Working Software, Inc., P.O. Box 1844, Santa Cruz, CA 95061. 408-423-5696. (Feb '90)

RightWriter

This easy-to-use grammar checker has strong grammar-checking abilities but flawed presentation features. No spelling checker. Works well with MultiFinder and is highly customizable. Works in batch mode only and requires frequent reference to manual. Compatible with MacWrite II, all versions of MacWrite; Word 3.0 and 4.0; WordPerfect 1.0 to 1.04; WriteNow 1.07, 2.0, and 2.2; and all text editors. Version 3.1 reviewed. Version 5 shipping. Requires Macintosh Plus or later and a hard drive. $99.95. QUE Software, 11711 N. College Ave., Carmel, IN 46032. 800-992-0244 or 317-573-2500. (Sept '91)

Sensible Dictionary


Spelling Coach Professional

Spelling Coach Professional is a good, powerful spelling checker. New features include a much improved control panel, clearer dialog boxes, greater flexibility in keyboard-command-equivalent assignments, and Deneba's Big-Dictionary. Coach can check spelling in batches or interactively. Main drawback is that it takes time and effort to learn. Version 3.0 reviewed. Version 4.0 shipping. Requires Mac Plus or later, System 6.07 or later, and a hard drive. $199. Deneba Software, 7400 S.W. 87th Ave., Miami, FL 33173. 305-596-5644. (May '90)

Spellingwell


TechWords

TechWords is a set of seven supplementary dictionaries for use with Microsoft Word. The dictionaries cover scientific areas such as chemistry, physics, life sciences, and computer technology. Word correctly identifies terms contained in these supplementary dictionaries, but such words aren't listed as alternatives when you find incorrect words, using Word's spelling checker. Version 1.0 reviewed. Version 2.1 shipping. $79. GeoComp, 66 Commonwealth Ave., Concord, MA 01742. 508-369-8304. (Feb '91)

ThUNDER

ThUNDER is a powerful update of the venerable and popular spelling checker. Now an extension and control panel, ThUNDER 7 launches at startup. Users select the dictionaries and applications with which it should run. The program operates interactively and checks for spelling, punctuation, capitalization, and double-word errors. Includes application-specific compatibility modules to retain character formatting. Editable glossary. Good use of color. Installation is complicated. Version 1.06 reviewed. Version 1.1 shipping. Requires Macintosh Plus or later, System 6.03 or later, and a hard drive. $99.95. Baseline Publishing, Inc., 1770 Moriah Woods Blvd., Ste. 14, Memphis, TN 38117. 800-926-9677 or 901-96766. (July '92) ★ '86 Eddy

Word Finder

Word Finder is an electronic thesaurus that won't replace your trusty Roget's but is useful for checking synonyms on the fly. Version 2.0 reviewed. Version 4.02 shipping. Requires Macintosh Plus or later, System 6.03 or later, and a hard drive. $69.96. Microlytics, Inc., Two Tobey Village Office Park, Pittsford, NY 14534. 800-828-6293 or 716-248-9150. (Feb '90)
WARNING... buying the wrong personal or small business finance software can be hazardous to your net worth.

### PRICES

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### ACCOUNT SPECIFICATIONS

- number of accounts available
- auto transfer between accounts
- paperless funds transactions
- budget splits on main screen
- uncleared check report
- automatic service/interest charges
- automatic check numbering

### ACCOUNT TYPES

- checking accounts
- savings accounts
- credit card accounts
- loan accounts w/auto pmt. deductions
- asset accounts
- liability accounts

### ACCOUNT REGISTERS WILL SHOW

- only cleared checks
- checks or deposits by date or range
- checks or deposits by payee
- checks or deposits by memo
- checks or deposits by amount or range
- checks or deposits by trans. number
- Above items as a report only

### ADDRESS DATABASE

- number of entries: 32M, none, 250, none
- prints on envelopes and labels
- figures multiple addresses
- prints return address only
- supports address import & export

### BUDGETING FOR CATEGORIES

- non-date budget
- monthly
- bi-monthly
- yearly

### AUTOMATIC WARNINGS

- bills due reminder
- deposits due reminder
- over-budget reminder
- aged receivables reminder

### CHECK PRINTING CAPABILITIES

- personal checkbook check template
- entire check laser printed on plain paper
- any check form, w/o stubs
- custom check text fields & stub fields
- selectable fonts on every check field
- prints checks from other applications

### REPORTS

- income vs. expense
- debt analysis and reduction report
- loan payment schedule
- savings schedule report
- credit card analysis
- budgeted vs. actual
- cash flow projections
- taxable expense summaries
- graph reports
- net worth report
- spoother for multiple report printing
- selectable budget category report groups
- selectable multi-acct report categories
- multi-year check register and budgeting

### EXTRA FINANCIAL SERVICES

- loan calculator
- automobile purchasing & dealer costing
- insurance planning
- retirement planning
- college fund planning
- savings planning
- lottery number picker

### PASSWORD PROTECTION

- password levels: 3, 1, none, 1

### IMPORT/EXPORT CAPABILITIES

- addresses
- text files import
- text files export
- transactions
- imports Quicken® and 'MYM®' files

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[Circle 69 on Reader Service Card]
Product Index

The following index lists all product records in the MiniFinders section of The Ultimate Buying Guide. All current Macintosh hardware and software products that have been reviewed and rated in *MacUser* (up to and including the December 1992 issue) are in this MiniFinders product index.

Hardware products are generally listed alphabetically by manufacturer; software products are generally listed alphabetically by product. Most product categories include both hardware and software.

Each product is listed just once in MiniFinders, so check related categories for products that may serve your needs. For example, a CD-ROM that’s useful to educators might appear in the Resources category instead of in Education (which lists products that actively teach instead of simply storing information). Likewise, a multipurpose Graphics & Design product that doesn’t quite belong in any specialized subcategory would probably be listed at the beginning of the main Graphics & Design category.

Because product prices, hardware specifications, software features, and vendor addresses can change quickly, we recommend contacting manufacturers directly for the latest product information. Vendors can update their product listings by sending written notification to MiniFinders Database Manager, c/o *MacUser*, 950 Tower Lane, 18th Floor, Foster City, CA 94404.

PRODUCT COMPANY Page Number

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While the cursor may hop or skip with some trackballs, Turbo Mouse® has always been known for its ultrasmooth movement.

Now, the latest version of Turbo Mouse is known for something else—jumping. Our new Brilliant Cursor technology makes it possible.

With it, you can move the cursor instantly to predefined HotSpots on the screen, such as the File and Edit menus and the Trash icon. First, you define your HotSpots. Then, click a button and move the ball in the direction you want to go. The cursor automatically jumps to the predefined HotSpot. You can even program in different HotSpots for different applications and for different users.

And Brilliant Cursor technology is not all that’s new with Turbo Mouse 4.0. Also new is advanced acceleration with three levels of control and Enhanced Mouse Buttons that let you execute one of seven programmable commands. For example, send a Print command with just one click using Send String. Or move the cursor with ultra precision using Slow Cursor. Even save different combinations of commands for each of your favorite programs.

Then there’s the award winning Turbo Mouse hardware. Hardware that has won more awards than any other input device. Hardware that has consistently been voted “Best Input Device” by Macintosh users worldwide. Features include a large comfortable ball, “easy-click” buttons, long-lasting precision stainless steel bearings, and two ADB ports for chaining other devices.

Turbo Mouse 4.0 is fully System 7.0 compatible. To receive information by fax, call 800-535-4242, dial 82 and request document 320. For general information, call 800-535-4242. Outside the US, 415-572-2700.

Introducing Turbo Mouse 4.0

With the all new Brilliant Cursor™ technology, you can actually make the cursor jump to any spot on the screen.

The only trackball with Brilliant Cursor™ from MacUser.

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The cost-effective buying arena that provides sellers of Macintosh-compatible products a 3 advertising options: Premier, Classified and BusinessCard to meet their specific advertising goals, reaching 410,000 Macintosh Business Buyers. All sections are set up by product category and offer reader service.

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<td>Utilities</td>
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<th>AD SALES INFORMATION</th>
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<tr>
<td>One Park Avenue, New York, NY 10016</td>
<td>(212) 503-5115 or (800) 825-4ADS</td>
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<tr>
<th>ACCOUNT REPRESENTATIVES</th>
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<tr>
<td>Ann Faustini</td>
<td>(212) 503-5043</td>
</tr>
<tr>
<td>CT, DC, DE, FL, GA, MA, MD, ME, NC, NH, NJ, NY, PA, RI, SC, VA, VT, WV</td>
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<tr>
<td>Larry Grella</td>
<td>(212) 503-5138</td>
</tr>
<tr>
<td>AL, AR, IA, IL, IN, KS, KY, LA, MI, MO, MS, NE, OH, OK, TN, TX, WI, CANADA, OVERSEAS</td>
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<tr>
<td>Thomas P. Koletas</td>
<td>(212) 503-5136</td>
</tr>
<tr>
<td>Acct. Manager – CT, DC, DE, FL, GA, MA, MD, ME, NC, NH, NJ, NY, PA, RI, SC, VA, VT, WV</td>
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<tr>
<td>Dennis M. Leavely</td>
<td>(212) 503-5111</td>
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<tr>
<td>AR, CA (209, 408, 415, 510, 707, 800, 805, 916), HI, ID, MT, ND, NV, OR, SD, WA, WY</td>
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<tr>
<td>Laura A. Salerno</td>
<td>(212) 503-5140</td>
</tr>
<tr>
<td>AZ, CA (213, 310, 416, 714, 818), CO, NM, UT</td>
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<th>CENTRAL ADVERTISING STAFF</th>
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<tr>
<td>Paul Stafford</td>
<td>Paul A. Fusco</td>
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<tr>
<td>Vice President, Central Advertising</td>
<td>Sales Manager</td>
</tr>
<tr>
<td>Anne R. Brocklinson</td>
<td>Nepriell Foster</td>
</tr>
<tr>
<td>Production Director</td>
<td>Advertising Coordinator</td>
</tr>
<tr>
<td>Chris Meyer</td>
<td></td>
</tr>
<tr>
<td>Production Coordinator</td>
<td></td>
</tr>
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</table>
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*USED: $1,999 - 300 dpi Color Laser*

---

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**CPU's**

<table>
<thead>
<tr>
<th>Used</th>
<th>Mac Plus</th>
<th>$359.00</th>
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<tr>
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<td>Mac SE 1/20 (800K)</td>
<td>$625.00</td>
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<td>Mac II 1/0</td>
<td>$1,079.00</td>
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<td></td>
<td>Mac IIfx 1/0</td>
<td>$1,499.00</td>
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<td></td>
<td>Mac Portable 1/40</td>
<td>$799.00</td>
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<tr>
<td></td>
<td>Call for latest pricing on Mac SE/30, IIfx, IIci, Powerbook, etc.</td>
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**NEW**

<table>
<thead>
<tr>
<th>New</th>
<th>Mac Classic 2/40</th>
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<tr>
<td></td>
<td>Mac LC 2/40</td>
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<td></td>
<td>Mac IIi 3/40</td>
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<td>Mac IIci 5/0</td>
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<td></td>
<td>Call for latest pricing on Mac IIvx, Classic II, Powerbook, etc.</td>
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#### Monitors

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<th>New</th>
<th>12&quot; Mono</th>
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<td>12&quot; RGB</td>
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<td>13&quot; Hi-Res RGB</td>
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<td></td>
<td>Portrait Display</td>
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<td>Two Page Mono</td>
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<td>21&quot; Color</td>
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<td>Apple Univ. Mon. Stands</td>
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#### Apple Accessories

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<td>Mac IIfx NuBus Adapters</td>
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<td>Mac LC IIe Adapters</td>
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<td>LocalTalk Board for PC</td>
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<td>Hayes 2400B Int. Modem</td>
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<td>Apple Stand. Keybd</td>
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<td>Laser Toner</td>
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**Printers**

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<td>Apple Laser IINTX</td>
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<td>Apple Laser III</td>
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<td>Apple Laser IIg</td>
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**Apple Parts**

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<th>Mac Plus</th>
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<tr>
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<td>Mac SE + SE/30</td>
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<td>Mac SE Analog</td>
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<td>Mac LC/LCII</td>
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<td>Mac II</td>
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<td>Quadra 900/950</td>
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**POWER SUPPLIES**

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<td>Mac SE (800K)</td>
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<td>Mac SE (FDHD)</td>
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**LOGIC BOARDS**

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<td>Portrait Display</td>
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<td>Radius, RasterOps, SuperMac</td>
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<td>20 MB Int</td>
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**VIDEO CARDS**

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<td>Apple Laser IINT</td>
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<td>Apple Laser IINTX</td>
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<td>Apple Laser III</td>
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**QMS**

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<td>Turbo (NEW)</td>
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<td>PS 820 Printer</td>
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<td>PS 2220</td>
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**APPLES**

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<th>Radius, RasterOps, SuperMac</th>
<th>$Blow-Out</th>
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<td>TPD Mono</td>
<td>$799.00</td>
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<td></td>
<td>19&quot; Trinitron</td>
<td>$1,375.00</td>
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<tr>
<td></td>
<td>19&quot; Hitachi</td>
<td>$1,150.00</td>
</tr>
</tbody>
</table>
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category continues on page 345.

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<table>
<thead>
<tr>
<th>CD-ROM Drive</th>
<th>Access Time</th>
<th>Buffer</th>
<th>SCSI Settings</th>
<th>Volume Control</th>
<th>Audio Software</th>
<th>SCSI Ports</th>
<th>Terminator</th>
<th>Terminalization</th>
<th>BCA</th>
<th>Maximum Voltage</th>
<th>Data Transfer</th>
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# BERNOLLI DISKS

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<td>Supra 50140 14.4/14.4</td>
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# LOCAL SPECIALS

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# SYQUEST CARTRIDGES

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<td>LC 16MHz Math Co-Processor</td>
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<td>Classic II 16MHz Math Co-Processor</td>
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<td>Mac101 Extended Keyboard</td>
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<td>Kensington Turbo Mouse 4.0</td>
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