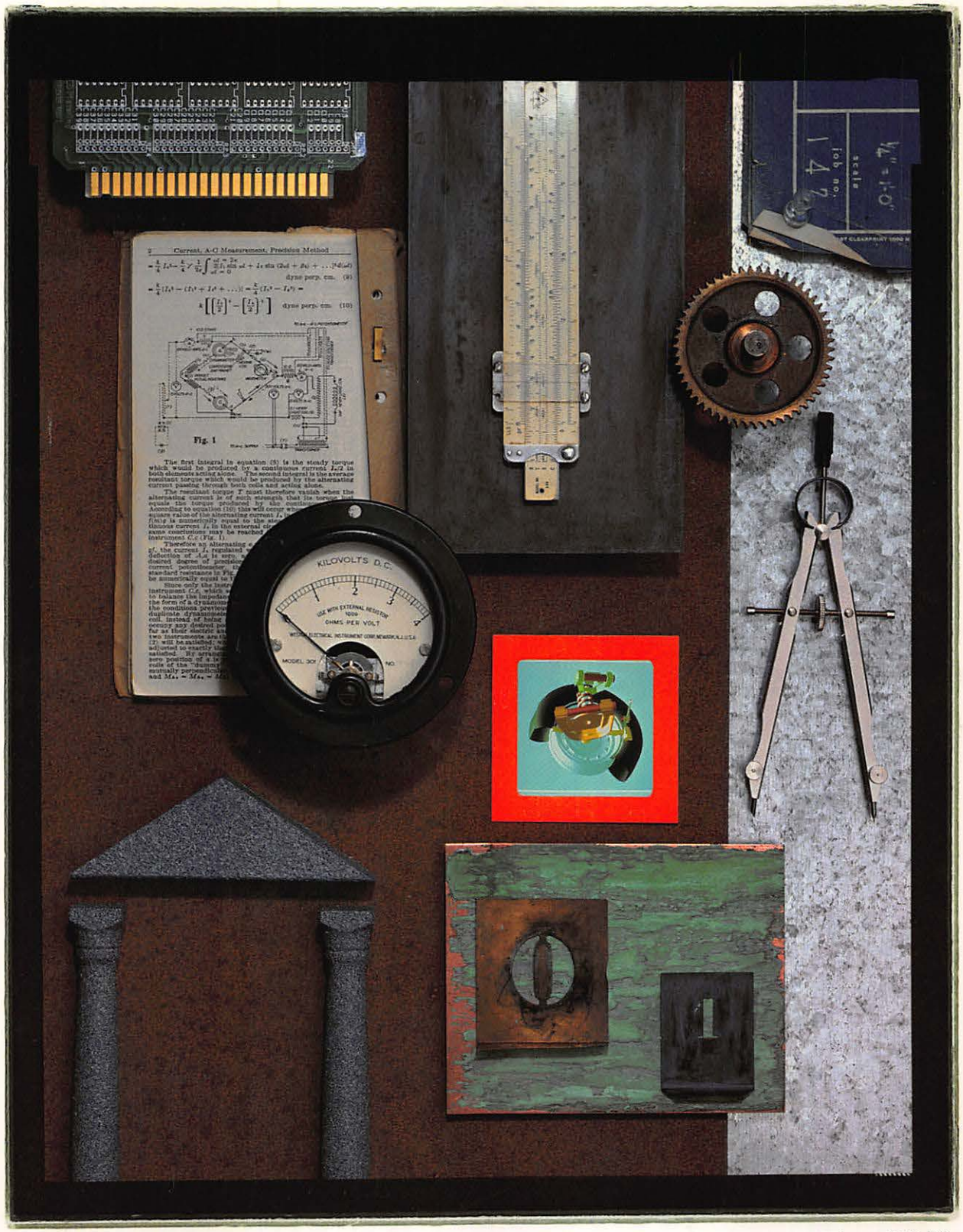
Apple Engineering/Scientific Solutions Guide



Winter 1989/90

Apple Engineering/ Scientific Solutions Guide

Winter 1989/90

Apple Computer, Inc.

©1989 Apple Computer, Inc. All rights reserved.

Apple, the Apple logo, AppleLink, AppleShare, AppleTalk, A/UX, HyperCard, ImageWriter, LaserWriter, MacApp, Macintosh, and SANE are registered trademarks of Apple Computer, Inc. Apple Desktop Bus, AppleFax, EtherTalk, FDHD, Finder, HyperTalk, LocalTalk, MacinTalk, MacWorkStation, MPW, MultiFinder, QuickDraw, ResEdit, and Switcher are trademarks of Apple Computer, Inc.

PostScript is a registered trademark of Adobe Systems, Incorporated. UNIX is a registered trademark of AT&T Information Systems. Claris, MacDraw, MacPaint, and MacWrite are trademarks of Claris Corporation. VAX, VMS, DECnet, and DEC are trademarks of Digital Equipment Corporation. Helvetica and Times are registered trademarks of Linotype Co. Smalltalk-80 is a trademark of ParcPlace Systems. NuBus is a trademark of Texas Instruments. Ethernet is a registered trademark of Xerox Corporation.

Mention of products in this directory is for information purposes only and constitutes neither an endorsement nor a recommendation. All product specifications and descriptions were supplied by the respective vendors or developers. Apple Computer, Inc. assumes no responsibility with regard to the selection, performance, or use of the products listed in this directory. All understandings, agreements, or warranties take place directly between the vendors and prospective users.

Limitation of Liability

Apple Computer, Inc. makes no warranties with respect to the contents of products listed in this directory, or the completeness or accuracy of this publication. Apple specifically disclaims all warranties, expressed or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose.

Acknowledgements

The publication of the Apple Engineering/Scientific Solutions Guide is a joint development between Apple Computer, Inc.'s Technical Markets and Strategic Relations group, and the third-party community. A sincere thanks is extended to the numerous people that have contributed to the development of the guide. The commitment and contributions by all continue to make this a valued resource for Macintosh® products.

Executive Editor: Bob Selzler

Managing Editor: Beverly Davilla Tracey

Contributing Editors: Sunil Chawla, David Kulbarsh, Gilda Raczkowski, Kirk Shorte, Harold Striepe

Editorial: Nancy Dunn, John Hammett, Jessie Wood

Production: Tracy Bruner, Julie Nef, Tim Reinhardt, Linda Jupiter, Carolyn Miller, Rad Proctor, Byll Travis, Suzanne Gepp, Roy Zitting

Editorial and publishing services provided to Apple Computer, Inc. by The Compage Company, San Francisco.

This edition of the Apple Engineering/Scientific Solutions Guide was desktop published using Macintosh computers, Acius 4th Dimension, Letraset Ready,Set,Go! , and Microsoft Word.

All price listings are manufacturers' suggested retail prices and are subject to change.

Table of Contents

Introduction vii

Architecture/Engineering/Construction
- Design/Drafting 1
- Analysis 28
- Mapping/Earth Resources 33
- Construction 42
- Administration 46

Mechanical
- Design/Drafting 53
- Analysis 58
- CAM 68

Manufacturing 73

Electrical
- Design Capture 81
- Analysis 85
- Physical Design 91

Scientific/Research
- Physics 95
- Chemistry 97
- Mathematics/Statistics 104
- Laboratory/Data Acquisition 114
- Data Visualization/Image Processing 124

Software Development
- Computer-Aided Software Engineering (CASE) 127
- General Languages and Tools 134
- Artificial Intelligence Languages and Tools (AI) 163
- Expert System Tools 168

Technical Productivity
- Conceptual Design 171
- Data Analysis/Simulation 176
- Animation 181
- Desktop Presentations 181
- Technical Publishing 185
- Project Management 191
- Databases 194
- General Productivity 197

Textile Design 203

System Components
- Accelerators/Coprocessors/Add-on Boards 207
- CPUs 215
- Digitizers/Tablets 217
- Monitors/Displays 220
- Networking/Communication 227
- Printers/Plotters/Drivers/Output Devices 237
- Scanners 246
- Storage Devices 250
- Terminal Emulation 256

Indexes
- Product Index 259
- Company Index 269

Introduction

In the summer of 1988, Apple Computer, Inc. published the second edition of the Apple Engineering/Scientific Solutions Guide. A brief addendum to the guide was published earlier this year and provided additional product listings to supplement the summer edition. This current Winter 1989/90 publication of the Engineering/Scientific Solutions Guide continues the Apple tradition of providing an updated and comprehensive source of information on engineering and scientific products currently available for the Macintosh product family.

Almost 800 products are listed in this guide, each indexed by product and by company name, making them easy to identify and find. The guide itself is divided into 9 major categories corresponding to the applications. Within each category and subcategory you will find the products organized alphabetically.

Each individual product entry provides the name, address, and telephone number for the developer, a brief description of the product, and the system requirements, price, and technical support information for the product.

A new feature in this edition is an icon legend to highlight products that support one or more of the following formats:

A/UX®

HyperCard®

CD-ROM

32-bit QuickDraw™

For further information on any of the products listed in the guide, contact the developer directly.

We believe this directory to be the most dependable source of information on engineering and scientific products for the Macintosh product family. The listings in this directory, however, do not constitute a complete list of all Macintosh software and are intended as a guide to many of the products available. Macintosh users worldwide have benefited from this information, and we know you will find it a valuable resource.

For additional copies of this directory, contact your nearest authorized Apple Computer dealer.

Architecture/Engineering/Construction

Design/Drafting

Many design and drafting packages can be used for multiple purposes. For additional product listings, see pages 53 to 58 in Mechanical—Design/Drafting.

3-D Pipe Clearance

3-D Pipe Clearance computes the clearance or interface between two nonparallel straight pipes (or lines) in three-dimensional space.

Heizer Software
1941 Oak Park Blvd., Ste. 30
Pleasant Hill, CA 94523
415-943-7667

System Requirements
Macintosh® Plus or larger; Microsoft Excel or Microsoft Works.

Price $30

Support
Telephone support is provided.

AD/ART/PLUS "Architectural Graphics"

AD/ART/PLUS "Architectural Graphics" is an application containing object-oriented architectural graphic drawings and symbols created in MacDraw and saved in PICT format. The collection contains complete architectural drawing and landscape design graphics for creating user-defined architectural and landscape graphic drawings and plans. Drawings and sizes can be rescaled, and shading and line widths can be modified. Architectural Graphics contains a selection of trees, bushes, foliage, rocks, windows, doors, furniture, fixtures, and plumbing and electrical symbols, as well as architectural symbols, plan symbols, and basic three-dimensional graphics.

FREEMYERS DESIGN
575 Nelson Ave.
Oroville, CA 95965
916-533-9365

System Requirements
Macintosh 512K enhanced or larger; 1 MB of RAM; MacDraw or compatible drawing program.

Price $49.95

Support
Telephone support is provided.

ADD3D

ADD3D is an application producing fast and effective wireframe models from the PowerDraw CAD program. Once a viewpoint perspective has been generated, it can be exported to PowerDraw for finishing or printed as a background to a hand-finished sketch. The enhanced version of ADD3D can export files to Super 3-D for full color and shaded presentations. ADD3D uses PowerDraw's macro functions to obtain coordinate data from drawing files. Complex structures can present a challenge in any three-dimensional environment, especially in terms of data input. With ADD3D, most projects are relatively easy to input because of the simplicity of the PowerDraw program combined with the macro language. One complex floor plan can be used for a variety of viewpoints displayed in wireframe or a variety of finishing techniques using the Macintosh fill patterns. ADD3D can produce a number of three-dimensional projections from the same data file—for example, two- and three-point perspectives and axonometric and cutaway views.

Future Vision Computer Systems LTD.
1100-940-6 Ave. S.W.
Calgary, Alberta, KTP 3T1 Canada
403-232-6390

System Requirements
Macintosh Plus or larger; PowerDraw, future release of ClarisCAD.

Price
$145, Canada.

Support
Free telephone support is provided.

ADS-MGMStation—Symbol Libraries

ADS-MGMStation—Symbols Libraries are comprehensive compilations of design symbols for the company's ARCHITECTURE, INTERIORS, and MECHANICAL symbol packages. The ARCHITECTURE libraries contain over 600 symbols developed specifically for architects, landscape architects, electrical and structural engineers, interior designers, space planners, draftspersons, and other design professionals. The INTERIORS libraries contain all key symbols for interior designers, space planners, draftspersons, and other design professionals. The program allows the user to customize symbols to fit specific needs. The MECHANICAL libraries are an integrated compilation of symbols designed specifically for mechanical engineers, plumbing contractors, specialists in HVAC systems, and other design professionals. These libraries conform to MIL STD and architectural standards.

COMPU-ARCH
9348 Civic Center Dr., Ste. 101
Beverly Hills, CA 90210
213-312-6632

System Requirements
Macintosh 512K or larger; MGMStation CAD.

Price $195
Per library.

Support
Free telephone support, training, and updates are provided.

AEC Fonts, Library Modules, and Setup Sheets

AEC Fonts is a collection of plotter fonts for use in VersaCAD architectural drawings. The reasonably priced fonts have a hand-crafted look. AEC Library Modules provides a collection of architectural symbols for VersaCAD drafting. Each library contains about 90 symbols for different aspects of the design and drafting field. AEC Setup Sheets provide a shortcut for the design process. The series of 24 VersaCAD drawing files establishes standards for the parts of drawings used in a typical architectural project. Each of the two dozen overlays comes preformatted with some standards, such as grid spacing, title blocks, and plotter specification. Additional standards, instructions, and suggestions are provided in the accompanying manual.

SLNB Architects, Inc.
1620 Central Ave. S.E.
Albuquerque, NM 87106
505-247-1529

System Requirements
Macintosh II or larger; VersaCAD Macintosh Edition.

Price
Fonts $20; Library Modules $25; Setup Sheets $245. Site licenses are available for all three products.

Support
Free support is provided; updates are available for a nominal charge.

AISC Code Check

AISC Code Check is a general-purpose steel-member design database program that uses an elastic design method to design steel beams, columns, struts, and other members subjected to combinations of axial loads, shear forces, and bending moments (uniaxial or biaxial). The program comes with database files containing a user-updatable library of standard steel cross-sections.

Micro-BESST
98-01 67th Ave., Ste. 11B
Rego Park, NY 11374
718-896-7418

System Requirements
Macintosh 512K or larger.

Price $99

Support
Free telephone support is provided for one year.

Aperture

Aperture, a high-precision drawing system integrated with a powerful database manager, is used to build complete visual information systems. With Aperture it is possible to create detailed drawings, attach data to the objects in the drawings, produce reports showing those data, display data on the drawings, and link drawings together to form complete applications. The objective is to keep drawings and data consistent so that designs and documentation are complete, accessible, and maintainable. Aperture is used by engineers, space planners, architects, facilities managers, network planners, inventory managers, pesonnel managers, and graphic artists for design, documentation, and presentation. Aperture's five major components are precision drawing, database management and report writer, drawing linkage, text display, and symbol library. Features include built-in report writer, visual search, data from database displayed on drawing, use of any object as a link button, full color, 256 layers, variable zooming, real-world dimensions, mouse-up drawing, zooming or panning while drawing an object, drawing styles, visual object snap, automated dimension lines, full copy and paste, import of DXF files, and data import and export.

Aperture Technologies, Inc.
84 West Park Pl.
Stamford, CT 06901
203-975-7587

System Requirements
Macintosh Plus or larger; hard disk.

Price $795

Support
Free telephone support is provided.

Arch-T2

Arch-T2's architectural tools work with AutoCAD to quickly produce professional plans and elevations. Arch-T2 includes more than 1300 quality blocks for furniture, cars, plants, people, trees, and mechanical/electrical elements. In addition, the package includes more than 150 unencrypted AutoLISP routines for producing schedules, ceiling grids, parking layouts, stairways, and column grid layouts. Arch-T2 allows users to develop custom menus, symbols libraries, and layering systems. Additional modules are available for HVAC, power, plumbing, facilities, and 3D.

KETIV Technologies, Inc.
6645 N.E. 78th Court, C-2
Portland, OR 97218
503-252-3230

System Requirements
Macintosh II or larger; 8 MB of RAM; AutoCAD 10.0 or later. Color monitor recommended.

Price $395
Site licenses available.

Support
Free telephone support is provided for 90 days; local dealer support is included.

ArchiCAD

ArchiCAD is a high-end two-dimensional/three-dimensional architectural building modeler that optimizes the process of producing plans and obtaining elevations, sections, bills of materials, and three-dimensional visualizations. With a well-integrated Macintosh interface, ArchiCAD speeds design by providing a library of building components and by letting designers make selections from a palette of elements such as slabs, walls, and roofs. ArchiCAD integrates and streamlines the design process, beginning with conceptualization and construction drawings, through final working documents—all the way to three-dimensional color renderings with full solid modeling features. A comprehensive bill-of-materials capability allows materials management and cost analysis. ArchiCAD is targeted to architects and construction professionals, building contractors, interior designers, space planners, and facilities managers.

GRAPHISOFT
400 Oyster Point Blvd., Ste. 520
South San Francisco, CA 94080
415-266-8720

System Requirements
Macintosh II or larger; 2 MB of RAM.
Color monitor recommended.

Price $3950
Site license available.

Support
Free telephone support and upgrades are provided for the first year; free initial training is provided.

Architosh

Architosh is a package of architectural symbols for beginners and expert users of VersaCAD. The package includes over 2,000 symbols, grouped together in libraries such as Landscape, Floor Plan, Elevations, Construction Details, Mechanical, Electrical, Office Furniture, and Targets. The file management section includes a scheme for managing project drawings. The property management section consists of prepared forms, which are used for organizing the levels, color, pen density, group name, z coordinates, width, style, and text sizes in each drawing. It describes how to keep the size of drawing files to a minimum by planning the production scheme. A variety of construction schedules, including Room Finish and Lighting Fixture schedules, help users keep their design projects organized. A complete project illustrates the package. The project includes over 39 sheets of a community college building, incorporating the "Con Doc" system of drawing notes as well as a complete AIA Master specification system.

E. T. Vermurlen & Associates Architecture, Inc.
2111 Burton S. E.
Grand Rapids, MI 49506
616-247-4809

System Requirements
Macintosh SE or larger; VersaCAD Mac.

Price $795

Support
A 90-day warranty is provided. Updates are available at $95, major updates at $195.

Architrion II/Series 5

Architrion II/Series 5 addresses the importance of light and color on architecture by allowing designers to define the colors of a building and its components and to specify the type and position of a light source in order to create realistic shades and shadows. The light source can be positioned within the building to simulate fixture lighting, or it may be accurately placed at the exterior for sun studies. Additional features include the ability to graphically create and modify the building in section view and to position and adjust openings in elevations. In addition to traditional two-dimensional CAD features, the drafting module of Architrion II provides capabilities unique to architectural drafting.

Gimeor, Inc.
420 10th St. S.E.
Washington, DC 20003
202-546-8775

System Requirements
Macintosh SE or larger; 2 MB of RAM; System 6.0.2. or higher; 10 MB hard disk.

Price $2995
Educational price, $750; site licences available.

Support
Free telephone support is provided for 30 days. Additional telephone support and a MacNET forum are available for $250 a year. Training is available at a cost of $500–$1,000 for two days.

ASD Professional CAD Symbol Library

The ASD Professional CAD Symbol Library is a comprehensive library of over 2700 symbols in one package, designed to eliminate time-consuming and repetitive manual drawing and drafting. Library includes general architectural symbols for residential and commercial designs, including doors, windows, appliances, plumbing fixtures, electrical, HVAC, landscape, site plan symbols, and interior design and furniture symbols. "Plumbing & Heating Supply House" includes piping, fittings, heating and air conditioning components, one- and two-line ductwork, and fire protection. "Hardware Store" includes metal and wood screws, nails, nuts, rivets, washers, cotter pins, and keys and springs for detail drawings and specification work. "Electronic Shack" includes electronic design symbols and printed circuit board aids from components to connectors. "Welding Symbols" includes grooves, flanges, seams, fillets, and plugs. General drawing aids include a variety of base sheets, title blocks, detail flags, section arrows, north arrows, and various scale legends. Library also includes geometric characteristic symbols, cartographic symbols, and more. The library conforms to ANSI, AWS, and NFPA standards where applicable.

Advanced System Design, Inc.
PO Box 3131
Evergreen, CO 80439
303-674-2222

System Requirements
Macintosh Plus or larger; Claris CAD, MacDraw II, or DXF-compatible CAD programs. Hard disk recommended.

Price $119.95

Support
Telephone support is provided.

Auto-Architect

Auto-Architect is a complete package that tailors AutoCAD for professionals in architecture, architectural engineering, facilities management, space planning, and construction. Tools are provided for design, input, and editing in plan, elevation, and three dimension. Programs for walls, roofs, doors, windows, foundations, and stairs are provided to automate design. Symbol libraries include plumbing fixtures, electrical symbols, furniture, appliances, trees, vehicles, and annotation symbols. An integrated schedule generator with automatic grid and column total capability is also included.

DCA Engineering Software, Inc.
7 Liberty Hill Rd.
Henniker, NH 03242
603-428-3199

System Requirements
Macintosh II or larger; 5 MB of RAM; AutoCAD 10.0.

Price $995

Support
Advanced training and dealer-provided support are available.

AutoCAD

AutoCAD is a design and drafting program designed to speed repetitive drawing tasks and simplify drawing revisions. The program includes the ability to create and edit any images in three dimensions, user-defined coordinate systems, three-dimensional surface modeling capabilities, and a multiple viewpoint facility. The program can be customized to create individualized menus and commands, and to execute frequently used functions. It supports IGES and DXF, and allows access to files on computers running AutoCAD under MS-DOS, Mac OS, UNIX, Apollo AEGIS, and Digital VMS.

Autodesk, Inc.
2320 Marinship Way
Sausalito, CA 94965
415-332-2344

System Requirements
Macintosh II or larger; 4 MB of RAM.

Price $3000

Support
Dealer-provided technical support is available.

AutoKIT

AutoKIT is an architectural tablet overlay designed for basic architectural drafting related to construction documents. AutoKIT can function as a stand-alone unit with AutoCAD 10.0 (not included); or, when coupled with AutoREP, the data extraction module, it becomes a powerful design and information management system. The tablet overlay can be used on digitizing tablets 10 inches by 10 inches or larger. The base drafting functions are accelerated with AutoLisp routines, including automated detail generation; parametric column grid; automated "cloud"; architectural detail symbols; wall routine with inside, outside, or centerline; wall intersection cleanup; and other architectural functions. More than 300 predefined general furniture and modular furniture symbols are provided in two and three dimensions. The system allows users to design layouts in two-dimensional mode and globally replace the two-dimensional symbols with three-dimensional ones if desired. Base categories, such as Typical Desks and Generic Tables, may be selected from the graphics tablet or from the screen.

Applied Software Technology, Inc.
1908 Cliff Valley Way, N.E.
Atlanta, GA 30329
404-633-8660

System Requirements
Macintosh II or larger; 5 MB of RAM; AutoCAD.

Price $895

Support
On-site support for installation and training; contracts for telephone support are available.

BEAMJOIS

BEAMJOIS Buildese module selects a douglas fir wood member or a prefabricated truss-joist to take imposed loads for either a simple or a cantilevered span. Questions are asked about type of structure, distribution of loads (continuous, partially continuous, and up to three concentrated), moisture, span, and other elements. If a plywood roof or floor is fastened to the member per code, it is then taken into account when calculating the deflection. Loads can be input as per linear foot or per square foot. BEAMJOIS computes the moment, shear, and reactions, and checks the member against a data bank of allowable stresses for different grades under various conditions to provide from three to six selections, depending on allowable width and depth. Both Eastern and Western TJI series are on the disk. Fiber and shear stress as well as deflection for L/360 and L/240 are calculated. Disk records are kept for file and/or future changing. Professional technical reports are printed if desired for review and/or submission.

J. J. JORDAN, ARCHITECT-ENGINEER
5236 Overbrook Way
Sacramento, CA 95841
916-332-6610

System Requirements
Macintosh 512K or larger.

Price $96.95
Discount available when ordered with other Buildese modules.

Support
Free telephone support is provided.

Beams and Columns

Beams and Columns is an AutoCAD-related program that automates the production of shop fabrication drawings of structural steel. Developed by a structural engineer with over 30 years of experience in detailing structural steel, Beams and Columns has been marketed for MS-DOS systems for several years and is constantly being updated and improved. The system uses a combination of screen and tablet menus to create an unlimited variety of structural elements. It features automatic dimensioning and a full-feature feet-and-inches calculator including bevels, rises, and slopes.

Computer Detailing Corporation
1310 Industrial Blvd.
Southampton, PA 18966
215-355-6003

System Requirements
Macintosh II or larger; 4 MB of RAM; digitizer; plotter.

Price $4000
Site license available.

Support
Free telephone support is provided.

Berol RapiDesign/Drawing Symbols Libraries

Berol RapiDesign offers four major drawing symbols libraries for the Macintosh: Electrical and Electronic, Mechanical Design, Residential Architectural, and Commercial Architectural. The comprehensive Berol RapiDesign Drawing Symbols Libraries include thousands of the most commonly used symbols in those disciplines. Other time-saving and information tools include protractors, arrowheads, and various polygon shapes. The symbols have been designed to produce the finest, smoothest possible output from the LaserWriter®, ImageWriter®, and plotters. Except for a few special cases, all are draw-type objects that are fully compatible with MacDraw and similar drawing programs. Users can revise or resize symbols as needed, while retaining the overall quality of the scaled symbol. The libraries are available in two formats: as PICT files, for use with all drawing programs capable of reading PICT files; and as MacDraw II files, especially set up to take advantage of MacDraw II's Library function. The MacDraw II version is also fully compatible with Claris CAD.

Berol USA
105 West Pak Dr., Ste. 300
Brentwood, TN 37064
615-371-1199

System Requirements
Macintosh Plus or larger; MacDraw II or Claris CAD.

Price $89.95
Per library.

Support
Free technical support is provided; 90-day warranty on media.

BIGBEAMS

BIGBEAMS Buildese module selects glu-lam and steel beams to take imposed loads for either a simple or a cantilevered span. Questions are asked regarding span, distribution of loads (continuous, partially continuous, and up to three concentrated), and other elements. BIGBEAMS computes the moment, shear, and reactions, checks the member against a data bank of 121 common glu-lam and 143 steel beams (both S and W shapes), and checks stresses for different sizes and grades to provide between three and eight selections; or it will check out the selection the user chooses. A separate section permits the input of dimensions for special sizes of steel, T, I, angles, channels, and square or round tubes. Fiber and shear stress as well as deflection for L/360 and L/240 are calculated and checked. Disk records of all input and calculated values, as well as final selections, are kept for file and/or future changing. Professional technical reports are printed if desired.

J. J. JORDAN, ARCHITECT-ENGINEER
5236 Overbrook Way
Sacramento, CA 95841
916-332-6610

System Requirements
Macintosh 512K or larger.

Price $96.95
Discount available when ordered with other Buildese modules.

Support
Free telephone support is provided.

Blueprint

Blueprint is a two-dimensional computer-aided design package for architects, designers, engineers, and technical illustrators. Blueprint's ability to work in layers, its variety of lines and fillets, hatching, editable fill patterns, and other CAD features produce precision technical documents. In addition to all the basic CAD abilities, Blueprint provides such advanced options as a built-in DXF translator, floating and constraint palettes, ability to use encapsulated PostScript, a library of hierarchical symbols, text rotation (by degrees, minutes, and seconds), precision to nine decimal places, and object-by-object color. Blueprint directly reads the Kurta ADB 11-inch by 17-inch digitizing tablet for 1000 dots-per-inch accuracy of drawing input.

Graphsoft, Inc.
8370 Court Ave., Ste. 202
Ellicott City, MD 21043
301-461-9488

System Requirements
Macintosh Plus or larger.

Price $449

Support
Free telephone and AppleLink® support are provided; free quarterly newsletter.

Building Code Analyst

Building Code Analyst is a HyperCard® stack designed to assist architects, engineers, contractors, facility managers, space planners, and architectural educators in designing architectural projects to comply with the basic requirements of the Uniform Building Code. The program automatically looks up and calculates occupancy descriptions, occupant load factors, exit width requirements, fire protection requirements, and allowable heights and areas and indicates whether a building is in compliance with the code. Analysis results can be previewed on screen and printed, or a report can be saved as a text file. Reports include references to the building code by chapter or by section and page number. Building Code Analyst performs "what-if" scenarios during the design stage and allows users to rapidly check the effect of design changes against code requirements. It also assists in quality assurance checks during various phases of a project.

Architectronica
330 The Village #109
Redondo Beach, CA 90277
213-376-7054

System Requirements
Macintosh Plus or larger; hard disk; HyperCard.

Price $245

Support
Free telephone, MacNET, and CompuServe support are provided.

CAD to MAC

CAD to MAC converts AutoCAD files into Adobe Illustrator files.

Output Network/GeoPacific, Inc.
6039 W. Alameda Ave.
Lakewood, CO 80226
303-238-1338

System Requirements
Macintosh 512K enhanced or larger.

Price $145

Support
Telephone support is available.

CADMOVER

CADMOVER 3.0 vector graphic translation utility creates connectivity between mainframes, workstations, the Macintosh computer, and other personal computers. It imports, translates, and exports both two-dimensional and three-dimensional graphics that use IGES, DXF (releases 2.5 through 10), PICT (1 and 2), MacDraw 1, MiniCad (two-dimensional and three-dimensional), Super 3-D, SNAP!, and MSC/pal formats. CADMOVER's precision transformation logic maintains a high degree of accuracy for all calculations. Translation options include multiple layers and levels, multiple drawings within a file, scaling between most formats, unit measurement conversion (metric to English standard, for example), and unlimited file size with use of a hard disk and full color. Additional format modules including MacConcept, HPGL, MiniCad+, Dimensions, Hyperspace, and Space Edit, can be added to the central processor.

Kandu Software Corp.
2305 N. Kentucky St.
Arlington, VA 22205
703-532-0213

System Requirements
Macintosh 512K or larger. Hard disk recommended.

Price $495
Educational version available.

Support
Technical support, updates and a 30-day warranty are provided. Updates are free if due to technical error.

DCA Civil Engineering Module

The DCA Civil Engineering Module provides for digital terrain modeling, subdivision design, route design, coordinate geometry, annotations, curve design, reduction of field notes, and pipeworks. All of these routines function completely inside AutoCAD and are initiated by pulldown menus and icon menus. The user-friendly look and feel of the Macintosh are maintained.

DCA Engineering Software, Inc.
7 Liberty Hill Rd.
Henniker, NH 03242
603-428-3199

System Requirements
Macintosh II or larger; 5 MB of RAM; AutoCAD 10.0.

Price $1995

Support
Prices vary for training and support. Updates and hotlines are free.

DIAFRAMS

DIAFRAMS Buildese module is a three-part program composed of WINDLOAD, ROOFLOOR, and DIAFRAMS. The 1988 Uniform Building Code is used for each determination. The wind pressure must be input with help and references to the UBC. Dimensions of walls must be input. The program automatically assumes the same length of wall from floor above for speed of input, but may be changed when asked to verify the dimension. WINDLOAD computes wind shears and distributes them to shearwalls. ROOFLOOR determines allowable plywood thickness and classification for direct loads. DIAFRAMS compares the wind shear with the seismic shear (loaded automatically from SHERWALL if available), then presents up to three selections of plywood grade and fastenings to satisfy the shear requirements for roof or floor diaphragms. WINDLOAD, ROOFLOOR, and DIAFRAMS can be used individually. All data can be recorded on disk for file and later changes if required. Professional printouts are provided for technical reports and building permits.

J. J. JORDAN, ARCHITECT-ENGINEER
5236 Overbrook Way
Sacramento, CA 95841
916-332-6610

System Requirements
Macintosh 512K or larger.

Price $96.95
Discount available when ordered with other Buildese modules.

Support
Free telephone support is provided.

Dreams

Dreams is a precision drawing and drafting program developed by the makers of MacDraft. A broad range of geometric drawing tools, including all MacDraft-like tools, Bezier and spline curves, associative dimensioning, parallel lines, and freehand sketching give Dreams the power to create scaled architectural and engineering drawings as well as illustrations for desktop publishing, presentations, charts, and general business graphics. Dreams also gives users high-powered zoom, color, rotation of text and objects in fractional degrees, custom line styles, end marks for lines and curves, fillets, line trim, and other features. In addition, users can merge shapes together, subtract one object from another, or even glue lines and curves together to create unique shapes that can be filled with custom color patterns or one of 16.8 million colors. Users can store commonly used symbols, details, and drawings in libraries that come on line with the program.

Innovative Data Design, Inc.
2280 Bates Ave., Ste. A
Concord, CA 94520
415-680-6818

System Requirements
Macintosh Plus or larger; System 6.0.2. and Finder™6.0 or later; hard disk. 2 MB of RAM and color monitor recommended.

Price $500

Support
Free technical support is provided.

DS-Concrete

DS-Concrete allows the user to design and analyze concrete beams, plot column interaction curves, and design spread footings. DS-Concrete consists of four programs: Concrete Beam Analysis, Concrete Beam Design, Rectangular Concrete Column Design, and Spread Footing Design. DS-Concrete greatly reduces the time required to produce engineering calculations and decreases the chance for error. On-line help and numerous examples in the manual explain each program's functions. The equations used to produce the output can be viewed in each program and are also included in the printed copy as supporting documentation.

Daystar Software, Inc.
5906 N.W. Walnut Creek Dr.
Kansas City, MO 64152
816-741-4310

System Requirements
Macintosh Plus or larger; Microsoft Excel. Hard disk recommended.

Price $195
HyperCard demo $5.

Support
Free telephone support and a money-back guarantee are provided.

DS-Steel

The DS-Steel program designs steel frames and trusses according to the 1980 AISC code. Design information such as loads and member lengths may be read from Frame Mac or text files or may be entered manually. In addition to the standard AISC shapes included in the program, users may create their own shapes. A complete AISC stress check is calculated, including allowable major and minor axis bending stresses and allowable tension or compression axial stresses. Combined stresses that exceed code requirements are indicated, so changes can be made quickly and easily to the appropriate members. A manual with numerous examples and an on-line help system explain the program's functions.

Daystar Software, Inc.
5906 N.W. Walnut Creek Dr.
Kansas City, MO 64152
816-741-4310

System Requirements
Macintosh Plus or larger; Microsoft Excel. Hard disk recommended.

Price $195
HyperCard demo $5.

Support
Free telephone support and a money-back guarantee are provided.

DS-Wood

The DS-Wood program designs wood frames and trusses according to the 1985 AITC code. Design information such as loads and member lengths may be read from Frame Mac or text files or entered manually. A complete AITC stress check is calculated, including major and minor axis bending stresses, tension and compression stresses, and horizontal shear stresses. Combined stresses that exceed code requirements are indicated, allowing quick and easy changes to be made to these members. The DS-Wood software greatly reduces the time required to produce engineering calculations while decreasing the chance of error. Numerous examples are provided in the manual to explain the program's functions.

Daystar Software, Inc.
5906 N.W. Walnut Creek Dr.
Kansas City, MO 64152
816-741-4310

System Requirements
Macintosh Plus or larger; Microsoft Excel. Hard disk recommended.

Price $195
HyperCard demo $5.

Support
Free telephone support and a money-back guarantee are provided.

DynaPerspective

DynaPerspective is an optimized modeling environment designed to minimize the human interface problems that occur with many traditional CAD programs. The program displays three orthographic views and a "live" perspective view of the user's design, giving constant visual feedback. DynaPerspective constructs models by use of 14 drawing primitives, including lines, polygons, prisms, and cylinders. For constructing common architectural conditions rapidly, DynaPerspective automatically draws walls, posts, stairs, and roofs with user-defined parameters. The program fully utilizes the floating-point calculations of the Macintosh II computer's math coprocessor. DynaPerspective's simulation capacity lets users link multiple viewpoints together into a smooth animation sequence. Other features include wire-frame and solid modeling in three-point perspective; light source shading and surface transparency; and instantaneous perspective and color control.

Dynaware Corporation
1163 Chess Dr., Ste. J
Foster City, CA 94404
415-349-5700

System Requirements
Macintosh SE/30 or larger; 8-bit color monitor; 2 MB of RAM. 4 MB of RAM and MacPlot software for plotter support are recommended.

Price $1495

Support
Free technical support is provided for 30 days. Extended support, an update program, training programs at DynaWare, custom training programs, and a quarterly newsletter are available.

Engineer's Aide I: Process Engineering

Engineer's Aide I: Process Engineering offers nine process engineering programs in a stand-alone integrated package. The pipe/duct module calculates either pressure drop or diameter for fluid or gas flow. The pump/fan/compressor module calculates the head and horsepower needed to overcome system losses. The heat exchanger module calculates heat transfer and sizes the exchanger. The orifice and control-value modules can solve for pressure drop and flow rate in addition to orifice diameter or valve coefficient. The financial module calculates a project's payback, net present value, and rate of return. The conversion calculator contains more than 300 available viscosity, density, and temperature conversions. The fluid-properties library module lists and performs fluid density, viscosity, specific head latent, and other caluclations for many substances at any temperature or pressure. The specification writer module creates custom specifications for pumps, fans, compressors, heat exchangers, flow meters, control valves, and other pieces of equipment.

EPCON
117 N. Main St.
Woodsfield, OH 43793
800-367-3585

System Requirements
Macintosh 512K enhanced or larger; hard disk.

Price $695
English or Metric version. Professional version $1195.

Support
Free technical support is provided.

Engineering Symbols Library

Engineering Symbols Library is a design and drafting symbols library created for Macintosh-based CAD systems and drawing programs. It contains a wealth of two-dimensional engineering symbols precisely drawn to conform to ANSI standards. This two-disk volume contains more than 1500 symbols commonly used by mechanical, electrical, and chemical engineers and designers. Engineering Symbols Library includes graphics symbol libraries for heating, ventilating and air conditioning; heat-power apparatus; chemical process flow equipment; pipes, pipe fittings, and valves; chemical structures and element symbols; arrows; electrical and electronic symbols; electronic logic functions; welding symbols; surface texture symbols; mechanical springs, machine screws, nuts, and washers; square, socket, wood, and miniature screws; hex bolts; wing nuts, wing screws, and thumb screws; and rivets. A manual with pictorial listings of all symbols is included. Engineering Symbols Library is available in either MacDraw II or PICT format.

Northstar Engineering Design
1704 Chatham Ave.
Arden Hills, MN 55112
612-636-1216

System Requirements
Macintosh Plus or larger; Claris CAD or MacDraw II.

Price $49

Support
Free telephone support is provided.

FileGLU

See complete description under Technical Productivity—General Productivity.

FlexiCAD 1.2

FlexiCAD 1.2 is a two-dimensional CAD software package for drafting architectural, mechanical, electrical, and other drawings. Features include a Bezier curve, a cardinal spline and B-spline, nested symbols with preview, nested groups, multiple drawings, multiple views, auto-dimensioning, macros, and a floating-point database with 16 digits of precision. FlexiCAD 1.2 has unlimited steps of Undo and Redo, user-definable views, layers, pen colors, hatch pattern, line style, line type, and symbol definitions. There is an extensive set of move, copy, rotate, mirror, scale, trim, fillet, extend, isometric, and reshape commands. The program provides scaled, fitted, and area plot for producing precise drawing output. Macro capabilities allow the user to assign commands with parameter values into tool palettes, keyboard templates, or tablet templates. There is digitizer tablet support of most brands and sizes for tracing. Drawings may be imported from or exported to other CAD or drawing software through the PICT, PICT2, IGES, or DXF file format.

Amiable Technologies, Inc.
3508 Market St., Ste. 210
Philadelphia, PA 19104
215-222-9066

System Requirements
Macintosh Plus or SE with 68881 coprocessor card or larger; 2 MB of RAM; hard disk. Digitizing tablet recommended.

Price $1495
Site license available.

Support
Free telephone or fax support and updates are provided. On-site training is available.

Generic CADD Level 1

Generic CADD Level 1 is an introductory-level two-dimensional CAD program. Drawing objects include lines, rectangles, circles, arcs, polygons, ellipses, and spline and Bezier curves. CADD Level 1 allows 256 named layers, which can be shown, edited, and printed individually or in any combination. Other features include the ability to create symbol libraries on the fly, the ability to edit multiple drawings in separate windows, unlimited rotation and rescaling, undo and redo, and accurate measurements of distances, angles, and areas. Objects can snap to the endpoint, midpoint, or an intersection. User-definable features include grids, units of measure, and named views. Work can be imported or exported via the Clipboard or in PICT format. A double-precision floating-point database allows accuracy to 16 decimal places and provides virtually unlimited zoom capability.

Generic Software, Inc.
11911 N. Creek Pkwy. South
Bothell, WA 98011
206-487-2233

System Requirements
Macintosh Plus or larger; two 800K drives; HyperCard (for Helpstack only).

Price $149.95

Support
Free telephone support and a 90-day money-back guarantee are provided.

GridMaker

GridMaker can be used to create a choice of three-dimensional grids for use within a drawing program as a guide for rendering perspective drawings. The drawing programs that can be used include MacDraw, MacDraft, FreeHand, Adobe Illustrator, Cricket Draw and others. Users can choose a planar surface, a corner, or an interior or exterior view of a box. The perspective is adjustable from a wide-angle to a telephoto view. The density of grid lines is adjustable. All objects can be rotated in all three axes, and the view may be scrolled within the window. The program also has a zoom feature. Once grids are created, they can be altered using MacDraw. Drawings may be created on top of the grid, and then the grid may be hidden or removed. Grids may span many MacDraw pages, and print accurately on a LaserWriter. If a large screen is available, GridMaker can use the entire screen.

Folkstone Design, Inc.
P.O. Box 44
Grantham's Lndg., B.C. V0N 1XO Canada
604-886-4502

System Requirements
Macintosh 512K or larger; 400 or 800K disk drive; drawing program.

Price $49

Support
Telephone support and a warranty are provided.

HEATCOOL

HEATCOOL Buildese module is an involved yet flexible program to determine the BTUH and CFM requirements for the heating and cooling of each room and for the total building. The program asks for the input of major building design factors such as outside and inside design temperatures, solar and shading data, U-values, and other elements. These factors can be preset for specific locations but can also be modified within the program, and they are recorded and printed at several points in the program. Data must be entered for individual room characteristics such as areas of external walls, windows, ceilings, number of people, and additional loads. A help feature allows dimensions to be input and areas calculated, automatically deducting windows and doors if desired. Each room can use different design factors. A screen shows all data, with required BTUH and CFM cooling and heating for review and change before recording and/or printing. The main menu provides 11 options after each room is finished, one of which is to treat the total building as an individual unit to achieve the most efficient total design. HEATCOOL provides 16 options for individualizing printed reports.

J. J. JORDAN, ARCHITECT-ENGINEER
5236 Overbrook Way
Sacramento, CA 95841
916-332-6610

System Requirements
Macintosh 512K or larger; ImageWriter.

Price $96.95
Discount available when ordered with other Buildese modules.

Support
Free telephone support is provided.

Housebuilder

Housebuilder is an architectural graphics package, designed by a building contractor, that enables users to assemble accurately drawn images of real-world building and landscape materials. These images can be used to produce plans, elevations, and interiors in two different scales.

Alternative Enterprises
3300 Jarretsville Pike
Monkton, MD 21111
301-557-9670

System Requirements
Macintosh 512K or larger; external disk drive; MacPaint.

Price $55

Support
Telephone support is provided.

IDD Symbol Library, Architecture, Volume I: Residential Construction

The IDD Symbol Library, Architecture, Volume 1: Residential Construction is the first in a series of productivity tools for architects, interior designers, and draftspersons involved in the design and production of residential construction. Over 1200 symbols, in both plan and elevation views, provide users with the drawing elements needed to produce working drawings quickly and easily. The Residential Construction library consists of a two-disk set of symbols and details in six primary groups: doors (including frame, bifold, exterior, interior, garage, sliding glass, and others), windows (casement, double hung, awning, sliding, bow, bay, and other types), electrical (including standard symbols), plumbing (including water closets, baths, and kitchen fixtures), typical details (including sample wall sections, foundations, fascia, and others), and general (showing materials, darts, and legends). All of the symbols are drawn to scale. With Dreams' automatic scaling function, this library can be used with a wide range of differently scaled drawings.

Innovative Data Design, Inc.
2280 Bates Ave., Ste. A
Concord, CA 94520
415-680-6818

System Requirements
Macintosh Plus or larger; Dreams.

Price $249

Support
Free technical support is provided.

KETIV/AutoCAD Standard Template (KAST)

KETIV/AutoCAD Standard Template (KAST) quickly performs drawing tasks and eliminates unnecessary drawing regeneration. KAST lets AutoCAD users select any layer, view, or block from menus that are automatically created during a drawing session. The menu files and other KAST fetaures can be further customized through AutoLISP. KAST works either with the mouse or with a digitizing tablet.

KETIV Technologies, Inc.
6645 N.E. 78th Crt., C-2
Portland, OR 97218
503-252-3230

System Requirements
Macintosh II or larger; 8 MB of RAM; AutoCAD 10.0. Color monitor recommended.

Price $150
Site licensing available.

Support
Free 90-day telephone support is provided; additional support is available through local dealer network.

LANDCADD Construction Details

LANDCADD Construction Details package is a comprehensive library of predrawn landscape construction details for use with AutoCAD. Over 500 details can save hundreds of hours of drafting time and are easily modified for specific applications. Construction details are available by individual disk, in sets, or as the complete set. Topics include curbs, decks, bridges, drainage, erosion control, fences, handicap design, irrigation, lighting, parking, paving, planing, playgrounds, fountains, pools, railings, shelters, signage, site furniture, steps and ramps, utilities, and walls.

LANDCADD, Inc.
7519 East Hwy. 86
Franktown, CO 80116
303-688-8160

System Requirements
Macintosh II or larger; 4 MB of RAM; AutoCAD 10.0.

Price $895
Price includes entire library. Site licensing is available.

Support
Free technical support is available through dealers.

LANDCADD Irrigation Design

LANDCADD Irrigation Design program is a computer-aided drafting and design tool for irrigation designers. Based on the AutoCAD drafting program, Irrigation Design is part of the LANDCADD system of integrated solutions for land planning and landscape design. The program helps designers lay out, design, and perform calculations for irrigation systems of any size, using any brand of irrigation equipment. Heads are duplicated automatically with triangular or square spacing. Gallons per minute can be totalled for any zone or for the entire site. Pressure loss calculations and pipe sizing are also calculated by the program.

LANDCADD, Inc.
7519 East Hwy. 86
Franktown, CO 80116
303-688-8160

System Requirements
Macintosh II or larger; 4 MB of RAM; AutoCAD 10.0.

Price $595
Site licensing is available.

Support
Free technical support is available through dealers.

LANDCADD Site Planning and Landscape Design

LANDCADD Site Planning and Landscape Design module is a powerful computer-aided drafting and design tool for land planning professionals. As part of the LANDCADD integrated software system, this program is based on the AutoCAD drafting package. Pull-down menus, screen icons, and a custom tablet menu make LANDCADD user friendly. The program performs calculations and draws complex symbols. Many time-saving features are provided to customize AutoCAD for land planners and landscape designers, and an extensive symbols library is also included. Routines are provided for coordinate geometry, topography, parking lots, roads and walks, and planting plans.

LANDCADD, Inc.
7519 East Hwy. 86
Franktown, CO 80116
303-688-8160

System Requirements
Macintosh II or larger; 4 MB of RAM; AutoCAD 10.0. Digitizing tablet recommended.

Price $695
Site licensing is available.

Support
Free technical support is available through dealers.

LAPPIS

LAPPIS, the Landscape Architectural Plant and Product Information System, is a set of ten HyperCard stacks used by small and large landscape firms, government agencies, and institutions of higher education. LAPPIS gives landscape professionals access to information on hundreds of plant species and thousands of commonly specified products. In addition, LAPPIS allows users to assign vendor and pricing information. Product stacks include irrigation, lighting, site furnishings, paving/surfacing, waterscapes, and structures. Powerful search capabilities allow users to retrieve information about particular plants or products quickly. Users can also customize the plant and product stacks with the LAPPIS attribute editor and create a bill of materials with the cost estimator. Bills of materials may be saved as text files and read by other applications such as word processors, spreadsheets, and CAD programs. On-screen help is provided.

Landware
13800 Parkcenter Ln., Ste. 236
Tustin, CA 92680
714-832-8046

System Requirements
Macintosh Plus or larger; hard disk; HyperCard 1.2 or later.

Price $250
Includes HyperCard.

Support
Free telephone support is provided.

LaserCAMM

LaserCAMM is a turnkey, CAD-driven laser cutting system that gives designers the power of industrial laser cutting. Sheet materials such as plastics, wood, paper, and fabric can quickly be cut into complex patterns drawn in most CAD programs. LaserCAMM has a wide variety of applications, including architectural modeling, signage, prototypes, and light manufacturing. Material up to 1/4-inch thick can be cut or etched on the 24-inch by 36-inch cutting area. LaserCAMM contains a 40-watt sealed-beam laser, internal computer control, cooling, and air cleaning. The system connects to most CAD systems through a serial cable using DXF files.

Scale Models Unlimited
111 Independence Dr.
Menlo Park, CA 94025
415-324-2515

System Requirements
Macintosh 512K enhanced or larger. All interface hardware and software included.

Price $125,000
Monthly lease $2,800.

Support
Installation, training, and a one-year warranty are provided. Subsequent service contracts are available for a fee.

LayerMap

LayerMap is a compliment to MiniCad+ that allows users to create predefined sets of layers, classes, and views that can be recalled instantaneously. Designers establish a drawing's layers and classes and then use a single menu command to name and number the drawings, which LayerMap tracks in its hot-linked spreadsheet. Once established, a single command calls up the right combination of drawings and layers to view, modify, or print.

Valle Anderson Associates
5177 Richmond Ave., Ste. 600
Houston, TX 77056
713-993-0088

System Requirements
Macintosh Plus or larger; hard disk, MiniCad+.

Price $59.95

Support
Free telephone support is provided for 30 days; service contracts are available thereafter.

LSI Pentagon CAD

LSI Pentagon CAD is a two-dimensional computer aided design and drafting tool application. The system allows the user to create drawings with accepted drafting techniques, including precise placement and construction of drawings in a user-defined measurement system. Drawing objects include: points, lines, arcs, circles, rectangles, symbols, regular polygons, and free-form lines. Each object created in the drawing can have a separate set of display attributes. Attributes include layer, color, line font, and pen number. Comprehensive editing functions include rotation, scaling, mirroring, grouping, ungrouping, translation (moving), and drawing attribute modification. Various export commands are available to allow a user to interface drawings created with LSI Pentagon CAD or other CAD systems. Digital plotter support is included for a variety of plotters. Application-specific software, such as a Coordinate Geometry addition and a Mapping addition, is available to customize LSI Pentagon CAD to the user's application.

Lionshead Software, Inc.
1911 Hollyhock Rd.
West Palm Beach, FL 33414
407-790-1157

System Requirements
Macintosh 512K or larger.

Price $99
Programmer's addition $100; Coordinate Geometry addition $400; Mapping addition $1495

Support
Telephone and electronic mail support are provided; updates are available for an additional charge; a 90-day warranty is provided for media only.

MacArchitrion

MacArchitrion is a three-dimensional CAD program that is designed to assist in all steps of the design process, including schematic design, preliminary planning, preliminary detail planning, working drawings and building permits. The different functions of the program interact, and are available in the same module. Key functions of MacArchitrion are classified into three fields: creation and angling of volumes, CAD and three-dimensional perspective. Creation and angling features include three-dimensional elements and openings moving with x, y, and z repetition; creation of components and insertion of three-dimensional openings; and three-dimensional device fields. CAD features include zone functions and screen scrolling; instant calculations of building and room areas; and multiple location by absolute, relative, cartisian and polar digit axis and location positioning. Three-dimensional perspective features include instant visualization, front views and the ability to determine cross sections.

Gimeor, Inc.
420 10th St. S.E.
Washington, DC 20003
202-546-8775

System Requirements
Macintosh Plus or larger.

Price $995

Support
Telephone technical support and upgrades are available.

MacCAD Symbol Libraries

The MacCAD Symbol Libraries are libraries of symbols used by architects, drafting personnel, engineers, and other designers of architectural or engineering systems. The libraries can be used with MacDraw, MacDraft, MiniCad, or any application that reads files in the PICT format. MacCAD—Mechanical Design is a 57-document library of symbols for engineers and designers that includes HVAC, basic valves, welding, fasteners, and surface textures among its symbols. McCAD—Architecture includes three libraries—Residential Architecture Design, Commercial Architecture Design, and Layout Planner. Residential Architecture Design includes symbols for living rooms, fireplaces, utility rooms, kitchens, and electrical devices. Commercial Architecture Design includes symbols for handicapped facilities, locker rooms, fire equipment, HVAC symbols, parking facilities, and various schedules. Layout Planner contains symbols for office, store, and restaurant layouts. MacCAD—Piping includes three libraries—Single Line Orthographic Piping, Two Line Orthographic Piping, and Single Line Isometric Piping. All symbols in the libraries are vector graphics drawn to ANSI standards. MacCAD—Electrical & Electronic includes symbols for receptacles, resistors, capacitors, switches, and other electrical components drawn to IEEE standards. All MacCAD symbols can be either printed with either a plotter or an ImageWriter or LaserWriter printer.

CompServCo
1921 Corporate Sq., Ste. 1
Slidell, LA 70458
504-649-0484

System Requirements
Macintosh 512K or larger; MacDraw, MacDraft, MiniCad, or any application that reads files in the PICT format. ImageWriter or LaserWriter. MacCAD—Architecture, plotter.

Price
MacCAD—Mechanical Design $169;
MacCAD—Architecture $149 to $169 per library;
MacCAD—Piping $249 per library;
MacCAD—Electric & Electronic $169.

Support
Free telephone support is provided; updates are available to registered owners.

MacDraft

MacDraft is a drawing/drafting package designed for use by graphic artists, desktop publishers, architects, engineers, and others with drawing and drafting needs. The program can be used to produce scaled drawings, rotate objects in one-degree increments, zoom in and zoom out, and generate automatic dimension lines. Other features include 32 different scales (metric and U.S.); custom fill patterns; area and dimension text values that can be detached from objects (text fonts, sizes, and styles can also be changed); sizes that can be displayed relative to the selected scale; circles that can be created by diameter or radius; arcs that can be created by radius or by three points; automatic area calculation; a cursor position indicator; and scale conversions between feet and inches and the metric system. Documents can be saved in PICT format.

Innovative Data Design, Inc.
2280 Bates Ave., Ste. A
Concord, CA 94520
415-680-6818

System Requirements
Macintosh 512K or larger; System 4.2; Finder 6.0 or later.

Price $269

Support
Free technical support is provided.

MacInteriors

MacInteriors is a three-dimensional software package for interior design and space planning. MacInteriors creates three-dimensional room layouts that can be viewed and printed in plan, elevation, multiview, and perspective. The perspective may be viewed from any angle and any height and a bird's-eye view is also available. All views can be printed on the ImageWriter or LaserWriter or plotted accurately in color and to any scale using Macplot. Users can draw realistic three-dimensional objects, then save them to object libraries for placement in the spaces created. The drawing palette contains tools for drawing rectangles, polygons, cuboid shapes and prisms, and there are 15 shading patterns to choose from.

Microspot
21060 Homestead Rd., Ste. 207
Cupertino, CA 95014
408-739-0222

System Requirements
Macintosh Plus or larger.

Price $295
Demo disk with tutorial manual, $19.95.

Support
Telephone support is available. Updates are provided on a regular basis.

MacPerspective

MacPerspective allows architects, draftspeople, artists, and engineers to construct accurate wire-frame perspective drawings of houses, buildings, or other objects from a dimensioned plan and elevation drawings or sketches. The viewpoint of the observer can be changed to show the house or building from a different angle without reconstructing the perspective. The program permits transfer of perspective drawings to other Macintosh applications, such as MacDraw or FullPaint, via the Clipboard. Drawings can also be transferred to plotter drivers, such as MacPlots II, in a high-resolution mode. Other features include the ability to duplicate/move objects in three dimensions, erase hidden line segments manually or automatically, set up a secondary coordinate system, and transfer objects in three dimensions between MacPerspective drawings. A zoom feature allows construction of perspectives in fine detail. MacPerspective drawings can be transferred into Adobe Illustrator as line art.

Knick Drafting, Inc.
1275 S. Patrick Dr., Ste. P
Satellite Beach, FL 32937
407-777-0275

System Requirements
Macintosh 512K or larger. ImageWriter or LaserWriter recommended.

Price $295

Support
Telephone support is provided; low-cost upgrades are provided as improvements are made.

MacRoad

MacRoad is an application for the geometric design of roads based on cross-section information of the existing terrain. MacRoad provides the tools to design and draw a road profile and cross-section shape for this terrain data. Road design is truly interactive because designers can immediately see the results of adjusting a design profile by viewing any cross section or can assess quantities after changing a pavement thickness or batter slope. It is not necessary to produce drawings on a plotter to check progress—all design work can be carried out on the high-resolution screen. MacRoad lets designers concentrate on the design by allowing them to draw typical sections from a palette of tools representing a variety of curb and pavement types; view and plot at a range of scales and units; switch instantly between views of long sections, cross sections, typical sections, or schedule of quantities; recalculate and redraw cross sections and plans when gradings are changed; and prepare earthworks quantities with allowance for bulking or compaction.

Creative Engineering
6 Pintill St.
Wilston, Qld 4051, Australia
617-356-6271

System Requirements
Macintosh 512K or larger. Pen plotter recommended.

Price $1150
Version 1.2 available for $950.

Support
Free telephone and mail support is provided; software upgrades are available for $450 per year; individual upgrades for a nominal fee.

Master Outline Spec

Master Outline Spec is an implementation of the complete MasterFormat Outline Specification of the Construction Specification Institute and includes all topics and subtopics included in divisions 00 through 16 of the specifications. The program is available in MORE and MacWrite formats.

Yeoman Technical Software
629 Voluntown Rd.
Jewett City, CT 06351
203-376-2952

System Requirements
Macintosh 512K or larger; MORE or MacWrite. Color monitor recommended.

Price $80

Support
Free telephone support is provided.

Masterspec AIA

Masterspec AIA consists of a library of master guide specifications for building construction. EPPS/Architectonix is licensed by the American Institute of Architects (AIA) to develop, maintain, and distribute disk library services to AIA hard copy subscribers on a worldwide basis for the Macintosh. An Architectural/Structural/Civil edition is now available in basic and short-language versions.

EPPS/Architectonix
1950 Stemmons Fwy., Ste. 5001
Dallas, TX 75207
214-746-4346

System Requirements
Macintosh 512K or larger; two 800K drives; MacWrite 5.0 or MacWrite II.

Price
Short version $495. Basic version, $795, includes initial disk library plus three quarterly updates for the first year's service.

Support
Free telephone hotline support is provided. Quarterly updates are available at $90 for basic and $60 for short version (subscription only).

Masterspec Diskette Libraries

Masterspec Diskette Libraries are the automated electronic version of the highly respected Master Specification documents produced by the American Institute of Architects through its Professional Systems Division. Masterspec is available in four libraries, typically on 800K disks: Architectural, Structural/Civil, Mechanical/Electrical, and Interiors. The first three libraries also have a Short Language version, which is an abbreviated BASIC designed to be used as an outline specification, and a Narrowscope version that specifies requirements for highly specialized work.

Concept Group, Inc.
904 Arizona Ave.
El Paso, TX 79902
915-544-4444

System Requirements
Macintosh 512K or larger; Microsoft Word 3.0 or later, WordPerfect 1.01 or later, or MacWrite II.

Price $150 to $750
Annual subscriptions from $150 to $750 for the first year, $115 to $415 for renewal.

Support
Telephone support is provided.

MGMStation

MGMStation is a full-featured CAD program that can be used as a drawing and design tool for virtually any type of desktop engineering application. It has broad utilization for mechanical, electrical, and structural engineers, architects and interior designers, landscape architects, and other professionals. The program makes more than 200 defined functions accessible to users, including multilayering of grouped entities; macro programming; unlimited layering; variable grid definition of any size desired; automatic dimensioning to four decimals in metric or feet and inches; continuous zooming and scaling; auto-trimming of lines and segments; automatic filleting, chamfering, and tangent options; user-selectable patterns and hatching; multiple rotation and mirroring of groups; variable offset contours; an extensive symbol library; full annotation and text-editing features; and a scientific calculator. It is compatible with most pen plotters and printers, such as Roland DXY, Houston Instruments, DMP, Hewlett-Packard, Graftec, Gould, and Apple®ImageWriter and LaserWriter printers.

Micro CAD/CAM Systems, An Aura Systems Co.
5900 Sepulveda Blvd.
Van Nuys, CA 91411
818-376-0008

System Requirements
Macintosh 512K or larger.

Price $999 to $1399

Support
Telephone support, training, and updates are available.

MicroStation Mac

MicroStation Mac microCADD software merges the power of two-dimensional /three-dimensional engineering design software with the ease of the Macintosh user interface. MicroStation Mac is fully compatible with IGDS, Intergraph's VAX-based core graphics software, and provides a complete stand-alone interactive CADD system for the generation, manipulation, display, and output of graphics data. Features such as resizable windows, dialog boxes, tool palettes, and Mac's Clipboard and Selection Set capabilities are just a few of the many Macintosh functions supported. More than 450 viewing and drawing functions are also supported; three-dimensional design is fully implemented. MicroStation Mac offers up to eight active windows of a design for viewing different perspectives and scales. The views are resizable and can be placed on any of up to six graphic screens, the maximum supported by the Macintosh. Up to 32 reference files can be attached to the active file for scaling, rotating, or clipping. Each design contains 63 drawing layers or "overlays," which can be independently controlled. Combined with the reference file capability, MicroStation offers over 2000 separate viewing levels. MicroStation advanced features include shading, hidden line removal, undo and redo commands, linear and area patterning, and DXF In/Out.

Intergraph Corporation
One Madison Industrial Pk
.Huntsville, AL 35807
205-772-2000

System Requirements
Macintosh SE/30 or larger; 2 MB of RAM recommended.

Price $3300

Support
Authorized reseller support and Intergraph 800-number telephone support is provided. Training is available through Intergraph, authorized resellers, and education centers.

MiniCad+

MiniCad+ is a CAD and analysis program that includes two-dimensional and three-dimensional in the same window, along with a hotlinked database/spreadsheet. A programming language lets users write their own routines or customize the program for greater efficiency. A built-in DXF translator allows transfer of files to and from AutoCAD and other formats. CAD and analysis can be performed in one window—for example, MiniCad+ will automatically calculate the changes in price caused by modifications in a floorplan or design. In ad-dition to such features as a highly accurate coordinate system, associative auto-dimensioning, filleting, layering, zoom, and multiple line types and arrowheads, MiniCad+ includes complex duplication with arrays, cubic and Bézier splines, a hierarchical symbol library, hatching, a constraint palette, mirroring, and the capability to paint on any layer with a full-color palette. Custom plotter drivers are available.

Graphsoft, Inc.
8370 Court Ave., Ste. 202
Ellicott City, MD 21043
301-461-9488

System Requirements
Macintosh Plus or larger.

Price $695
MiniCad plotter drivers, $150 and $300.

Support
Telephone support and a quarterly newsletter are provided.

MiniReporter

MiniReporter, for users of MiniCad+, generates reports associated with a design project. MiniReporter summarizes the symbols used in all layers of a drawing and reports the number of objects in a text file, sorted by name and layer. The report file includes the class and name of the symbols, and the contents (if any) of the four symbol fields. The report file can be edited with any Macintosh text editor, or it can be exported to a word processor, database manager, or spreadsheet application that accepts standard text files.

Valle Anderson Associates
5177 Richmond Ave., Ste. 600
Houston, TX 77056
713-993-0088

System Requirements
Macintosh Plus or larger; hard disk drive; MiniCad+.

Price $59.95

Support
Telephone support is provided free for 30 days; support contracts are available thereafter.

ModelShop

ModelShop is a three-dimensional surface modeler created for architects, urban planners, and set and exhibit designers. Information is entered in metric units or feet and inches. Available viewing modes include Plan, Elevation, Axonometric, and Perspective. Graphic data may also be freely exchanged with other programs through the PICT format. When used on a Macintosh II computer, ModelShop performs color shading with a user-defined light source. The number of windows and models is limited only by available RAM. Objects may be easily transferred between models with Cut, Copy, and Paste commands. Up to 235 layers may be used for organizing complex models. Grid snap, coordinate feedback, and fixed-point numerical accuracy allow precise dimensioning and placement. Distance, angle, and area measuring tools are provided. ModelShop may be used with all Macintosh-compatible output devices, including plotters and film recorders.

Paracomp, Inc.
123 Townsend St., Ste. 310
San Francisco, CA 94107
415-543-3848

System Requirements
Macintosh Plus or larger; System 4.2 or later. Plotters, slidemakers, and two-dimensional drawing and painting software are recommended. Color capability recommended for Macintosh II family.

Price $595

Support
Free technical support is provided.

Normal Depth

Normal Depth utilizes Manning's Uniform Flow Equation to solve for normal depth of storm water in pipe or open channels. Channels may be man-made or natural. Quick calculations are provided with a graphic output format.

McNeely Associates PA
5501 McNeely Dr.
Raleigh, NC 27612
919-782-9677

System Requirements
Macintosh 512K or larger.

Price $135
Package discounts and site licensing available.

Support
One year free support and 60-day money back guarantee is provided. Updates are available for a nominal cost.

Nudge Macro

Nudge Macro operates with MiniCad+ to let users move objects on more than one layer from the keyboard.

Chamberlain Custom Macros
7835 Metacomet Rd.
Hanover, MD 21076
301-551-3730

System Requirements
Macintosh Plus or larger; MiniCad+ 2.0.

Price $45

Support
Free support is provided.

Planit

Planit is a computer-aided design system that allows users to input awkwardly shaped rooms and complex kitchen designs. Drawings and quotations can be quickly produced or revised to provide full-color perspective drawings, architectural plans and elevations, and detailed quotations; alternative quotations and price comparisions between different styles can be made quickly.

Planit West
#1 Santa Cruz Ave.
Los Gatos, CA 95030
408-395-1765

System Requirements
Macintosh 512K or larger; ImageWriter or LaserWriter. Pen plotter is recommended.

Price $3995
Catalogs with kitchen cabinets, $400 each.

Support
Telephone hotline, training, installation, and service are available.

PlotMaker

PlotMaker is a plotter driver that provides tools for polishing the look of drawings before printing them on a printer or plotter. PlotMaker sets output scaling, positions the drawing on the sheet, fits different drawings to one another, optimizes plotter pen movement, filters coincidencing lines to avoid repeated drawing, and unifies connecting lines. For last-minute modifications, PlotMaker also includes drawing and editing tools, such as construct and edit lines, circles, hatchings, and multiline text labeling in a variety of type options. Developed for Graphisoft's ArchiCAD program, PlotMaker works with CAD programs that output in PICT, DXF, or HP-GL formats.

GRAPHISOFT
400 Oyster Point Blvd., Ste. 520
South San Francisco, CA 94080
415-266-8720

System Requirements
Macintosh II or larger; 2 MB of RAM; CAD software; plotter or printer.

Price $295

Support
Free telephone support is provided.

PowerDraw

PowerDraw is a professional Computer Aided Design drafting system that has a broad range of uses, including built-in plotting and printing features. PowerDraw offers an intuitive Macintosh interface for ease-of-use, speed, and the ability to use keyboard entry for precision. Users can create up to 120 layers, and can use the auto-dimensioning feature with or without extension lines and in three-dimension styles. Other features include drawing circles by circumference through three points, diameter, or radius; defining arcs by three specified points or radius; continuous autoscroll; interactive rotate; kill redraw for speed; multiple scales for detail; fillets, chamfer, trim; combine, attach, trim; and nine line styles and eight line weights (including laser width hairline). Drawings can be produced in color on the Macintosh II, ImageWriter and plotter. Two polygon tools are provided. PowerDraw can read MacDraw files directly, along with PICT files created using other packages, for transition from existing software. PowerDraw DXF Translator software is available separately.

Engineered Software
P.O. Box 18344
Greensboro, NC 27419
919-299-4843

System Requirements
Macintosh Plus or larger; System 4.1 or later.
Hard disk recommended.

Price $795
PowerDraw DXF Translator, $195.

Support
Free telephone support is provided; updates are available to registered users.

PowerDraw Formatted Details

PowerDraw Formatted Details (PFDs) is a set of comprehensive general notes and typical details that can be used on a variety of projects ranging from single-unit residential to large-scale industrial and commercial projects. Over 120 PFDs cover timber, masonry, concrete, and steel. Available in both imperial and metric formats, PFDs are for use by architects, engineers, contractors, developers, and anyone else involved in the construction industry. It is also a valuable reference tool for students and professionals. It can be used as is or as a starting point from which to develop any required specific detail.

Intuitec Software, Inc.
56 Goddard St.
North York, Ontario, M3H 5E2 Canada
416-631-6603

System Requirements
Macintosh Plus or larger; PowerDraw 2.0.

Price $125
$150, Canada.

Support
Free telephone support is provided.

PowerDraw Landscape Libraries

PowerDraw Landscape Libraries are extremely comprehensive and are planned for use by landscape architects, landscapers, architects, and drafting personnel. The 75 PowerDraw Landscape Libraries are arranged for ease of use. The graphics libraries contain plan and elevation views of trees and shrubs, and symbols for elements used in rock gardens. The libraries of labels contain plant names organized in a manner that assists users in plant selection. Common, family, and scientific names are listed alphabetically and grouped into categories such as ground covers, hedges, shrubs, trees, vines, and seasonal colors.

Engineered Software
P.O. Box 18344
Greensboro, NC 27419
919-299-4843

System Requirements
Macintosh 512K or larger; PowerDraw 2.0 or later.

Price $79

Support
Free telephone support is provided; updates are available to registered users.

PowerDraw Residential Construction Symbols Library

PowerDraw Residential Construction Symbols Library contains over 1000 symbols in both plan and elevation views. This comprehensive library includes all types of doors, appliances, and fixtures, along with wall sections, foundations and slabs. In addition to representations of plumbing and other types of fixtures, symbols are included for electrical installations and wiring. The symbols in PowerDraw Residential Construction Symbols are ready to load and place.

Engineered Software
P.O. Box 18344
Greensboro, NC 27419
919-299-4843

System Requirements
Macintosh 512K enhanced or larger; PowerDraw 2.0 or later.

Price $199

Support
Free telephone support is provided; updates are available to registered users.

Professional Series Drafting Symbols

Professional Series Drafting Symbols is a library of drafting symbols produced in the MiniCad format ready for immediate use. Origin points may be attached to symbols to aid in accurate placement. Symbols may have editable text fields. There are three modules. The Architectural module includes kitchen appliances, bathroom and toilet fixtures, windows (a starter set), doors (a starter set), utility room fixtures, HVAC symbols, electrical and lighting fixtures, site or landscaping planning, dining and conference room furniture, living room furniture, bedroom furniture, game room equipment, and office and commercial fixtures. The Cabinetwork module contains kitchen and bathroom cabinets, and bookcase cabinetwork. The Doors and Windows module contains window and door elevations. Symbols are also available in the PICT file format for applications such as MacDraw, MacDraft, Dreams, VersaCAD, and other programs that use PICT.

Williams AG Products
9191 Towne Centre Dr., #175
San Diego, CA 92122
619-558-9193

System Requirements
Macintosh 512K or larger; MiniCad+, BluePrint, or any application that reads PICT files, such as MacDraw, MacDraft, or VersaCAD. Hard disk recommended.

Price $195
Price includes Modules I, II, III. Also available individually: Module I $95; Modules II and III $75 each.

Support
Free telephone support and a 30-day money-back warranty are provided.

Resrouting

Resrouting is a reservoir flood routing program that allows the size and efficiency of detention basins for small sites to be checked. The program allows the user to define storage and discharge relationships, and provides graphic hydrograph output.

McNeely Associates PA
5501 McNeely Dr.
Raleigh, NC 27612
919-782-9677

System Requirements
Macintosh 512K or larger.

Price $65

Support
One year of free support and a 60-day money back guarantee is provided. Updates are available at a nominal cost.

RETWALLS

RETWALLS Buildese module determines the construction requirements of a simple poured concrete or concrete block retaining wall and footing. Preset factors such as soil weight, angle of repose, and allowable stresses can be kept or changed either permanently or just for the wall being designed. Preliminary dimensions, vertical and surcharge load, and distance are requested. A diagram of wall and footing with pertinent data, including moments, is shown, indicating if it is satisfactory or not. If the overturning moment or the soil pressure is too great, the program suggests changes in dimensions. Once overturning and soil pressure are satisfied then the vertical and horizontal steel is determined for a satisfactory design. If steel spacing is input then the size is determined; or if size is input then the spacing is determined, with the 1988 UBC always governing as a minimum. Disk records of all input and calculated values, as well as final selections, are kept for file and/or changes. Professional printouts are provided.

J. J. JORDAN, ARCHITECT-ENGINEER
5236 Overbrook Way
Sacramento, CA 95841
916-332-6610

System Requirements
Macintosh 512K or larger; ImageWriter.

Price $96.95
Discount available when ordered with other Buildese modules.

Support
Free telephone support is provided.

SHERWALL

SHERWALL Buildese module is a comprehensive, interactive program that computes seismic shear, compares it with wind shear, and then provides tables of possible shear panel materials and fastenings for selection. All data taken from the 1988 Uniform Building Code. Stud spacing, size, and blocking determine final choices. If used with the DIAFRAMS module, wind shears and many dimensions are loaded automatically for comparison and use. Appropriate seismic information is requested with references to the UBC. PSF loads for walls and floors are entered, as well as dimensions. Additional applied loads are accommodated. Loads on each wall are computed, and walls from above are added to compute the total seismic, dead, and live load at the base of each. Materials for selection vary with the computed shear. They may permit gypsum board, plaster, or plywood of varying thicknesses, grades, and nailing schedules. The length of each panel in each shearwall is requested, and checked against the UBC allowable. Each panel is tested for overturning, and a selection of holddowns is presented if required. All data can be recorded on disk for future use and changes. Professional printouts are provided for technical reports.

J. J. JORDAN, ARCHITECT-ENGINEER
5236 Overbrook Way
Sacramento, CA 95841
916-332-6610

System Requirements
Macintosh 512K or larger; ImageWriter.

Price $96.95
Discount available when ordered with other Buildese modules.

Support
Free telephone support is provided.

SNAP!

SNAP! is a full-featured two-dimensional CAD system. The one billion unit design plane, along with user-definable units of measure, provides precision data input using key-ins or the mouse. It supports symbol libraries with user-definable fully nested symbols. On-screen text input provides annotation of drawings, and the special SNAP! font allows placement of text at any angle. A wide variety of element, fence and active group transformations are included. A powerful auto-dimensioning feature supports a variety of dimension modes and display settings. SNAP! has built-in support for Houston Instrument and Hewlett-Packard plotters and a custom PostScript generator for high-quality output to LaserWriter. PICT file, copy to Clipboard, and PostScript and plotter spool files allow transfer of SNAP! drawings to other applications. Color support is included for Macintosh II users. SNAP!/Intergraph Translator acts as a direct translator to and from the Intergraph IGDS format and is available as a separate application.

Forthought, Inc.
P.O. Box 32
Sunset, SC 29685
803-878-7484

System Requirements
Macintosh 512K enhanced or larger. ImageWriter, PostScript printer, or plotter recommended.

Price $395
Demo disk $19.95; SNAP!/Intergraph Translator $195.

Support
Free telephone support is provided.

SPECTEXT

SPECTEXT is one of several sets of marketing construction guide specifications available on magnetic media from CSI Data Services. SPECTEXT is the master guide specification for medium- to large-size private-sector construction projects. SPECTEXT II, the abridged version, is geared toward smaller projects and preliminary design specifications. CEGS is the master guide specification for Corps of Engineers construction projects, and NFGS is the master guide specification for Naval Facilities Engineering Command construction projects.

CSI Data Services
400 Oser Ave.
Hauppauge, NY 11788
800-235-3515

System Requirements
Macintosh 512K or larger; MacWrite, Microsoft Word, or WordPerfect word processing software. Hard disk and LaserWriter are recommended.

Price
SPECTEXT $495; SPECTEXT II $2400.

Support
Free telephone support is provided. Annual contracts providing updates are available.

topCAD

topCAD is a high-end two-dimensional CAD package that offers over 500 basic commands, including 110 geometric construction tools for ellipses, splines, and other primitives. The commands can be nested or composed into application-specific custom commands. A customizable user environment allows icon and menu definition through the built-in parametric macro language and procedure calls for external FORTRAN, C, and Pascal modules. topCAD provides 20-step undo/redo, automatic saving, journaling, context-sensitive graphic help, 27 types of dimensioning with full associativity, and 32 selection methods. Other features include hierarchic construction and snap grids, object snap, automatic contouring with hole-exclusion, and direct plotter and digitizer support. In addition, topCAD has built-in interfaces for DXF, IGES, PICT, HPGL, spreadsheet, and other popular Macintosh applications. The package comes with complete ANSI standard macro and symbol libraries for different applications.

GRAPHISOFT
400 Oyster Point Blvd., Ste. 520
South San Francisco, CA 94080
415-266-8720

System Requirements
Macintosh II or larger; 4 MB of RAM; hard disk.

Price $3000
Site licensing is available.

Support
Telephone support, free initial training, and updates are provided.

V-FONTS Macintosh

V-FONTS Macintosh is a family of lettering fonts developed for use in VersaCAD/Macintosh Edition and VersaCAD Drafter software. These fonts can be used by VersaCAD in the same way as the standard fonts that are shipped with VersaCAD. (These fonts can be installed as fonts 21 through 40 in the "VCADfonts" file.) All fonts include full upper- and lower-case charcters, the complete number set, punctuation, and other characters available on Apple-layout keyboards. A degree symbol is also included. Font selections include several large "block letter" lettering styles, an architectural-style "hand" font, an engineering "Leroy" style font, and a large selection of general purpose fonts in both upright and italic (oblique or slanted) styles.

Engineering Desktop Solutions
3325 N. University Ave., Ste. 300
Provo, UT 84604
801-373-6110

System Requirements
Macintosh Plus or larger; VersaCAD Macintosh Edition 2.0 or later; VersaCAD Drafter 2.0 or later.

Price $80
Per group of four font styles.

Support
Free telephone support is provided; free font catalog is available.

VersaCAD Drafter

VersaCAD Drafter, a fully interactive two-dimensional CAD program for the Macintosh, provides a rich variety of drawing objects, attributes, and geometric construction tools. The system offers full editing, grouping, and dimensioning capabilities, as well as unlimited symbol libraries, up to 250 drawing levels, 10 units of measurement, and 5 independent snap modes for precision drafting. For geometric construction, VersaCAD Drafter provides such tools as extend and trim, parallels and perpendiculars, fillets, tangents, ellipses, freehand sketching, and Bézier curves. Object information such as length, radius, and perimeter can be displayed at any time, along with cross-sectional calculations such as center of gravity and moment of inertia. VersaCAD Drafter also features crosshatching of both regular and irregular boundaries.

Versacad Corporation
2124 Main St.
Huntington Beach, CA 92648
714-960-7720

System Requirements
Macintosh Plus or larger; 2 MB of RAM; a math coprocessor is required for use with a Plus or SE.

Price $995
Site licence available.

Support
Hotline, technical support, training, warranties, tutorials, and manuals are available.

VersaCAD/Macintosh Edition

VersaCAD/Macintosh Edition is a two-dimensional CAD system that supports translation files to interface with desktop publishing, paint packages, finite element analysis, CAM, and other applications. It is a fully interactive system for designers, architects, and engineers that provides a variety of drawing objects and attributes, floating-point accuracy to 16 decimal digits, and unlimited visual symbol libraries, as well as full editing and grouping capabilities, pan and zoom, grid and snap, cut and paste, up to 250 drawing levels, and 10 units of measurement. For geometric construction, the program includes sophisticated tools featuring extend and trim, parallels and perpendiculars, fillets, tangents, ellipses, freehand sketching, and Bézier curves. Object information such as length, radius, and perimeter can be displayed at any time, along with cross-sectional calculations such as center of gravity and moment of inertia. Crosshatching of both regular and irregular boundaries is also provided. Output is to plotter, ImageWriter, or LaserWriter. Among the product features on the 32-bit Macintosh II supported by the system are 256 user-selectable screen colors and multiscreen operations with movable windows.

Versacad Corporation
2124 Main St.
Huntington Beach, CA 92648
714-960-7720

System Requirements
Macintosh Plus or larger; hard disk or two 800K disk drives. 2 MB of RAM recommended.

Price $1995
Site licenses and educational pricing are available.

Support
Technical support, training warranties, videotapes, tutorials, and manuals available.

X-Fonts

X-Fonts is a third-party product for AutoCAD version 10.0 on the Macintosh II platform. The product is a library of standard AutoCAD fonts that can be used in an AutoCAD or AutoSketch drawing. Each font in the catalog features true arc-segmented letters, character kerning, and vertical balance and contains the 98 characters found in standard AutoCAD font files. All of the features of X-Fonts are transparent to the user and implemented without using AutoLisp or any other programming language. Each of the 24 solid filled fonts comes complete as a collection of nine AutoCAD shape files. Three fill densities (outline, single filled, and double filled) are each accompanied by three spacing patterns (normal, double, and triple-spaced characters). Stick characters are fast single, double, and triple stroke emulations of popular drafting printing styles. Each contains the features of the solid filled fonts and can be used for general noting and dimensioning.

Autograf Utilities
608 Sonora Ave.
Glendale, CA 91201
818-242-5883

System Requirements
Macintosh II or larger; AutoCAD 10.0 or later.

Price $79.95
Per font.

Support
Free telephone support is provided.

Analysis

Atelier Interiors

Atelier Interiors is a CADD-data management package that extracts data from CADD and performs a design analysis based on the extracted information. The program assists professionals in analyzing designs room by room and creates graphs and reports, such as bills of materials and cost analyses. Atelier Interiors has a data library of products necessary for completing a structure, including pricing, installation costs, waste estimates, and other factors. The program is also equipped with directories for clients, vendors, and projects. Atelier Interiors enables architects and designers to generate all required reports from a single set of data for a project. Data entry can be performed manually.

Artel Software Inc.
13 South St.
Pawtucket, RI 02860
401-724-1896

System Requirements
Macintosh SE or larger. LaserWriter and hard disk recommended.

Price $785
Educational discounts.

Support
Toll-free telephone support is provided.

Beam Analysis

Beam Analysis provides three analysis worksheets (concentrated loads, uniformly distributed loads, and a combination of concentrated and uniform loads), each designed for and dedicated to the analysis of the specific load to determine wood and steel beam sizes due to varying loading configurations. The program analyzes input data; checks the results for bending, deflection, and shear; and displays appropriate beam sizes and types that meet specific criteria. Options include built-up and solid-sawn wood beams; 3-, 5-, and 7-inch glu-lam beams; and miscellaneous or wide-flange steel beams. A shear and moment diagram printout may be selected from the chart folder. Input areas are conveniently isolated for the operator; pictorial displays of the loading conditions are shown; and reactions, maximum shear and moment values, and required section moduli are tabulated for ready reference.

Heizer Software
1941 Oak Park Blvd., Ste. 30
Pleasant Hill, CA 94523
415-943-7667

System Requirements
Macintosh Plus and larger; Microsoft Excel.

Price $99

Support
Free telephone support is provided.

BEAM MAC and BEAM MAC II

BEAM MAC and BEAM MAC II allow technical users to analyze and design continuous or simple beams or columns. Any number of nodes, supports, elements, loads (including node, element, sloped, moments, and trapezoidal) can be used. Each node may be rigid or partially or fully hinged, and each element can be different. Double-clicking on a node or element allows it to be changed, and multiple nodes or elements can be changed in groups. The program shows original and/or deflected shapes, loads, values, and other information. A separate window shows elements with loads, tension, shear moment, and deflection. Other windows show nodes as free bodies with loads acting on them, input text, output text, and section tables. With BEAM MAC II users can draw or change structures, as in MacDraw.

Compuneering Inc.
113 McCabe Crescent
Thornhill, Ontario L4J 2S6, Canada
416-738-4601

System Requirements
Macintosh 512K enhanced or larger.

Price
BEAM MAC $145. BEAM MAC II $345.

Support
Free telephone and written support are provided; updates are available at a nominal cost. A one-month warranty is provided.

DAYLITE

DAYLITE lets designers plan daylit structures to maximize daylight penetration, achieve even distribution, and effectively coordinate useful daylight with the building's electric lighting system to minimize dependency on artificial light. DAYLITE quantifies the effects of natural illumination and ensures the quality of the visual environment by calculating important glare and contrast values. Hourly, monthly, or yearly studies can be performed in a user-defined room. Absolute illuminance, solar heat gains, point-specific internally reflected illuminance, and the contribution of natural illumination to the building's lighting load when any of five electric lighting control strategies are employed can be indicated. The program analyzes the effect of horizontal and tilted glazing, overhangs, and other design features. Graphics include three-dimensional rotating building images that illustrate illumination levels with a net-like pattern (the Illumi-Net graph), isolumen contour plots on a scaled floor plan, and bar graphs indicating the contributions of natural light to the overall design load.

Solarsoft
12762 Skyline Blvd.
Woodside, CA 94062
415-851-4484

System Requirements
Macintosh 512K or larger; 800K disk drive, hard disk.

Price $489

Support
Two levels of user support are provided: Level 1 support entitles a user to three telephone calls for technical assistance ($45); level 2 entitles a user to unlimited telephone assistance for one year ($145).

FRAME MAC

FRAME MAC can be used to help analyze and design two-dimensional frames, trusses, or beams. Any number of nodes, supports, elements, loads (including node, element, sloped, moments, and trapezoidal) can be added (limited only by RAM). Each node may be rigid or partially or fully hinged, and each element can be different. Users can draw or change structures as in MacDraw. Loads may be added using a mouse or keyboard. Double-clicking on a node or element allows it to be changed, and multiple nodes or elements can be changed in groups. The program shows original and/or deflected shapes, loads, and values. A separate window shows elements with loads, tension, shear, moment, and deflection. Another window shows any node as a free body, with all loads acting on it. Four additional windows show input text, output text, and section tables.

Compuneering Inc.
113 McCabe Crescent
Thornhill, Ontario L4J 2S6, Canada
416-738-4601

System Requirements
Macintosh 512K enhanced or larger.

Price $595

Support
Free technical support provided. 30-day money-back guarantee. Updates are available at nominal cost.

FrameMac Section Tables

FrameMac Section Tables (FSTs) make the complete list of AISC and CISC section data available in a format that is transparent to FrameMac. The FSTs are logged on to in exactly the same way as the section tables provided with FrameMac. But with the FSTs, all AISC and CISC shapes are available in both the x-x and y-y axis (1145 AISC and 1105 CISC sections). The AISC set includes the following shapes: 2L, L, C, MC, TS, W, M, S, HP, WT, MT, and ST. The CISC set includes the following shapes: 2L, L, C, MC, HP, S, M, HS, T, W, WRF, and WWF. The AISC sections (x and y axis) comprise one set, available in imperial units. The CISC sections (x and y axis) comprise another set, available in metric and imperial units.

Intuitec Software, Inc.
56 Goddard St.
North York, Ontario M3H 5E2 Canada
416-631-6603

System Requirements
Macintosh Plus and larger; FrameMac.

Price $165
$195, Canada

Support
Free telephone support is provided.

Heatloss

Heatloss software calculates heat-loss values and costs for residential and small commercial construction projects.

Yeoman Technical Software
629 Voluntown Rd.
Jewett City, CT 06351
203-376-2952

System Requirements
Macintosh Plus or larger; Double Helix II; color monitor. Hard disk recommended.

Price $125

Support
Free telephone support is provided.

Hydro Mac

Hydro Mac is a hydrographics package for civil engineers. Containing applications for both rational and SCS (Soil Conservation Service) storm models, it allows users to design detention ponds in minutes. Hydro Mac Rational supports both rational and modified rational storm models, and Hydro Mac SCS is based on the TR-20 methodology. Hydro Mac supports graphical summing of up to five hydrographs and multiple storm routing. Users can change data and see the results in seconds; reports can be previewed before printing. The program's interactive design permits pond or hydrograph data modification and review while the outlet structure is changing. Hydro Mac SCS displays a curve number window, and Hydro Mac Rational provides a coefficients editor. Both applications provide extensive error checking and a time-of-concentration calculator. Multiple designs can be created in one document, and multiple documents can be opened.

Applications Design Group
60 E. Hanover Ave.
Morris Plains, NJ 07950
201-285-5160

System Requirements
Macintosh 512K or larger; hard disk.

Price $800

Support
Toll-free telephone support is provided. Updates are available for a nominal fee.

Inertia

See complete description under Mechanical—Analysis.

MacSap

MacSap is a linear elastic analysis program for generalized three-dimensional structures using the finite element method. MacSap allows direct wireframe and surface modeling of structures. The geometry is used as a key to assign numerical characteristics to the structure's elements and to read the results. MacSap allows static and dynamic analysis of three-dimensional frame structures and continuous structures such as plates and shells. MacSap includes a vast library of finite compatible elements. Results may be represented as deformed structure diagrams, stress diagrams, and modal shapes, among others. MacSap is an independent analysis environment, and does not need CAD programs for data input or representation of results. The program contains functions such as hidden surfaces removal and shadowing for complete data representation. Methods for automatic mesh generation include frame extrusion, parametric mapping, and ruled surfaces. Two postprocessors related to concrete design are available for MacSap: MacBeam for reinforced design, and CADSap for framework design.

Softing S.V.P.
Via Reggio Calabria 6
00161 Roma, Italy
39-6-426101

System Requirements
Macintosh II or larger; 2 MB of RAM; color monitor recommended.

Price $3200
Site license available.

Support
Toll-free telephone, AppleLink, and fax support; monthly training courses; yearly updates; demo versions and HyperCard guide available.

MacShapes

MacShapes allows users to draw and change any combination of shapes (rectangles and circles) to see geometric and structural properties. Either the mouse or the keyboard can be used to change defaults, to draw, move, align, change, or resize shapes. Users can change properties, shades, or sizes of groups of shapes. With a Macintosh II, colors or shades of gray may be changed as well. Users can adjust the scale, ruler, units, or decimal format and may also choose what appears in each of three windows from a list of properties. The diagram window displays shapes with optional text. The list window displays information on each shape. The summary window displays the sum of areas, average density and modulus of elasticity, total moment of inertia, and other information that may be saved or copied in a variety of formats for use by other programs including spreadsheets. MacShapes is compatible with large screens, hard disks, networks, and MultiFinder™. The information obtained can be used in combination with all of the structural analysis software from Compuneering Inc.

Compuneering Inc.
113 McCabe Crescent
Thornhill, Ontario L4J 2S6, Canada
416-738-4601

System Requirements
Macintosh 512K enhanced or larger.

Price $145

Support
Free telephone and written support are provided, as well as a one-month money-back guarantee. Updates are available at a nominal cost.

Moment of Inertia

Moment of Inertia is a function macro that determines the moments of inertia of any cross section having an outline that can be defined by a series of ordered coordinate points. It calculates the area of the cross section, centroid location, moments of inertia, products of inertia, orientation of the principal axes, and principal moments of inertia.

Heizer Software
1941 Oak Park Blvd., Ste. 30
Pleasant Hill, CA 94523
415-943-7667

System Requirements
Macintosh 512K and larger; Microsoft Excel.

Price $30

Support
Telephone support is provided.

MultiFrame

MultiFrame is a professional software package for the analysis and design of engineering structures. It can handle complex structures ranging from simple span or continuous beams to large trusses or high-rise buildings. MultiFrame creates structural models, applies multiple loading conditions, and examines the results of analysis with a click of the mouse. Advanced editing features let users automatically generate repetitive structures or edit coordinates. The built-in library of structural shapes includes all commonly used steel sections and can be customized with other shapes or for concrete and lumber. Loads may be applied at any position on any member. Results may be viewed as moment, shear, deflection, and axial force diagrams. MultiFrame includes extensive report-formatting capabilities, which allows reports with numeric results and graphics to be easily prepared.

Graphic Magic Ltd.
PO Box 185, Cottesloe 6011
Perth, Western Australia, Australia
011-61-9-38332114

System Requirements
Macintosh Plus or larger.

Price $895

Support
Free telephone support is provided.

SimpleSpan Utilities I

SimpleSpan Utilities I consists of SimpleSpan 2.5 and BackSpan 2.0. SimpleSpan is a desk accessory for sizing simply supported wood and steel beams under multiple loading conditions. SimpleSpan 2.5 now includes the capability to print a summary sheet of calculations, allows a user to adjust joist spacing, draw shear and moment diagrams, allows sizing of rough sawn lumber of any lumber species and allows a user to clear only the load data while retaining other information already entered. Also, the user-entry of steel stress values will enable the use of any grade of steel. The software supports wide flange beams, laminated beams and several species and grades of framing lumber. BackSpan is a desk accessory that analyzes and selects sizes of cantilevered wood beams. BackSpan adds the ability to print a summary sheet of calculations, allows adjustment of joist spacing and allows a user to clear only the load data while retaining other information already entered. Using framing lumber, laminated veneer lumber or rough sawn means, BackSpan will analyze shear, deflection and bending and calculate the required beam size. Features include the ability to revise or delete individual loads, set user options and review beam calculations.

Arch Software, Inc.
1642 Pullan Ave.
Cincinnati, OH 45223
513-681-1642

System Requirements
Macintosh 512K or larger.

Price $149

Support
Free telephone support and updates are provided to registered users.

Sun Clock

Sun Clock shows where the sun is (and is not) shining on a map of the world. The situation for any date and time can be displayed.

MLT Software, Inc.
6325 S.W. Capitol Hwy.
Portland, OR 97201
503-245-7093

System Requirements
Macintosh 512K or larger.

Price $15

Support
Telephone and AppleLink support are provided.

SUNPAS

SUNPAS 4.0 is a program designed to perform heating/cooling load calculation. SUNPAS makes it possible to determine a residential or light commercial building's potential energy consumption while the building is still on the drawing board. Using both variable based degree day and solar load ratio methods, SUNPAS calculates effective indoor temperatures using heating and cooling thermostat setpoints. The program can analyze a wide range of building types, from stick frame light mass to traditional heavier mass passive solar structures. Typical input times range from 15 to 45 minutes, and run times vary from 9 seconds to 2.8 minutes. Program features include: clear on-screen prompting, simple building data entry formats, helpful default values, optional graphic outputs to help communicate analysis results, complete documentation, and example buildings on disk.

Solarsoft
12762 Skyline Blvd.
Woodside, CA 94062
415-851-4484

System Requirements
Macintosh 512K or larger; external 800K drive or hard disk.

Price $289

Support
Two levels of user support are provided: Level 1 support entitles a user to three telephone calls for technical assistance ($45); level 2 entitles a user to unlimited telephone assistance for one year ($145).

Mapping/Earth Resources

Azimuth

Azimuth allows users to draw dramatic global views of all the countries in the world and all the states in the United States with perfect accuracy from any distance and any angle. Users enter the desired parameters or click "autoparameters," double-click on their chosen country or state, and Azimuth does the rest. Latitude and lontgitude lines can be specified. Maps can be viewed "flat-on" or from any angle or viewpoint the user chooses to give a dramatic three-dimensional rendering of the earth fading to the horizon. Maps can be scaled to fit documents and Azimuth's high-accuracy coordinate system allows users to draw maps with perfectly meshed country borders. Maps can be rotated and cropped, and text can be added at any scale. Drop shadows are easily created by duplicating an object and filling it with black. Maps can be saved as PICT files and ported into any program that reads the PICT format. Plotter drivers are available.

Graphsoft, Inc.
8370 Court Ave., Ste. 202
Ellicott City, MD 21043
301-461-9488

System Requirements
Macintosh Plus or larger.

Price $395

Support
Free telephone support and quarterly newletter are provided.

The Benchmark Survey System

The Benchmark Survey System is a collection of integrated calculation routines that solve most problems encountered in land surveying and subdivision design. Benchmark works with a wide variety of CAD software. It has a flexible command and data entry format. Advanced users may enter commands quickly from the numeric keypad; casual users can activate the screen menu to assist in command selection. Users can customize screen menus to fit operating preferences. A customization menu allows the program to be set up to accept data and print results in according to a user's procedures. Batch files may be created with a word processor. The Benchmark AutoCAD interface provides a series of commands to create drawing interchange files for AutoCAD. The Data Collector interface allows the direct connection of an EDM data collector to a personal computer for transfer of field data and coordinates to Benchmark for processing.

The Computersmith, Inc.
143 Kimball Hill Rd.
Hudson, NH 03051
603-889-2670

System Requirements
Macintosh 512K or larger; hard disk.

Price $995

Support
Free telephone support and training at The Computersmith are provided. On-site training and consultation are available at $70 per hour plus expenses. Updates are provided for a nominal fee.

COGOMASTER II

COGOMASTER II is a menu-driven coordinate geometry package primarily designed for surveyors. It is ideal for use in designing housing additions and plotting tracts of land. It can also be used by abstractors, lawyers, and government employees to analyze deed and property descriptions for accuracy and position. Routines are included for traverse, inverse, curve calculation, area, bearing-bearing, bearing-distance, distance-distance intersections, enter and assign coordinates, compass rule adjustment, sideshot, stakeout, and changes in file size. Bearings may be entered using quadrants, using cardinal directions, or by reference to other points including adding or subtracting angles from the reference line. Users have the option of changing the printout to include more or less decimal display.

Guenzi Surveys
P.O. Box 127, #38CDR
Glendive, MT 59330
406-365-3527

System Requirements
Macintosh 512K enhanced or larger; 800K disk drive.

Price $75
Demo disk $20 (applies to purchase).

Support
Free telephone support (three calls only) is provided.

Deed Plotter

Deed Plotter is a "mapcheck" coordinate geometry package that runs as an Apple HyperCard stack. Critical information such as type of deed, township, range, area, closure, date recorded, and owner can be entered and recalled nearly instantaneously. The unique feature of Deed Plotter is that each legal description can be entered as bearing and distance (or curve information), and it will be drawn automatically to scale. For each property corner, a 24-character description can also be entered. Accuracy is maintained to ten places past the decimal point for all calculations. Once the deed is drawn in HyperCard, the drawing can be sent to a printer, or it can be turned into a scaled VersaCAD CAD drawing by pressing a button on the deed card. As a VersaCAD drawing, it can be plotted to scale on a large pen plotter. If V-COGO Macintosh is also installed with VersaCAD, all coordinate information from Deed Plotter can be directly exported to this powerful COGO (coordinate geometry) package. All input into Deed Plotter is saved in ASCII format, which can then be exported to other application software.

Engineering Desktop Solutions
3325 N. University Ave., Ste. 300
Provo, UT 84604-4465
801-373-6110

System Requirements
Macintosh 512K enhanced or larger; 1 MB of RAM; external 800K disk drive; HyperCard 2.1 or later; any Macintosh system that will run HyperCard.

Price $195
Per license.

Support
Free telephone support is provided.

DIGITIZE

DITIGIZE, a digitizer communication, allows users to enter x and y values into any coordinate system. Digitized input may be in the form of points, lines, polygons, and polylines (continuous connected lines). Line lengths and polygon areas are automatically calculated and displayed. A continuous readout of the stylus location is echoed on the screen in the chosen coordinate system. Point coordinates entered from the digitizer appear in a text editing window adjacent to the graphic display. The data can be edited at any time during the digitizing session, using the typical Macintosh text editing routines. Digitized data can be saved in several formats, including ASCII-DIGITIZE, the native format of the program; ASCII-x, y, z, containing coordinates from POINT commands and any associated string values entered by the user; ASCII-MacGRIDZO Base Map, which converts DIGITIZE commands into MacGRIDZO base map commands for input into the MacGRIDZO contour mapping program; and Scaled PICT, which converts coordinates into PICT format using specified x and y scales.

RockWare, Inc.
4251 Kipling St., Ste. 595
Wheat Ridge, CO 80033
303-423-5645

System Requirements
Macintosh SE or larger; Apple Desktop Bus™ digitizers from Summagraphics, GTCO, or Kurta.

Price $250

Support
Free technical support and a 30-day money-back guarantee are provided.

GEOdisc US Atlas

GEOdisc US Atlas is a 535 MB vector graphics database of geographic features and names. Included are detailed highways, railroads, political boundaries, and hydrographic features. GEOdisc includes over one million place and landmark names. It is the first commercial mapping product ever available on CD ROM. A 580 MB vector graphics database for the state of Georgia, GEOdisc Georgia Atlas, is also available and includes neighborhood-level detail for roads, hydrographic features, railroads, and high-tension power lines, and is available on CD ROM.

Geovision, Inc.
270 Scientific Dr.
Norcross, GA 30092
404-448-8224

System Requirements
Macintosh II or larger; CD ROM drive; MapGrafix or AutoCAD.

Price $495
Site licensing is available. GEOdisc Georgia Atlas $1995.

Support
A 90-day warranty is provided.

Geolog 1.2

Geolog 1.2 is a database for geotechnical engineers. Previously, soil profile data was processed through a labor-intensive procedure: Raw field data was compiled and tabulated by hand on oversized sheets, which were then photographically reduced to produce printed forms (tabular data reports). These printed forms provided the data from which soil profile charts could be drafted by hand. Geolog consolidates this process into a single database that generates reports and several alternative formatted graphic displays directly from the input field data, including boring log forms, stick log graphic representations, and set definitions. Geolog provides varied and flexible output options for professional drafting needs, including application to reverse-reading mylar and reverse placement descriptions for information-dense drawings.

HyperActive, Inc.
78 Queen Anne's Ct., Ste. 26
Weymouth, MA 02189
617-331-7433

System Requirements
Macintosh Plus or larger; external 800K disk drive. Hard disk recommended.

Price $5000
Price includes company-wide site license and full customization services. Call for component pricing.

Support
Free telephone support and update notification; service and training contracts are available.

GeoQuery

GeoQuery is a business mapping product designed for anyone who makes business decisions in which location is an important consideration. GeoQuery takes information from any database, spreadsheet, or mailing list and automatically creates interactive "maps with pushpins" showing the location of each customer, prospect, branch office, or anything else users desire. The maps are helpful in planning more effective business travel, determining optimal territories, finding the best city for a new office, or geographically targeting direct mail programs for maximum results.

Odesta Corp.
4084 Commercial Ave.
Northbrook, IL 60062
312-498-5615

System Requirements
Macintosh Plus or larger.

Price $349
Optional map boundary files available.

Support
Unlimited free technical support is provided. AppleLink support is available. Annual zip code updates are available for a fee.

GeoView

GeoView is a topographic contour-mapping package that creates contour maps from x, y, and z data. Data input is via text-only (ASCII) files containing up to 500 data points per map with site name, x coordinate, y coordinate, and z value fields for each data point. GeoView draws contour maps; overlays of two maps; three-dimensional maps; base-data only maps; residual maps; total volume maps; volume differential maps; and 1st, 2nd, or 3rd degree trend surface maps. All maps may be labeled and are date stamped. Maps may be created from either Universal Transverse Mercator (UTM) or Geographic Reference (GEOREF) coordinate systems and have a resolution of 600 by 800 pixels in up to 15 scrollable windows. Maps may be saved as either PNTG files (MacPaint type files) or as PICT files (MacDraw type files). The mapped data may be exported as an ASCII file for external analysis. Raw data-mapping speed is approximately one minute per data point on a 512K, 512K enhanced, Macintosh Plus or SE and one second per data point on a Macintosh II or any Macintosh with an accelerator board installed.

Computer Systemics
806 Hill Wood Dr.
Austin, TX 78745
512-441-4583

System Requirements
Macintosh 512K or larger. Accelerator board; coprocessor (68881 and 68882); 19" black-and-white monitor recommended.

Price $900
Price is for single user license. Multi-user site license $4,000 plus $800 per disk. Government and education discounts available.

Support
Free technical support to registered owners; free hotline; bulletin board access; free manual; free upgrades for one year.

In Deed-The Graphic Land Area Analysis Tool

In Deed-The Graphic Land Area Analysis Tool performs graphic land-area analysis. The program calculates perimeter, area, error of closure, and closing side. It calculates and displays multiple tracts, exceptions, and building sites. In Deed works with a variety of units and converts between them—feet, meters, rods, poles, and other units—and supports direct entry of many types of calls. The program's graphics provide visual entry verification. The results can be printed in customizable reports. In Deed graphics can be exported to other application programs.

SWS Software
7807 Laurel Ave.
Cincinnati, OH 45243
513-561-2590

System Requirements
Macintosh Plus or larger.

Price $150
Site licensing is available.

Support
Free telephone support, newsletter, and udpates are provided. Upgrades are available at a nominal cost.

LANDesign

LANDesign is a COGO (coordinate geometry) and surveying package for land surveyors, developers, civil engineers, lawyers, and others. The program supports all conventional COGO features, such as various intersections, field traverse editing and adjusting, and defining and setting boundary areas. Users can list metes and bounds descriptions and radial stakeout data and do plan checks and deed plots. Text can be rotated to any angle. Data appear graphically and numerically simultaneously. All objects and traverses can be cut, duplicated, copied, and pasted into the same or other documents or into other programs. Users can enter or import three-dimensional coordinates. Data may be exported to a terrain-modeling program to produce contour maps. Drawings may be produced in any scale. Data may be saved in PICT format for use in other CAD programs.

Compuneering Inc.
113 McCabe Crescent
Thornhill, Ontario L4J 2S6, Canada
416-738-4601

System Requirements
Macintosh 512K enhanced or larger.

Price $595

Support
Free telephone and mail support, and a one-month money-back guarantee are provided. Updates are available at a nominal cost.

LSI Surveyor

LSI Surveyor allows users to operate on points and figures, and calculate various quantities of interest in surveying and engineering. The system works on the basis of input commands that mimic (in abbreviated form) their function. Users supply data to the system in a format equivalent to those used in surveying and engineering. A complete integrated drawing CAD environment is also included to augment the computation capabilities. Features include coordinate precision that exceeds 15 digits; predetermined area calculation; and station-offset and alignment calculations for roadway work. Street return placement calculations, decimal angles, bearings, and azimuths are allowed. The LSI Surveyor system includes and interfaces with LSI Pentagon CAD with the Coordinate Geometry Addition to allow users to display computations. LSI Pentagon CAD can directly read output files created by LSI Surveyor and by other CAD software via the DXF file translators included.

Lionshead Software, Inc.
1911 Hollyhock Rd.
West Palm Beach, FL 33414
407-790-1157

System Requirements
Macintosh Plus or larger; 800K disk drive; System 6.0.2 or later.

Price $1999

Support
Telephone and electronic mail support are provided; updates available for an additional charge; a 90-day warranty is provided for media only.

MacAdam

MacAdam is graphic interactive software for road designing and earthwork calculation. It performs and manages dotting, contour line interpolation, road insertions, Cornu spiral intersections, and automatic designing of longitudinal sections and cross sections. MacAdam is organized in accordance with the two methodologies of ground data insertion: dotting or section mounting. By means of an interpolation of successive triangles, MacAdam creates a grid over the whole ground. A powerful graphics editor allows the input of topographic information in the plan. The cross-section shape can be selected from a library, which can be increased by the user. The same procedure can be used for face walls, offsets, and fosses.

Cigraph S.r.l
Via Brunacci 9B
Mestre, Venezia, 30175 Italy
041/93 23 88

System Requirements
Macintosh II or larger; 2 MB of RAM; plotter. 19" color monitor recommended.

Price $5000

Support
Free updates for one year; additional updates available for a fee.

MacChoro II With Map Animation

MacChoro II With Map Animation is a choropleth mapping and map animation program for spatial data analysis. It accurately displays the character of a distribution and relationships to other distributions. Normally, maps are updated in 5 to 10 seconds. However, a series of maps can be put into animation and displayed at user-defined speeds up to 60 frames per second. These animations can consist of different classifications of a single variable or a single classification of multiple variables. The animation feature can be used to examine the change in the distribution of a variable over time.

Image Mapping Systems
516 South 51 St.
Omaha, NE 68106
402-553-2246

System Requirements
Macintosh Plus or larger; one external 800K disk drive. MacDraw II recommended.

Price $295
Optional United States by county boundaries file $100.

Support
Telephone support is provided.

MacGRIDZO

MacGRIDZO is a tool for creating three-dimensional mesh map perspective plots and contour maps. The program allows users to design base maps with different control point symbols, labeling, and line drawing commands. North, south, east, and west views; skirt plotting; and variable vertical exaggeration and skew are available. Users can determine the grid dimensions or let the program do it automatically. MacGRIDZO can plot up to 10,000 data points and reads ASCII files or data files from Excel or Reflex. Users can enter data from other sources or reformat grid files for use with other programs. Output routines allow maps to be plotted to any scale for output. Files can be converted to PICT format for input into object-oriented graphics programs. MacGRIDZO supports color plotting. Three optional modules are available: TRENDO, for trend surface analyses; CROSSECT, for converting MacGRIDZO file models into cross-sectional profile vector files; and DRAWDOWN, for creating a grid model using the Thies nonequilibrium equation for groundwater hydrolics.

RockWare, Inc.
4251 Kipling St., Ste. 595
Wheat Ridge, CO 80033
303-423-5645

System Requirements
Macintosh Plus or larger.

Price $350
Three optional modules $100 each.

Support
Free telephone support and a 30-day money-back guarantee are provided.

MacMohr

See complete description under Technical Productivity—Data Analysis/Simulation.

MacRoad

See complete description under Architecture/Engineering/Construction—Design/ Drafting.

MacSection

MacSection is a program for use by geologists and other earth scientists. The program reads text files of borehole data that include a well's name and location and the rock types or formations found over a given interval. Each formation name or rock type is keyed in with a specific pattern that is then plotted within the interval. The user can choose from 50 different editable patterns that represent different lithologies. The program operates in three modes: strip logs, correlated cross-sections, and fence diagrams. The strip log option reads data from text files of lithographic data and plots pattern symbols for each rock type over the specified interval. The cross-section option reads data from multiple well log files and plots correlated sections over the area of interest. The fence diagram option reads data from multiple well log files and plots correlated fence diagrams over the area of interest. Graphic plots can be viewed at any vertical and horizontal scale on-screen and printed at any scale.

RockWare, Inc.
4251 Kipling St., Ste. 595
Wheat Ridge, CO 80033
303-423-5645

System Requirements
Macintosh Plus or larger.

Price $300

Support
Free telephone support and a 30-day money-back guarantee are provided.

MapGrafix Mapping System

MapGrafix Mapping System offers graphic and database management capabilities for digital mapping and geographic information system applications. Spatial (absolute) coordinates of point, line, and polygon features, including symbols and annotations, are digitized and edited interactively with double-precision accuracy. Every map feature, whether graphic or text, can be linked to attributes in a relational database management system. This allows descriptive data to be tied to specific geographic locations. The system supports industry-standard digitizing tablets from 12 inches by 12 inches to 42 inches by 60 inches and A to E size plotters. The MapLink module provides the ability to translate existing digital map files to and from MapGrafix. Support for DXF, DLG 3, WDBII and more is available. MapView converts MapGrafix files from one cartographic projection to another.

ComGrafix, Inc.
620 E St.
Clearwater, FL 34616
813-443-6807

System Requirements
Macintosh SE or larger.

Price $8500
Software cost to turnkey hardware. Discounts for multiple-copy purchases; site licensing available.

Support
Free 90-day warranty support. Annual user support includes both telephone support and software updates.

MapMaker

MapMaker includes everything users need to produce full-color, publication-quality maps of the United States by county, individual state, groups of states, or the entire country, as well as continents of the world separately or in any combination, including Canada by province. The program provides built-in drawing tools, on-screen distance measurements, graphics tablet support, and other features for creating high-resolution, object-oriented graphics. In addition, MapMaker provides a powerful data analysis framework. Up to 30 data variables for each area of the map may be entered into the MapMaker database or imported from other Macintosh applications, such as an Excel spreadsheet. The program also includes a variety of ready-to-use U.S. census statistical data files. Using MapMaker, users can quickly uncover hidden relationships in geographic data and then demonstrate their findings with striking presentation graphics.

Select Micro Systems, Inc.
322 Underhill Ave.
Yorktown Heights, NY 10598
914-245-4670

System Requirements
Macintosh 512K or larger.

Price $395

Support
Free telephone support is provided.

MapStar

MapStar is a graphic display and report generating software package with a communications front end designed to interface with positioning and messaging devices of Automatic Vehicle Location (AVL) services. MapStar resides at the dispatch headquarters workstation and receives satellite-relayed position/message packets from remote units and displays their positions on an electronic road network or chart. This current information is merged with attribute data—such as driver name, trailer number, carbo, customer, and designation—which users enter using the Data Manager. The graphic map display, with vehicle locations and detailed customer and cargo information, allows dispatchers to make the mental associations necessary for real-time dispatch decision making. Standard MapStar has limited search capabilities. Data Manager MapStar has broad search capabilities. The program is ideal for remote reporting of location and data transmission and such uses as cross-country trucking, military training, public safety, EMS, transportation of hazardous materials, and other jobs.

ComGrafix, Inc.
620 E St.
Clearwater, FL 34616
813-443-6807

System Requirements
Macintosh Plus or larger; hard disk drive; color requires 4 MB of RAM.

Price
Standard MapStar $3000; Data Manager MapStar $4000 (includes Omnis 3). Color Data Manager MapStar $5000 (includes Omnis 3).

Support
Training, installation, and support are provided under contract.

QuickLog 2.0

QuickLog 2.0 is a borehole logging system for geotechnical and environmental engineers and geologists. It enables the user to compose and create an entire borehole log, including graphics, plotting, depth scales, symbols, legends, and text, all at once. The completed log can be edited as new data becomes available, and common data can be copied between logs. Multiple plots, depth scales, and type sizes are supported. QuickPlate is used to create and modify the log format or page layout. There can be up to 28 different areas on a single log, including any combination of text areas, plot areas, graphic areas, depth scales, legends, headers, and footers. Each log format can be saved as a template to be used with QuickLog.

ESE Software, Ltd.
14535 118th Ave.
Edmonton, Alberta, T5L 2M7 Canada
403-454-5411

System Requirements
Macintosh 512K or larger.

Price $495

Support
Free support and updates are provided for six months.

SANGRE and SangPlot

SANGRE and SangPlot are software for processing and color-postprocessing of mechanical, thermal, and other models. SANGRE is a nonlinear finite element code for elastic, creep, thermal, fluid, and faulting studies. Users couple combinations of these capabilities for solutions in mechanical, thermal, hydrological, or faulted numerical models. Applications have been solved in mechanical engineering, geomechanics, hydrology, and plate tectonics. SangPlot is a color-graphics package to postprocess graphics for SANGRE. It uses 256 colors to plot contours, wire-mesh diagrams, time histories, or vector plots and prints output on a LaserWriter or produces color PICT files. Output may be in black and white or color.

GeoComp
3869 Montgomery N.E., Ste. 1626
Albuquerque, NM 87109
505-881-8996

System Requirements
Macintosh II or larger; 2 MB of RAM; 13-inch, 256-color monitor. LaserWriter recommended.

Price
SANGRE $2500; SangPlot $1000.

Support
Telephone support is available.

Seismic Processing Workshop

Seismic Processing Workshop is a software system for processing seismic reflection data from field 9-track tapes through to final stack. Users specify the processing to be done by building a flowchart in a graphic, interactive fashion. The individual processing steps in the flowchart are part of a modular, user-expandable library of processing steps. All of the steps run, at flowchart execution time, on a 20-mflop NuBus coprocessor card, which is necessary to use Seismic Processing Workshop. Seismic data may be displayed and interactively analyzed during various stages of processing.

Parallel Geosciences
4807 Spicewood Springs Rd., Bldg. 2
Austin, TX 78759
512-346-4040

System Requirements
Macintosh II or larger; 4 MB of RAM; Mercury Computer Systems MC3200 NuBus coprocessor.

Price $26,000
Price includes MC3200 coprocessor.

Support
Free telephone support and upgrades for the first six months; additional support available for a monthly fee.

Spot Elevation Macro

Spot Elevation Macro works as an add-on to the CAD program MiniCad+ 2.0 to place spot elevation on maps.

Chamberlain Custom Macros
7835 Metacomet Rd.
Hanover, MD 21076
301-551-3730

System Requirements
Macintosh Plus or larger; MiniCad+ 2.0.

Price $55
Available in 32-bit QuickDraw format.

Support
Free support is provided.

Stereo 4.0

Stereo 4.0 is a three-dimensional orientation analysis and plotting program that works as a stand-alone application or integrally with other programs in the RockWare Collection. Stereo lets users plot an unlimited number of data sets on the same stereonet plot; generate pattern-coded density-contoured plots for single data sets; calculate mean directional vectors with a powerful eigenvector analysis routine; produce multicolor stereonets, using a different color for each symbol type and density pattern; and rotate and plot a data set about a given axis. Users can also generate density-contoured plots of rotated data and beta intersection plots.

RockWare, Inc.
4251 Kipling St., Ste. 595
Wheat Ridge, CO 80033
303-423-5645

System Requirements
Macintosh 512K or larger.

Price $250

Support
Free telephone support and a 30-day money-back guarantee are provided.

USGS Maps on CAD

USGS Maps on CAD are CAD drawing files available in 3.5-inch or 5.25-inch disk format. Contents include lakes, streams, highways, streets, pipelines, railroads, airports, trasmission lines, and rivers shown on United States Geological Survey 7.5 minute quadrangle maps. All files are in digital form and can be modified. Separate layers are provided for each topography type.

Geographic Infomation Systems
Geographic Information Ctr., M/S 691563
Houston , TX 77269
713-894-0702

System Requirements
Macintosh SE or larger; AutoCAD, MiniCad, MicroStation Mac, or VersaCAD Macintosh Edition.

Price $95
Available in HyperCard format.

Support
Telephone support is provided; on-site training available for a negotiated fee.

V-COGO Macintosh

V-COGO Macintosh is a full-featured coordinate geometry (COGO) package that runs "inside" VersaCAD Macintosh Edition and VersaCAD Drafter. Its functions are accessed from a Macintosh pull-down menu found next to the VersaCAD menu items. Point numbers can be entered, picked with the mouse, calculated with standard COGO routines, or assigned by the "mapcheck" routine to property corners of a legal description. Once points are assigned, VersaCAD lines, curves, and annotation text such as bearings and distances can be automatically generated and placed on the VersaCAD drawing by simply entering point numbers. Annotation can be in English or international units. All popular intersection routines, field note reduction of traverses and sideshots, and traverse adjustments are also included. Elevations can be assigned or automatically calculated using the field note reduction routines. A 24-character description can also be assigned for each point number. All information that is input into V-COGO Macintosh, or generated by it, can be saved to a file. V-COGO Macintosh can also import and export coordinates in ASCII for sharing data between application software and data collectors.

Engineering Desktop Solutions
3325 N. University Ave., Ste. 300
Provo, UT 84604
801-373-6110

System Requirements
Macintosh Plus or larger; VersaCAD Macintosh Edition 2.1 or later; VersaCAD Drafter 2.1 or later.

Price $995
Per license.

Support
Free telephone support is provided.

VALE

VALE provides estimating solutions for design and construction professionals. VALE stands for Volume, Area, Length, and Earthwork. VALE users can estimate earthwork and any volume, area, or length of material efficiently, accurately, and quickly. This software is the product of the most widely understood manual estimating processes merged with efficient performance/cost hardware. VALE's earthwork estimation capabilities can swiftly translate grading plans into cut and fill quantities and costs with suggestions on how to balance the earthwork. Users can work with any scale drawing and any level of detail, from mass grading volumes to the intricate details of accounting for the effects of stockpiling topsoil, paving, and buildings to subgrade, spreading topsoil, compaction, and other aspects that may affect earthwork estimation. VALE automatically summarizes the totals and costs of take-offs, which can be reviewed or printed at any time.

Earthware
50 Academy Ave.
Pittsburgh, PA 15228
412-563-1920

System Requirements
Macintosh Plus or larger; digitizer (Summagraphics 18" x 12", Seiko, Microgrid, Kurta, Calcomp).

Price
Software $995; digitzers $995 and up; base system $1950.

Support
Telephone support and 30-day money-back guarantee on software provided; updates available for a small fee; training available at a daily rate plus travel; software includes documentation and many examples and tours.

Construction

Accounting 4 Construction

Accounting 4 Construction is an integrated construction-accounting system. Job cost is integral to the program, which first breaks the job down into divisions, then into cost items, and finally into cost-item types. Any accounts receivable, accounts payable, cash receipt, cash disbursement, or payroll item can be charged to job cost. The system can handle either cash or accrual accounting. Basic accounting features include general ledger, accounts receivable, accounts payable, cash receipts, cash disbursements, payroll, and job cost. Additional features include check printing, estimates, audit trails, project cost tracking, automatic general ledger, and job-cost updates. A profit worksheet allows the project manager hands-on control of projected costs. The projected final cost of any item can be recalculated by entering the actual percentage completed, an estimated lump-sum cost to complete the item, the remaining quantity to complete, or an updated unit cost to be applied to the remaining quantity.

Software Constructors, Inc.
2416 Hillsboro Rd., Ste. 200
Nashville, TN 37212
615-383-4850

System Requirements
Macintosh Plus or larger; hard disk; ImageWriter.

Price $2000
Per single-user version. Multi-user version available. Demo disk $25.

Support
Free telephone support is provided for 6 months. Free updates and a comprehensive manual are available.

Bid Master

Bid Master is an estimating application for commercial contractors with small- to medium-size businesses. Contractors can use Bid Master to control the process of estimating from receipt of plans through final bidding. The package provides the ability to change bid variables at virtually any point. Designed as a relational database, assemblies or components built for one project can be reused for other projects. The application also features a built-in bid day analysis package and project tracking by type, size, and customer. Users of the single-user version of Bid Master can upgrade to the multi-user version with no loss of existing records.

Building Pro Software
P.O. Box 1742
Reno, NV 89505
800-346-4694

System Requirements
Macintosh Plus or larger. Hard disk recommended.

Price $700
Per single user. Each additional user $150.

Support
Ten hours of toll-free telephone support are provided.

Concept to Completion

Concept to Completion is a cost-breakdown software package for project managers, general contractors, subcontractors, lending institutions, fund controls, and inspectors. It provides cost estimation, retentions, "what-if" analysis, forecasting, and complete payment scheduling. A list of over 300 standard construction items allows users to choose line item descriptions to be included in the cost breakdown. Line items can be added to the cost breakdown at any time, and the standard items list can be updated. Line item description entries are fully automated. Concept to Completion uses Microsoft Excel macros and requires Excel 1.5 or greater. A demo disk is available.

MAXSolutions
241 12th St.
Del Mar, CA 92014
619-481-0479

System Requirements
Macintosh Plus or larger; Microsoft Excel 1.5.

Price $195

Support
Free telephone support is provided. Customization is available for a nominal fee.

Concrete Estimator

Concrete Estimator is designed for contractors and do-it-yourselfers. Users enter the desired dimensions of the pour, and the program calculates cubic yardage. It then does two cost calculations so that users may compare the price of ordering ready-mixed concrete with that of mixing it themselves. Concrete Estimator also gives material requirements for different bag-mix ratios and allows for ready-mix variables such as calcium chloride, plastisizer, and drayage.

Heizer Software
1941 Oak Park Blvd., Ste. 30
Pleasant Hill, CA 94523
415-943-7667

System Requirements
Macintosh Plus or larger; Microsoft Excel or Microsoft Works.

Price $20

Support
Telephone support is provided.

Construction Calculators

Construction Calculators is a set of four construction tools that work with Excel. Board Feet calculates the number and cost of board feet. Hypotenuse calculates the hypotenuse in feet, inches, and sixteenths of an inch using the other two sides of a right triangle. Feet-Inches Calculator adds, subtracts, multiplies, and divides dimensions expressed in feet, inches, and sixteenths of an inch. Lumber Fit gives the best combination of standard lumber lengths for a run having the least wastage.

Heizer Software
1941 Oak Park Blvd., Ste. 30
Pleasant Hill, CA 94523
415-943-6882

System Requirements
Macintosh Plus or larger; Excel 1.5 or later.

Price $15

Support
Free telephone support is available.

Construction Contractor Management

Construction Contractor Management is a comprehensive general contracting system that handles subcontractor bids, job costing, estimating, expense tracking, cost-to-estimate comparison, and more. The program prints to AIA Draw Request form, or can be set up with other invoicing. The program can be interfaced with Exceiver's integrated accounting, which includes invoicing, aging, accounts receivable, accounts payable, and general ledger.

Exceiver Corp.
14407 Excelsior Blvd.
Minnetonka, MN 55345
612-938-3361

System Requirements
Macintosh Plus or larger; hard disk required for integrated accounting module.

Price $1050 to $2230
Price depends on number of modules purchased.

Support
Free telephone support provided; software customization available.

Construction Cost Estimator—Residential

Construction Cost Estimator—Residential is a variation of Heizer's Complete Construction Cost Estimator for use in cases where only detailed unit costs are required. A breakdown is provided of over 600 material and labor categories for residential home construction. Users enter quantities and prices for the residence, and the program calculates all extensions and summaries. Construction Cost Estimator—Residential categorizes items logically in such groups as foundations, rough lumber, and roofing. The program is easy to use and to customize.

Heizer Software
1941 Oak Park Blvd., Ste. 30
Pleasant Hill, CA 94523
415-943-7667

System Requirements
Macintosh Plus or larger; Microsoft Excel or Microsoft Works.

Price $40

Support
Telephone support is provided.

Construction Cost Project Manager

Construction Cost Project Manager is designed for use with construction and interior design projects. It allows budgeting and estimating; project control; and tracking of invoicing, change requests, and payment of invoices. Projects are entered and maintained in a hierarchical fashion from the general project-client relationship down to the contractor/subcontractor details for specific parts of a project. A client and contractor/supplier database is provided as an integral part of the system. There are a full complement of reports, such as change requests, change approvals, invoice payment approvals, and contract project summaries. Custom reports can be built to user specifications.

Accuware Business Solutions Ltd.
528 11th Ave. N.E.
Calgary, Alberta T2E 0Z5, Canada
403-230-4039

System Requirements
Macintosh Plus or larger; Omnis 3 Plus 3.3; TOPS, AppleShare®, or Novell file server for multi-user applications; ImageWriter or LaserWriter.

Price $495
Per single-user version. Does not include cost of a TOPS or AppleShare file server and Omnis 3 Plus.

Support
Free software modifications and first update are provided. Additional updates are available for a minimal cost.

Construction Form Maker

Construction Form Maker creates 16 forms vital to a construction office. Users enter a company name, slogan, address, and telephone number. After approving a screen proof, the program makes 16 customized forms. The forms include bid quote, bid screener, bid submittal, change order, contract, invoice, plan log, punch list, conversation confirmer, specification change, account statement, subcontractor contract, time card, and transmittal letter.

Tight Line Software
27601 Forbes Rd., Ste. 50
Laguna Niguel, CA 92677
714-367-0007

System Requirements
Macintosh Plus or larger; Excel 1.5 or later.

Price $15

Support
Free telephone support is available.

Construction Progress Billing

Construction Progress Billing is a macro-driven spreadsheet that controls construction budgets. The program, which works with Excel 1.5 or higher, is based on the industry-standard draw system. Simply enter your line-item budget descriptions and amounts. The program automatically creates a billing spreadsheet with columns for budget, amounts previously billed, amounts for the current billing, and balance to finish. It also handles markup percentages, retention, and change orders. Construction Progress Billing was designed by a contractor for use by contractors, lenders, and property owners.

Heizer Software
1941 Oak Park Blvd., Ste. 30
Pleasant Hill, CA 94523
415-943-7667

System Requirements
Macintosh Plus or larger; Excel 1.5 or later.

Price $50

Support
Free telephone technical support is provided.

Homer

Homer is a computer-aided project management system designed to save contractors and construction managers up to 80 percent of their project management paperwork costs. Homer produces over 100 predesigned industry-standard documents, such as documents for the submittal system, request-for-information system, and material equipment system. The change system includes request for quotations, authorization to proceed, change-order requests, change orders, subcontract agreement change orders, and running records of project totals. One of the time-saving features of Homer is its ability to print "all at once," with just a click of the mouse, such documents as submittal follow-up letters and subcontract agreement change orders for up to 99 subcontractors and vendors.

Kulda Corporation
10845 Meads Ave.
Orange, CA 92669
714-639-5780

System Requirements
Macintosh Plus or larger; hard disk; ImageWriter or LaserWriter.

Price $395

Support
Free telephone support and program updates are provided. Training is available at $300 per day plus expenses.

Hyper•Remodeler

Hyper•Remodeler is a residential construction estimator for remodeling projects or any job best handled on a "room-by-room" basis. It produces a planning estimate for architects, builders, or developers. Hyper•Remodeler also links to MacNail to provide an front-end to MacNail's integrated estimating, scheduling, and job cost accounting for construction professionals. Pictures and buttons are used to simplify the entry of project dimensions and specifications. HyperCard is included with this HyperCard-based program.

Turtle Creek Software
651 Halsey Valley Rd.
Spencer, NY 14883
607-589-4471

System Requirements
Macintosh Plus or larger; hard disk; HyperCard.

Price $95
$145 if purchased with Hyper•Estimator

Support
Free unlimited telephone support is provided. Updates provided for a fee.

MacNail

MacNail is a set of Excel worksheets and macros designed for estimating, tracking, and scheduling residential construction. Four estimating templates are provided: new construction, gut and rehab, additions, and small jobs. MacNail's database includes more than 1000 items. The user can add new items or change existing ones by using Excel's cell entry techniques. Several "fudge factors" are also provided, allowing users to adjust bid prices for local costs and conditions. The four estimating templates, which can be modified, calculate a detailed and finished bid price based on approximately 25 job dimensions. A Cost Control macro allows users to track the progress of each job against the original estimate. A detailed breakdown of job costs is maintained, making it possible to refine future estimates based on actual labor, material, and subcontractor costs. The Job Scheduler macro produces a job calendar based on estimated man-hours. The MacNail quality control worksheets and macros maintain a series of checklists and reminder lists that can be produced automatically at the selected time based on the job scheduler.

Turtle Creek Software
651 Halsey Valley Rd.
Spencer, NY 14883
607-589-4471

System Requirements
Macintosh Plus or larger; hard disk; Microsoft Excel.

Price $295

Support
Free unlimited telephone support is provided; software updates for a fee; on-site training available.

Threshold Construction Forms

Threshold Construction Forms consists of 38 documents for new construction, spec homes, and remodeling. Users can edit the forms, using a word processing program, and print as many copies as needed. The forms consist of six different builder/homeowner contracts; twelve different subcontractor contracts; change order forms; lien waiver/specifications; kitchen specifications; owner selection list; three defect checklists; four estimating forms, including a comprehensive cost estimate; lumber, concrete, and masonry estimate; production schedule; house plan checklist; and several financial documents that control payments, load advances, and other such items.

Wilhelm Publishing, Inc.
3304 Skylark Rd.
Columbia, MO 65205
314-442-6134

System Requirements
Macintosh 512K or larger; printer; word processing program.

Price $99
Choice of any 6 documents, $40; any 12 documents, $69.

Support
Free telephone support and a money-back guarantee are provided.

VALE

See complete description under Architecture/Engineering/Construction—Mapping/Earth Resources.

Administration

254/255 FreeForm

254/255 FreeForm facilitates generation of 254/255 forms by improving data entry and retrieval and by improving output. (Submission of government RFPs requires filing of 254/255 forms.) Data is easily reached from 254/255 FreeForm's database or imported from other databases. Preference can be set to standardize entry in similar forms. Forms are easily customized to company format.

HyperActive, Inc.
78 Queen Anne's Ct., Ste. 26
Weymouth, MA 02189
617-331-7433

System Requirements
Macintosh Plus or larger; 800K disk drive. Hard disk recommended.

Price $99.95

Support
Free telephone support and update notification are provided. On-line help; service and training contracts are available.

ArchAccount

ArchAccount provides billing and job costing for small architectural firms. Three billing methods are available: percentage of construction cost, professional fee, and direct personnel expense. ArchAccount maintains and supports a complete project history of time and expenses, from which two reports are generated: a detailed report of each project and a summary report of all projects. Statements are designed to be printed on the user's letterhead. ArchAccount comes with a 70-page manual and sample data.

The Gardner Partnership, Architects
173 S. 200 West
Cedar City, UT 84720
801-586-9494

System Requirements
Macintosh 512K or larger; ImageWriter or LaserWriter.

Price $295
Demo and manual are available for $30 which is applied toward program purchase.

Support
Free support is provided during working hours; updates, $10; warranty for media only.

The Architect's Office

The Architect's Office is a HyperCard-based desktop management system for architects. It can track appointments, dials telephone, and access standard forms and general correspondence. The Architect's Office controls office data and files, system components, and applications.

CDG Architects
345 E. Toole Ave., Ste. 202
Tucson, AZ 85701
602-629-9752

System Requirements
Macintosh 512K or larger; hard disk; ImageWriter or LaserWriter; HyperCard.

Price $95

Support
Free telephone support is provided.

Clerk of the Works: Accounting Software for Architects

Clerk of the Works: Accounting Software for Architects tracks project revenues and expenses, staff and consultant time, indirect costs, and budgetary project performance. Designed to conform precisely to AIA accounting standards, Clerk of the Works also offers fully customizable phase and task categories, five methods of billing, different rates for the same person on the same or different projects, more than 50 preformatted reports, check-writing, and the ability to begin in mid-project. Compatible with virtually all Macintosh word processors and spreadsheets, Clerk of the Works' five modules can be purchased in any combination, and missing modules can be added at any time. The modules include Time and Expenses, Billing and Accounts Receivable, General Ledger, Accounts Payable, and Payroll. A demonstration disk is also available.

Samsara Ltd.
P.O. Box 222
Spring House, PA 19477
215-628-3565

System Requirements
Macintosh Plus or larger; hard disk; ImageWriter or LaserWriter.

Price
General Ledger, Accounts Payable, and Payroll $595 each; Billing and Accounts Receivable $895; Time and Expenses $1295.

Support
Free technical support is provided for the first six months.

Constructimator II

Constructimator II is a program designed to allow architects, contractors, developers, estimators, appraisers, insurers, and lenders develop complete cost estimates or actual job costs of commercial or residential building construction projects. Constructimator II provides the capability to estimate project costs as well as to handle actual job costs during the construction project. Constructimator II uses unit-costing techniques for developing material and labor costs at the task level, and it provides for equipment costs and subcontractor costs by subcontractor. Indirect costs, contractor's fees, and company overhead factors, as well as global cost change simulations, are available. Detailed reporting at the task level and summary reporting at the major division and project level can be generated. Summary reports and graphs are automatically updated as detailed cost changes are entered.

Softouch Software, Inc.
5200 S.W. Macadam, Ste. 255
Portland, OR 97201
503-241-1841

System Requirements
Macintosh Plus or larger; two 800K drives or one 800K drive and hard disk; Microsoft Excel.

Price $195

Support
Free telephone support is provided to registered owners.

Construction Project Management System II

Construction Project Management System II (CPMS II) is designed for contractors, architects, project managers, and owners for use in planning and controlling construction building projects. The program focuses on managing and controlling costs throughout the project. CPMS II provides the capability to record estimates and bids by subcontractor and to develop preliminary schedules at the task level. Cost summaries are automatically computed and comparisons of estimates to bids made. Variances are reported at the task, major division, and project total levels. CPMS II automatically provides a final list of subcontractors and bids by task; automatically computes invoiced amounts to date for division level and project summaries, and reports remaining project funds. The program also compares percentage of task completion to the invoiced percentage of bid amount and reports the variance. CPMS II provides complete detail and summary reports. In addition, it provides the capability to record changes in the cost of the project, generate order forms, and list project cost changes.

Softouch Software, Inc.
5200 S.W. Macadam, Ste. 255
Portland, OR 97201
503-241-1841

System Requirements
Macintosh 512K or larger; two 800K drives or one 800K drive and hard disk; Microsoft Excel.

Price $95

Support
Free telephone support is provided to registered users.

The Contractor Solution!

The Contractor Solution! provides all the management tools needed by general contractors and developers. Estimating, job costing, payables, receivables, purchasing, billing, employee relations, equipment tracking, 1099 reporting, automatic writing of subcontracts, automatic writing of subcontract pay schedules, monitoring of subcontractor insurance certificates, and automatic bid invitation letters are all provided. The Contractor Solution! is an integrated program, and all the features are available on-screen all the time.

Vertical Solutions
27201 Tourney Rd., Ste. 201M
Valencia, CA 91355
805-254-3664

System Requirements
Macintosh Plus or larger; ImageWriter or LaserWriter. Multi-user format requires AppleTalk® network.

Price $4295
Multi-user version is available for an additional $800.

Support
Free telephone and on-site support, and five hours of training are provided.

Entrepreneur

Entrepreneur is a 40-file program built around the A.I.C.P bid form: A complete accounting and job costing system. The program actualizes the A.I.C.P. form and does the accounting at the same time. With 24 files in the database, users can handle accounts payable, accounts receivable, checking, bids, clients, personnel, vendors, and other information. Users can track clients and vendors via the "Reviews" file and stay on top of production with mail-merge capabilities.

J.A.G. Enterprises
351 W. 24th St.
New York, NY 10011
212-807-6338

System Requirements
Macintosh II or larger; 2 MB of RAM; two external 800K drives; hard disk; LaserWriter.

Price $7000

Support
A telephone hotline and updates are available.

FastTrax Engineering Drawing Management System

FastTrax Engineering Drawing Management System provides a relational database that allows users to access stored raster images of drawings and related documents from an optical disk storage system. Drawings and associated information can be scanned, stored, indexed, accessed, viewed, edited, linked, and printed from stand-alone or networked stations. The system provides engineers, architects, and designers, as well as facilities, project, product, and records managers real-time access to large numbers of drawings and associated information they use every day. Access module and input modules may be purchased separately.

E.I. DuPont De Nemours & Co. (Inc.)
P.O. Box 6099
Newark, DE 19714
302-453-4563

System Requirements
Systems include Macintosh IIx, 8 MB of RAM; rewritable optical disk; write-once, read-many (WORM) optical drive; 600 MB hard disk. Large color monitor recommended.

Price
Master Access Station, $58,585, includes Macintosh IIx, magnetic and optical storage, and software; additional workstations $26,700. Master Input Station, $70,580, includes hardware and software for scanning; system does not include scanner.

Support
Free telephone support is provided; annual service contract is available for a fee.

Hyper•Estimator

The Hyper•Estimator is a "friendly" estimator for residential construction projects. It produces a planning estimate for architects, builders, and developers. It also links to MacNail to produce finished bids for construction professionals. Pictures and buttons are used to simplify the entry of project dimensions and specifications. HyperCard is included with this HyperCard-based program.

Turtle Creek Software
651 Halsey Valley Rd.
Spencer, NY 14883
607-589-4471

System Requirements
Macintosh Plus or larger; ImageWriter or LaserWriter; hard disk; HyperCard.

Price $95
$145 if purchased with Hyper•Remodeler.

Support
Free telephone support is provided.; on-site training is available.

OverLAYS A.M.S.

OverLAYS A.M.S. is designed for the management of architectural and engineering offices. The program contains general ledger, accounts payable, accounts receivable, payroll, time, billing, and job expense records in a single integrated package. The software can track job expenses, calculate billings, figure payrolls, age receivables, write checks, reconcile bank statements, print W-2 forms, and produce balance sheets. OverLAYS is based on the American Institute of Architects Financial Management System (AIA/FMS), so offices already using that paper method can make a smooth transition to the OverLAYS system. Others will find that OverLAYS brings them all of FMS's organization and power.

The Firstside Studios
826 Hazelwood Ave.
Pittsburgh, PA 15217
412-422-3888

System Requirements
Macintosh 512K enhanced or larger; ImageWriter or LaserWriter; Driver 5.1 or earlier.

Price $349
Includes OVERVUE 2.1x; without OVERVUE $299.

Support
Free telephone support for the first year and 60-day money-back guarantee are provided. Subsequent telephone support available for $75 per year. On-site training for an additional fee and support plan with updates are also available.

Perspective For Architects

Perspective For Architects is a complete, comprehensive business management program designed specifically for the small- to medium-sized architectural firm. The program manages clients, projects, project phases, outside services, time sheets, purchases, invoicing, overhead expenses, and reimbursable expenses and performs professional billing. The program also calculates profit and loss analyses per project, time period, and client, enabling a firm to pinpoint and document profitable work areas and methods. Prospective features many useful reports, from mailing labels to a complete business overview, and adheres to appropriate AIA guidelines.

First Logistics, Inc.
310 Madison Avenue, Ste. 1212
New York, NY 10017
718-397-5927

System Requirements
Macintosh Plus or larger; System 5.0 or later; hard disk; ImageWriter or LaserWriter.

Price $995
Multi-user version (3 nodes) $1795; each additional node $495.

Support
Free technical support is provided for 90 days. Extended support programs, customization, training, and installation are available.

Professional Manager

Professional Manager is an integrated financial accounting and billing system for architects and engineers. It consists of Job Cost and Billing, Project Cost Management, Accounts Receivable, Payroll, Accounts Payable, and General Ledger modules. Canadian Payroll is available. An AIA or ACEC chart of accounts is provided with the system. Foxbase-compatible databases may be logged onto using the Foxbase report writer. Professional Manager produces invoices (up to 22 formats) from time cards; writes payroll and accounts payable checks (multistate payroll is supported); prints W-2 and 1099 forms; and provides all quarterly tax information. Project Cost Management reports provide timely information on profits and employee time utilization.

Automate Computer Software
7475 Callaghan Road, Ste. 201
San Antonio, TX 78229
512-377-0461

System Requirements
Macintosh Plus or larger; 2 MB of RAM; 20 MB hard disk; ImageWriter or LaserWriter.

Price $1495
Report Writer is available at additional cost.

Support
Support is available; annual maintenance contract on per call basis. Comprehensive tutorial provided with the system.

Professional Solutions Management Templates

Professional Solutions Management Templates are a set of four programs and extensive analysis charts that provide architects, engineers, and other service-oriented professionals with the ability to accurately calculate an extensive variety of management parameters, including overhead rates, office multipliers, and fees. The first template calculates direct personnel expense, direct salary expense, benefits factors, overhead rates, multipliers, profit margins, profit rates, employee costs, breakeven billing rates, efficiency, and utilization rates. Calculation results are linked to three other modules that establish fees at different levels of detail. Input alternatives include three methods for allocating profit and contingencies, markups for consulting fees, allocations for nonreimbursable expenses, employee technical levels and pay rates, phase numbers, and phase names. These three modules make use of cost-based, project estimating and phase compensation approaches to establishing professional fees.

Creighton Nolte and Associates
744 G Street, Ste. 209
San Diego, CA 92101
619-234-1008

System Requirements
Macintosh 512K or larger; Microsoft Excel.

Price $225

Support
Free telephone support and on-line support via MacNET is provided. Software updates are available for a fee.

Proposal Manager•254/255

Proposal Manager•254/255 is marketing software for architecture and engineering professionals who want to manage and produce government forms 254/255 on the Macintosh. It is the first such product that tailors database functions into a PageMaker environment. Features include FileGenerator•PM (once project, consultant, and resume records are input, they can be placed into any future proposal); printing onto blank paper; full documentation and tutorial. Proposal Manager is designed by a licensed architect; is GSA acceptable; has WYSIWYG display of all forms; contains all sheets used in both 254 and 255 families, including alternate layout for expanded narrative; and provides a seamless transition between the private sector and 254/255 public sector marketing efforts.

Wordscapes
4546 B-10 El Camino Real #177
Los Altos, CA 94022
415-968-8737

System Requirements
Macintosh Plus or larger; LaserWriter; hard disk; PageMaker 3.0.

Price $279
Site licensing is available.

Support
Free telephone support provided for registered users.

The Subcontractor Solution!

The Subcontractor Solution! provides all the management tools that subcontractors need. Estimating, job costing, payables, receivables, purchasing, billing, employee relations, equipment tracking, and inventory management are all provided. The Subcontractor Solution! is an integrated program, and all the features are available on-screen all the time.

Vertical Solutions
27201 Tourney Rd., Ste. 201M
Valencia, CA 91355
805-254-3664

System Requirements
Macintosh Plus or larger; ImageWriter or LaserWriter. Multi-user format requires AppleTalk network.

Price $3995
Multi-user version available for an additional $800.

Support
Free telephone and on-site support, and five hours of training are provided.

Time Is Money – Architects & Engineers

Time Is Money–Architects & Engineers is a project and office management program for small- to medium-sized offices (1 to 20 people). A new concept in accounting management, it is a timesheet-driven system written without any accounting jargon or methodology. Reports include fixed fee, hourly statements, or a combination; project analysis; on-call project management summaries; aged accounts receivable; accounts payable; yearly revenues; payroll project expense management; and many project and office directories. Familiarity with Reflex Plus is not required.

Collier Software
603 W. 13th, Ste. 251
Austin, TX 78701
512-476-1110

System Requirements
Macintosh Plus or larger; ImageWriter; System 4.2 or later; Finder 6.0 or later; Reflex Plus.

Price $399
Price includes full Reflex Plus package.

Support
Free telephone support is provided.

Time Billing 1.5

Time Billing 1.5 is a time management and billing system for architects, consultants, contractors, and other professionals. Users can track time, cost, and billing information by client, job, and employee or contractor. Time entries can be billed by rates for type of work, employee, or both. The system accommodates a number of codes for work, employees, fixed/specific charges, projects, invoicing, and other factors. Tracking, reporting, and comparative reporting features include prebilling analyses for work in progress. The program can be customized to provide direct invoicing. It will work with any or all of the Exceiver integrated accounting modules.

Exceiver Corp.
14407 Excelsior Blvd.
Minnetonka, MN 55345
612-938-3361

System Requirements
Macintosh 512K or larger.

Price $950 to $2130
Prices range from stand-alone Time Billing module to complete integrated accounting system.

Support
Free telephone support is provided; software customization is available.

Mechanical

Design/Drafting

Many design and drafting packages can be used for multiple purposes. For additional product listings, see pages 1 to 27 in Architecture/Engineering/Construction—Design/ Drafting.

Ashlar Vellum

Ashlar Vellum CAD software eliminates on-screen guesswork and makes precision drafting as effortless as freehand sketching. Vellum's built-in intelligence has the full power of professional CAD, without complex commands or extensive training. The Drafting Assistant and such high-end CAD tools as integrated parametrics, associative dimensioning and detail views, and NURB splines help shorten the design cycle and increase productivity in mechanical engineering, design, drafting, graphics, and technical illustration.

Ashlar Inc.
1290 Oakmead Pkwy.
Sunnyvale, CA 94086
408-746-3900

System Requirements
Macintosh SE/30 or larger; 4 MB of RAM. Color monitor recommended.

Price $995

Support
Telephone support is provided. Extended support plans and training available at additional cost.

Claris CAD

Claris CAD is a design and drafting tool for engineers and architects. Claris CAD provides users with freehand, object-oriented sketching; double-line construction lines; optional keyboard entry; area and perimeter calculations; tangents, perpendiculars, and offsets; construction from endpoints, centers, intersections, objects, and other geometry; fillets and chamfers; trim, divide, and extend; multiple duplication; standard or custom hatching; regular polygon tool; the ability to paste any symbol or drawing with flipping, individual x and y scaling, and rotation; and other CAD features. The program includes automatic, linear, radial, diametrical, and angular dimensioning features, among others. It supports U.S. and international standards for drawing and dimensioning and provides a customizable symbol library. Claris CAD allows up to 16,000 preset or custom fill patterns and provides a zoom window, grouping of items, and alignment features. The number of layers in a drawing is limited only by available memory.

Claris Corp.
5201 Patrick Henry Dr., Box 58168
Santa Clara, CA 95052-8168
408-987-7000

System Requirements
Macintosh Plus or larger; hard disk; ImageWriter, LaserWriter. Color monitor recommended.

Price $799

Support
Telephone support is provided. Newsletter and training are available.

Composites Design Software

Composites Design Software is a complete package for the design of composite materials for structural applications. The package contains point-stress analysis (GEN LATE), laminate optimization (LAM RANK), and integrated micro- and macromechanics analysis (MIC-MAC) templates for typical structural components.

Think Composites
140 Devonhurst Dr., Apt. B-1
Dayton, OH 45429
513-255-3068

System Requirements
Macintosh Plus or larger; HyperCard; Microsoft Excel.

Price $425
A user's manual and a HyperCard stack with the latest advances in the design of composite materials are included with the package.

Support
Free telephone and fax support are provided. Updates are available for $200.

Engineer's CAD

Engineer's CAD is a multifeatured software product for engineers. The Engineering Drawing program does scaled drawings with Bézier curves. The Design Specification program is a full-featured word processor designed to do detailed engineering design specifications. The Engineering Calculation program allows for input of custom engineering formulas with multiple subformulas, including all trigonometric and logarithmic functions. Once the equation is defined, the program acts as a stand-alone application for each custom formula set. The Unit Conversions program has the capability of over 100 million unit conversions selected from menus of basic units, derived units, and combined units. When an engineering calculation is performed, a specification and graphic display is automatically generated for development of the design specification.

EPCON
117 N. Main St.
Woodsfield, OH 43793
800-367-3585

System Requirements
Macintosh Plus or larger; hard disk.

Price $495

Support
Free technical support is available.

FileGLU

See complete description under Technical Productivity—General Productivity.

IN-CAD

IN-CAD integrates three-dimensional design, two-dimensional drafting, and solids modeling capabilities in one package. The program provides engineers and designers with flexible design capabilities that enhance creativity and eliminate the need for special presentation software. IN-CAD features include associative dimensioning; ANSI dimensioning with full control over appearance of dimension graphics; user-definable text fonts and cross-hatch patterns; output ability in a variety of plotter formats; full geometry creation and editing; ability to enter notes directly into drawings or from ASCII files; labeling with balloons and automatic incrementing; subfigures for library parts and grouping; complete on-line documentation and help system; and an English-like command language. The program reads and writes industry-standard IGES 3.0 files and converts AutoCAD's DXF files to IN-CAD drawings and vice versa.

Infinite Graphics, Inc.
4611 E. Lake St.
Minneapolis, MN 55406
612-721-6283

System Requirements
Macintosh II or larger; 2 MB of RAM; Finder 6.0 or later. Color monitor is recommended.

Price $2495

Support
Bulletin-board support, a newsletter, and training are available.

MacBRAVO!

MacBRAVO! is a series of design and modeling software packages available singly or as an integrated set. MacBRAVO! DETAILER is a mechanical detail drafting product that works as a stand-alone tool for two-dimensional design and drafting or in conjunction with MacBRAVO! MODELER for detailing three-dimensional models. MacBRAVO! MODELER is task-optimized for mechanical design and is the foundation of the MacBRAVO! CAD/CAM system. Fully three-dimensional, MacBRAVO! MODELER lets mechanical designers and engineers perform the most common operations. MacBRAVO! IGES allows users to translate information from MacBRAVO! DETAILER and MacBRAVO! MODELER into the International Graphic Exchange Standard (IGES). MacBRAVO! DESIGN is an integrated software package including MacBRAVO! DETAILER, MacBRAVO! MODELER, and MacBRAVO! IGES.

Schlumberger CAD/CAM
4251 Plymouth Rd.
Ann Arbor, MI 48106
313-995-6000

System Requirements
Macintosh II and larger; 4 MB of RAM; 40 MB hard disk; LaserWriter.

Price
MacBRAVO! IGES $495; MacBRAVO! DETAILER $1995; MacBRAVO! MODELER $1495; MacBRAVO! DESIGN $3295.

Support
A maintenance agreement providing telephone hotline support and updates is available for $495 per year. A warranty is provided. Training is available through qualified dealers.

MacConcept

MacConcept can be described as "electronic modeling clay," sophisticated enough to illustrate complex wireframe images, yet simple and versatile enough to manipulate them into fine masterpieces. It provides multidimensional spacial design features that simulate the industry's most sophisticated professional graphics and design systems. MacConcept's real-time dynamic rotation and perspective allow the user to view the design in three-dimension. Dynamic rotation is easily controlled. MacConcept allows multiple Undo levels that affect only specific areas of the design. With this increased flexibility, the user can add or delete lines, change the perspective, rotate the object, and undo one or all of those commands. Objects can be designed and measured in three-dimension with eight-digit accuracy. The user can specify whether objects are to be designed in English or metric units or both within one illustration. MacConcept handles up to 4096 lines of 64 points each, totaling 262,144 xyz data points with floating-point accuracy. These lines can be easily manipulated (split, combine, extract, isolate, true view, flange, and more). MacConcept is compatible with all Macintosh applications that read PICT or Scrapbook files. Translators are available for PDGS, CGS, for transferring data on the Ford and GM standard systems.

Klex Software Inc.
25633 Branchaster
Farmington Hills, MI 48018
313-477-6800

System Requirements
Macintosh Plus or larger. Macintosh II and hard disk recommended.

Price $1995
Third-party translators are available for IGES, DXF, Ford Motor, and General Motors systems. Discounts for education and for ClarisCAD users.

Support
Free telephone support and six months of free upgrades are provided. Training and custom-made sample files are available.

MacSurf

MacSurf is a powerful three-dimensional surface modeling system for use in marine design. MacSurf handles complex shapes ranging from supertankers to workboats and from 12-meter yachts to sailing dinghies. Up to 16 independent surfaces can be used to allow designers to create complex shapes with great accuracy. A range of design modules, providing a complete set of tools for design and analysis, includes MacHydro for large angle stability; MacRate for automatic IOR rating; PreFit for input of existing designs; FullPlot for multisheet output of designs at up to full size; QuickSail for sailing yacht performance prediction; and CGcalc for weight schedule preparation. A single-surface version of MacSurf, MacSurf/S, is available for students and amateur designers. For designers using flow-code simulation, MultiMesh provides a link between the MacSurf design and the flow-code model used by VSaero, a three-dimensional flow-code analysis system from Analytical Methods, Inc.

Graphic Magic Ltd.
PO Box 185, Cottesloe 6011
Perth, Western Australia, Australia
61-9-38332114

System Requirements
Macintosh Plus or larger; ImageWriter or LaserWriter.

Price $4495

Support
Free telephone support is provided.

MGMStation IGES/DXF

MGMStation IGES/DXF is an application that allows users to transfer drawing files to or from CAD programs that run on different computers. IGES (Initial Graphics Exchange Standard) is an industry-standard format for representing graphic data in an ASCII text file. MGMStation IGES/DXF can also be used to translate DXF (AutoCAD exchange standard) and PICT (Macintosh internal graphic exchange standard) files.

Micro CAD/CAM Systems, An Aura Systems Co.
5900 Sepulveda Blvd.
Van Nuys, CA 91411
818-376-0008

System Requirements
Macintosh 512K or larger.

Price $500

Support
Telephone support, training, and updates are available.

MGMStation—CAD

MGMStation—CAD is a two-dimensional computer-aided design program that uses floating-point arithmetic for high precision. Drawing features include points, lines, arcs/circles, fillets/tangents, intersections, splines/shapes, move/rotate, mirroring, dimensioning, line types, and deletes. Other features include precision drawing options for precise placement of objects, automatic dimensioning in decimal or English mode, multiple modes for hatching, multiple coordinate systems, scrolling menu bar for symbol libraries, unlimited number of layers, and a macro programming language. Text editing and connectivity features include the ability to interchange files in the PICT format. Two versions are available: 2.5 I and 2.5 II. Version 2.5 I is monochrome. Version 2.5 II is designed to utilize the capabilities of the Macintosh II, runs over eight times faster than version 2.5 I, supports up to 256 colors, and will perform background plotting under MultiFinder.

Micro CAD/CAM Systems, An Aura Systems Co.
5900 Sepulveda Blvd.
Van Nuys, CA 91411
818-376-0008

System Requirements
Macintosh 512K or larger. Version 2.5 II requires a Macintosh II or larger.

Price
Version 2.5 I $999; version 2.5 II $1399.

Support
Telephone support, training, and software updates are available.

MOLDPLUS

MOLDPLUS is a complete plastic and die-cast mold design package that uses the DME and National Mold base catalogs within the basic system. All standard components are supplied for instant insertion into the user's design. Special layers are established for all functions. Cavity and core molding and part surfaces are controllable. Many AutoLisp routines are built into a digitizing tablet menu to speed the construction of gates, waterlines, and special mold base plate construction. Special on-screen updates advise users of the current condition of a drawing.

Peak Plastic Performance Center, Inc.
26801 Del Gado Rd.
Capistrano Beach, CA 92624
714-240-2412

System Requirements
Macintosh II or larger; 4 MB of RAM; digitizing tablet; AutoCAD 10.0.

Price $4300
Basic package of DME and National catalogs. Additional catalogs available: HASC $1500; MUD $1500; DME COOCONE $750; and INCOE HOT TIPS $750.

Support
Free telephone support, a two-day training class for the basic system, and free software updates until the next AutoCAD release are provided.

OVATION CAD/CAM

OVATION CAD/CAM is a fully integrated CAD designing package for the structural designing function of the packaging industry. The system includes full dimensioning, line selection, full advanced geometry, and standard configurations relative to the packaging industry. The system represents line styles, bridging patterns, and thickness of lines pertinent to the structural designers' needs. This system on the CAM end outputs to all types of high-resolution flatbed plotters, as well as drum plotters, routing machines, and commercial laser systems.

Innovative Design Systems Corp.
150 N. Miller Rd., Bldg. 250, Ste. B
Akron, OH 44313
216-836-0006

System Requirements
Macintosh Plus or larger; LaserWriter Plus or ImageWriter II.

Price $1000 to $8000
Software pricing by module.

Support
Free telephone support, warranty, and updates are provided; on-site training is available.

PCXI 3M

A/UX PCXI 3M is a fast bidirectional translator available on the Macintosh II that allows users of Computervision and PD files (CADDS 4, 4X, and CADDSTATION) and AutoCAD DXF files to exchange two-dimensional and three-dimensional CAD databases. PCXI enhances a Computervision installation by allowing users to create graphic databases off-line using DXF-compatible CAD packages. After the translation of the DXF databases, they can be transported to the Computervision system for further analysis. PCXI can also be used to provide accurate database transfers of graphic information between Computervision users and field service groups/contractors who use DXF Release 10 compatible packages.

K.R.B., Inc.
510 Charlotte St.
Longwood, FL 32750
407-339-8000

System Requirements
Macintosh II or larger, A/UX®.

Price $5000

Support
Telephone support is provided.

Shaft Alignment for Rotating Machinery

Shaft Alignment for Rotating Machinery helps users determine how to position the shafts of rotating machinery to achieve a colinear axis of rotation when the machinery is running under normal operating conditions. The program uses a variety of visual aids to assist users in understanding the step-by-step process required to align rotating machinery. Users can enter the names of the machinery, the axial dimensions of the drive train, data on how the machinery moves from off-line to running conditions, and the direction of this movement. Other items that can be input include the selection of three different types of dial-indicator shaft-measurement techniques and field readings taken with one of these techniques. Users can then see how two shafts are oriented with respect to each other, choose from an infinite number of possible solutions to achieve the required machinery position, and print any or all of the information.

Turvac Alignment Engineering Services
12012 Elkwood Dr.
Cincinnati, OH 45240
513-851-1439

System Requirements
Macintosh Plus or larger. Hard disk recommended.

Price $395
Site license available.

Support
Telephone support is provided. In-house training is available (two-day seminar $4995).

Vector

Vector is a toolbox for developing engineering applications. The program lets engineers and programmers concentrate on the engineering problem itself rather than on the development of computer graphics and three-dimensional database structures. Vector includes a full-featured micro programming language, as well as tools such as entity definition; menu creation; icon creation; tools creation; user-definable database primitives; associative dimensioning; layers and level control; spline curves; color; bit-mapped and three-dimensional graphic routines; math and geometric tools; full two-way parametric operatives; DXF, PICT, and IGES input/output; and HPGI and HI plotting output. The macro source and listings to a completed three-dimensional CAD system are provided with Vector for customization purposes. Vector can be used to develop CAD/CAM packages and applications, finite and thermal element modeling packages, in-house engineering applications, and the customization of complex applications.

Micro Concepts Inc.
4030 Piper Dr.
Fort Wayne, IN 46809
219-478-8088

System Requirements
Macintosh II or larger; 2 MB of RAM; ImageWriter or LaserWriter.

Price $2595

Support
Free telephone support and a 90-day warranty are provided. Updates are available at a nominal cost. Comprehensive training seminars, custom programming and on-site consulting services are available for a fee.

Analysis

ANSYS-PC/LINEAR 4.3

ANSYS-PC/LINEAR engineering software performs finite element analysis. The code can be used in a wide range of disciplines for solutions to mechanical and electronic problems. Linear and nonlinear static and dynamic analysis types are provided. Preprocessing routines and a library of 22 elements speed three-dimensional geometric model building. Postprocessing routines perform speedy results analysis. Results can be expressed as strains, stresses, displacements, and other terms through text and/or graphics.

Swanson Analysis
Johnson Rd.
Houston, PA 15342-0065
412-746-3304

System Requirements
Macintosh II or larger; 2 MB of RAM; color monitor. 40 MB hard disk recommended.

Price $6400
Lease price, $300 per month.

Support
Telephone support and training seminars are provided and included in the lease price.

Composite Wing Optimization

Composite Wing Optimization is an engineering package for engineers in the aerospace and aviation industries. Users can create a model of an aircraft wing by entering data into the program. Characteristics of the wing, such as stress distributions and margins of safety, are then displayed by the program. After reviewing these characteristics, users can edit the data and create a new model. The program uses the Weissinger discrete vortex method for determining the airload distribution for wing configurations. Matrix calculations are used to determine loads, deflections, twist, tensile stresses, compressive stresses, and shear stresses in wing components. The software prints diagrams of deflections, geometric definitions, load distributions, and stress plots.

Aircraft Designs, Inc.
25380 Boots Rd.
Monterey, CA 93940
408-649-6212

System Requirements
Macintosh 512K or larger; external 800K disk drive or hard disk.

Price $60

Support
Telephone support is provided.

COSMOS/M

COSMOS/M is an element package meant for use in technical industries such as mechanical, civil, chemical, or aerospace engineering. Users can perform linear, nonlinear, static and dynamic structural, thermal, fluid, and electrical network analyses. With the static linear module, users can also perform substructuring analyses. The system allows users to determine stresses, strains, displacements, forces, and temperature distribution in structures subjected to external loads, forces, and imposed-boundary conditions. The system consists of a preprocessor and postprocessor, menus for user input, color graphics with shaded color plots, and a CAD system interface. Extensive libraries of elements, loads, and materials (including composites) are provided.

Structural Research & Analysis
1661 Lincoln Blvd., Ste. 200
Santa Monica, CA 90404
213-452-2158

System Requirements
Macintosh II or larger; 4 MB of RAM; color monitor. 80 MB hard disk recommended.

Price $995
Sold by module; site licenses available.

Support
Telephone support, maintenance contracts, and training seminars are provided.

Data Record 'n Plot

Data Record 'n Plot gathers, records, and plots data such as cooling rates over TTT or CCT diagrams. Designed for lab and industry data logging, process monitoring, and control, Data Record 'n Plot records temperature, pressure, flow, and other analog or digital input from sensors or instruments; you can activate heaters, fans, pumps, hoists, furnaces and other on/off devices as well; data is captured in a data base for S.P.C. documentation and analysis.

The Metal Works Industrial Furnaces, Inc.
21100 Fern
Oak Park, MI 48237
313-545-6703

System Requirements
Data Record 'n Plot is a Macintosh SE or Macintosh II family computer upgraded with necessary additional hardware and software.

Price $8500 to $25,500
Prices quoted on request.

Support
Free telephone support and 90 days warranty are provided.

Discsim

Discsim is a comprehensive six-degrees-of-freedom wave-frequency motion simulation for the special case of azimuthal hull symmetry. It is suited for simulation of buoy motions and loads in single-point mooring applications, and for round vessel geometries often associated with operations in the presence of persistent ice. Discsim uses an efficient algorithm for calculating wave-frequency forces and moments, which permits accurate simulation using only gross hydrostatic and mass properties as input, eliminating the need for tedious input of vessel lines detail. As a result, comprehensive simulations can usually be completed in an hour or less. A wide range of environmental conditions is accommodated, including extensive built-in wave spectral types, azimuthal spreading of wave directions, and an optional indpendent background swell. Accelerations, velocities, and displacements at any point on the vessel can be computed. Finite water depth effects are fully simulated and either English or metric units may be used. Output is in amplitude and phase-of-vessel Response Amplitude Operators (RAOs) and/or statistical characterizations of vessel response to irregular wave conditions.

SeaSoft Systems
250 Ribera Dr., Ste. B
Santa Barbara, CA 93111
805-683-3002

System Requirements
Macintosh Plus or larger; hard disk.

Price $10,000 to $20,000
Single user to multi-user.

Support
Free telephone support and software updates for six months, and eight hours of training are provided. Extended support, source code, and software customization for special applications are available.

Engineer's Aide II: Mechanical

Engineer's Aide II: Mechanical offers five programs for engineers in manufacturing and process industries. Engineer's CAD does engineering drawings, design specifications, unlimited custom engineering calculations (with a handbook on disk), and over 100 million unit conversions. Conveyor Sizing allows users to size belt and screw conveyors with an extensive library of solid properties. Mechanical Drive Sizing provides analysis of V-belts, flat belts, and roller chains for transmission of power. Mechanical Shape Analysis calculates the geometric and structural characteristics of mechanical shapes drawn by the user. Shaft Alignment Analysis makes recommendations for the specific movement of coupled equipment to provide precise alignment of rotating equipment.

EPCON
117 N. Main St.
Woodsfield, OH 43793
800-367-3585

System Requirements
Macintosh 512K enhanced or larger; hard disk.

Price $895

Support
Free telephone support is provided.

Generalized Tethered Object Simulation System

Generalized Tethered Object Simulation System (GTOSS) simulates the orbital motion of an arbitrary number of rigid bodies (or particles) connected in arbitrarily complex fashion (at arbitrarily assignable attach points) by an arbitrary number of tethers, such as cables and lines. The tethers can be simulated as massless or as having mass via a model synthesis or point synthesis model (which handles non-uniform properties). Bodies and tethers can experience aerodynamic forces and tethers can conduct current, thus experiencing electrodynamic forces due to the Earth's magnetic field. Output from the program is an archivable Results Database. The Results Database is post-processed into input files to Cricket Graph for plotting of engineering results, or into animation files to display three-dimensional motion animation via Super 3D.

David D. Lang Associates
2222 70th Ave. S.E.
Mercer Island, WA 98040
206-236-2579

System Requirements
Macintosh Plus or larger, external drive; Cricket Graph and Super 3D.

Price $900

Support
Telephone support, documentation, and a newsletter are provided. Special consulting support and seminars are available at consulting rates.

Inertia

Inertia is an engineering mechanics design tool kit that contains software products designed specifically for engineering mechanics and manufacturing industries. Inertia is part of a family of computer programs that enable engineers to take advantage of advanced FEA technology for design optimization on a microcomputer. Inertia consists of several unique application programs, including InerSolid, for electromechanical component design, such as automotive and aerospace parts; InerFrame, for highrise and space-frame structures; and InerDesign, for structural-steel design and AISC code check.

Modern Computer Aided Engineering, Inc.
1231 Cumberland Ave., Ste. A
Lafayette, IN 47906
312-463-1550

System Requirements
Macintosh SE or larger; System 5.2 or later.

Price $3000

Support
Free telephone support and two days of hands-on basic training are provided. Maintenance agreements are available.

LapCAD3

LapCAD3 is a finite element modeler used to create finite element models for stress or vibration analysis with the MSC/pal2 and MSC/NASTRAN programs, and three-dimensional visualizations of an object. It determines the weight and center of gravity of an object, and computes beam cross-sectional properties and stresses on arbitrary beam cross sections. Users can employ standard shapes as starting points in geometry definition and can copy, mirror, delete, rotate, translate, expand, contract, align, and extrude shapes, among other functions. Users can verify accuracy at each step of the model-building process. Nodes and elements can be automatically generated, replicated, and edited. Geometry can be imported from AutoCAD and VersaCAD. Cross-sectional properties of beams are calculated by drawing the cross section in LapCAD, which computes the area and moments of inertia. Stresses on these shapes are computed by entering the axial force and moments.

LapCad Engineering
1568 Diablo Point Ct.
Chula Vista, CA 92011
619-421-1236

System Requirements
Macintosh Plus or larger; two 800K drives; ImageWriter or LaserWriter. MSC/pal by MacNeal-Schwendler is recommended.

Price
Demo (100 nodes) $45; Version 1 (1200 nodes) $295; Version 2 (2500 nodes) $395.

Support
On-site consultation and telephone support are provided for a fee.

LinAir, Lifting Surface Analysis Program

LinAir, Lifting Surface Analysis Program computes aerodynamic characteristics of complete configurations. It is based on the Weissinger discrete vortex method and can analyze multiple nonplanar lifting surfaces with up to 200 panels. Quadratic profile drag integration and Trefftz-plane induced drag computation are used. The professional version of LinAir features enhanced geometry options; asymmetric flight conditions; roll, pitch, and yaw rates; batch mode for analysis of many cases at one time; real-time 3D rotations and display of input geometry; and near-field force calculations for more accurate calculation of distributions and interference effects. The easy-to-use interface includes a built-in plotting routine. Multiple chordwise panels can be used to predict camber effects and control effectiveness. The program is ideal for computing the aerodynamics of new aircraft designs including interference of wing and canard or aft tail or winglets.

Desktop Aeronautics
P.O. Box 9937
Stanford, CA 94305
415-424-8588

System Requirements
Macintosh Plus or larger.

Price $200 to $1000
Basic version and Professional version.

Support
Telephone support, a 30-day unconditional money-back warranty, and updates are provided free. Related consulting services and custom versions are available at extra cost.

LINCAGES

LINCAGES is a unique design tool to aid in the design and analysis of four-bar linkages that move to the user's specifications. Either four or three specified design positions or trial-and-error "sketching" can be used to create numerous four-bar mechanisms. The program provides animation, velocity, acceleration, and transmission angle analysis; it lets the user explore many different kinds of mechanisms that might otherwise be impossible to find. LINCAGES can reduce the time it takes to design a mechanism from days to minutes. Animation gives a quick indication of how workable the four-bar mechanism will be. Several linkages can be animated at once to compare alternative designs. The four-bar links can be reshaped to check out interference problems quickly. Coupler curve, transmission angle, velocity, and acceleration graphs are automatically calculated when the linkage changes.

Minnesota Technology Transfer (MINTT) Inc.
1957 3rd St., S.W.
New Brighton, MN 55112
612-341-2311

System Requirements
Macintosh Plus or larger. 2 MB of RAM recommended.

Price $3000

Support
Free telephone hotline support is provided. Training is available for a fee. Update/mainframe service is available for an annual fee. Software maintenance $300 per year.

MCADA

MCADA (Mechanism Computer-Aided Dynamic Analysis) analyzes the dynamic response of planar mechanisms. Users may specify forces and solve for the motion of the mechanism (dynamic analysis) or specify the motion and solve for the forces that produce it (kinetostatic analysis). MCADA automatically constructs the equations of motion while applying constraints corresponding to user-prescribed pin and translational joints. MCADA can display the mechanism in one or many positions; can create interactive plots of user-specified variables, such as forces and torque at a certain joint or the position and velocity of a specified link; and includes automatic motion generators that can be used to prescribe relative linear and angular motions of a link with time. An optional postprocessor animates the mechanism's motion repetitively without recomputing. Professional MCADA allows users to create a custom, user-definable generator subroutine and link it to create a new custom executable MCADA. Professional MCADA requires the Microsoft Macintosh FORTRAN compiler.

Mechanical Software Inc.
1630 5th Ave., Ste. 535
Moline, IL 61265
309-762-1129

System Requirements
Macintosh 512K enhanced or larger. Hard disk recommended.

Price $995
Professional MCADA with postprocessor.

Support
A two-day on-site training seminar is available at $500 per person plus the instructor's expenses.

MGMStation—GEOMETRY

MGMStation—GEOMETRY is a package that calculates the perimeter, area, and X and Y coordinates of both the center of gravity and the moment of inertia of any MGMStation CAD file. The region for calculation is defined by dragging a window around the desired contours or by separate entities; the results are saved and printed. The analyzer displays a representation of the region of simple or complex contours (up to 50) with a discrete pattern and calculates all properties or selected properties.

Micro CAD/CAM Systems,
An Aura Systems Co.
5900 Sepulveda Blvd.
Van Nuys, CA 91411
818-376-0008

System Requirements
Macintosh Plus or larger.

Price $80

Support
Telephone support, training, and updates are available.

Moorsim

Moorsim is a comprehensive simulation used for design, evaluation, maintenance, and failure analysis of catenary-type spread mooring systems. It provides detailed mooring system and vessel performance data under specifiable water depth and environmental conditions, including characteristic (r.m.s.) and peak mooring line loads in the forecast maximum storm. A wide range of environmental conditions is accommodated, including extensive built-in wave spectral types, azimuthal spreading of wave directions, an optional independent background swell, and steady or fluctuating wind and/or current. Moorsim accommodates mooring nonlinearities at all levels, including system statics, quasi-statics (low-frequency oscillations with typical periods of 1 to 10 minutes), and dynamics (wave-frequency oscillations with typical periods of 4 to 30 seconds). Moorsim is suitable for on-board use in an advisory capacity during mooring set-up or storm preparation. The simulation is especially useful for deep-water applications, which are difficult to study using conventional model-scale tests. Simulation is carried out in the frequency domain, resulting in short execution times and unambiguous predictions of statistical response values.

SeaSoft Systems
250 Ribera Dr., Ste. B
Santa Barbara, CA 93111
805-683-3002

System Requirements
Macintosh Plus or larger; hard disk.

Price $50,000 to $100,000
Single user to multi-user.

Support
Free telephone support and software updates for six months, and eight hours of training are provided. Extended support, source code, and software customization for special applications are available.

MSC/pal 2

MSC/pal 2 performs two- and three-dimensional stress and vibration analyses of structures and mechanical components. It allows engineers and designers to simulate responses to static and dynamic loads to determine structural integrity, leading to safer, less costly designs. The program uses the finite element method to perform static, normal mode, transient response, and frequency response analyses. Elements include beams, membranes, plates, concentrated springs, solids, axisymetric masses, and dampers. Applied loads include concentrated forces, temperature loading and stresses, moments, pressure, and gravity loads. Graphics include model geometry, deformed/undeformed overlays, deformed animations, shaded stress contours, and xy plots. Graphics and text can be cut and pasted to other Macintosh applications for report generation. The Macintosh Plus-SE version has a 500-node, 3000 DOF limitation. The Macintosh II-SE/30 version is limited to 2000 nodes and 12,000 DOF.

The MacNeal-Schwendler Corporation
815 Colorado Blvd.
Los Angeles, CA 90041
213-258-9111

System Requirements
Macintosh Plus-SE version requires a Macintosh Plus or larger, and a hard disk. The Macintosh II-SE/30 version requires a Macintosh II or SE/30, math coprocessor, and 2 MB of RAM, or 3 MB for use with MultiFinder.

Price
Macintosh Plus and SE version $995; Macintosh II and SE/30 version $2495.

Support
Free telephone hotline support is provided.

NASCRAC Fracture Mechanics Computer Code

The NASCRAC Fracture Mechanics Computer Code, initially developed for NASA's Marshall Space Flight Center, is a fracture mechanics computer program. The code can perform time- or cycle-dependent analysis of subcritical crack growth. Over 30 stress intensity factor solutions are built into the code. Complex spatial gradients are treated by the use of influence functions. Subcritical crack growth analysis can be performed by a variety of crack growth laws, such as Modified Forman, Paris, Walker, Collipriest, or tabulated inputs. Spectrum loading can be treated by models such as Walker or Willenborg. The NASCRAC program can also generate stress intensity factor solutions for previously unsolved crack configurations and provide automatic evaluation of J-integrals from previously published results. NASCRAC software is a fully interactive code with graphics capability, and is available for IBM-PC and compatible computers, VAX VMS computers, Sun workstations, and Macintosh computers.

Failure Analysis Association, Inc.
2225 E. Bayshore Rd.
Palo Alto, CA 94303
415-496-7125

System Requirements
Macintosh Plus or larger; hard disk.

Price $7500

Support
Free telephone support and updates are supplied for the duration of paid licensing fees.

PANDA-Program for Analysis and Design of Airfoils

PANDA-Program for Analysis and Design of Airfoils is ideal for analysis and design of custom airfoils or for educational applications. The program computes pressures on arbitrary airfoil sections from coordinates in an ASCII file. It includes Kármán-Tsien compressibility effects, and integral boundary layer calculations for transition location, laminar and turbulent separation, and drag. An interactive design option permits changes in airfoil geometry with a press of the mouse button, with recalculation and display of pressures in less than a second. Users may employ the built-in plotting of Cp distribution or save in a QuickPlot (ASCII) file.

Desktop Aeronautics
P.O. Box 9937
Stanford, CA 94305
415-424-8588

System Requirements
Macintosh Plus or larger.

Price $100

Support
Telephone support, a 30-day unconditional money-back warranty, and updates are provided free. Related consulting services and custom versions are available at extra cost.

SALMsim

SALMsim is a comprehensive simulation used for design, evaluation, maintenance, and failure analysis of riser-buoy-yoke type single-point mooring systems (SALMs) with an attached storage vessel. A wide range of environmental conditions is accommodated, including extensive built-in wave spectral types, azimuthal spreading of wave directions, an optional independent background swell, and steady or fluctuating wind and/or current. Integrated simulation modules compute static, low-frequency (typical periods of oscillation of 1 to 10 minutes) and wave-frequency (typical periods of oscillation of 4 to 30 seconds) behavior of the vessel and its associated mooring structures. Emphasis is on estimation of characteristics (r.m.s.) and storm peak motion and load values at any point in the system. Effects of finite water depth are fully simulated and either English or metric units may be used. Output is in the form of amplitude and phase of Response Amplitude Operators (RAOs) and/or statistical characterizations of vessel and mooring system motion and load response to irregular wave conditions. Simulation is carried out in the frequency domain, resulting in short execution times and unambiguous predictions of statistical response values.

SeaSoft Systems
250 Ribera Dr., Ste. B
Santa Barbara, CA 93111
805-683-3002

System Requirements
Macintosh Plus or larger; hard disk.

Price $60,000 to $120,000
Single user to multi-user.

Support
Free telephone support and software updates for six months, and eight hours of training are provided. Extended support, source code, and software customization for special applications are available.

SAMBAS

SAMBAS provides high-performance finite-element structural analysis of multibody axial symmetric objects. The program analyzes tensile, compressive, and thermal properties; initial displacement; plane strain, plane stress, or axial symmetric plane strain; and other factors. Users enter the basic parameters of a structure, then plot the resulting finite element mesh on screen for immediate inspection and validation. SAMBAS plots stresses in the structure or plots the deformed structure. Isotropic lines of stress or strain are plotted on the screen. Selected portions of the plot may be enlarged for detail analysis. Element Report lists all elements and their nodal points. Nodal Point Report lists radial and axial coordinates, the initial boundary conditions and loads, and the radial and axial displacements of every nodal point. Stress Report and Strain Report each lists ten basic properties for each finite element.

microneering
211 E. Culver Blvd., Ste. Q
Playa del Rey, CA 90293
213-306-0878

System Requirements
Macintosh 512K or larger.

Price $4500

Support
Telephone hotline, training, service, and updates are available.

SAND-Simulation of Aircraft Nonlinear Dynamics

SAND-Simulation of Aircraft Nonlinear Dynamics is a simulation program that produces time histories of aircraft motion given control inputs, initial conditions, and aircraft mass properties. Aerodynamic characteristics may be entered from a file in the form of stability derivatives or a customized routine linked at runtime to the main routine. No programming is necessary, but users who desire to do so may add subroutines in Absoft FORTRAN. The nonlinear equations of motion are integrated numerically using a second-order method. Any of the state variables may be displayed graphically. Users may interrupt the integration, modify controls, and continue the process. The program is used to evaluate the dynamic stability and handling qualities of aircraft.

Desktop Aeronautics
P.O. Box 9937
Stanford, CA 94305
415-424-8588

System Requirements
Macintosh Plus or larger.

Price $200

Support
Telephone support, a 30-day unconditional money-back warranty, and updates are provided free. Related consulting services and custom versions are available at extra cost.

SANGRE and SangPlot

See complete description under Architecture/Engineering/Construction—Mapping/Earth Resources.

Section Properties

Section Properties calculates the area and moments of inertia of a cross-section. The program works by dividing the cross-section into rectangular legs. Curved and tapered cross-sections may also be approximated in this way. All instructions necessary to run the program are printed on the screen. Screen graphics illustrate the section being analyzed, leg by leg. The input and output may be printed in a format suitable for inclusion in a report.

Peter O'Driscoll, Inc.
2672 Bayshore Pkwy., Ste. 404
Mountain View, CA 94043
415-969-2894

System Requirements
Macintosh 512K or larger.

Price $45

Support
Free telephone support is provided. For sample screen displays and printout, send stamped addressed envelope.

Semisim

Semisim is a six degree-of-freedom wave-frequency motion simulation package for use with semisubmersible vessels in the nontransit, hulls-submerged mode. Computed response characteristics reflect the highly nonlinear nature of motion damping and excitation for this type of vessel. A wide range of environmental conditions is accommodated, including extensive built-in wave spectral types, azimuthal spreading of wave directions, and an optional independent background swell. The simulation provides for calculation of air gap clearances between deck and water surface in addition to absolute displacements, velocities, and accelerations at any point on the vessel. Effects of finite water depth are fully simulated and either English or metric units may be used. Output is in the form of amplitude and phase of vessel Response Amplitude Operators (RAOs) and/or statistical characterizations of vessel response to irregular wave conditions. Simulation is carried out in the frequency domain, resulting in short execution times and unambiguous predictions of statistical response values.

SeaSoft Systems
250 Ribera Dr., Ste. B
Santa Barbara, CA 93111
805-683-3002

System Requirements
Macintosh Plus or larger; hard disk.

Price $25,000 to $50,000
Single user to multi-user.

Support
Free telephone support and software updates for six months, and eight hours of training are provided. Extended support, source code, and software customization for special applications are available.

Shipsim

Shipsim is a general-purpose six degree-of-freedom wave-frequency vessel motion program specifically enhanced for displacement-hull vessels with relatively large block coefficients, such as drillships, barges, and tankers. Shipsim utilizes an efficient algorithm for calculating wave-frequency forces and moments that requires as input only gross hydrostatic and mass properties. This eliminates the need for tedious and error-prone input of vessel lines details and allows comprehensive simulations to be completed in one hour or less. Nonlinear roll damping leads to response predictions that depend on details of bilge geometry. A wide range of environmental conditions is accommodated, including extensive built-in wave spectral types, azimuthal spreading of wave directions, and an optional background swell. Accelerations, velocities, and displacements at any point on the vessel can be computed. Effects of finite water depth are fully simulated and either English or metric units may be used. Output is in the form of amplitude and phase of vessel Response Amplitude Operators (RAOs) and/or statistical characterizations of vessel response to irregular wave conditions. Simulation is carried out in the frequency domain, resulting in short execution times and unambiguous predictions of statistical response values.

SeaSoft Systems
250 Ribera Dr., Ste. B
Santa Barbara, CA 93111
805-683-3002

System Requirements
Macintosh Plus or larger; hard disk.

Price $20,000 to $40,000
Single user to multi-user.

Support
Free telephone support and software updates for six months, and eight hours of training are provided. Extended support, source code, and software customization for special applications are available.

SPMsim

SPMsim is a comprehensive simulation for use in the design, evaluation, maintenance, and failure analysis of catenary-based single-point mooring (SPM) systems comprising vessel-fixed turret systems. It provides detailed mooring system and vessel performance data under specifiable water depth and environmental conditions. A wide range of environmentional conditions is accommodated, including extensive buit-in wave spectral types, azimuthal spreading of wave directions, an optional independent background swell, and steady or fluctuating wind and/or current. SPMsim accommodates mooring nonlinearities at all levels, including system statics, quasi-statics, and dynamics. It is suitable for on-board use in an advisory capacity during mooring setup or storm preparation, and is especially useful for deep-water applications that are difficult to study thoroughly using conventional model-scale tests. Simulation is carried out in the frequency domain, resulting in short execution times and unambiguous predictions of statistical response values.

SeaSoft Systems
250 Ribera Dr., Ste. B
Santa Barbara, CA 93111
805-683-3002

System Requirements
Macintosh Plus or larger; hard disk.

Price $50,000 to $100,000
Single user to multi-user.

Support
Free telephone support and software updates for six months, and eight hours of training are provided. Extended support, source code, and software customization for special applications are available.

Statmoor

Statmoor is a comprehensive static mooring analysis program for multileg catenary mooring systems. The program is used in design and analysis of complex single-vessel multipoint mooring systems and special applications, including static response characteristics of most elasto-gravitational lines of importance to the offshore industry (towlines, reinforced coflex-type hoses, for example). An analytically exact solution to the elasto-gravitational static response of mooring line elements is employed; these exact equations apply to arbitrary degrees of nonlinearity in the tension-elongation characteristics for the mooring line elements, permitting analysis of strongly nonlinear materials such as nylon and polypropylene. Extensive on-line default values for weight, strength, and elastic properties of steel and synthetic mooring materials are provided to enhance efficiency in preliminary parametric design studies. The program supports spring buoys, clumped weights, sloping seafloor conditions, and individually specifiable anchor depths. Output can include both individual line characteristics and net restoring forces and moments associated with yaw offsets or lateral offsets in any direction.

SeaSoft Systems
250 Ribera Dr., Ste. B
Santa Barbara, CA 93111
805-683-3002

System Requirements
Macintosh Plus or larger; hard disk.

Price $5000 to $10,000
Single user to multi-user.

Support
Free telephone support and software updates for six months, and eight hours of training are provided. Extended support, source code, and software customization for special applications are available.

Steam Function Macro Set

The Steam Function Macro Set is a set of five function macros that allow complex thermodynamic models to be set up, modeled, and solved. They duplicate the standard Keenan and Keyes tables to 1 part in 10,000. The set includes Saturated Steam Pressure (Deg F—>PSIA, 32-705.4 F); Saturated Steam Temperature (PSIA—>Deg F, 854-3206.2 PSIA); and Superheated Steam Enthalpy, Volume, and Entropy (32-1600 F range at Volumes>.016 CuFt/lb).

Heizer Software
1941 Oak Park Blvd., Ste. 30
Pleasant Hill, CA 94523
415-943-7667

System Requirements
Macintosh 512K or larger; Microsoft Excel.

Price $35

Support
Telephone support is provided.

THREADS

THREADS provides high-performance finite-element analysis of many standard threaded connector configurations, such as oil-drilling tubular, electrical conduit, or process piping. Five predefined tooth geometries may be selected, and a sixth type of tooth permits designers to specify the tooth height, crest width, load flank, and stabbing flank. Users enter the basic parameters of a structure, then plot the resulting finite element mesh on the screen for immediate inspection and validation. THREADS plots stresses in the structure or plots the deformed structure. Isotropic lines of stress or strain are plotted on the screen for ten basic properties. Seven reports providing engineering data are generated: Element Report, Nodal Point Report, Nodal Point Displacement Report, Stress Report, Strain Report, Materials Report, and Boundary Pressure Report.

microneering
211 E. Culver Blvd., Ste. Q
Playa del Rey, CA 90293
213-306-0878

System Requirements
Macintosh 512K or larger.

Price $745

Support
Telephone hotline, training, service, and updates are available.

Tolculator

Tolculator is designed to perform analyses and to aid in the selection of standards, such as drill and counterbore sizes, amount of Geometric tolerance or finish to specify. It simplifies math from mixed fraction, powers and roots, to the trigonometry of right and oblique angles or quadratics. It does tolerance studies, such as RSS, Gaussian, other distributions and selective fit. It also does all manner of conversions such as deg., min., sec. to decimals and back, fractions to decimals, customary to metric, polar to coordinate and back and rectangular coordinate to positional tolerance. The program can figure histograms, do sampling analysis (in process control), produce statistical predictions vs. actuals and draw them. It will do all manner of least square studies (except for the positional ones done by Softgage). Tolculator will calculate rate, virtual conditions, bonus tolerances, positional tolerances, and look up and calculate limits and fits. Further, it will analyze circularity, find the least squares center, analyze flatness, parallelism, straightness of elements or axes, find the center of a pattern, do shop math, sampling studies, figure bonus tolerances and allowables based on actuals vs. drawing requirements, do thermal compensations and convert screw sizes to diameters.

International Geometric Tolerancing Institute, Inc
2943 Cortina Dr.
San Jose, CA 95132
408-251-7058

System Requirements
Macintosh 512K or larger; Microsoft Excel.

Price $150 to $175

Support
Free telephone hotline and newsletters are provided. Updates $25. 700-page supplementary GD&T manual (AGT II) $55, 250-page CATA (Computer Aided Tolerance Analysis) workbook ($28.75), and in-plant seminars (fee) are available.

Towsim

Towsim is a comprehensive simulation used for design, evaluation, maintenance, and failure analysis of simple or composite towlines used in open-ocean tug-barge-towline systems. It provides detailed towline and vessel performance data under arbitrary water depth and environmental conditions, including characteristic (r.m.s.) and peak towline loads in the forecast maximum storm for a particular route. Characteristics of the towline are fully specifiable. The analysis can be used to optimize towline characteristics in trip planning for a specific route/environment and is suitable for on-board real-time use in an advisory capacity for setting optimal towline scope and/or optimal tug heading during storm penetration or survival preparations. Towsim accommodates system nonlinearities at all levels, including statics, quasistatics (low-frequency oscillations produced by variable wind and wave-drifting forces with typical periods of oscillation of 1 to 10 minutes), and dynamics (wave-induced oscillations with typical periods of 4 to 30 seconds). Simulation is carried out in the frequency domain, resulting in short execution times and unambiguous predictions of statistical response values.

SeaSoft Systems
250 Ribera Dr., Ste. B
Santa Barbara, CA 93111
805-683-3002

System Requirements
Macintosh Plus or larger; hard disk.

Price $45,000 to $90,000
Single user to multi-user.

Support
Free telephone support and software updates for six months, and eight hours of training are provided. Extended support, source code, and software customization for special applications are available.

Universal Calculator

The Universal Calculator is a package of program modules designed for mechanical engineers, designers, and draftsmen. These modules, which solve most common design calculations, include many options. UniCalc is a calculator that includes arithmetic, trigonometry, and special functions, memory, constants, and right and oblique triangles. Convert converts more than 60 units of measurement. Tolerances solves for hole-to-hole tolerances for geometric position and coordinate systems. Sector finds angle, chord, segment height, radius, arc length of sectors, and segments of a circle, and solves for area and volume sectors and segments. Areas solves for areas of common shapes. Volumes solves for volumes of common shapes. Belt solves belt pitch lengths for open, crossed, right angles, and idler pulley designs. Springs calculates spring properties for helical spring designs. Hardware is a list of charts that includes screws, washers, lock washers, hex nuts, clinch nuts, drill chart, tap drill chart, and thread chart. All modules are linked through menus.

Flight Engineering
615 Forrest Dr., Ste. 206
Miami Springs, FL 33166
305-884-1475

System Requirements
Macintosh Plus or larger.

Price $98

Support
Free telephone support is provided.

CAM

EZ-CAM IV

EZ-CAM IV integrates all the manufacturing tools necessary to machine parts faster, more accurately, and at less cost than conventional methods. Users define a part, using interactive graphics and a comprehensive set of commands. Once defined, a simulated part can be cut in three dimensions on screen. EZ-CAM IV can also produce the required format for various CNC machines, using a generalized post-processor build utility that can create complex gears and cams. Other EZ-CAM IV features include access to CAD databases through the vendor's IGES or AutoCAD interface; direct links to other computers or via modems for data interchange; and direct links on the shop floor to CNC machines. Modules are available for machinery centers, lathes, or wire EDM machines. A three-dimensional surface package is available for machining complex parts.

Bridgeport Machines, Inc.
500 Lindley St.
Bridgeport, CT 06606
508-842-7200

System Requirements
Macintosh Plus or larger.

Price $11,475
Complete system includes EZ-MILL, EZ-TURN, and Macintosh II with 13" monitor.

Support
Free telephone hotline and bulletin board assistance are provided to registered users for 60 days. Updates are available at a nominal charge. There are frequent training sessions at regional sales/service centers.

EZ-EDM

EZ-EDM is designed for the preparation of part programs for CNC-controlled EDM wire cutting machines. The software can be used for two- or four-axis programming or separate taper cutting conditions. Standard features include IGES and DXF translators to link to CAD systems, and more than 200 ways to define geometry with graphic verification on screen. Versatile utilities for the simple generation of gears and cams are also included. The package includes a library disk of postprocessors and the means to create any other post required by incorporating absolute or incremental output and/or wire compensation. Downloading utilities are standard for communication via the RS-232 interface. The software supports the full Macintosh interface, LaserWriter and ImageWriter printers, networking, high-resolution color monitors, and the 68881 numeric coprocessor.

Bridgeport Machines, Inc.
500 Lindley St.
Bridgeport, CT 06606
508-842-7200

System Requirements
Macintosh Plus or larger.

Price $3000

Support
Free telephone technical support hotline and a national bulletin board network are provided.

EZ-MILL

EZ-MILL is designed for the preparation of two and one-half (2.5) axis NC/CNC part programs for vertical or horizontal spindle machining centers. Standard features of the package include both IGES and DXF translators to link CAD systems, and more than 200 ways to interactively define geometry with graphic verification on the screen. EZ-MILL can also generate milling or drilling instructions using canned cycles or calculated locations. Other features include visual verification of machining operations and automatic undercut checking in all milling operations. The package has a library disk of standard postprocessors, and the resources to create any other post required by incorporating absolute and/or incremental output cutter compensation and macros. Downloading utilities are standard for communications via the RS-232 interface. The software supports the full Macintosh interface, LaserWriter and ImageWriter printers, networking, and high-resolution color monitors, and will access all available RAM installed in a Macintosh.

Bridgeport Machines, Inc.
500 Lindley St.
Bridgeport, CT 06606
508-842-7200

System Requirements
Macintosh Plus or larger.

Price $3000

Support
Free telephone technical support hotline and electronic bulletin board services are provided.

EZ-SURF PLUS

EZ-SURF PLUS provides comprehensive support for three-dimensional surface milling operations. The software integrates a powerful two-dimensional construction mode with a flexible surface module, making it an ideal system for low cost sculptured surface N/C programming. EZ-SURF PLUS supports ruled surfaces, surfaces of revolution, normal and parallel translations, and general sculptured surfaces. Surface modifications can be completed using a wide range of editing commands. In addition, multiple two-dimensional curves can be projected from the xy plane onto a surface, extruding islands up through it, or to confine machining within a restricted boundary. Included in the package is a library disk of standard postprocessors, and the power to create new posts using the Build program. Downloading utilities are standard for communications via the RS-232 interface. EZ-SURF PLUS supports the full Macintosh interface, LaserWriter and ImageWriter printers, networking, high-resolution color monitors, and the 68881 numeric coprocessor.

Bridgeport Machines, Inc.
500 Lindley St.
Bridgeport, CT 06606
508-842-7200

System Requirements
Macintosh Plus or larger.

Price $6000

Support
Free telephone technical support hotline, manuals, tutorials, and a national bulletin board network are provided.

EZ-TURN

EZ-TURN is designed for part program preparation for NC/CNC single or dual turret turning centers. Both IGES and DXF translators are standard to link to CAD systems, and there are more than 200 ways to interactively define geometry with graphic verification. EZ-TURN incorporates roughing, profiling, grooving, drilling, or threading operations using canned cycles or calculated locations. Visual verification of machining operations, including automatic undercut checking in all applicable operations, is standard. Roughing cycles automatically machines towards the headstock to maintain part rigidity. The package includes a library disk of postprocessors, and the means to create any other post required, incorporating absolute or incremental output and/or cutter compensation. Downloading utilities are standard for communication via the RS-232 interface. The software supports the full Macintosh interface, LaserWriter and ImageWriter printers, networking, high-resolution color monitors, and the 68881 numeric coprocessor.

Bridgeport Machines, Inc.
500 Lindley St.
Bridgeport, CT 06606
508-842-7200

System Requirements
Macintosh Plus or larger.

Price $3000

Support
Free telephone technical support hotline, manuals, tutorials, and a national bulletin board network are provided.

Foam-Line 2000 CAD/CAM Cutting System

The Foam-Line 2000 CAD/CAM Cutting System combines the easy-to-use Macintosh interface with the Foam Cutter Computer 2000 program to give users the power and flexibility to fabricate EPS properly.

R.O.F.
2105 Scenic Dr.
Austin, TX 78703
512-477-0092

System Requirements
Macintosh 512K or larger.

Price $42,500

Support
A 90-day warranty, 2 days on-site training, 24-hour service, and updates (for a nominal charge) are available.

The Gibbs System; ncCAD/ncCAM

The Gibbs System is a comprehensive package of all programs necessary for the design, generation, and downloading of a numerical control program for NC/CNC machines. Because the programs are graphically interactive, using pictures and symbols in place of language or prompting, machinists and programmers do not have to be computer experts to use the system. Milling and lathe capabilities are included, as well as pocketing with unlimited islands, canned cycles, and full toolpath animation. Capabilities exist for 2-, 2.5-, and 3-axis manufacturing, and 4- and 5-axis positions are supported. User definables and custom postprocessors are available for a large variety of NC/CNC machines. Direct binary transfer from a VersaCAD file is available in the ncExchange module. DXF and IGES transfer capabilities are also available. The Gibbs System modules include ncCAD, ncCAM, ncPost, ncSurfaces, ncExchange, ncSimulation, and ncCommunication.

Gibbs and Associates
9320 Deering Ave.
Chatsworth, CA 91311
818-700-8854

System Requirements
Macintosh Plus or larger.

Price $6500

Support
Free telephone support is provided. Installation, training, and fax and modem support are available.

The Industrial Mac—CAD/CAM/CAE Workstation

See complete description under System Components—CPUs.

MacLaser

MacLaser is an integrated robotic system that utilizes vision to input varied two-dimensional information—such as photographs or mechanical drawings—and convert the necessary cutting information to a laser and x-y table to automatically cut out the design shape. All information required by the x-y table and laser is computed by the control software without user assistance. This laser cutting machine has been designed with advanced artificial intelligence techniques to free the operator.

Rivera & Associates, Inc.
28024 Dorothy Dr.
Agoura Hills, CA 91301
818-706-7790

System Requirements
Macintosh II or larger; laser; x-y table with controller; vision system; exhaust system.

Price $125,000

Support
AppleLink support and other services are available by custom contract.

NC-AUTO-CODE

NC-AUTO-CODE is a customizable open-architecture CAM software system that runs entirely within AutoCAD, adding over 50 commands for manufacturing and mechanical NC programming applications. An object-oriented graphic NC programming system, NC-AUTO-CODE translates AutoCAD entities directly into NC code files for all NC/CNC operations. Tool paths are defined inside AutoCAD drawings with support for full three-axis machining and AutoCAD polyline mesh offsets. NC-AUTO-CODE includes a univeral postprocessor with a library of predefined posts, AutoLISP routines for all NC applications, backplotter for translating existing NC files into AutoCAD, file manager, text editor, communications, and a 24-hour RBBS for on-going support and updates.

Kramer Consulting, Inc.
6175 Shamrock Ct.
Dublin, OH 43017
614-792-3900

System Requirements
Macintosh II or larger; 5 MB of RAM; modem; AutoCAD.

Price $2995

Support
Telephone support is available. Bulletin-board support is free for one year, $200 for each additional year.

Softgage

Softgage is a cost-effective solution to the problem of positional verification of patterns of holes or studs/pins. Measurements taken from any origin are translated to determine acceptability by computer. The pattern is solved mathematically as though a phantom set of metal function gages were used. Softgage is designed for use by inspectors or engineers in lieu of a metal functional gage or where an existing functional gage does not accept a part and it is necessary to determine what is wrong, whether the part is really acceptable, and how to rework the part or the gage. Softgage is used in MRB (Material Review Board) to determine which pieces should be reworked and which should be scrapped and in manufacturing to determine trends or machine adjustments. Users need only enter the drawing and measured data in the correct form and read the sets of results. Softgage contains many hidden routines, including least squares; strategic decision making; vector-seeking optimization; and slope/distance zone envelope testing. It also allows hand tweaking of the results. The Softgage manual includes flow diagrams, technical explanations, and definitions.

International Geometric Tolerancing Institute, Inc
2943 Cortina Dr.
San Jose, CA 95132
408-251-7058

System Requirements
Macintosh 512K or larger; Microsoft Excel.

Price $59.95

Support
Free telephone hotline is provided. CATA (Computer Aided Tolerance Analysis) Workbook $28.75; 700-page Geometric Tolerancing Book (AGT II) $55.

Manufacturing

AI-90 FACTORYMAC

AI 90 FACTORYMAC is an industrially hardened Macintosh II designed for a harsh environment such as a manufacturing facility. It is available as a 19-inch rack, panel, or desktop stand-mountable unit housed in a NEMA-2 drip-proof enclosure. The unit includes six NuBus slots to provide synchronous 10 MHz speeds and full 32-bit addressing, an enhanced power supply, and voltage monitoring indicators for easier troubleshooting. The unit also features RFI shielding for noise immunity and filtered ventilation, and can operate in altitudes up to 10,000 feet with an operating range between 10 and 50 degrees centigrade.

Automatix, Inc.
775 Middlesex Tpk.
Billerica, MA 01821
508-667-7900

System Requirements
System includes Macintosh II and custom configuration.

Price $9600 to $12,500
Includes Macintosh II and custom configuration.

Support
Telephone support, one-year warranty, national field service, and training courses are available.

Applied Stats

Applied Stats is a system that integrates Statistical Process Control (SPC) into the production environment. It provides production operators with the tools to be craftsmen in the manufacturing arena and provides management with the ability to improve processes, allocate resources and increase profitability. The system is a turnkey package, including hardware, software, installation, and service support. Building to specification allows the product to randomly vary within the entire specification range. By building to target with Applied Statistics' system, manufacturing variation can be detected and can be used to prevent or minimize the causes. The SPC software integrates data and graphics immediately, providing manufacturing technicians with the tools to understand process variations and how to control them. Measuring, recording, and plotting the statistics of multiple and relative dimensions is accomplished by placing a part into an application-tailored multi-gaging fixture, hand gage, or other measuring device, and pushing a mouse button on the ASI workstation.

Applied Statistics, Inc.
3080 Centerville Rd.
Saint Paul, MN 55117
612-481-0202

System Requirements
Macintosh Plus or larger.

Price $4600
Starting price for total turnkey system.

Support
Free telephone technical support and software updates are provided for one year. On-site training is available.

Autovision 90

Autovision 90 is an industrial-machine vision system for automatic inspection of manufactured parts. The system measures more than 50 geometric and other values including distances, angles, areas, roundness, part count, part registration, and luminance-based features such as average and standard deviation of the gray values in a part. Measurements can be calibrated to real world units. The system analyzes images from standard video sources using processing techniques that include pixel counting, connectivity, gray scale, edge detection, normalized correlation, Hough transform, mathematical morphology, and local convolution operators. The system interfaces to the factory using digital, analog, or serial input/output. Users can specify the configuration of a desired inspection with menus and dialog boxes. A programming environment is also available for customizing the application. Application areas include gauging, assembly verification, flaw detection, and product identification.

Automatix, Inc.
775 Middlesex Tpk.
Billerica, MA 01821
508-667-7900

System Requirements
System includes Macintosh II and custom configuration.

Price $22,000 to $38,000
Includes Macintosh II and custom configuration.

Support
Telephone support, one-year warranty, national field service, and training courses are available.

Design/IDEF

Design/IDEF provides graphics and dictionary support for the three IDEF modeling methodologies (IDEF0/SADT, IDEF1, and IDEF1x) used in CIM, CASE, and system engineering. IDEF0/SADT is a top-down design methodology for process modeling that defines a complex system with a hierarchical series of diagrams. Each successive diagram adds a level of detail to the model. The IDEF1 and IDEF1x methodologies are used in the construction of data models. Design/IDEF supports multipage hierarchical documents; will automatically redraw text and arrows connected to objects when the object is moved; provides arrows with joins, branches, and tunnels; automatically identifies IDEF box numbers and ICOM labels with each new page created; allows easy customization of master page templates; provides an interactive data dictionary that generates text files describing the system model; lets the user integrate both data and process views into a single document or dictionary. In addition, it provides the ability to include behavioral information in the graphic model.

Meta Software Corporation
150 Cambridge Park Dr.
Cambridge, MA 02140
617-576-6920

System Requirements
Macintosh Plus or larger.

Price $2500

Support
A maintenance contract provides technical support, product updates, user group membership and seminar discounts.

Event Monitor System

The Event Monitor System, designed for manufacturing operations, shows at a glance which production lines are running and which are not. Event Monitor System tracks the minute-by-minute performance of each production line or process over an eight-hour period. A software driver continually polls the event monitor hardware unit, updating data disk files and printing end-of-shift reports at predetermined intervals. A unique two-window event monitor desk accessory program provides instant access to process data, even while running Macintosh application programs. Full support of copy and paste operations is provided for both numeric and graphic event data, allowing easy integration with most Macintosh applications. Input algorithm of a microprocessor-based event counter allows separate control of rising and falling edge debounce interval for each channel. The Event Monitor can be connected to almost any type of control logic or sensor using either AC or DC signals.

Ansan Industries, Ltd.
7400 W. Lawrence Ave.
Harwood Heights, IL 60656
312-867-7170

System Requirements
Macintosh Plus or larger.

Price $8790
Includes Macintosh Plus computer, battery backup with surge supressor, Ansan Event Monitor hardware unit, Ansan Event Monitor software package, MacPaint, MacWrite, MacDraw, and Microsoft Excel.

Support
Free telephone support is provided for one year. Initial turn-on, checkout, and user orientation are supplied at customer's facility for $50 per hour plus travel and expenses.

FOREST-pls

A/UX FOREST-pls is a collection of software modules that can be invoked from a TREES-pls program. Use of these predefined routines reduces the development effort for manufacturing, scheduling, and capacity-planning applications by as much as 85 percent. Most of the functions common to solving these problems have been captured in FOREST-pls, making this product very useful for systems developers who will need to implement only the unique aspects of their particular applications. FOREST-pls consists of 36 functions or procedures that resolve common manufacturing, scheduling, and capacity-planning problems.

AVYX, INC.
304 Inverness Wy. S., Ste. 265
Englewood, CO 80112-5819
303-790-0514

System Requirements
Macintosh II or larger; 4 MB of RAM; 80 MB or larger hard disk; A/UX.

Price $8500
Price varies with system size.

Support
90-day warranty; updates available with support contract; training and turnkey implementation are available.

HyperMonitor

HyperMonitor combines the power of hypermedia, networking, and mainframe connectivity to offer industrial process monitoring for factory floor processes, power plant data, biotechnology, and similar areas. HyperMonitor enables users to create custom hypermedia views of data without programming. Data can be organized into groups and displayed as tables, graphs, or trends. Each user can create a custom interface using plant schematics, flow charts, and other elements, which are pasted into HyperMonitor from the clipboard and linked so that point and zoom functions can guide the operator to relevant dataviews of live data or historical information stored on a fileserver. HyperMonitor collects data sent using RS-232 serial communications and broadcasts them over an EtherTalk or LocalTalk network to Macintosh operator stations. Applications can also be customized using various network protocols. The inference engine from NEXPERT OBJECT can be embedded within this application, allowing the addition of a knowledge base.

Arbor Intelligent Systems, Inc.
506 N. State St.
Ann Arbor, MI 48104
313-996-4238

System Requirements
Macintosh II or larger; host computer sending data or Macintosh data acquisition software. EtherTalk™ recommended.

Price $25,000

Support
Eighty hours configuration and support $10,000; two days installation $4000; three days training, $6000. AppleLink support is available.

I-CAT

I-CAT is an expert system developed specifically for the diagnostic design and troubleshooting of electronic, mechanical, and electromechanical systems and equipment. Requiring only a functional block diagram, I-CAT will develop optimal test and diagnosis strategies, produce diagnostic fault trees, and show where testpoints or sensors are needed in a design. Using I-CAT to compare the diagnosability of different designs increases the efficiency of prototyping and debugging new products. Benefits derived from the use of I-CAT continue throughout the product life cycle. Designs are sent to manufacturing with required diagnosis and maintenance data, thereby reducing time to market. Troubleshooting in the field and quality control are easier for equipment designed with diagnostic procedures in mind.

Automated Reasoning Corp.
1800 Northern Blvd., Ste.102
Roslyn, NY 11576
516-484-6254

System Requirements
Macintosh II or larger; 4 MB of RAM.

Price $18,000
Price based on options and chosen platform; enhancement modules available.

Support
Maintenance contract includes support, telephone hotline, warranties, and updates; training and consulting services are available as required.

The Industrial Mac—CAD/CAM/CAE Workstation

See complete description under System Components—CPUs.

Instrument Archive

Instrument Archive is an advanced instrumentation data-management system for consulting engineers, construction contractors, and plant engineering and plant maintenance departments in industries such as pulp and paper, petrochemicals, and mining where process control equipment must be specified and maintained. Key features include instrument indexes, data sheets, calibration reports, and user-specified reports. Over 1200 fields allow complete specification of all types of process control equipment. Calibrations and other maintenance data may be tracked for any item. Instrument Archive conforms to ISA standards for tagging, process, and equipment codes, and allows advanced import of data to and export of data from other programs.

Desktop Engineering Ltd.
445 Mountain Hwy.
North Vancouver, B.C. V7J 2L1 Canada
604-980-9619

System Requirements
Macintosh SE or larger; ImageWriter LQ or LaserWriter. 4D Runtime included with purchase.

Price $2500
Per user; site and company licenses are available.

Support
Free telephone support and minor upgrades for one year; major upgrades at a discount. Maintenance contract is available after one year. Training quoted on request.

Job Cost II

Job Cost II software is designed for manufacturers who build products to order rather than as a discrete product. Cost estimates for labor, material, and subcontract services can be entered for each job. If estimates are entered, the system will track the estimate to the actual costs and compute any variance for each operation, material, and subcontract service as the job progresses through the production cycle. Jobs are tracked in terms of process time, to assure that delivery schedules are met and uncompleted jobs are not lost. The system is fully integrated and offered as a single- or multi-user solution. Job Cost II also includes job scheduling; inventory control; payroll; and general ledger and contains a scheduling module that allows jobs to be scheduled for production before being released to the floor, or to be rescheduled from any place in the production process based upon job priority. Direct and indirect labor is maintained for job costing and payroll generation.

Advanced Data Systems, Inc.
P.O. Box 5717
Winter Park, FL 32793
407-657-4805

System Requirements
Macintosh Plus or larger, external disk drive or hard disk, modem, Omnis 3 Plus.

Price
Single user $6000, multi-user $9000. Includes operating system, documentation, MacNET software and future upgrades.

Support
MacNET or AppleLink support is provided. Modifications are quoted at current rates.

MacPLC Comm-Stacks

MacPLC Comm-Stacks is a collection of communication drivers for HyperCard that allows complete network addressing on programmable controller networks and the reading and writing of bit or register information with those controllers. Comm-Stacks XCMD's and XFNC's can be used to create custom operator interfaces for control or collection data from the programmable controllers. Drivers that have already been released include Mac/D Comm-Stack for Square D's Sy/Max line of programmable controllers and Mac/A5 and Mac/A3 Comm-Stacks for Allen-Bradley's PLC-5 and PLC-3 programmable controllers.

Kleinhans Systems, Inc.
178 Ramaker Ave.
Cedar Grove, WI 53013
414-668-6238

System Requirements
Macintosh Plus or larger.

Price $500
Per driver. Site license available.

Support
A one-year warranty is provided. Upgrades are available at a nominal cost; on-site training and application development are available for a fee.

The Manufacturing Controller

The Manufacturing Controller, an integrated accounting package for manufacturers, includes order entry, accounts receivable, purchasing/payables, inventory control, job costing, M.R.P., shop floor scheduling, and general ledger. Features include the ability to handle both stock and nonstock items; multiple-location inventory tracking; automatic backorder handling; the ability to handle multiple delivery dates, scheduling, job costing, and purchasing requisitions; generation of vendor invoices; maintenance of payroll and commission information; and budgeting. The system can issue invoices to select orders, repeat orders, or all shipments within a given date range. The Manufacturing Controller includes more than 120 different management reports.

QUBE Software, Inc.
3001 Redhill Ave., Ste. 5-205
Costa Mesa, CA 92626
714-549-8033

System Requirements
Macintosh Plus or larger; hard disk drive.

Price $4995
Basic system for single user; also sold in modules; multi-user systems available.

Support
Free telephone support is provided for three months.

Manufacturing/Job Cost II

Manufacturing/Job Cost II is a software package designed for manufacturers of discrete products and/or build-to-order products. The system contains both finished goods and raw materials inventory and allows for the sale of products from either inventory. A multilevel bill of materials is included which keeps all material quantity requirements, operation processes, and outside subcontract service requirements for a finished item and/or component part. The system will track each job on the production floor in terms of schedule, estimate to actual cost and efficiency, and provide capacity requirement information for each department, operation, and total company, based upon open jobs. A scheduling module allows jobs to be scheduled for production before being released to the floor or to re-schedule from any place in the production process based upon job priority. Direct and indirect labor is maintained for job costing and payroll generation. Other features include order entry/invoicing; production control and job costing; job scheduling; inventory control; bill of materials; purchase orders; accounts receivable; accounts payable; payroll; and general ledger. It can be purchased as a complete package or on a modular base.

Advanced Data Systems, Inc.
P.O. Box 5717
Winter Park, FL 32793
407-657-4805

System Requirements
Macintosh Plus or larger, external 800K disk drive or hard disk, modem, Omnis 3 Plus.

Price
Single user $9500, multi-user $14,250. Includes operating system, documentation, MacNET software and future system upgrades.

Support
MacNET or AppleLink support is provided. Modifications quoted at current rates.

Metal Minder

Metal Minder is a turnkey system for metal warehousing or fabrication. The program includes invoicing, inventory, graphic product tracking, SPC control, barcode of shipping/receiving, production record by employee, automatic weight calculation/piece count conversion, shipping label, and packing list generation capabilities. Associated components can be tracked to assembly.

TWH Corporation
P.O. Box 83064
Troy, MI 48083
313-524-9251

System Requirements
Macintosh Plus or larger; 2 MB of RAM. A 60830 2 MB cpu for the server, Macintosh Plus for the guest, and a Time Wand Bar Code Scanner are recommended for multi-user systems.

Price $2500
Pricing for customer modifications and multi-user pricing is available on request.

Support
Free support is provided for 90 days. Additional support is provided for a fee.

MGMStation CAD/CAM

MGMStation CAD/CAM is a computer-aided manufacturing system for numerical control of machine tools. The system consists of seven basic modules: CAD, Milling, Milling Simulation, Turning, Turning Simulation, Generic Milling Postprocessor, and Generic Turning Postprocessor. Additional modules are 3-D Milling, Sheet Metal Cutting, Wire EDM, Flame Cutting, and Wood Cutting. Postprocessors are available for over 100 different machine tools. General features include a built-in editor, graphic tool libraries, integration of modules, and the ability to stop and start a process without data loss. The 2.5 axis and 3-D milling modules include the capability for climb milling with islands in pockets, and flexible entry of material (perpendicular, arc, tangent, and so on). The Turning module allows analysis of turning geometries. The Sheet Metal Cutting module has comprehensive NC programming. Wire EDM performs two-and four-axis wire cutting. Flame Cutting provides flexible entry of material and automatic part multiplication.

Micro CAD/CAM Systems,
An Aura Systems Co.
5900 Sepulveda Blvd.
Van Nuys, CA 91411
818-376-0008

System Requirements
Macintosh 512K or larger.

Price $7000
Price includes seven basic modules; optional modules are $1000 each.

Support
Telephone support, on-site installation and training, and software updates provided; custom postprocessor development available.

Parameter Manager Plus

See complete description under Scientific/Research—Mathematics/Statistics.

Production Control

Production Control is an accounting package that creates and tracks shop orders. Features include a bill of materials, parts, and subassembly and a shop-order scheduling system. A tooling control system provides daily tracking of job issues and receipts. Integrated files include a department file, a control file, a bill of materials with subassembly, department assets, and parts and subassembly. The product automatically interfaces with other modules, such as Accounts Receivable/Sales Analysis, Order Processing, Inventory Control, Payroll, Job Costing, General Ledger, Accounts Payable, and Purchasing. The program can be used in a multi-user/multicompany environment.

Turner Data Systems, Inc.
17885 Sky Park N., Ste. E
Irvine, CA 92714
714-261-5094

System Requirements
Macintosh 512K or larger; hard disk.

Price $795
Runtime license $100.

Support
Telephone hotline at $65 per hour, training, modifications, and support contracts are available. 90-day warranty is provided.

Production Scheduler

Production Scheduler automates monthly production scheduling. The program forecasts production requirements and quickly prepares modifiable monthly schedules. It can schedule up to ten production lines at once, with volumes of up to 99,999 per line. Program Scheduler balances labor and overtime on the lines and performs model changeover, determined by using daily line rate or daily model rate. An automatic calendar generator allows for holidays, weekends, and overtime.

Bunder Computer Services
P. O. Box 26104
Greenville, SC 29616
803-268-7063

System Requirements
Macintosh Plus or larger; System 6.0 or later; Microsoft Excel 1.5 or later.

Price $2450
Turnkey systems are available.

Support
Free telephone support is provided for 90 days. Additional support, site installation, and training are available for a fee.

Rack II

See complete description under Systems Components—CPUs.

Skin Tite Manufacturing

Skin Tite Manufacturing is a machine-shop production-management package that uses cash accounting. Features include job bidding with job-order generation, purchase orders and invoices with links to accounts payable and receivable, labor tracking, phone-message handling, and job-costing reports. Labor data can also be extracted and used with Soft Software's PayTime payroll program to generate employee checks and reports. Based on the Double Helix database program, the package is available in both single and multiple user versions. The program will be customized to the user's business operations, with the user's forms if desired.

Soft Software
3675 Provincetown
Irvine, CA 92714
714-559-9439

System Requirements
Macintosh Plus or larger; hard disk; ImageWriter or LaserWriter.

Price $2500
Average price, including customization.

Support
Free telephone support and software modifications are provided. Upgrades containing additional features are provided at a nominal charge.

TREES-pls

A/UX

TREES-pls, the proprietary programming language developed by Avyx, together with its extensive subrouting library, enables programmers to very rapidly develop effective manufacturing scheduling and capacity-planning systems. TREES-pls is a language designed to facilitate the implementation and use of hierarchic tree structures to define and resolve complex scheduling and capacity-planning problems.

AVYX, INC.
304 Inverness Wy. South, Ste. 265
Englewood, CO 80112
303-790-0514

System Requirements
Macintosh II or larger; 80 MB or larger hard disk; A/UX.

Price $6825
Price varies with system size.

Support
A 90-day warranty is provided. Training, turnkey implementation, and a support contract that provides regular updates are available.

TWM-pls

A/UX TWM-pls is a windowing system and graphics library designed for engineering workstations and UNIX, which facilitates the development of windowed and highly graphic user interfaces for manufacturing scheduling and capacity-planning applications. The nature of scheduling and capacity-planning applications is such that high-resolution graphics and windowed user interfaces are necessary to allow the systems to be effective in a day-to-day operational environment.

AVYX, INC.
304 Inverness Wy. South, Ste. 265
Englewood, CO 80112-5819
303-790-0514

System Requirements
Macintosh II or larger; 80 MB or larger hard disk; A/UX.

Price $2000
Price varies with system size.

Support
A 90-day warranty is provided. Training, turnkey implementation, and a support contract that provides regular updates are available.

V.P.M.S.

V.P.M.S. is an automated predictive maintenance program that performs data acquisition from the Bruel & Kjaer 2515 analyzer and produces machine defect trending and analysis reports. The program also performs extensive database management.

Anderson Electronics, Inc.
P.O. Box 519
East Lyme, CT 06357
203-444-5076

System Requirements
Macintosh 512K or larger; Bruel & Kjaer 2515 Vibration Analyzer and suitable IEEE 488 serial interface (IOtec).

Price $595

Support
A one-year upgrade warranty is provided; training is available.

Electrical

Design Capture

ADS-MGMStation—ELECTRONICS

ADS-MGMStation—ELECTRONICS is a comprehensive compilation of electromechanical electronic symbols developed specifically to allow the creation of complex electronic schematics and drawings. There are more than 15 libraries covering all the primary ANSI symbols. The symbols can be altered to any scale, angle, or dimension. Used in connection with the MGMStation CAD package, the ADS-MGMStation—ELECTRONICS library transforms a Macintosh computer into a powerful CAE schematic-capture workstation. It was developed for electronic design, engineering, drafting, or documentation. The system allows portability of data to high-end CAD tools via IGES interface. It is also fully compatible with a variety of plotters and laser printers. The symbols are precise representations of the most common analog, digital, solid state, microwave and RF, logic, and system templates. In addition, the package includes complete circuits, connectors, and busings, as well as a self-paced learning tutorial.

COMPU-ARCH
9348 Civic Center Dr., Ste. 101
Beverly Hills, CA 90210
213-312-6632

System Requirements
Macintosh 512K or larger.

Price $195

Support
Free telephone support, training, and updates are provided.

DesignWorks

DesignWorks is an integrated schematic-diagram and digital-logic-simulation application for electronics engineers. The system provides a full-featured schematic editor and a menu of symbols and simulations for hundreds of standard logic devices, and supports the simulation of PROM and PLD devices, files imported from the LPLC logic compiler, and user-defined devices. Users can create, test, and document circuit designs in a fully interactive, 13-state digital-simulation environment with control over device delay, clock speed, and other parameters. Output can be displayed on simulated output devices or in timing diagrams. The system can also print, plot, and save logic and timing diagrams as graphics files for use in other applications and can generate net and component lists from circuit data in customizable formats. DesignWorks is fully compatible with the Douglas Electronics Professional Layout system.

Capilano Computing
1168 Hamilton St., Ste. 501
Vancouver, BC V6B 2S2 Canada
604-669-6343

System Requirements
Macintosh Plus or larger.

Price $685

Support
Free telephone support is provided. Updates are available for $65.

LogicWorks

LogicWorks is an integrated schematic diagram and digital logic simulation package for electronic engineering students. The package allows users to create, document and test circuit designs with all the interactive graphics power of the Macintosh. LogicWorks features "live" circuits presented on screen which respond immediately to connection, input and parameter changes. The program provides a menu of standard symbols for logic devices, as well as allowing users to create symbols, and supports simulation of PROM and PLA logic devices. Logic files can be read from LPLC. Cut/Copy/Paste is supported between multiple circuit windows, and logic and timing diagrams can be printed or passed to MacPaint or PICT files for use in plotting or creating other documentation. A strip chart printing mode allows the output of continuous timing diagrams. Net and component lists can be created from circuit data for use in prototyping or PBC layout. Full digital simulation handles registers, three-state devices, open-collector, and feedback. Circuit output can be displayed on simulated output devices or in the form of a timing diagram which graphs signal changes over time. The diagram is updated continuously to immediately reflect design and input changes. Diagrams may be much larger than the screen. Actual circuit complexity is limited only by available memory. The user has complete control over device delay, clock speed, timing display resolution, and other parameters.

Capilano Computing
1168 Hamilton St., Ste. 501
Vancouver, BC V6B 2S2 Canada
604-669-6343

System Requirements
Macintosh 512K enhanced or larger; two 800K drives.

Price $199.95

Support
Free telephone hotline is provided. Updates are available at $20.

LPLC

LPLC, The DesignWorks Programmable Logic Compiler, is an application that allows electronic engineers to generate and test code for programmable logic devices such as PALs and PROMs. It accepts text descriptions of devices in a high-level language with a Pascal-like syntax and produces minimized logic files that can be used with any popular PLD programmer. File formats include standard JEDEC-format fuse map files, hex-format files, and an intermediate data format that can be used with the DesignWorks application to test devices in a simulation of their complete operating environment. Other features include artibrary Boolean and integer expressions for describing device input/output relationships; IF-THEN, CASE, and goto constructions for describing state transitions in clocked devices; and libraries for common 20- and 24-pin PAL devices.

Capilano Computing
1168 Hamilton St., Ste. 501
Vancouver, BC V6B 2S2 Canada
604-669-6343

System Requirements
Macintosh Plus or larger.

Price $535

Support
Technical support is provided. Updates are available at $50.

MacABEL

A/UX MacABEL aids in the description and implementation of logic designs in programmable logic devices (PLDs) and PROMS. A natural high-level design language is combined with a language processor that converts logic descriptions to programmer load files. These files contain the required information to program and test PLDs. MacABEL allows users to describe their designs in any combination of Boolean equations, truth tables, or state diagrams. Meaningful names can be assigned to signals, signals grouped into sets, and macros used to simplify logic descriptions. The software's language processor provides logic reduction and extensive syntax and logic error checking. MacABEL, which runs under the A/UX and O/S operating systems, supports the most powerful and innovative PLDs on the market, as well as many still in development.

Data I/O Corporation
10525 Willows Rd. N.E.
Redmond, WA 98052
800-247-5700

System Requirements
Macintosh II or larger; 4 MB of RAM; 80 MB hard disk; A/UX; ImageWriter or LaserWriter.

Price $2995
Volume discounts available.

Support
Free telephone support and free software updates are provided for one year. On-site training is available.

MacAC

MacAC is a fully integrated linear circuit entry and simulation package that allows the user to graphically enter and edit analog circuits, perform analyses to investigate circuit properties, and display or print the results in graphs or tables. It is designed to run on numerically nonintensive machines (Macintosh Plus and SE) as well as on 020 and 030 machines with a math coprocessor. MacAC performs AC (frequency), Monte Carlo, and time simulations on linear circuits. Circuits are easily entered and edited through a schematic capture interface. When voltage and current probes are placed in the circuit, MacAC automatically checks connections and collects data corresponding to those probes. The circuit can be quickly altered and the simulation rerun with a click of the mouse.

San Juan Software Company
P.O. Box 27620
Seattle, WA 98125
206-525-9269

System Requirements
Macintosh Plus or larger.

Price $149.95

Support
Free telephone, AppleLink and CompuServe support is available.

MacFilter

MacFilter digital filters are designed for use in digital signal processing applications. The system supports both Infinite Impulse Response (IIR) design and Finite Impulse Response (FIR) design. Eight filter types are available: low pass, high pass, bandpass, bandstop, differentiator, Hilbert transformer, multiband, and arbitrary magnitude. Graphical output includes magnitude, log magnitude, phase, pole/zero, impulse response, and group delay plots. Detailed design reports are also available. The IIR design can have up to 80 filter orders, and five analog prototypes are supported. FIR design includes both window designs and Parks McClellan Equiripple design. Several window functions are available. Special features of the system include compensation for digital to analog conversion and compensation for comb filters.

Momentum Data Systems
1520 Nutmeg Pl., Ste. 108
Costa Mesa, CA 92626
714-557-6884

System Requirements
Macintosh SE or larger. Color monitor recommended.

Price $995

Support
Free unlimited telephone support is provided.

McCAD Schematics

McCAD Schematics is a schematics capture program that allows users to create digital or analog electronic designs quickly. In addition to creating a schematic drawing, the system automatically generates a parts list, netlist, and wire list in a number of popular CAD formats. Key features include Spice netlist extraction; multiple split screens that permit viewing and working in different areas of a large work surface simultaneously; full rubber banding of lines; object and area drag; variable zooming (10 to 100 percent); panning and autoscrolling; automatic or manual node connection; busing utilities; user-definable libraries; a library search function; the ability to rotate and mirror library elements; an electronic font with overscore; text rotation; an auto-packaging utility for quick conversion from gate level designs; and multiple pages up to the limit of the storage media. The program provides for net list and parts list interface with McCAD Auto-Router, McCAD EDS, and McCAD PCB-ST. Output drivers for ImageWriter and LaserWriter printers and for Houston Instrument and Hewlett-Packard pen plotters are included.

Vamp, Inc.
6753 Selma Ave.
Los Angeles, CA 90028
213-466-5533

System Requirements
Macintosh Plus or larger; hard disk.

Price $495

Support
Free telephone support is provided for 30 days. Extended software maintenance and telephone support are available at $95 per year.

McCAD Schematics-D.S.

McCAD Schematics-D.S. is an advanced circuit analysis tool consisting of a digital simulator integrated with the McCAD schematics package. All aspects of the schematics application have been retained in the Schematics-D.S. package. Schematics-D.S. gives users who have captured their designs the ability to test for functionality. Circuits can be activated and their behavior recorded. A full-capability modeling language editor can be used to define the digital behavior of "black boxes" or new user-defined library devices. Key features include accurate simulation, on-screen probes, on-screen timing diagram, monitoring of up to 64 channels, continuous interactive simulation, user-defineable propagation delays, selectable recording modes, integrated function compiler, high-level modeling language, and the ability to simulate PALs, GALs, PLDs, and ASICs. The Schematics-D.S. package also integrates with the McCAD PCB-ST package.

Vamp, Inc.
6753 Selma Ave.
Los Angeles, CA 90028
213-466-5533

System Requirements
Macintosh Plus or larger; hard disk.

Price $895
Evaluation disk, $15.

Support
Free telephone support is provided for 30 days. Extended software maintenance and telephone support are available at $95 per year.

McLogic

McLogic is a full-featured schematic capture program. High quality graphics translation software is available for compatibility with most CAE systems. An IGES 4.0 translator (full ASCII, both directions) is also available. McLogic contains a very powerful data extraction for matter that is user configurable (this is similar to a database report generator, only much more flexible). It can be tailored to extract netlists, part lists, and HDL's to user specifications, and a powerful, intermediate graphics format is available for custom interfaces. McLogic will interface directly with Valid, Mentor, and other applications.

Eclipse Software, Inc.
1607 Raewyck Dr.
West Chester, PA 19380
215-696-2801

System Requirements
Macintosh Plus or larger. Hard disk recommended.

Price $1995
Educational discounts. Site licenses are available.

Support
Free telephone support for first 6 months; maintenance contracts available; all upgrades included.

Micro-Cap II

Micro-Cap II is an integrated electronic circuit drawing and analysis program. It can handle circuits up to 100 nodes. With Micro-Cap II, a circuit can be sketched on screen and the program automatically creates a netlist suitable for simulation or analysis directly from the graphics image using device model parameters that are found in the library. Using a built-in schematic editor, an engineer can create a circuit, then perform an AC, DC, Transient or Fourier analysis of it. Results are plotted during the analysis, providing quick graphic feedback. This eliminates the need to wait for a full simulation to finish and then load another program to plot it. Hardcopy of drawings and plots is available on the ImageWriter. Micro-Cap II also provides accurate device models, Including BJTs, MOSFETs, Opamps, diodes and transmission lines (not available on SPICE programs). Efficient worst-case analysis, with multiple analysis plots, using component values randomly selected from user specified tolerances, are available. The program also provides for powerful temperature analysis, with multiple analysis plots for any number of desired temperatures.

Spectrum Software
1021 S. Wolfe Rd.
Sunnyvale, CA 94086
408-738-4387

System Requirements
Macintosh 512K or larger; ImageWriter.

Price $895

Support
Technical support is available to registered users.

Analysis

ACNAP

ACNAP is a general-purpose linear circuit analysis program that analyzes passive and active circuits consisting of resistors, capacitors, inductors, transistors, operational amplifiers, FETs, transformers, and other components. Circuit information can be stored on disk for later editing and further analysis. ACNAP allows users to create component models or edit existing ones. Models may contain other models and may be nested as deeply as desired. ACNAP's machine code is optimized for speed, calculating the response of a typical five-node circuit in one-half second. It performs magnitude, phase, and delay calculations at any node. Users can direct ACNAP to compute the complex input and output impedances at any node over a range of frequencies. It computes component sensitivities and uses tolerances to perform Monte Carlo analysis and calculate worst-case outputs, saving worst-case circuit configurations for review. Results from ACNAP's analyses can be graphed on the screen and printed on an ImageWriter or LaserWriter printer.

BV Engineering
2023 Chicago Ave., Ste. B13
Riverside, CA 92507
714-781-0252

System Requirements
Macintosh 512K or larger; System 3.2 and Finder 5.3 or later.

Price $349.95

Support
Free telephone support and low-cost upgrades for registered users are provided.

ACTFIL

ACTFIL is a stand-alone active transform synthesis and filter realization program that computes detailed design parameters and transfer function coefficients given the desired filter requirements. ACTFIL provides solutions for active low-pass, high-pass, band-pass and band-reject filters. Butterworth and Chebychev responses are selectable, as is a choice of realizable circuits. ACTFIL enables users to design complex multiple-stage filters up to the 26th order as easily as simple filter configurations. ACTFIL computes magnitude, phase, and delay characteristics of the specified filter. Both linear and logarithmic frequency steps are selectable. Files generated by ACTFIL can be used with SPP to provide transient analysis and with PDP or PCPLOT to make screen, printer, and pen plots of the results. Inputs are free format with liberal error trapping. Unlimited length keystroke macros and auto-execute processing allow the design and analysis of unattended filters.

BV Engineering
2023 Chicago Ave., Ste. B13
Riverside, CA 92507
714-781-0252

System Requirements
Macintosh 512K or larger; System 3.2 and Finder 5.3 or later.

Price $124.95

Support
Free telephone technical support and upgrades at half price are provided.

CLAS 4000 Logic Analysis System

The CLAS 4000 Logic Analysis System is a breakthrough in high-performance digital measurement technology. The system is tailored for the hardware or software engineer who is designing and integrating state-of-the-art products using CISC or RISC processors, high-performance or innovative computer architectures, or ASIC components. The CLAS 4000 is modular and configurable from one to four independent logic analyzers with up to 384 channels in one measurement mainframe. The independent logic analyzers may be configured from the user interface as one or several closely coupled measurement modules. Measurement modules support 200 MHz and 1GHz data capture rates. Triggering, with Trace Control, allows an individual logic analyzer to take actions based on conditions recognized across all analyzers. The CLAS 4000 is controlled by a high-performance Macintosh workstation with a color, window-based, graphic human interface. The Macintosh may control several measurement mainframes.

Gould Inc., Design & Test Systems Division
19050 Pruneridge Ave.
Cupertino, CA 95014
408-988-6800

System Requirements
Macintosh SE or larger; 2 MB of RAM; CLAS 4000 chassis; 13- or 19" monitor available with Macintosh II controller.

Price $19,950 to $62,950
Price depends on configuration.

Support
800 telephone line for technical support; one-year warranty for CLAS 4000 chassis; 90-day warranty for floppy and hard disk drives and CRT displays are provided. Application notes are available.

DCNAP

DCNAP is a general-purpose linear DC circuit analysis program that works on passive and active DC circuits consisting of resistors, voltage sources, independent and dependent current sources, operational amplifiers, FETs, transistors, and other components. DCNAP's machine code is optimized for speed, calculating all node and element voltages, branch currents, and component power dissipation of a typical five-node circuit in less than three seconds. DCNAP also performs sensitivity, Monte Carlo, and worst-case analysis. In addition, users may iterate the value of a component while performing node voltage; branch V, I, and W; or node-impedance calculations and graph the results. Users may choose the supplied component libraries, create their own models, or edit and save the existing models.

BV Engineering
2023 Chicago Ave., Ste. B13
Riverside, CA 92507
714-781-0252

System Requirements
Macintosh 512K or larger; System 3.2 and Finder 5.3 or later.

Price $199.95

Support
Free telephone support and low-cost upgrades are provided to registered users.

DragonWave

DragonWave is a microwave analysis and optimization program. From a library of more than 50 elements, users drag symbols into a drawing area and connect them with the mouse; the program automatically creates a schematic and the associated node list. The node list can be viewed in a separate window or exported to other personal computer microwave programs. DragonWave analysis results reports can be edited to change column order, column width, and number of decimal places. Resizable XY plots have editable grids and include a marker. Smith charts are infinitely zoomable and have a dynamic marker. All graph traces can be put into memory. The frequently updated symbol library includes microstrip, stripline, coupled lines, coax, and other elements. DragonWave calculates NF, stability, and group delay. The program chooses nodal or nonnodal analysis to give the benefits of both.

Nedrud Data Systems
P.O. Box 27020
Las Vegas, NV 89126
702-737-7735

System Requirements
Macintosh Plus or larger.

Price $1380

Support
Free telephone support and incremental upgrades are provided during the first six months. 30-day money-back guarantee.

dv/dt

dv/dt is a timing diagram editor, a new kind of tool for digital hardware designers. Users can rapidly sketch timing diagrams and set propagation delays between edges. The resulting timing models can then be used to verify circuit timing requirements and make "what-if" calculations. Users can create libraries of symbols containing propagation-delay information. Changes to diagrams are easy to make and results of timing changes are calculated and displayed instantly. dv/dt is not a simulator, does not require test vectors, and does not use captured schematics or net lists to verify circuit timing requirements.

Engineerium
5415 Oberlin Dr.
San Diego, CA 92121
619-457-4545

System Requirements
Macintosh Plus or larger.

Price $595
Demonstration copy, $25.

Support
Free telephone support is provided, AppleLink support is available; updates are available for a nominal charge. On-site training for dealers and large-volume end users is available for a negotiable fee.

Extend

Extend is a top-down, system-level simulation tool for engineering design and modeling. Users build block diagrams composed of custom icons with user-defined behavior, which are then connected together to form a model. The simulation is run, and the results are plotted and presented as tabular data. Extend contains all the tools necessary to create custom libraries of icons, with their own dialog boxes, on-line help, and compiled scripted behavior. An Advanced Engineering library is included to facilitate the design and analysis of analog and digital systems, telecommunications, signal processing, and peripheral and other systems. The library includes A/D and D/A converters, amplifiers, filters, and many more signal-processing and digital system blocks that can be user-modified. Users may create new blocks with Extend's built-in, compiled scripting language. With MultiFinder, simulations can run in the background while other applications are in use.

Imagine That, Inc.
7109 Via Carmela
San Jose, CA 95139
408-365-0305

System Requirements
Macintosh Plus or larger; two 800K drives or one 800K drive and a hard disk.

Price $495

Support
Free telephone support and quarterly newsletter are provided.

FEHT

FEHT provides numerical solutions of two-dimensional steady-state and transient-conduction heat transfer problems and steady-state electrical fields problems. The program provides a drawing environment in which to describe the problem, a finite-element calculation procedure, and graphical output of the result, in the form of contour, flux plots, temperature/voltages versus time plots, and other charts.

F-Chart Software
4406 Fox Bluff Rd.
Middleton, WI 53562
608-836-8536

System Requirements
Macintosh Plus or larger. Macintosh II recommended.

Price $400
Site license available.

Support
Telephone support is provided.

IsSpice/mac

IsSpice/mac, an enhanced version of Spice, performs complete DC, AC, noise, distortion, transient, and Fourier analyses on the Macintosh computer. Program status, including the amount of memory available for IsSpice, is continuously displayed while the program is running. The first node in the .Print statement is also displayed, which allows users to see interactively how the simulation is running. IsSpice/mac works with any schematic entry program that produces a Spice netlist. It can also use all or part of the available RAM. Typical circuit-size limitations are about 1,000 components per MB of RAM. The student version can simulate circuits in the 150- to 200-component range. IsSpice comes with the Spice reference book, *Simulating With Spice,* and with several benchmark/sample circuits and a small parts library.

INTUSOFT
2515 S. Western Ave., Ste. 203
San Pedro , CA 90732
213-833-0710

System Requirements
Macintosh Plus or larger; System 6.02 or later.

Price $210
Academic discount available.

Support
Free product support and 30-day money back guarantee are provided. Training class is available for $295.

LCFIL

LCFIL is a stand-alone program for electronic engineers and technicians involved in the design, synthesis, and analysis of LC filters. LCFIL expedites both the design and analysis of popular families and topologies. It provides solutions for passive low-pass, high-pass and band-pass filters. The program will design and analyze Butterworth, Chebychev, Cauer, and Bessel filters. Any other filter may be analyzed. LCFIL enables users to design complex multiple-stage filters of up to 21 poles. Impedance and inductor Qs are user specified, and the program computes the magnitude, phase, and delay characteristics of the specified filter. Both linear and logarithmic frequency steps are selectable. Inputs are in free format with liberal error trapping. LCFIL data files are fully compatible with PCPLOT and PDP graphics programs.

BV Engineering
2023 Chicago Ave., Ste. B13
Riverside, CA 92507
714-781-0252

System Requirements
Macintosh 512K or larger.

Price $149.95

Support
Free telephone technical support and upgrades at half price are provided.

LOCIPRO

LOCIPRO is a stand-alone general-purpose root-locus analysis program that provides users with a simple means to determine closed loop system stability quickly from a description of the open loop LaPlace transfer functions. LOCIPRO quickly solves the locus of roots for systems up to the 26th order numerator, up to ten loops with up to ten elements per loop. LOCIPRO automatically handles multiple nested loops. LOCIPRO also computes open or closed loop frequency response. Output files are compatible with SPP to perform transient analysis and PDP or PCPLOT to graph the data.

BV Engineering
2023 Chicago Ave., Ste. B13
Riverside, CA 92507
714-781-0252

System Requirements
Macintosh 512K or larger.

Price $149.95

Support
Free telephone technical support and upgrades at half price are provided.

LSP

LSP is a stand-alone digital-logic simulation program. After describing a logic circuit and sequence of binary input signals to the program, LSP will compute the resulting binary output signals at any (or all) nodes of the circuit at the specified times. LSP contains built-in models for combinatorial gates such as AND, OR, and NAND; sequential devices such as D, JK, and toggle flip-flops; and tristate devices. Signals, inputs, and output nodes may be defined by common and easily remembered names. LSP handles all time scheduling and accurately propagates the input and computed output results through the design regardless of the complexity or nesting of feedback loops. The output of LSP is a timing diagram or truth tables showing the binary states of each selected symbol as a function of time. LSP provides for zero (0), one (1), don't know (x), and high-impedance (z) states. Each state is properly propagated through the circuit. LSP provides for full output control including periodic sampling, single step, break point interrupt, and signal change interrupts.

BV Engineering
2023 Chicago Ave., Ste. B13
Riverside, CA 92507
714-781-0252

System Requirements
Macintosh 512K or larger.

Price $124.95

Support
Free telephone technical support and upgrades at half price are provided.

McCAD CLASSIC SPICE

McCAD CLASSIC SPICE is an analog simulation package based on SPICE 2.6g. It has six interactive editing windows and supports numerous analysis modes, including Fourier analysis and selective Monte Carlo calculations. It accepts Spice format files from any CAD system. McCAD CLASSIC SPICE includes built-in editors and will process any standard Spice deck input file. Both color and black-and-white operation are supported, and the program is MultiFinder compatible. McCAD CLASSIC SPICE lets users simulate resistors, capacitors, inductors, mutual inductors, transmission lines, diodes, bipolar transistors, field effect transistors, and metal-oxide field effect transistors; independant voltage, independant current, dependant voltage, dependant current, simple, pulse, sinusoidal, piece-wise linear, and single frequency FM sources; and subcircuits.

Vamp, Inc.
6753 Selma Ave.
Los Angeles, CA 90028
213-466-5533

System Requirements
Macintosh SE/30 or larger; 2 MB of RAM; hard disk.

Price $745

Support
Free support is provided for 30 days; extended software maintenance and support available at $95 per year.

PreSpice/mac

PreSpice/mac is a Spice preprocessing program designed to enhance any Spice analog circuit simulator. PreSpice contains Spice model libraries, utility programs to assist users in device modeling, a full-screen editor, and the ICAPS circuit simulation shell program. PreSpice's device libraries offer an extensive array of Spice models capable of simulating thousands of electronic components including diodes, BJTs, opamps, transformers, nonlinear magnetics, SCRs, power MOSFETS, PWMs, analog computer functions, digital logic gates, switches, crystals, and lasers. PreSpice provides a variety of Spice syntax extensions, such as INCLUDE, which gets models and subcircuits out of Spice component libraries; PARAM, which allows parameter passing into subcircuits or conversion of data sheet parameters into Spice parameters; and DEFINE, a global name and variable substitution capability. Comprehensive documentation on how to model a wide variety of electronic components for use in Spice is included. All Spice models in the part libraries are available for user inspection and are described in detail.

INTUSOFT
2515 S. Western Ave., Ste. 203
San Pedro , CA 90732
213-833-0710

System Requirements
Macintosh Plus or larger; System 6.02 or later; MultiFinder.

Price $175

Support
A 30-day money-back guarantee, product support, and newsletter are provided; model library updates are available for a fee; a training class is available for $295.

PSpice

PSpice is an electronic circuit simulator for analog and digital circuitry. The program calculates the behavior of electrical circuits including voltages; currents; logic levels and strengths; and, in some cases, derived quantities such as group delay. Users can perform the same measurements as they would with an actual circuit and many others that would not be feasible with a breadboard. PSpice, using the 68881 floating-point coprocessor, supports both monochrome and color displays and can be expanded with various options such as Analog Behavioral Modeling, Digital Simulation, Device Equations, Monte Carlo, and Digital Files. The maximum size of the circuit to be simulated is limited only by the amount of RAM available. PSpice runs under the MultiFinder operating system.

MicroSim
20 Fairbanks
Irvine, CA 92718
714-770-3022

System Requirements
Macintosh SE with accelerator card or larger; 2 MB of RAM.

Price $1450 to $4950
Deluxe version includes all PSpice options.

Support
Unlimited technical support is provided with the program. An update subscription is available for $295 per year.

SPP

SPP (Signal Processing Program) is a general-purpose signal-processing program with an integrated set of routines that analyze linear and nonlinear systems and circuits and their effects on user-specified time domain waveforms. The basis of SPP is a 512-point Fast Fourier Transform and its inverse. Linear processing is conducted in the frequency domain, and nonlinear processing is performed in the time domain. Inputs are buffered through an input processor that looks for input errors and understands common abbreviations. SPP contains built-in windowing functions and provides for unlimited length keystroke macros and auto-execute features. The utility of this program is enhanced by its ability to switch rapidly between the time domain and frequency domain. SPP handles feedback loops, computing the closed loop transfer function from open loop equations. SPP is compatible with, and adds transient analysis capabilities to BV Engineering's ACNAP, PDP, PCPLOT, XFER, ACTFIL, LCFIL, and LOCIPRO.

BV Engineering
2023 Chicago Ave., Ste. B13
Riverside, CA 92507
714-781-0252

System Requirements
Macintosh 512K or larger; System 3.2 and Finder 5.3 or later.

Price $149.95

Support
Free telephone support and low-cost upgrades are provided to registered users.

STAP

STAP is a general-purpose two-dimensional steady-state heat transfer program with particular emphasis on the analysis of heatsinks in the electronic packaging field. After the heatsink properties and heat input characteristics have been entered, the steady-state temperatures for each device are displayed. STAP is designed for electrical engineers who are designing high-power electronic circuits; however, it is a fully functional two-dimensional thermal analysis program and can be used to solve any two-dimensional thermal conduction problem. The input to STAP allows for many defaults common to the electrical engineering field. All heatsink data can easily be saved, recalled, and edited. Heatsink size may be changed, with STAP automatically removing components mounted on the deselected part of the heatsink.

BV Engineering
2023 Chicago Ave., Ste. B13
Riverside, CA 92507
714-781-0252

System Requirements
Macintosh 512K or larger; System 3.2 and Finder 5.3 or later.

Price $125

Support
Free technical support and low-cost upgrades are provided to registered users.

XFER

XFER is a program that uses short circuit transfer impedance functions configured around an operational amplifier to compute circuit element values that synthesize a desired transfer function. Conversely, given a circuit configuration and element values, XFER will compute the LaPlace transfer function for that circuit. Multiple stages of short circuit transfer impedance functions using forward and feedback elements in operational amplifier configurations enable users to synthesize and analyze almost any transfer function that has real roots. Analyses include frequency response, sensitivities, and Monte Carlo. XFER is interactive and menu-driven, with a free-format input processor that understands common engineering abbreviations. View and Review commands making it easy for users to review their designs and make changes. Text files generated by XFER are compatible with other BV Engineering software, such as SPP, PCPLOT, and PDP.

BV Engineering
2023 Chicago Ave., Ste. B13
Riverside, CA 92507
714-781-0252

System Requirements
Macintosh 512K or larger; System 3.2 and Finder 5.3 or later.

Price $124.95

Support
Free technical support and low-cost upgrades are provided to registered users.

Physical Design

Douglas CAD/CAM Professional System

The Douglas CAD/CAM Professional System, the most advanced package in the Douglas line of CAD solutions, allows designers full use of the Macintosh computer as an engineering workstation. The system is fully integrated from schematic diagram to routed board. Schematic includes interactive 13-state digital logic simulation, individual device delays from 0 to 32,767 units, busing, an extensive library of common logic devices, multiple-page drawing capabilities, and netlist generation. Professional Layout has all the capabilities of the Douglas CAD/CAM Plot program with additional features such as a parts placement facility, unlimited number of layers, rubberbanding, rotation, and color support on the Macintosh II. The command-file driven, multipass AutoRouter will simultaneously route a maximum of 16 layers. Professional System files can be linked to the Douglas CAM Facility to receive 24-hour photoplots and quick delivery prototype boards. Gerber conversion and drill tape creation software is also available for preparing files for manufacturing at sites other than the Douglas CAM Facility.

Douglas Electronics, Inc.
718 Marina Blvd.
San Leandro, CA 94577
415-483-8770

System Requirements
Macintosh Plus or larger. Macintosh II; 4 MB of RAM; and color monitor recommended for optimal workstation.

Price
Schematic $700; AutoRouter $700; Professional Layout $1500.

Support
Free telephone support and quarterly newsletters are provided. A telecommunications program is included for sending design files to the Douglas CAM Facility.

Douglas CAD/CAM System Basic, Print & Plot

Douglas CAD/CAM is a family of products for the design and manufacturing of printed circuit boards. The software includes many of the features and functionality of higher-end CAD systems. It is particularly flexible, accommodating layouts up to 32 inch x 32 inch in addition to a variety of grids, pads, holes, and trace widths. User-definable parts are also accepted. Fifty different view sizes are available, and the system has a resolution of 0.001 inches throughout. Douglas CAD/CAM Basic is designed for use with the Douglas Electronics' manufacturing capabilities for artwork and/or circuit board production. The Print version has all the features of the Basic System, and will also output to an ImageWriter or LaserWriter. The Plot version is identical to the Print version, and includes a plotter driver for outputting to a variety of pen plotters. On completion of the board file, modem transfer programs supplied by Douglas can be used to send the layout data to the Douglas CAM Facility. Quick turnaround photoplots and/or prototype circuit boards can be produced directly from the raw data file due to the Macintosh-controlled photoplotter and drilling machine.

Douglas Electronics, Inc.
718 Marina Blvd.
San Leandro , CA 94577
415-483-8770

System Requirements
Macintosh 512K or larger.

Price $95 to $1500
Basic Layout $95; with print option $395; with print and pen plot option $525.

Support
Free technical support and quarterly newsletters are provided. Upgrades are available through a rebate/exchange. A telecommunications program is included with the software for sending layout files to the Douglas CAM Facility.

Douglas Drill Tape Creator

The Douglas Drill Tape Creator is a program for generating drill tapes from layout files produced with Douglas CAD/CAM Print, Plot, or Professional Layout packages. The program features a flexible, user-defined format. Files can be stored on a disk or sent directly via the serial port to a paper-tape punch that accepts ASCII RS-232 input. Files may also be sent to another site via modem. A separate file is created by the program to contain drill codes and the number of each drill size specified. An option is available for rotating the board 90 degrees on the drill table. A text mode is provided to allow users to monitor the program output on the screen.

Douglas Electronics, Inc.
718 Marina Blvd.
San Leandro , CA 94577
415-483-8770

System Requirements
Macintosh 512K or larger. Requires files created with Douglas CAD/CAM Print, Plot, or Professional Layout software.

Price $150

Support
Free telephone support and quarterly newsletters are provided.

Douglas Gerber File Creator

The Douglas Gerber File Creator produces the formatted information necessary to drive a Gerber or Gerber-compatible photoplotter from an aperture file and a Douglas CAD/CAM layout file. The formatted data is stored on a disk in Gerber ASCII form. The software assigns apertures to pallet items in the layout file; a total of 99 apertures may be assigned. Apertures are displayed in tables on the screen, and users can change the aperture assignments before storing the file on the disk. The specially formatted data and the layout file are all that is necessary to drive the photoplotter. Files may be placed anywhere on a film panel, allowing users to plot more than one file on a single piece of film.

Douglas Electronics, Inc.
718 Marina Blvd.
San Leandro , CA 94577
415-483-8770

System Requirements
Macintosh 512K or larger. Requires layouts designed with Douglas CAD/CAM Print, Plot, or Professional Layout software.

Price $250

Support
Free telephone support and quarterly newsletters are provided.

GerberIn

The GerberIn program allows the user to convert Gerber photoplotter files to Douglas CAD/CAM layout files. This software reads layout and aperture files from other printed circuit board CAD packages and produces Douglas layout files. Printed circuit board designers using other platforms can now take advantage of the excellent speed and graphics of a Macintosh engineering workstation with this ability to convert board designs into Douglas CAD/CAM layout file format. All the same abilities and options apply to a converted layout file as to one that was originally designed with Douglas CAD/CAM software. The new file behaves as a Douglas layout file, with all the same viewing, editing, and outputting capabilities.

Douglas Electronics, Inc.
718 Marina Blvd.
San Leandro , CA 94577
415-483-8770

System Requirements
Macintosh 512K or larger; any Douglas CAD/CAM layout program except Basic.

Price $250

Support
Free telephone support and quarterly newsletters are provided.

McCAD Auto-Router

The McCAD Auto-Router is a high-performance routing engine that takes the netlists and parts lists prepared by either EDS or Schematics systems and creates finished PCB artwork. This is a re-entrant router with user-definable routing options and keep-out areas. The system will list unfinished routes, which can then be finished manually in either the EDS or PCB-ST system.

Vamp, Inc.
6753 Selma Ave.
Los Angeles, CA 90028
213-466-5533

System Requirements
Macintosh II or larger; 8 MB of RAM; hard disk.

Price $4795

Support
Free telephone support provided for 30 days; extended software maintenance and telephone support available at $450 per year.

McCAD EDS-1 and McCAD EDS-2

McCAD EDS-1 and McCAD EDS-2 are integrated electronic design systems (EDS) for printed circuit designers. Each system is a bundling of our individual stand-alone software modules into a single package that provides electronics designers with the necessary tools to manage a complete design project. The EDS-1 package consists of three modules: Schematics, Layout and Routing (PCB-ST), and Gerber Translation. EDS offers these additional key features: point-to-point router, high-resolution color, high-resolution Linotronic print driver, and support for up to 255 layers. Other features include user-definable art libraries, auto-tooling extraction, automatic ground planes, rotated text and art, full rubberbanding traces, importation and exportation of files via the Clipboard, automatic component placement, net-list driven routing, and route design checks. The EDS-2 package also includes a digital simulation and behavior modeling capability.

Vamp, Inc.
6753 Selma Ave.
Los Angeles, CA 90028
213-466-5533

System Requirements
Macintosh Plus or larger; hard disk. 2 MB of RAM recommended.

Price
McCAD EDS-1 $149;. McCAD EDS-2 $1895.
Evaluation disks $15 each.

Support
Free telephone support for 30 days; extended support available thereafter if needed.

McCAD G-View

McCAD G-View is a system that will decode any standard Gerber text to a photoplot file and display it on screen. This allows users to verify the accuracy of the plot file prior to committing to expensive time on the plotter. In addition, once the file has been decoded, it can be converted to the standard McCAD PCB format for editing purposes.

Vamp, Inc.
6753 Selma Ave.
Los Angeles, CA 90028
213-466-5533

System Requirements
Macintosh Plus or larger.

Price $895

Support
Free telephone support for 30 days is provided. Extended software maintenance and telephone support available for $95 per year thereafter.

McCAD Gerber Translator

The McCAD Gerber Translator is a utility that will quickly and easily convert a PCB-1, PCB-ST, or EDS-1 database into a standard Gerber text photo-plot file.

Vamp, Inc.
6753 Selma Ave.
Los Angeles. CA 90028
213-466-5533

System Requirements
Macintosh Plus or larger.

Price $175

Support
Free telephone support for 30 days is provided. Extended software maintenance and telephone support are available for $95 per year thereafter.

McCAD PCB-1

McCAD PCB-1 is a tool for designing, creating, editing, and revising conventional or surface-mount printed circuit board drawings. It includes an art library of more than 3000 elements (all of which are modifiable) and a 32- by 32-inch work surface with a choice of grids and viewing scales. In addition to trace, pads, and silk-screen layers, other tooling outputs include automatic extraction of drill list, drill template, and solder masks. Key features of PCB-1 include nine design layers, a precision locator with selectable relative or absolute position, selectable metric or English measurement, ability to group and edit or move elements, ability to group layers and perform moves in registration, views of single layers or any combination of layers, support for custom pad arrays, custom device design, surface-mount technology, a rectilinear pattern generator with autofill, vectored fonts with normal reverse type, support for output to ImageWriter and LaserWriter printers, and plotter drivers for common Houston Instrument or Hewlett-Packard plotters. An optional Gerber photo-plot driver is available.

Vamp, Inc.
6753 Selma Ave.
Los Angeles, CA 90028
213-466-5533

System Requirements
Macintosh 512K or larger; hard disk.

Price $395
Evaluation disk $15.

Support
Free telephone support for 30 days is provided. Extended software maintenance and telephone support are available at $95 per year thereafter.

McCAD PCB-ST

McCAD PCB-ST is an expanded layout design system for the serious professional printed circuit board designer. In addition to the basic features of the PCB-1 system, the PCB-ST has the following key features: system can be driven by net list from the McCAD Schematics software module, dynamic rubberbanding of all interconnects, up to 32 design layers, user-definable libraries, library editor, runs in color or black-and-white, rotation, instant ground-plane generation with user-definable isolation band, customizable menus, split screen views, multiple windows that open simultaneously, and import/export via standard Macintosh Clipboard.

Vamp, Inc.
6753 Selma Ave.
Los Angeles, CA 90028
213-466-5533

System Requirements
Macintosh Plus or larger; hard disk.

Price $995
Evaluation disk $15.

Support
Free telephone support for 30 days is provided. Extended software maintenance and telephone support are available at $95 per year thereafter.

Physics

Astronomy

Astronomy is designed to provide astronomical plots. It produces two plots in two separate windows. The first window, titled "Solar System," plots the Pole Star's eye view of the solar system for a given date and time. The second window, titled "Sky View," plots an image of the heavens as seen by an earth-bound observer for a given date, time, longitude, and latitude. The "Sky View" plot locates the sun, moon, planets, and major constellations. Windows can be thrown away, recalled, repositioned, or resized. Users may generate detailed enlargements of either plot by using the zoom features. Accompanying parameter files used in the calculations of planet and star positions are modifiable by users with MacWrite. This allows customization of the package to the user's preference.

E&M Software Co.
95 Richardson Rd.
Chelmsford, MA 01863
508-251-7451

System Requirements
Macintosh 512K or larger.

Price $19.95

Support
Telephone support is provided.

MacStronomy

MacStronomy maps the stars, moon, and planets in their correct locations for any given date and time. Users select a region of the sky to be mapped by choosing a ground-level observation location, date, and time. To identify a star or a planet, the user selects an object with the mouse; the object's name and coordinates appear on screen. MacStronomy can search its database of celestial objects for the name of a specific object, display its coordinates and description, and center the object on its sky map. MacStronomy also displays the planets in their orientation around the sun. The database contains more than 1700 objects, including all stars to a magnitude of 5.0, 110 Messier objects, the moon, nine planets, and the sun. Users can add stars, galaxies, nebulae, and solar orbiting objects—such as comets or asteroids—to the database. Constellation lines can be shown at the user's option. An optional database is available that includes all stars to a magnitude of 6.5 and more than 9000 objects. Use of the larger database requires an external hard disk drive.

Etlon Software
1936 Quail Circle
Louisville, CO 80027
303-665-3444

System Requirements
Macintosh SE or larger.

Price $75
Optional database containing 9000 stars $15.

Support
Telephone support and update notification are provided. Updates are available for a nominal charge.

Solar System Calculator

The Solar System Calculator calculates the location in the sky of the sun, moon, and principal planets. It gives positions for any location on Earth for any date and time and the estimated times of rising and setting. Users enter the longitude, latitude, and local time. Charts give a local sky display, positions along the sun's path, and a rough solar system picture. The Solar System Calculator includes all planets except Pluto.

Heizer Software
1941 Oak Park Blvd., Ste. 30
Pleasant Hill, CA 94523
415-943-7667

System Requirements
Macintosh 512K or larger; Microsoft Excel.

Price $25

Support
Telephone support is provided.

TellStar

TellStar's graphic display allows users to locate and identify constellations, stars, planets, and other stellar objects. Views are presented for all compass points as well as overhead. A special utility section allows users to perform equatorial, ecliptic, horizontal, and precession conversions. TellStar is controlled entirely by mouse, and users may locate and identify objects, change viewing direction, and access utilities via pull-down menus. In addition, the program contains information on Halley's Comet and various other solar bodies, star clusters, galaxies, nebulae, and constellations.

Spectrum Holobyte
2061 Challenger Dr.
Alameda, CA 94501
415-522-3584

System Requirements
Macintosh 512K or larger.

Price $14.95

Support
Telephone support is provided.

TFCalc

TFCalc is used for designing optical thin films. It computes and displays the reflection, transmission, phase-change, and electric-field intensity of any thin film design. TFCalc may also be used to optimize the coating design process.

Software Spectra, Inc.
11070 Overland Ave.
Culver City, CA 90230
213-204-6589

System Requirements
Macintosh 512K or larger.

Price $2400
Educational discounts available; demo package $20.

Support
Support and updates are provided for one year.

Chemistry

CAChe worksystem

The CAChe (computer-aided chemistry) worksystem is a stereo three-dimensional personal chemical modeling system that meets the experimental chemist's need for a molecular design and modeling system that is powerful, affordable, easy to work with, and that covers the whole periodic table. Using the CAChe worksystem, chemists in the pharmaceutical, agrichemical, plastics, petrochemical, and other industries can shorten the product development cycle by modeling molecular structures and exploring their properties before synthesizing them. The CAChe system allows real-time conformational and structural analysis and provides a number of embedded software applications for the exploration of electronic properties. Users can manipulate models of molecules in three-dimensional stereo vision. The system supports color, and chemists can cut and paste illustrations into word processors for documentation and reports or prepare studio-quality slides in just minutes.

Tektronix, Inc.
P.O. Box 500
Beaverton, OR 97077
503-627-2596

System Requirements
Macintosh II or larger; 4 MB of RAM.

Price $39,500
Includes Macintosh IIx, monitor, special accelerator board, and stereo 3-D graphics board.

Support
Telephone hotline, bug fixes, on-site maintenance, training, and other services are available for a fee.

Chem3D

Chem3D is a molecular modeling package for chemists. Three-dimensional structures may be read in from coordinate data files, created from stereochemical structural formulas drawn in ChemDraw, or built with Chem3D's own model-building tools, which include structural error minimization and a substructure library containing over 160 pre-minimized molecular fragments. Users may customize Chem3C by adding atom types, substructures, and other parameters for any type of chemical structure. Structures can be viewed as wireframe, ball-and-stick, or spacefilling models from any angle, and views can be replayed to form animation sequences. Interatomic distances, bond lengths, bond angles, and torsional angles may be obtained with a click of the mouse. Multiple structures may be treated simultaneously, and docked or overlaid for comparison. Structures may contain over 2000 atoms.

Cambridge Scientific Computing, Inc.
875 Massachusetts Ave., Ste. 41
Cambridge, MA 02139
617-491-6862

System Requirements
Macintosh Plus or larger; 2 MB of RAM recommended.

Price $595
Volume, education, and student discounts available.

Support
Free telephone support and one year of free software updates are provided.

ChemConnection

ChemConnection is a desk accessory designed to simplify the building of a chemical structure or substructure search query for CAS ONLINE. It allows the chemist to construct a query structure off-line using the same powerful drawing capabilities as in ChemIntosh Desk Accessory. ChemConnection is helpful to the experienced as well as the inexperienced or infrequent user of Chemical Abstracts Service. Since all structure building is conducted off-line, all users realize savings of both time and money. For the inexperienced user, creation of the search term in the form of a chemical structure is simplified because no knowledge of the structure generation commands used by CAS is required. ChemConnection includes all the features of ChemIntosh DA for creating publication-quality structures in word-processing documents and presentation materials.

SoftShell International, Ltd.
2754 Compass Dr., Ste. 375
Grand Junction, CO 81506
303-242-7502

System Requirements
Macintosh Plus or larger; modem; telecommunication program.

Price $395

Support
Free technical support and product updates are provided.

ChemDraw

ChemDraw provides an easy way for chemists to produce high-quality structural formulas for papers, presentations, and reports. Specifically for chemists, ChemDraw includes many common chemical notations that are tedious to create with general-purpose drawing programs. Bonds can appear in dashed, hashed, wedged, bold, single, double, or triple form. Spacing and subscripts in atom labels are added automatically. Rings of various sizes, including chair and aromatic rings, are provided. The program also provides a wide selection of arrows, orbitals, boxes, braces, and other shapes. Titles may be created in a variety of styles, and a special formula mode makes it easy to create chemical formulas. Reaction coordinate diagrams, curved arrows, and other shapes may be drawn using the curve tool. Structures and text may be rotated, grouped, aligned, scaled, and duplicated using the lasso tool. Finished drawings may be printed, saved as encapsulated PostScript files, or copied and pasted into other applications.

Cambridge Scientific Computing, Inc.
875 Massachusetts Ave., Ste. 41
Cambridge, MA 02139
617-491-6862

System Requirements
Macintosh Plus or larger.

Price $595

Support
Free telephone support and one year of free updates are provided.

ChemIntosh Desk Accessory

ChemIntosh Desk Accessory allows users to draw a chemical structure and transfer it to a word processing document without leaving the word processor. The chemical diagram can be copied back to the ChemIntosh window for editing. The DA has tools for drawing ten bond types, 19 rings, and four straight arrows, which include reaction, equilibrium, resonance, and dashed. Strings of chemical symbols with any font, size, and style can be added with automatic subscripting and superscripting. The program has an undo facility and on-line help. Selected objects can be slanted to show perspective or resized by dragging a handle. ChemIntsosh Desk Accessory can be used to draw solid or dashed circles, ovals, and arcs by dragging the mouse outside the circle or oval to specify the desired arc. A user can print directly from the DA to create transparencies and other presentation materials. A reduced view of the entire document for page layout is provided, and rulers can be used to refine it. Selected objects can be aligned with a press of the mouse button.

SoftShell International, Ltd.
2754 Compass Dr., Ste. 375
Grand Junction, CO 81506
303-242-7502

System Requirements
Macintosh 512K or larger; hard disk.

Price $295

Support
Free technical support and product updates are provided.

The DNA Inspector IIe

The DNA Inspector IIe is a system for handling DNA analysis and manipulations. Users can enter, edit, and analyze DNA sequences in circular or linear strands. Other features allow users to define the position of the first base; save and edit comments associated with the DNA sequences; automatically convert text sequences from other programs (such as GenBank); recombine up to 10 different DNA fragments with optional inversion; search for repeated or inverted sequences; perform complete base composition, homology matrix, restriction enzyme (with gel electrophoresis pattern), and extensive open reading frame analyses; search a restriction enzyme database; and execute M13 shotgun sequence reconstructions. A digitized speech feature facilitates entry and confirmation of DNA sequences. The program supports the color capabilities of the Macintosh II and the ImageWriter II and may be used on AppleTalk networks.

Textco
27 Gilson Rd.
West Lebanon, NH 03784
603-643-1471

System Requirements
Macintosh Plus or larger; two 800K drives or one 800K drive and hard disk; ImageWriter or LaserWriter.

Price $345

Support
Free telephone and AppleLink support is provided. Software updates are available.

DrawStructures for Chemists

DrawStructures is a chemical structure library that contains hundreds of organic and biochemical structures. They range from the very simple to the very complex, and represent all major classes of chemical structures. The structures may be used directly as supplied, or modified to produce other structures. All that is required is any Macintosh and a drawing program that allows working with PICT format documents, such as MacDraw, MacDraft and SuperPaint. All structures have been constructed as object-oriented graphics for high-quality LaserWriter printing.

SoftShell International, Ltd.
2754 Compass Dr., Ste. 375
Grand Junction, CO 81506
303-242-7502

System Requirements
Macintosh 512K or larger; MacDraw, MacDraft or SuperPaint.

Price $79.95
A 10% university discount is available. Volume discounts are also available.

Support
Telephone support is provided.

Dynamax HPLC Method Manager

The Dynamax HPLC Method Manager is designed to collect, store, and analyze HPLC data. If a complete HPLC system is purchased, users can also control gradient composition, mobile phase flow, and automation events in user-defined time sequences. The package consists of software and hardware components, including a special RS-422 communication cable and interface module with analog-to-digital conversion for two chromatographic data channels at 18-bit resolution. Chromatographic data is displayed on the screen. Peak detection, integration, identification, and quantification occur in real time (as the data is collected). An analysis report can be printed at the end of each run, and both raw and calculated report data can be saved on a disk. Method files containing all specifications for timed sequences, data analysis parameters, peak identification, and quantification can be saved on a disk and used at any time.

Rainin Instrument Co., Inc.
Mack Rd.
Woburn, MA 01801
617-935-3050

System Requirements
Macintosh Plus or larger; two 800K drives or one 800K drive and hard disk; ImageWriter or LaserWriter. Hard disk recommended.

Price $2795
Complete HPLC systems, $11,850 to $28,365.

Support
Free telephone support is provided. Complete warranty and repair services are available.

Equilibrium

Equilibrium calculates the equilibrium concentrations for up to 18 species involved in up to 18 reaction equations. It also calculates the equilibrium reaction temperature, the heat of reaction (enthalpy), and the specific heat. The output of the program is a list of species names and their equilibrium molar concentrations. The program can produce a before- and after-reaction pie chart that displays the molar percentages of the mixture.

E&M Software Co.
95 Richardson Rd.
Chelmsford, MA 01863
508-251-7451

System Requirements
Macintosh 512K or larger; Microsoft BASIC.

Price $28

Support
Telephone support is provided.

The Gene Communicator

The Gene Communicator is an accessory program for The DNA Inspector II (or later versions) and is designed to aid users in searching the BioNet database. The five-disk package includes the Gene Communicator program, a customized version of Red Ryder communications software, and a number of index files. The index files contain a listing of the contents of the GenBank and EMBL DNA sequence databases. An index-file entry contains the name of each sequence in the database and a brief description. Users can rapidly search these files for keywords and automatically create download lists, and then log on to BioNet and automatically download the sequences on the lists by using menu commands in Red Ryder. Downloaded files can be converted to DNA Inspector sequence files for analysis within the DNA Inspector II program.

Textco
27 Gilson Rd.
West Lebanon, NH 03784
603-643-1471

System Requirements
Macintosh 512K enhanced or larger; two 800K drives or one 800K drive and hard disk.

Price $199

Support
Free telephone support is provided.

Gene Construction Kit

The Gene Construction Kit is designed for planning and managing complex genetic engineering construction projects and generating high-quality illustrations of the structures. DNA sequences may be represented either graphically or as text, with complete or partial digest gel patterns displayed either as a graphic or a table. Text labels, rectangles, rounded rectangles, and circles can be added at any location. Users can cut and paste segments and choose to display them in a line or a circle, with the option of defining thickness, pattern, direction, and color for each segment. The program can mark restriction enzyme sites and indicate areas of particular interest. The Gene Construction Kit allows attaching comments to any segment, site, region, or even a whole construct, and it's possible to search the comments. The program keeps track of segment history and can display any generation for any segment.

Textco
27 Gilson Rd.
West Lebanon, NH 03784
603-643-1471

System Requirements
Macintosh Plus or larger, 800K external disk drive.

Price $895
Academic price $495.

Support
Telephone or AppleLink support is provided.

MicroChem

MicroChem is a molecular modeling system with organic, inorganic, and polymer chemistry applications. The Organic Unit is used for building, analyzing, and displaying molecules up to 500 atoms and features two-dimensional sketching with robust molecular mechanics energy minimization to create three-dimensional structures, fragment joining, fractional to Cartesian coordinate conversion, configuration conversion, and fixed-valence-geometry mechanics conformational energy searching. The Inorganic Unit is used for building zeolite molecules of up to 500 atoms by assembling three-dimensional subunits supplied in a library and features control of Si:Al composition, automatic insertion of oxygens and hydroxy, and assigns partial atomic charges. The Macromolecular Unit is used for building synthetic molecules of up to 500 atoms including addition, subtraction, and ladder varieties.

Chemlab Incorporated
1780 Wilson Dr.
Lake Forest, IL 60045
312-996-4816

System Requirements
Macintosh Plus or larger. Modem and LaserWriter recommended.

Price $495
Academic price, $295. Quantity discounts available.

Support
A maintenance contract is available.

Microplate Manager

Microplate Manager software eliminates all of the manual calculations involved in ELISA screening and quantitation. It allows for customized microtitration plate formatting, editing of plate formats, multiple chemistries per plate, flagging of outliers, standard curve graphics, sample extrapolations, four graphic transformations, linear and quadratic regression analysis, export of data to other software applications, self-adjusting graph axes, dual wavelength subtraction, format options, curve fit evaluations, data reports, mean and standard deviation, coefficient of variation, correlation coefficient, and standard error of estimate. The program can produce seven different hardcopy reports, including standard curve graphics, sample extrapolations, and complete statistical analysis of EIA data. Advanced command menus allow access to all command functions.

Bio-Rad Laboratories, Inc.
1414 Harbour Way South
Richmond, CA 94804
415-232-7000

System Requirements
Macintosh Plus or larger; ImageWriter; Bio-Rad's Model 2550 and 3550 Microplate Readers; Microsoft BASIC.

Price $765

Support
Toll-free telephone support is provided.

MM2+

MM2+ is an updated version of MM2 (Molecular Mechanics 2) that can optimize molecular geometries, calculate strain energies and heats of formation, and predict other molecular properties. MM2+ includes a PI-SCF calculation for delocalized systems (hydrocarbons only). The FORTRAN source code is included with the program.

C Graph Software, Inc.
P.O. Box 5641
Austin, TX 78763
512-459-3562

System Requirements
Macintosh Plus and larger.

Price $150

Support
Free telephone support is provided.

MNDO +

MNDO+ is designed for running quantum mechanical calculations. The program calculates electronic, energetic, and geometric properties of molecules; it predicts eigenvectors, eigenvalues, IPs, heats of formation, and equilibrium geometries. Features of the program include AMPAC-style keyword input, improved output files, reaction paths, and restarts. MNDO+ contains the complete set of MNDO parameters for certain chemical elements. The FORTRAN source code is included with the program.

C Graph Software, Inc.
P.O. Box 5641
Austin, TX 78763
512-459-3562

System Requirements
Macintosh Plus or larger.

Price $150

Support
Free telephone support is provided.

Monitor

The Monitor is an industrial data acquisition system and trend monitor which replaces any panel containing gauges, status lights, stip chart recorders, first out annunciators, event loggers, remote terminal units or alarm panels. It will record temperature, pressure, flow, rpm, vibration, voltage, amperage, equipment status or any other process item. The Monitor trends up to 960 signals simultaneously and will display or print the history of any trend over a period of 0-60 seconds, 0-60 minutes, 0-24 hours, and 0-30 days. Each trend has up to two high level setpoints and two low level setpoints for alarming and control. If any setpoint is violated an appropriate digital output will change state and an event log will be updated with the exact date and time, to the second, that the setpoint was violated. The Monitor will do mathematical calculations on incoming data, in real time and trend the result. It will integrate the area under any curve, in real time and place the result in the accumulation log.

Monico Computer, Inc.
2111 Dickson Dr., Ste. 30
Austin, TX 78704
512-288-0195

System Requirements
Macintosh II or larger; 2 MB of RAM.

Price
Software only $8000. Other pricing depends on size and configuration of hardware and I/O.

Support
Installation, service, and custom alterations are supplied by Monico Computer or distributors.

NITRO

NITRO transforms the Macintosh II into an interactive three-dimensional graphics terminal for molecular modeling at the desktop. Communicating with SYBYL Software on the host VAX, Silicon Graphics, or Sun, NITRO delivers real-time rotation, translation, and scaling of molecular structures. Users may view structures in stereo, in mono, or orthogonally. Other features of the program include mouse menu selection, multiple window areas, and VT 640 emulation. NITRO provides full support for the SYBYL menu. Displays include molecule, dot, volume, H-bond, and potential surface. Operations supported by SYBYL/NITRO include building and editing, fitting, minimization, docking, molecular dynamics, and QSAR and conformational analysis functions.

Tripos Associates, Inc.
1699 S. Manley Rd., Ste. 303
St. Louis, MO 63144
314-647-1099

System Requirements
Macintosh II or larger; color monitor; 2 MB of RAM; SYBYL Molecular Modeling Software on host cpu (VAX/VMS, Silicon Graphics or Sun UNIX).

Price $1495
SYBYL license fees are separate. Educational pricing available.

Support
On-site training and membership in SYBYL Users Group are provided with SYBYL. Telephone support and product updates are provided.

PCMODEL

PCMODEL is a molecular modeling program. Users can enter chemical structures by sketching or reading various types of computational chemistry data files, manipulate the structures, rotate in three dimensions, rotate about specific bonds, and include up to 60 different types of atoms including transition metals. The MMX force field is included for molecular mechanics calculations, including a pi VESCF routine for calculations on both closed and open shell molecules. Output includes hard copy as well as files for MOPAC/MNDO, MM2, and other computational chemistry programs.

Serena Software
P.O. Box 3076
Bloomington, IN 47402
812-333-0823

System Requirements
Macintosh II or larger; 4 MB of RAM; 40 MB hard disk; LaserWriter.

Price $990
Educational price available.

Support
Free telephone support is provided.

Piper/Stiff 1.01

Piper/Stiff 1.01 is a Piper and Stiff diagram-plotting program that allows users to enter chemical assay values, calculate the ion balance, and then plot Piper-trilinear or Stiff diagrams from the data set. The program has two operational modes. The Piper option plots trilinear diagrams of chemical values entered as mg/l. The values are converted and plotted as percent of meq/l. The Stiff option plots Stiff diagrams of chemical values entered as mg/l. The values are converted and plotted as meq/l. Several different plotting options are available in each operational mode. The program contains its own data input form for entering ion values and calculating the ion balance; files created via this option are used to create the Piper and Stiff diagrams. Simple reports can be generated from these files, or the data can be exported for use in other Macintosh applications.

RockWare, Inc.
4251 Kipling St., Ste. 595
Wheat Ridge, CO 80033
303-423-5645

System Requirements
Macintosh 512K or larger.

Price $225

Support
A 30-day money-back guarantee is provided.

Plasmid Artist

Plasmid Artist is the first Macintosh graphics program designed for molecular biologists that creates and produces desktop publication-quality plasmid diagrams (graphical respresentations of recombinant DNA molecules used in the design and publication of experimental results). Plasmid Artist uses a simple, MacDraw-like user interface that allows biologists to construct diagrams detailing their recombinant DNA molecule-building strategies and results. Using the mouse and pull-down menus, users can draw linear or circular restriction map diagrams containing a virtually unlimited number of restriction sites and fragments. Over 60 common restriction enzyme names are provided in the Site menu, and others can be added by the user. The program automatically keeps track of the size of the molecule as the user "clones" in new gene fragments using mouse-activated tools. It shows the map with correct scaling on screen and prints a high-quality image to any PostScript printer. Plasmid Artist can also export the image as an encapsulated PostScript file so that diagrams can be pasted into page layout programs for the preparation of reports and manuscripts.

GeneSystems Computer Software
755 Loma Verde, Ste. B
Palo Alto, CA 94303
415-493-0972

System Requirements
Macintosh 512K enhanced or larger; System 4.1 or later. Hard disk and LaserWriter recommended.

Price $395
Site license available.

Support
Free technical support, free bug fixes and minor upgrades, and reduced prices of new versions for registered users. Thirty-day money back guarantee.

Reactions

Reactions is a chemical-reaction rate program that calculates the time-varying species concentrations for up to 18 species involved in up to 18 reaction equations. It also calculates the reaction temperature and the heat of reaction (enthalpy). The final product of the calculation is a semi-log plot of concentration versus time.

E&M Software Co.
95 Richardson Rd.
Chelmsford, MA 01863
508-251-7451

System Requirements
Macintosh 512K or larger; Microsoft BASIC.

Price $28

Support
Telephone support is provided.

Structure

Structure is a downloadable PostScript font containing more than 100 of the most important chemical structures, bonds, and abbreviations. Structure gives chemists access to these figures from the keyboard while they are working in word processing, page layout, or graphics programs. Included are most possible cycloalkane and alkene rings, as well as structures commonly used in inorganic chemistry.

Allotype Typographics
1600 Packard Rd., Ste. 5
Ann Arbor, MI 48104
313-663-1989

System Requirements
Macintosh 512K or larger; ImageWriter or LaserWriter.

Price $125

Support
Free telephone support is provided.

ZBasic 4.01

ZBasic 4.01 is a Basic compiler that features accurate math configurable to more than 1,000 digits. It comes standard with BCD to eliminate rounding problems inherent in binary math packages. Features include LongInteger support with range of ±2,147,483,647; direct support of more than 500 Macintosh Toolbox calls and functions, including the 128K ROM; complete control of the Macintosh event trapping interface, including windows, scroll bars, buttons, edit fields, menus and mouse; an interactive editing environment; a built-in editor that works similar to MacWrite; memory "Segment" control; HFS and MFS support; RMaker for adding icons; printer and modem serial port support with buffer; AppleTalk and MacinTalk™support; two desk accessories for debugging; multi-line If/Then/Else and FN; Select-Case structure; Do/Until-While/Wend-For/Next; automatic indentation of structures; labels or line numbers; and the ability to change the graphic coordinate system at anytime. ZBasic works the same way on many different computers, making it ideal for developers that want to expand their markets and for schools and universities that teach on different machines.

Zedcor, Inc.
4500 E. Speedway, Ste. 22
Tucson, AZ 85712
602-881-8101

System Requirements
Macintosh 512K or larger.

Price $249

Support
Telephone support and a newsletter are provided.

Mathematics/Statistics

Biomedical Research Chart Tool Kit

Biomedical Research Chart Tool Kit records numeric research data and translates this data into meaningful graphic forms and statistics. The program allows generation of random-number files for experimentation and simulation purposes. It also provides scatter plots, with standard error bars plotted with optional best-fit curves. Other program features include linear, exponential, power, and logarithmic graphs; three-part trend chart overlays; trend charts with standard error bars plotted; and histograms and bar charts with standard error bars plotted. In addition, the program includes student T-tests and polynomial regression analyses and graphs. These biomedical charts and statistical reports are not found in general graphics software. They provide optional standard-error bar plots as well as curve-fitting capability.

Sof-Ware Tools
P.O. Box 8751
Boise, ID 83707
208-343-1437

System Requirements
Macintosh 512K or larger.

Price $199

Support
Free technical support is provided.

Chameleon

Chameleon is a weights and measures conversion program designed for engineers, scientists, and students who must convert measures from one unit to another. The program can perform more than 100 million conversions in 16 different dimensions, including distance, mass, time, temperature, density, power, flow rate, moment of inertia of area, and moment of inertia of volume. Users highlight the unit to be converted on the left side of the screen and the unit it should be converted to on the right side of the screen. Conversion factors are accurate to six decimal places and are displayed in scientific notation when necessary. The program also features an on-screen multiplication function.

Spectrum Computing, Inc.
P.O. Box 141097
Coral Gables, FL 33114
305-665-0404

System Requirements
Macintosh Plus or larger.

Price $69.95

Support
Free updates are provided.

CLR ANOVA

CLR ANOVA can compute an analysis of variance for designs with any factorial combination of up to five between- and five within-subject variables. Plots of interactions can be drawn by clicking the interaction term on the Analysis of Variance Summary Table and choosing "Graph means" from a menu. Marginal means, pair-wise comparisons (Neuman-Keuls, Duncan, Tukey hsd and t-tests), simple effects, and planned or unplanned specific contrasts among means can be computed. Advanced features include the Σ correction for possible violations of multisample sphericity and choices of error terms for simple effects and specific contrasts among means. Designs with unequal group sizes can be analyzed. The Macintosh interface with windows, menus, and dialog boxes is used throughout. An entire analysis of variance with plots of interactions and many follow-up tests can be done in a matter of minutes with a few keystrokes, mouse clicks, and menu choices. Graphs, ANOVA Summary Table, and marginal means can be copied to the Clipboard so they can be pasted into other applications.

Clear Lake Research
2476 Bolsover, Ste. 343
Houston, TX 77005
713-523-7842

System Requirements
Macintosh 512K or larger.

Price $100
Educational discounts are available.

Support
Telephone hotline is provided.

Data Desk

Data Desk offers a full complement of standard statistics tools that take advantage of the Macintosh graphical interface for extensive data exploration and analysis. The program's data exploration features let users uncover unique aspects in data that might otherwise go undetected. For example, rotating multidimensional plots that display three or more dimensions may make apparent groupings of data. Similarly, plot brushing lets users select points in one plot and see them highlighted in other windows simultaneously. HyperViews use built-in expertise to suggest related plots and analyses. Enhanced statistics include a full environment for general linear model (GLM). Data Desk allows users to mix text and numbers freely within variables and allows missing data. It can handle up to 32,000 cases. The program will directly access 68881 and 68882 floating point coprocessors, if present.

Odesta Corporation
4084 Commercial Ave.
Northbrook, IL 60062
312-498-5615

System Requirements
Macintosh 512K enhanced or larger, 800K disk drive.

Price $595

Support
Free telephone and electronic mail bulletin board support are provided.

Engineering Tool Kit

Engineering Tool Kit is a statistical and graphics software package used for recording numeric engineering data, translating this data into meaningful graphic forms and generating statistical analysis reports. The program provides scatter plots (with optional best-fit curves: linear, exponential, power, logarithmic), trend charts, and histograms. It includes multiple linear regression and analysis of variation (correlation coefficients, standard error of estimate, F-ratio, degrees of freedom, standard deviation and other statistics). A polynomial regression routine is included for graphics and statistics for first to fifth order polynomials. The program also includes base conversion routines from any base to any other base, up to base 16.

Sof-Ware Tools
P.O. Box 8751
Boise, ID 83707
208-343-1437

System Requirements
Macintosh 512K or larger; ImageWriter or LaserWriter.

Price $199

Support
Free technical support is provided. Customization is available at an additional charge.

Exstatix

Exstatix is a data analysis package that combines advanced statistical analysis with presentation graphics. Statistical functions include extensive regression analyses, correlations, ANOVA, cross tabulations, time-series analyses, and significance testing. The program allows users to create two-dimensional and three-dimensional presentation-quality color graphics. Graphics features include a rotating three-dimensional scatterplot and a three-dimensional bar chart. Users can transfer data to other Macintosh applications as text-only files, or the Clipboard may be used to transfer graphics and data. The user can also write custom packets—extensions that add functions or commands to the program.

Select Micro Systems, Inc.
322 Underhill Ave.
Yorktown Heights, NY 10598
914-245-4670

System Requirements
Macintosh 512K enhanced or larger.

Price $349

Support
Free telephone and MacNET support are provided.

FASTAT. Fast Statistics for the Mac.

FASTAT is a statistics and graphics package that allows summary statistics; one-way and multiway tables; chi-square, Pearson, and Spearman correlations; regression; nonparametric tests; ANOVA and ANOCOVA; series transformation and smoothing; forecasting; principal components and common-factor analysis. FASTAT offers two- and three-dimensional full-color graphics for presentations and reports. FASTAT's scatterplot brushing tools allow users to isolate and extract cases visually and to zoom in on point clouds, encouraging interactive exploratory analysis. On-screen help and statistics explanations round out this easy-to-learn tool. FASTAT can handle up to 50 variables and unlimited cases.

SYSTAT, Inc.
1800 Sherman Ave.
Evanston, IL 60201
312-864-5670

System Requirements
Macintosh Plus or larger; hard disk. Macintosh II requires 2 MB of RAM.

Price $195

Support
Unlimited free technical support is provided.

MacElastic and MacPoisson

MacElastic and MacPoisson are instructional finite element analysis programs that enable a user to solve the partial differential equations governing elasticity, steady state heat conduction, electrostatics, ideal fluid flow, seepage in porous media, and more. Program specifications include separate programs for biharmonic and Poisson's equations; two-dimensional and axisymmetric elements of triangular cross section; automatic graphical mesh generation; automatic bandwidth reduction; graphical input of properties and boundary conditions; Gaussian elimination for nodal values; consistent element smoothing for derived element and nodal values; tabular and graphical output; full zoom and labeling capability; plot mesh, displaced mesh, boundary conditions, and properties; and plotting of all computed quantities using shading and contour lines.

Cooke Publications
P.O. Box 4448
Ithaca, NY 14852
607-272-2708

System Requirements
Macintosh 512K enhanced or larger.

Price $99.95
Per application.

Support
Telephone support is provided.

MathCAD

MathCAD is an advanced Macintosh mathematics package that allows technical professionals to calculate interactively on a Macintosh as they would on a scratchpad. MathCAD integrates mathematical equations, text, and graphics in a single document. The program features dynamic evaluation of expressions. As equations are entered, MathCAD quickly calculates results and displays them. Special MathCAD Macintosh palettes make it simple for users to enter operators and Greek letters into equations. They also allow for easy, fast manipulation of mathematical expressions. If variable values and expressions are changed, affected calculations are automatically updated and new results presented. Built-in features include simultaneous equation solving; matrix operations; two-dimensional linear, log, and semi-log graphs; and three-dimensional mesh and surface plots. Users can modify or extend built-in features to meet their own needs.

MathSoft, Inc.
One Kendall Sq. #200
Cambridge, MA 02139
617-577-1017

System Requirements
Macintosh Plus or larger; ImageWriter or LaserWriter. Coprocessor supported.

Price $495

Support
Free telephone technical support is provided to registered users.

Mathematica

Mathematica is a general system for numerical, symbolic, and graphical computation for use by researchers, students, engineers, analysts, and others as both an interactive calculational tool and as a programming language. Numerical capabilities include arbitrary precision arithmetic, special function evaluation, and matrix manipulation. The program can manipulate formulas directly in algebraic form; perform such operations as integration, differentiation, and power series expansion; and solve symbolic equations. Mathematica produces two- and three-dimensional PostScript graphics. The program, incorporating a high-level programming language, runs on a range of machines from personal computer to supercomputer. Mathematica can produce input for other systems, including C, FORTRAN, and TeX, and it has built-in mechanisms for interfacing to external processes running under the UNIX operating system.

Wolfram Research Inc.
P.O. Box 6059
Champaign, IL 61826
217-398-0700

System Requirements
Macintosh Plus or larger. 4 MB of RAM recommended; enhanced version requires a numeric coprocessor.

Price
Standard version $495; enhanced version $795.

Support
Support related to installation is free.

Mathematician's Toolkit

See complete description under Software Development—General Languages and Tools.

MathLab

MathLab is a symbolic algebra program designed to solve multivariate polynomial calculus problems. It adds, subtracts, multiplies, divides, factors, expands, substitutes, differentiates, and integrates (polynomials), and performs summations and pi products. MathLab provides linear, semi-log, log-log, and three-dimensional plotting functions.

E&M Software Co.
95 Richardson Rd.
Chelmsford, MA 01863
508-251-7451

System Requirements
Macintosh 512K or larger.

Price $49.95

Support
Updates are available for an additional charge.

MathWriter

See complete description under Technical Productivity—Technical Publishing.

MATLAB

MATLAB is an interactive system for high-performance numeric computation in scientific and engineering applications. It combines numeric analysis, matrix computation, signal processing, and graphics with a user interface in which problems and solutions are expressed just as they are mathematically, without traditional programming. MATLAB provides interactive access to matrix algorithms from LINPACK and EISPACK and signal-processing algorithms from the IEEE Programs for Digital Signal Processing library. MATLAB offers numerous functions for matrix computation, polynomial operations, statistics, differential equation solving, numerical integration, and nonlinear optimization tools. The program creates two-dimensional linear, log, semi-log, and polar plots and three-dimensional mesh and contour graphs. Optional toolboxes are available to provide additional functions for particular applications, including signal processing, control system design and analysis, system identification (parametric modeling), and chemometrics.

The Math Works Inc.
21 Eliot St.
So. Natick, MA 01760
508-653-1415

System Requirements
Macintosh Plus or larger; external 800K disk drive; System 3.2 and Finder 3.2 or later; ImageWriter or LaserWriter.

Price $895
Education and quantity discounts are available.

Support
Free telephone and mail support, a 30-day money-back guarantee, and a quarterly newsletter are provided.

Matrix Workshop

Matrix Workshop is a command-driven interactive program for matrix analysis and linear algebra solutions. It consists of more than 80 functions, including matrix inversion, determinant, norm, rank, and eigenvalues and eigenvectors. It has the capability to calculate trancendental functions of a scalar, vector, or matrix. It can also determine roots of polynomials, perform a Fast Fourier Transform, convert polar to rectangular (and vice versa), and create linear and logarithmic data plots. Gaussian elimination and singular value decomposition functions are provided for system solutions and curve fitting. A powerful feature is the option to write "EXEC" files and user functions. "EXEC" files contain Matrix Workshop commands which are executed as a batch. They may be created with any text editor or word processor and saved for future sessions. Looping and conditional statements such as FOR, IF, and WHILE provide the flexibility to write Matrix Workshop "programs" to solve specific problems. User functions (FORTRAN subroutines written and compiled by a user), are automatically linked and executed by Matrix Workshop at runtime. Two-dimensional graphics routines have the capability of plotting multiple functions of a single variable. Input and output can be copied to the Clipboard for use by other Macintosh application programs.

Puma Software, Inc.
P.O. Box 35373
Albuquerque, NM 87176
505-881-4967

System Requirements
Macintosh 512K or larger.

Price $295
Student price $99.

Support
Free telephone support and updates for one year.

Milo

Milo is a math processor that combines mathematical calculations with graphing and word processing capabilities. Users can describe a problem, solve it, and graph the solution in a single document. Milo can also rearrange the equation into a more convenient form, help to simplify a mathematical expression or substitute one expression in another, and create and manipulate indexed summations and products. Matrix and vector operations and logarithmic, exponential, and trigonometric functions are included. The program supports calculus features such as definite and indefinite integrals, ordinary and partial derivatives, limits, and Taylor series. Div, grad, curl, and the Laplacian coordinates are included, as are rectangular, cylindrical, and spherical coordinates. Milo graphs functions of one variable and parameterized curves. Users can modify or extend the built-in tables to meet their own needs.

Paracomp, Inc.
123 Townsend St., Ste. 310
San Francisco, CA 94107
415-543-3848

System Requirements
Macintosh 512K or larger; ImageWriter or LaserWriter.

Price $249

Support
Free telephone support is provided.

Monte Carlo Simulations (Advanced Version) 2.0

Monte Carlo Simulations (Advanced Version) 2.0 consists of three integrated modules: Statistical Analysis, Simulation, and Long-Term Projection. Statistical Analysis analyzes raw data; creates histograms, goodness-of-fit tests, and 13 probability distributions. Simulation allows users to construct a probabilistic model of up to 100 variables. Each variable is either random, logical, functional, compound, or dependent. Random variables are based on one of the 13 available probability distributions. Long-Term Projection allows users to create and analyze a true long-term situation model involving random events in each of a series of time periods. Inflation and other adjustment factors can be applied as desired. Data can be passed back and forth from other programs by using DIF files.

Actuarial Micro Software c/o The ACS Group
8025 N. Point Blvd., Ste. 215E
Winston-Salem, NC 27106
919-773-1313

System Requirements
Macintosh 512K or larger; numeric keypad.

Price $595

Support
Telephone support and 90-day warranty are provided. Updates are available for a nominal fee.

OPTDES

OPTDES performs linear and non-linear optimization. Model variables may be discrete or indiscrete. The program also contains statistical models to approximate the results of computationally expensive functions. Results of the optimization may be plotted within OPTDES or transferred to other programs for further analysis.

Four Peaks Optimal Software
154 W. Hillside
Mesa, AZ 85201
602-969-0343

System Requirements
Macintosh SE or larger; hard disk; Language Systems FORTRAN, MPW.

Price $2500

Support
Free telephone support, a quarterly newsletter, and consulting services are provided.

Parameter Manager Plus with pmTALK

Parameter Manager Plus with pmTALK is technical graphing and analysis software with the ability to handle large data sets at high speed. The program features high-resolution plotting of up to 32,000 data points per variable, multiple Y axes, true nonlinear curve fitting, and time-based trend plotting. Professionals in the financial, medical, industrial, scientific, and engineering fields have used Parameter Manager Plus in many diverse applications. The worksheet handles up to 256 columns and 32,767 rows. Users can enter data manually or import it from any ASCII file. Built-in analysis routines are available that give users an array of choices for showing data trends and comparisons. Users can analyze trends, forecast future values or events, compress large databases into understandable graphs, even apply statistical process control charts, and get a graphic picture of the characteristics of the data.

GenRad, Inc.
510 Cottonwood Dr.
Milpitas, CA 95035
408-432-1000

System Requirements
Macintosh 512K enhanced or larger; two 800K disk drives or one 800K disk drive and hard disk. Printer and hard disk recommended.

Price $795
Site licenses and volume discounts available.

Support
Free telephone support is provided. Updates are available to registered users.

polyMath

polyMath is designed to solve univariate polynomial calculus problems. The program adds, subtracts, multiplies, divides, factors, expands, differentiates, integrates, performs summations and pi products, extracts roots, and produces linear, semi-log, and log-log plots.

E&M Software Co.
95 Richardson Rd.
Chelmsford, MA 01863
508-251-7451

System Requirements
Macintosh 512K or larger.

Price $19.95

Support
Updates are available for a fee.

Power Math

PowerMath solves problems from the simplest arithmetic to symbolic and polynomial calculus problems. It is designed to be a productivity tool for scientists, engineers, students, and numerical analysts.The problems can be expressed on the screen in conventional mathematical terms, and there is no limit to size of numbers, length of variables, or the form of an expression. Standard symbolic notation is used throughout. A variety of built-in functions, including transcendental and logarithmic functions, are stored on disk. Users may also store custom-built functions.

Central Products, Inc.
2211 Norfolk, Ste. 518
Houston, TX 77098
713-529-1080

System Requirements
Macintosh 512K or larger.

Price $149.95

Support
Telephone support is provided.

PowerMath II

PowerMath II is a computer algebra program that does calculus and matrix mathematics using algebraic symbols. Users can enter formulas and equations as pure symbols. PowerMath II can process large numbers and expressions such as "1000 factorial," complete algebra problems, and solve complex engineering problems.

Central Products Corp.
2211 Norfolk, Ste. 518
Houston, TX 77098
713-529-1080

System Requirements
Macintosh 512K or larger.

Price $149

Support
Telephone support is available at $20 per call.

Process Control Chart Tool Kit

Process Control Chart Tool Kit is a statistical and graphics software package that provides graphics based on Deming's philosophy of quality control systems. The program provides scatterplots; trend charts; histograms; Pareto charts; P, NP, U, and C control charts; and X-Bar-R charts. It also includes graph-of-trend line, mean line, and control lines on all control and X-Bar-R charts. The program allows for UCL and LCL computations over a range of subgroups or via user input and for user-input specification limits. Other features include special X-Bar-R data-input routines as well as individual and moving X-Bar-R charts. Process Control Chart Tool Kit also offers the option of four types of curve fitting for the scatterplot routine: exponential, linear, power, and logarithmic.

Sof-Ware Tools
P.O. Box 8751
Boise, ID 83707
208-343-1437

System Requirements
Macintosh 512K or larger.

Price $199

Support
Free technical support; customization available at an additional charge.

ProType Math

See complete description under Technical Productivity—Technical Publishing.

ProType Plus

See complete description under Technical Productivity—Technical Publishing.

The Scientific Desk

The Scientific Desk includes a large library of statistical routines for use in science, mathematics, and engineering. Functions and subroutines provided in the package cover the areas of arithmetic, error analysis, elementary and special functions of mathematical physics, linear algebra, interpolation, solution of nonlinear equations, and optimization. Other areas covered in The Scientific Desk are differentiation and integration, differential equations, integral transforms, approximation and data fitting, statistics and probability, data handling, and service routines. A number of tutorials are included on various topics, including linear algebra and eigensystem analysis.

C. Abaci, Inc.
208 Saint Mary's St.
Raleigh, NC 27605
919-832-4847

System Requirements
Macintosh Plus or larger; hard disk; FORTRAN.

Price $300 to $750
One machine license per site license.

Support
Maintenance and upgrades are supplied under license agreement.

Statistica

Statistica is a comprehensive statistics and forecasting package with statistical database management and graphics. The program includes a full range of basic statistics, nonparametric statistics, multiple regression methods, ANOVA/ANCOVA/MANOVA with post hoc tests, discriminant function analysis, contrast analysis, and cluster analysis. Three-dimensional rotating graphs include axis, line, and spectral plots, plus multiple scatterplots—all with on-screen customization options. Two-dimensional graphics include scatterplots, scatterplot matrices, box, mean, trend, range, and SD plots, all customizable. The statistical database manager offers a spreadsheet-style editor, hierarchical sorting, splitting/merging of files, and transformations—including standardization, missing data substitution, lead/lag, smoothing, differencing, and random-number generation.

StatSoft, Inc.
2325 East 135th St.
Tulsa, OK 74104
918-583-4149

System Requirements
Macintosh Plus or larger.

Price $245

Support
Telephone support and upgrades are available to registered users.

Statistical Macro Package

The Statistical Macro Package is a collection of powerful statistical analysis tools, including linear regression (function macro, worksheet, and chart work as with the Excel "LINEST" function, but with regression statistics added and more flexible data entry); nth degree regression (function macro, worksheet, and chart find coefficients for up to 12th-degree equations with least squares method and plot data); equal proportion test (compares binomial proportions); normal distribution; inverse normal distribution; chi-square distribution; F-distribution (area under the F curve, with N1, N2 degrees of freedom, 0 to x, to five digit accuracy); F-approximation (similar to F-distribution but four times faster, accurate to four digits); loggamma function (evaluates the gamma function for any x > 0); t-distribution; repeated measures; Mann Whitney (non-parametric comparisons of two samples); correlations (computes correlations for two or more columns of data); ANOVA 1 (performs a one-way analysis of variance); and t-test (performs either independent or correlated student's t-test on two columns of data).

Heizer Software
1941 Oak Park Blvd., Ste. 30
Pleasant Hill, CA 94523
415-943-7667

System Requirements
Macintosh 512K or larger; Microsoft Excel.

Price $79

Support
Telephone support is provided.

Stats Tool Kit

Stats Tool Kit is designed to be used for recording numeric data and generating statistical analysis reports for physicians, researchers, and scientists. It allows the generation of random number files for experimentation and simulation purposes. The program includes chi-square test, Student's T test, Wilcoxon's sum rank test, Mann-Whitney U test, Spearman rank correlation, Kendall's Tau Coefficient, and various distribution tests. Other statistics for one and two variables include kurtosis, skewness, moments, mean, standard deviation, variance, and more. Analysis of variation (one-way and two-way with repeated trials) is also included.

Sof-Ware Tools
P.O. Box 8751
Boise, ID 83707
208-343-1437

System Requirements
Macintosh Plus or larger.

Price $99

Support
Free technical support is provided. Customization is available at an additional charge.

StatView II

StatView II 1.03 is a statistical analysis package with presentation color graphics that allows management, analysis, and presentation of data. StatView II directly accesses the 68881/68882 numeric coprocessor and creates color charts using all 16.8 million colors available on the Macintosh II. It also operates on a Macintosh Plus or SE with an accelerator board containing the 68020 and 68881 processors. StatView II also runs under A/UX. The program performs a variety of descriptive and comparative statistical operations at speeds comparable to those of mainframe computers. These operations include complete descriptive statistics; t-tests; Pearson correlations; simple, multiple, polynomial, and stepwise regressions; 1 to 16 factor ANOVA with factorial and repeated measure designs; contingency tables; exploratory factor analysis; and complete nonparametric tests. StatView II produces complete and fully interactive presentation-quality color graphics. Text can be inserted anywhere on the screen, and the user can change the font, style, size, and color of any character or character group. StatView II outputs to any color printer, plotter, or slidemaker with a Macintosh II printer driver.

Abacus Concepts, Inc.
1984 Bonita Avenue
Berkeley, CA 94704
415-540-1949

System Requirements
Macintosh II or larger; MOS 4.2 or later; 68020/030 and 68881/882 or later processors.

Price $495
Educational and volume discounts. Site licensing available.

Support
Free technical support is provided.

StatView SE+Graphics

StatView SE+Graphics 1.03 is a statistical data analysis and color presentation graphics package for professionals who must analyze data and present the results to an audience. Publication-quality graphs include scattergrams; line, pie, and bar charts; histograms; box plots; and error bars. Graphs can be customized by resizing, adding text, drawing arrows and shapes, changing point types and sizes, filling bars, and changing pattern fills. Text can be inserted anywhere on the graphs. The font, style, size, and color of each character can be controlled. Statistics include complete descriptive statistics; t-tests; Pearson correlations; simple, multiple, polynomial, and stepwise regression; 1 to 16 factor ANOVA with factorial and repeated measure designs; contingency tables; exploratory factor analysis; and complete nonparametric tests. Data management techniques include transformations, creation of new variables by formula, recoding, sorting, data selection by criteria, and column splitting by category. Text files created by other Macintosh applications or downloaded from mainframe computers can be quickly imported. StatView SE+Graphics is fully MultiFinder compatible.

Abacus Concepts, Inc.
1984 Bonita Ave.
Berkeley, CA 94704
415-540-1949

System Requirements
Macintosh 512K enhanced or larger.

Price $399.95
Educational and volume discounts. Site license available.

Support
Free technical support is provided.

SuperANOVA

SuperANOVA analyzes virtually any general linear model used by statisticians, scientific and medical researchers, and engineers who perform ANOVA, ANCOVA, MANOVA, MANCOVA, and multiple regression on their data. Users can easily create, modify, and save model designs, as well as annotate and document these designs in a complete MacDraw-like environment. Once created, these analysis and presentation documents can be saved and applied to any data of interest. SuperANOVA handles balanced, unbalanced, and missing cell designs. Repeated measures are solved using univariate or multivariate models with up to 11 within factors. Additional output includes 12 post hoc tests with multiple formats (including Tukey's HSD, Tukey-Kramer, Duncan's New Multiple Range, Games-Howell, Fisher's PLSD, Scheffe's S, Student-Newman-Keuls, and others); contrasts; means tables; and over 20 different types of graphs, including interaction and residual plots. A comprehensive set of canned model designs (including Latin squares, repeated measures, and split plots) is shipped with SuperANOVA.

Abacus Concepts, Inc.
1984 Bonita Ave.
Berkeley, CA 94704
415-540-1949

System Requirements
Macintosh Plus or larger; hard disk; MOS 4.2 or later.

Price $495
Educational and volume discounts. Site license available.

Support
Free technical support is provided.

SYSTAT

SYSTAT 3.2 offers a full range of univariate and multivariate statistical procedures and high-resolution two- and three-dimensional graphics through a combined menu-and-command-window interface. The data editor provides pull-down menus and dialog boxes for editing and data management, and allows users to cut and paste data, import files directly, and save files in system file, text file, or tab-delimited formats. Commands are entered in a command window, and text output appears in a separate output window. Both windows are fully resizeable and editable. SYSTAT features high-resolution two- and three-dimensional graphics for business, scientific, and statistical applications, including maps, contour plots, triangular coordinate plots, Voronoi tesselations, casement plots, grouped box plots, scatterplots smoothed with any of seven different options, scatterplot matrixes, spline interpolation, probability plots, and pie charts. Users can resize fonts and displays to produce camera-ready graphics. PostScript is supported.

SYSTAT, Inc.
1800 Sherman Ave.
Evanston, IL 60201
312-864-5670

System Requirements
Macintosh Plus or larger; hard disk.

Price $595
Site license available.

Support
Free unlimited technical support is provided.

UNITize

UNITize is a unit conversion application/DA for use by scientists and engineers. UNITize quickly and easily converts among any linear units typically found in conversion tables. Users can modify UNITize without difficulty. The application also comes with more than 50 of the most common quantity sets, and allows import and export.

Rainbow Bridge Software, Inc.
4243 Hunt Rd., Ste. 210
Cincinnati, OH 45242
800-548-8871

System Requirements
Macintosh 512K enhanced or larger.

Price $79.95
Site license available.

Support
Free telephone support is provided.

WormStat

WormStat is a general-purpose statistical package and learning tool that uses a MacPaint-like format. Data can be stored in rows and columns, entered from the keyboard or from a data file, randomly generated, and transferred from a variety of other applications, including most spreadsheet and word processing packages. Once data is available, various analyses can be carried out by clicking the appropriate tool from the palette. Data can be saved, printed, and transformed using various menu options. The program's statistical functions include arithmetic mean, standard deviation, histograms, median, range, box-and-whisker plots, analysis of variance, and others.

Small Business Computers of New England, Inc.
P.O. Box 397
Amherst, NH 03031
603-673-0228

System Requirements
Macintosh 512K or larger.

Price $19.95

Support
Telephone support is provided.

Laboratory/Data Acquisition

556 Measurement and Control System

Keithley's 556 Measurement and Control System converts the Macintosh to an integrated multifunction data-acquisition and control system. The Model 556 acts as a front end, linking signal conditioning, measurement, and control to the Macintosh. Bringing the data-acquisition tools to the Macintosh computer's rich graphics- and text-processing environment means that users can gather data, control experiments, and go from raw signals to publication-quality reports and graphics quickly. Optional MacDA488 software lets the users collect data to the Clipboard which can be pasted to a spreadsheet or word processor for analysis, graphing, or publication. Without MacDA488, the 556 can be controlled by commands in Microsoft BASIC 3.0, Pascal, C, HyperTalk™, and other Macintosh languages. The Model 556's general purpose expansion chassis uses the IEEE-488 bus. The 556 can hold up to 10 selections from the Keithley line of 23 optional plug-in boards, ranging from 12- or 16-bit analog input for voltage readings to thermocouples and RTDs for temperature measurement.

Keithley Instruments, Inc.
28775 Aurora Rd.
Cleveland, OH 44139
216-248-0400

System Requirements
Macintosh Plus or larger; SCSI to 488 converter for Macintosh Plus or SE; GPIB board for Macintosh II.

Price $1395
System prices start at $1395; price depends on configuration of system and choice of plug-in modules.

Support
Free telephone support is provided.

Accu-Weather Forecaster

Accu-Weather Forecaster provides direct access to up-to-the-minute weather information and forecasts. The information is downloaded by modem and can then be displayed in a wide variety of maps, graphs, charts, and forecasts. The source of the data is Accu-Weather, the nation's largest private weather service.

Metacomet Software
P.O. Box 31337
Hartford, CT 06103
203-223-5911

System Requirements
Macintosh 512K enhanced or larger; 1 MB of RAM; modem.

Price $89.95
Typical connect-time fee is $2 per download.

Support
Telephone support is available.

DataFlash

DataFlash is a fully expandable data acquisition system for measurement and control applications that demand high-data transfer rates. STD (standard) bus I/O devices can be remotely accessed via the SCSI port. Interrogation, storage, and data manipulation may be handled on a Macintosh or transferred to a mainframe computer. The I/O system may be expanded with up to six 20-slot chassis, each with a choice of STD bus devices tailored to a user's requirements.

CPSA
166 South J St.
Livermore, CA 94550
415-449-7744

System Requirements
Macintosh Plus or larger.

Price $149.94 to $1795
Software module to basic system.

Support
A one-year warranty, free technical support, updates, and on-site training are available.

GPIB-SE

The GPIB-SE is a full-function IEEE-488 interface designed to be plugged into the expansion slot on a Macintosh SE which becomes an IEEE-488 instrument controller that can be used for numerous data-acquisition and control applications such as laboratory testing, process monitoring and control, and automated test and measurement. It can monitor and control up to 13 engineering, scientific, or medical instruments. The hardware and software architecture of the GPIB-SE is geared for high-performance operation, using state-of-the-art gate array technology, FIFO buffering techniques, and support for the LabView software construction system, as well as conventional programming languages. For scientific computation and data analysis, the GPIB-SE is optionally equipped with a MC68881 numeric coprocessor. An optional DMA controller further increases the I/O performance to the full 1 MB per second capability of the IEEE-488.

National Instruments
12109 Technology Blvd.
Austin, TX 78727
512-794-0100

System Requirements
Macintosh SE or larger.

Price $495 to $1295

Support
Free telephone hotline support and a two-year warranty are provided.

GrafStack

GrafStack is a general-purpose interface to laboratory data acquisition systems. A device driver is opened within GrafStack to the desired experiment. Acquired or previously stored data in the form of complex vectors can then be manipulated in the form of a graphical RPN calculator, with each window corresponding to an entry on the stack.

Micro/Research
730 E. Cypress Ave.
Monrovia, CA 91016
818-359-3503

System Requirements
Macintosh SE or larger; programming language for writing interface drivers (samples provided in Lightspeed C).

Price $495

Support
Free telephone and fax support are provided. Product updates are available at low cost.

Lab Master II

Lab Master II is an expansion product for the Macintosh II that combines four data acquisition/process control functions in one package. Two 12-bit latched DACs, five 16-bit precision timer/counters, and 24 lines of buffered TTL-compatible I/O are on one full-size board inside the Macintosh II. The 12-bit analog-to-digital converter is located outside the computer in a separate enclosure. This optimizes signal clarity and allows easy access to signals at a remote location. Lab Master II has built-in expansion capability to add options such as an IEEE 488 interface or additional memory. Completing the system are device drivers for multilanguage application development and a screw terminal board for the analog inputs.

Scientific Solutions, Inc.
6225 Cochran Rd.
Solon, OH 44139
216-349-4030

System Requirements
Macintosh II or larger.

Price $1250
PGL option; TM-100 option $1515; PGH option $1445.

Support
Free technical telephone and bulletin board support are provided.

Lab Partner - design of experiments

Lab Partner offers a systematic approach to experimental design and analysis based on the techniques and philosophy of Dr. Genichi Taguchi. Lab Partner is designed to provide an efficient means to attack the problem of poor quality due to excessive variation. By using the analysis and design techniques provided in this program, one can uncover the source of variability and reduce or control it. Lab Partner provides an easy means of improving efficiency and decreasing the costs associated with experimental design and analysis. Features include the generation of experimental design for multiple factors; analysis of experimental results by means of main effects; Anova and signal-to-noise ratio and S/N ANOVA; 2 Factor Design and ANOVA; chi-square test for single-factor analysis; and loss function/tolerance reports.

Sof-Ware Tools
P.O. Box 8751
Boise, ID 83707
208-343-1437

System Requirements
Macintosh Plus or larger; ImageWriter or LaserWriter.

Price $500

Support
Free technical support is provided.

LABTECH NOTEBOOK

LABTECH NOTEBOOK turns a Macintosh computer into a real-time data acquisition and process control system. The program collects data from transducers, displays the data in real time, and saves data on disk while the software simultaneously controls the process. Data acquisition, display, and filing functions are user-configurable without programming. Sophisticated triggering options and real-time calculations, including mathematical, statistical, and signal-processing functions, can be built into the system. Data can be collected from thermocouples, strain gauges, RTDs, resistance devices, and counters or timers as well as devices that produce voltage and current output. The data are converted into engineering units in real time. LABTECH NOTEBOOK collects, displays, and files data as a background task under the MultiFinder operating system while users run other software. Data file formats are compatible with popular analysis software packages, such as Microsoft Excel. LABTECH NOTEBOOK works with a wide variety of hardware interfaces, including interfaces from Data Translation, GW Instruments, IOtech, National Instruments, and Strawberry Tree.

Laboratory Technologies Corp.
400 Research Dr.
Wilmington, MA 01887
508-657-5400

System Requirements
Macintosh Plus or larger; two 800K drives; data acquistion and control interface (plug-in board or external box).

Price $995

Support
Free 90-day telephone support and 90-day warranty on defective materials are provided. On-site training and consultation available for a fee.

LabView

LabView is a software construction system designed to simplify scientific programming. Its unique graphic programming system provides tools for data acquisition, reduction, analysis, management, and presentation. LabView is ideal for applications such as instrument and process control, laboratory automation, automated testing and measurement, scientific computation, experimentation, simulation, and modeling. Software modules in LabView are virtual instruments constructed using block diagrams and operated through graphic front panels. The program features extensive libraries for scientific applications. Optional hardware includes the NB series of interface cards for the Macintosh II; the NB-GPIB and NB-DMA-8-G IEEE-488 plug-in interface cards for Macintosh II computers and the GPIB-SE IEEE-488 plug-in interface card for the Macintosh SE. Lab-SE, a low-cost data acquisition card, and GPIB-422CT, a full-function IEEE-488 interface box that connects to a Macintosh serial port, are also available.

National Instruments
12109 Technology Blvd.
Austin, TX 78727
512-794-0100

System Requirements
Macintosh 512K or larger; hard disk.

Price $1995

Support
Free telephone hotline; application support; field seminars and user group meetings; and one year of updates are provided. Training is available for a fee.

Mac488B and MacSCSI488

The Mac 488B controller is a hardware interface to devices that gather data in real-time. Mac488B provides complete IEEE 488 bus capability, including controller, talker, and listener functions. Two software packages accompany the controller: MacDriver488 software provides IEEE 488 control for popular Macintosh languages, with high-level and low-level commands for accessing 488 devices. MacDA488, a desk accessory, lets the Macintosh accept incoming data on the Clipboard; once there, the data can be saved on disk or pasted to a Macintosh spreadsheet or other application, such as Parameter Manager. The MacSCSI488 controller is a hardware interface for devices that gather data in real time. The unit attaches to the SCSI port and provides full IEEE 488 functionality, including control of up to 14 IEEE instruments, plotters, and peripherals. Two software packages accompany the controller: MacDriver488 software provides IEEE 488 control for popular Macintosh languages, with high-level and low-level commands for accessing 488 devices. MacDA488, a desk accessory, lets the Macintosh accept incoming data on the Clipboard; once there, the data can be saved on disk or pasted to a Macintosh spreadsheet or other application, such as Parameter Manager.

IOtech Inc.
25971 Cannon Rd.
Cleveland, OH 44146
216-439-4091

System Requirements
Macintosh 512K enhanced or larger; IEEE 488 devices.

Price $595 to $795
Mac488B $595; MacSCSI488 $795.

Support
Telephone support, a 30-day money-back guarantee, and a two-year warranty are provided.

MacADIOS

MacADIOS is a general-purpose data acquisition system primarily for scientists and engineers who need to store and manipulate information accumulated from such devices as thermocouples, strain gauges, accelerometers and electrical circuits. It includes the MacADIOS hardware unit, data collection and manipulation software, and cables required for interfacing with a Macintosh. Special-function software included with the system are an oscilloscope emulation program, a spectrum analyzer, an XY recorder and an eight-channel voltmeter. A maximum of eight analog channels can be input through the unit at a frequency of 172 Hz. A maximum of four analog channels can be output with a -10 V to +10 V range. Sixteen digital channels can be input or output through the system.

GW Instruments, Inc.
35 Medford St.
Somerville, MA 02143
617-625-4096

System Requirements
Macintosh Plus or larger.

Price $2500

Support
Free technical support, updates, and a one-year warranty are provided.

MacADIOS 488n and MacADIOS 488s

MacADIOS 488 products are high-speed IEEE-488 interfaces for GPIB instrument control. The MacADIOS 488s is an IEEE-488 interface that supports data transfers of over 150K bytes/sec on the Mac Plus, 600K bytes/sec on the SE, and 800K bytes/sec on the Mac II. The MacADIOS 488n is a NuBus-compatible board that supports high speed data transfer rates of over 600K bytes/sec on the Mac II. Both products include MacDA488, desk accessory software that allows the user immediate IEEE-488 control and data collection. For more experienced programmers, the MacADIOS 488s and 488n are also shipped with MacDriver488 software which includes a comprehensive set of over 30 bus commands for creating IEEE acquisition and control procedures.

GW Instruments, Inc.
35 Medford St.
Somerville, MA 02143
617-625-4096

System Requirements
MacADIOS 488n requires Macintosh II or larger.
MacADIOS 488s requires Macintosh Plus or larger.

Price
MacADIOS 488n $595; MacADIOS 488s $795.

Support
Free telephone support, software updates, and a one year warranty are provided.

MacADIOS II

MacADIOS II is flexible data acquisition hardware for the Macintosh II and SE computers. The MacADIOS II card plugs into one of the Macintosh expansion slots or the GW Instruments Macintosh SE expansion box, and provides 16 analog input channels, 2 analog output channels, 8 digital input channels, 8 digital output channels, and 3 counter/timer channels. With MacADIOS II, a Macintosh II or SE interfaces directly with the real world for a variety of applications, including data acquisition, external measurement and control, and counter/timer operations. There are also nine expansion boards available, up to three of which can be connected to MacADIOS II at one time. These expansion boards perform such tasks as high-speed sampling and multichannel input and output. A master clock synchronizes all MacADIOS activity, allowing users to obtain information from several I/O channels simultaneously. The MacADIOS II card comes with a set of I/O routines that can be called from BASIC, Pascal, FORTRAN, or C.

GW Instruments, Inc.
35 Medford St.
Somerville, MA 02143
617-625-4096

System Requirements
Macintosh SE or larger.

Price $1490 to $10,000

Support
Technical telephone support; free software updates and a one-year parts and labor warranty are provided.

MacADIOS II Jr.

The MacADIOS II Jr. turns the Macintosh II into a complete laboratory computer system. A multifunction analog and digital I/O board, the MacADIOS II Jr. provides sixteen 12-bit analog inputs, two 12-bit analog outputs, 8 digital inputs, 8 digital outpus, and 3 counter/timers on a single NuBus-compatible board. A 12.5us A/D converter provides throughput rates of up to 40,000 samples/sec over multiple channels or up to 833,000 samples/sec in single channel mode. The MacADIOS II Jr. card includes powerful, TurboDriver software, a complete set of I/O routines which can be called from 7 high-level languages. With TurboDrivers and the MacADIOS II Jr., users can emulate an oscilloscope, scrolling strip chart recorder, chart recorder, or spectrum analyzer with unprecedented speed. In addition, data can be acquired in the background, using interrupts, and spooled to hard disk for long-term storage.

GW Instruments, Inc.
35 Medford St.
Somerville, MA 02143
617-625-4096

System Requirements
Macintosh II or larger.

Price $890

Support
Free technical support, software upgrades, and one-year warranty are provided.

MacADIOS Manager II

MacADIOS Manager II is a powerful, easy-to-use data acquisition software system for the collection, display, and analysis of real-time data. Compatible with the MacADIOS family of data acquisition systems, MacADIOS Manager II displays multiple waveforms on a single graph and can perform FFT, Inverse FFT, spectrum analysis, statistical calculations, integration and differentiation, and histrograms and convolutions on collected data.

GW Instruments, Inc.
35 Medford St.
Somerville, MA 02143
617-625-4096

System Requirements
Macintosh Plus or larger; MacADIOS hardware configuration.

Price $890

Support
Free telephone technical support, updates, and one-year warranty are provided.

MacADIOS SCSI

MacADIOS SCSI provides inexpensive, high performance data acquisition capabilities through a series of low-profile outboard boxes capable of transferring data at up to 28,800 samples/sec. The SCSI product line includes: MacADIOS 8ain with 8 differential, 12-bit analog input channels and up to 28,800 samples/sec throughput; MacADIOS 8dio with 8 digital input and 8 digital output bits, TTL-compatible, and up to 28,800 samples/sec throughput; MacADIOS fg with programmable function generator, 1 Hz to 1 MHz frequency range, sine, square, or triangle wave output; variable amplitude control; offset control; TTL synchronization output; and MacADIOS adio with multifunction unit having two 12-bit analog inputs, one 12-bit analog output, two digital I/O bits, and one trigger input; and up to 28,800 samples/sec throughput.

GW Instruments, Inc.
35 Medford St.
Somerville, MA 02143
617-625-4096

System Requirements
Macintosh Plus or larger.

Price $490 to $890

Support
Free telephone support, software updates, and a one-year warranty are provided.

MacATAC

MacATAC is designed to keep track of patient or animal demographics. It allows users to build panels of tests and calculate the least-time work path. MacATAC interfaces to multiple analyzers and does quality control analysis and reports, including a collated final report with flags. Data used in MacATAC are archived in files.

Ohio Valley Research Associates Inc.
16901 McIntosh Rd.
Wellsville, OH 43968
614-283-7274

System Requirements
Macintosh Plus or larger; two 800K disk drives.

Price $400
Additional hard disk extensions are available.

Support
Free telephone hotline is available. Training and warranty are provided.

MacDSP Acquisition Daughter Cards

The MacDSP Acquisition Daughter Cards provide real-time data acquisition, processing, and control by transferring data directly to or from MacDSP processor boards, bypassing the NuBus. Sixteen-bit A/D and D/A boards are available in single-channel, dual-channel, synchronous, and 8-channel versions. All come with programmable gain, programmable sample rates (or external clock up to 150 kHz), and programmable seventh-order anti-aliasing and reconstruction filters. A 1 MHz 12-bit A/D board is also available for high-speed data acquisition. The drivers provided allow dynamic configuration of the daughter cards. Optional software packages ease the design of automated and adaptive acquisition and control systems. Optional software includes MacDSP Signal Analysis Package with real-time processing and display capabilities; Array Processor Libraries in Lightspeed C, Pascal, MPW™ C and Pascal, BASIC, and FORTRAN; and a DSP32 C compiler, assembler, linker, and simulator.

Spectral Innovations, Inc.
4633 Old Ironsides Dr., Ste. 450
Santa Clara, CA 95054
408-727-1314

System Requirements
Macintosh II or larger; MacDSP or MacDSPXKC coprocessor card.

Price $495 to $1595

Support
Free telephone support is provided.

MacDSP Analysis Software

MacDSP Analysis Software allows analog signals to be sampled at up to 1 MHz and processed instantly, with screen updates up to 20 times a second. MacDSP enables real-time spectral analysis, filtering, modulation, and other signal processing techniques so that users can immediately see the effect on processed data. Real-time color displays include an oscilloscope, spectrum analyzer, spectogram, three-dimensional contourgraph, and waterfall. Data can be captured to disk and played back. Optional data acquisition cards include a 150-KHz 16-bit analog-to-digital (A/D) and digital-to-analog (D/A) card, a 1-MHz 12-bit A/D card, and other multichannel A/D and D/A cards. MacDSP Analysis Software can be used to analyze external data files as well as the results of custom algorithms developed using the optional Array Processor Libraries supported in Lightspeed C and Pascal, MPW C and Pascal, BASIC, and FORTRAN, or algorithms created with the DSP 32C compiler, assembler, linker, and simulator.

Spectral Innovations, Inc.
4633 Old Ironsides Dr., Ste. 450
Santa Clara, CA 95054
408-727-1314

System Requirements
Macintosh II or larger; MacDSP or MacDSPXKC coprocessor card.

Price $495

Support
Free telephone support is provided.

MacExpansion Chassis

MacExpansion Chassis is a desktop laboratory workstation that allows for multiple expansion boards and high-density hard disk drives. The system is intended for customers who need dedicated Macintosh hardware for data acquisition and other engineering and scientific purposes.

Spectra Micro Development
548 E. Speedway Blvd.
Tucson, AZ 85705
602-884-7402

System Requirements
Macintosh 512K or larger.

Price $495

Support
Telephone and bulletin board support are available.

MacInstruments

MacInstruments enables the Macintosh to emulate popular laboratory instruments. When used with MacADIOS hardware, MacInstruments emulates oscilloscopes, chart recorders, scrolling strip chart recorders, and scan line recorders. MacInstruments is capable of digitizing waveforms at rates up to 833kHz in the oscilloscope mode, 25kHz in the chart recorder mode, 60Hz in the scrolling strip chart mode, and 16kHz in the scan line recorder mode.

GW Instruments, Inc.
35 Medford St.
Somerville, MA 02143
617-625-4096

System Requirements
Macintosh Plus or larger, MacADIOS hardware configuration.

Price $790

Support
Free telephone support, updates, and a one-year warranty are provided.

MacLab

MacLab is a laboratory data acquisition system that allows the Macintosh to emulate a four-channel chart recorder or a digital oscilloscope. MacLab can sample as fast as 25 microseconds per sample and can capture and analyze analog signals of up to 25 KHz. The hardware unit contains four differential high-gain input amplifiers, a 12-bit analog-to-digital converter, and a microprocessor with 16 KB of RAM. Also included is a 12-bit digital-to-analog converter with a variable gain output amplifier. The Scope and Chart applications are compatible with other Macintosh applications, allowing data to be transferred via the Clipboard to graphics or spreadsheet programs.

World Precision Instruments, Inc.
375 Quinnipiac Ave.
New Haven, CT 06513
203-469-8281

System Requirements
Macintosh 512K or larger; two 800K disk drives; hardware unit; Scope and Chart software.

Price $2925

Support
Limited telephone support and one-year warranty on parts and labor are provided.

MACONTROL-IDAC/1000

MACONTROL-IDAC/1000 is a front-end hardware processor that accepts input from instruments and sensors and provides outputs under control from a host computer. This combined input-output circuitry connects to a Macintosh via a standard RS-232-C serial interface that isolates it electronically from the process a user is monitoring or controlling. The control software operates on a simple list of tasks. Users fill in the blanks of a task template that instructs the hardware in the operation of the user's "process." Users specify which input channel, or channels, to sample data from, how they want the resulting data arranged, and how often they want to sample it. The process for controlling external devices is the same. All data captured by the IDAC system is written in numeric form into a standard text file used by all financial spreadsheet programs.

Small Business Computers of New England, Inc.
P.O. Box 397
Amherst, NH 03031
603-673-0228

System Requirements
Macintosh 512K or larger; external drive.

Price $1795

Support
One-year warranty provided with both software and hardware; post warranty telephone support provided at $50 per hour; on-site installation and training is available.

MacPacq

MacPacq is a hardware and software system that, when added to a Macintosh computer, creates a powerful data acquisition and control system. It can be used for physiological and environmental data recording, stimulus and acquisition experiments, process monitoring, and process control. Hardware features include eight analog inputs, eight digital input/outputs, and sample rates to 10 KHz. Software features include waveform reviewing tools and tools for printing and handling files. In remote mode, MacPacq can acquire and process data while disconnected from the Macintosh. When the system is reconnected, data can be plotted and stored by the computer.

BioPAC Systems
5960 Mandarin Ave.
Goleta, CA 93117
805-968-8880

System Requirements
Macintosh 512K or larger.

Price $1195

Support
Telephone support and updates are provided for $95 per year; software customizing is available.

MacScope

MacScope is a high-performance data-acquisition system that has the measurement capabilities of the Gould Model 1425 digital storage oscilloscope. MacScope combines engineering and publishing functions to handle both in-depth computation and analysis and the generation of presentation graphics or technical documents. Data can be captured at two samples to two megasamples per second for one-shot events, or repetitive waveforms can be stored with 20 MHz bandwidth in equivalent time mode. A unique two-window desk accessory shows measured data in the view window and control parameters in the settings window, even while running Macintosh applications programs. Both windows support copy and paste operations, allowing integration with most Macintosh applications. In the view window users can show or delete the graticule, set inverse video, or select linear interpolation between data points. Keep traces mode allows the user to write new data on top of previous traces in the view window and build a family of waveforms. Traces can also be saved to disk files for later review and analysis.

Ansan Industries, Ltd.
7400 W. Lawrence Ave.
Harwood Heights, IL 60656
312-867-7170

System Requirements
Macintosh Plus or larger; Gould 1425 digital storage oscilloscope; Ansan interface cable.

Price $9970
Includes Macintosh Plus, ImageWriter, Gould Model 1425 digital storage oscilloscope, interface cable, MacScope, MacPaint, MacWrite, MacDraw, and Microsoft Excel.

Support
Free telephone support is provided for one year. Initial turn-on, checkout, and user orientation are supplied at customer's facility for $50 per hour plus travel and expenses.

MacSpeech Lab I

MacSpeech Lab I is a general speech-analysis program designed to be used with the MacADIOS data acquisition system. The program can be used by researchers studying voice waveforms, and by engineers and scientists doing analyses on long waveforms. Recorded waveforms can be stored on disk and analyzed with such tools as a spectrum window, a spectogram window, and a fundamental frequency window. The waveform can be viewed on screen and segments can be selected for analysis using the mouse. Sections of waveforms can be cut, copied, or pasted and then saved. Saved utterances can be played back through an external speaker.

GW Instruments, Inc.
35 Medford St.
Somerville, MA 02143
617-625-4096

System Requirements
Macintosh Plus or larger.

Price $3550 to $7385
Includes hardware.

Support
Free technical support, updates and a one-year warranty are provided.

MacSpeech Lab II

MacSpeech Lab II transforms a Macintosh II into a speech-analysis workstation. With input band widths up to 40 KHz, MacSpeech Lab II can be used to capture, view, edit, analyze, and play back waveforms. Once a waveform is stored in the computer's memory, MacSpeech Lab's algorithms can be used for full waveform analysis. To choose the point or segment on the time waveform for analysis, users click the mouse to set the markers. A full Fourier analysis is available, including wide and narrow band FFTs, sonograms, and full gray-scale spectograms. An LPC spectral slice can be generated from linear predictive coding coefficients. A fundamental frequency plot can also be viewed for any segment of a voice waveform. Both input and output utterances are channeled through an onboard anti-aliasing filter, which gives sharp cut-offs at a preselected frequency. Results are output to a LaserWriter to generate high-resolution printouts for presentations and for publication.

GW Instruments, Inc.
35 Medford St.
Somerville, MA 02143
617-625-4096

System Requirements
Macintosh II or larger.

Price $4990 to $15,350

Support
Free technical support, updates, and one-year warranty are provided.

NB LabDriver

NB LabDriver provides high-level software modules for developing data acquisition applications with the NB Series data acquisition boards in a Macintosh II. With one or more of the NB Series personal instrumentation boards installed, a Macintosh II becomes a personal laboratory with the capability for real-world analog and digital measurement and control. NB LabDriver is an essential ingredient for this system, since it eliminates the low-level programming task and integrates the hardware capabilities with the high-level application programming environment of the user. NB LabDriver is a set of driver routines that can be called from the user's application programming environment. These routines provide functional support for analog input (A/D conversion), analog output (D/A conversion), digital input and output, timing input and output, and RTSI. NB LabDriver can be logged on to directly from any language that supports system toolbox device manager calls, and higher-level language interface libraries are provided for Lightspeed C, Lightspeed Pascal, HyperLab, MPW C, and Microsoft BASIC. A Virtual Instrument (VI) Library is available for using the NB LabDriver routines with the LabView graphical software construction system.

National Instruments
12109 Technology Blvd.
Austin, TX 78727
512-794-0100

System Requirements
Macintosh II and larger; NB Series hardware.

Price $295

Support
Free telephone hotline and updates for one year are provided.

NB Series Data Acquisition Boards

The NB Series Data Acquisition Boards provide data acquisition and control capability for a Macintosh II computer. Functions of these boards include analog-to-digital and digital-to-analog conversion, digital input and output, event timing, and IEEE-488 interface. The boards feature full software support under the LabView software construction system, as well as conventional languages such as C, BASIC, FORTRAN, Pascal, and Assembly. Unique to the NB Series is the National Instruments Real Time System Integration (RTSI). This feature enables direct communication between boards to enable precise timing and synchronization capabilities. It also enables shared system-level direct-memory access (DMA) for high-performance applications with the NB-DMA-8G DMA server board.

National Instruments
12109 Technology Blvd.
Austin, TX 78727
512-794-0100

System Requirements
Macintosh II or larger.

Price $245 to $1495

Support
Free telephone hotline, application support, field seminars, and a two-year warranty are provided.

Rack II

See complete description under System Components—CPUs.

WavEdit

WavEdit reviews and edits data recorded by a variety of Macintosh-based acquisition programs and equipment. WavEdit makes it easy to review long data files, identify regions of interest, and then cut, copy, and paste those regions into another file for display and analysis. Original data files are not altered. Up to 16 channels of data can be viewed at once, and display of waveforms can be scaled and compressed as needed. Waveforms can be overlaid for comparison, each in a different color. A magnifier tool allows zooming in on a selected spot; time and voltage scales change accordingly.

World Precision Instruments, Inc.
375 Quinnipiac Ave.
New Haven, CT 06513
203-469-8281

System Requirements
Macintosh SE or larger. Large-screen color or monochrome monitor recommended.

Price $295

Support
Free limited telephone support is provided.

Data Visualization/Image Processing

Digital Darkroom

Digital Darkroom is an image-processing program that functions as a computerized darkroom for manipulating scanned or digitized gray-scale images with up to 256 levels of gray. Six levels of view, 32 brush shapes, and a highly intuitive user interface make photo retouching and image enhancement simple. Digital Darkroom can dramatically alter images with Perspective, Slant, Stretch, Flip, and Free Rotate transformations. Special effects include blurring, solarizing, posterizing, mosaic patterning, and gray-scale inversion. A Magic Wand automatically lassos adjacent pixels of similar gray value. AutoTrace automatically creates Bézier curve outlines of entire bit-mapped images or picture elements, converting them to object-oriented images.

Silicon Beach Software, Inc.
9770 Carroll Ctr. Rd., Ste. J
San Diego, CA 92126
619-695-6956

System Requirements
Macintosh SE or larger.

Price $395
Educational site licenses available.

Support
Telephone support is provided.

HyperSpace

HyperSpace is a data visualization tool that creates accurate digitized models of complex three-dimensional objects. Its six-dimensional stylus that recognizes x, y, z, pitch, roll, and yaw lets users point and click on three-dimensional objects to digitize them directly without scanning. The stylus also sets the light source. Flat and smooth shading are available for the modeling process. The program can maintain more than one view on an object, and it allows creating or editing more than one object at a time. Images rendered with the modeler can be cut and pasted into any desktop publishing program. Views of an object can be saved in PICT format. Users can also translate objects created in HyperSpace into ASCII text files for use in dedicated CAD/CAM or high-end animation workstations.

Mira Imaging Inc.
202 East 39th St., 4th fl.
New York, NY 10016
212-986-5770

System Requirements
Macintosh Plus or larger.

Price $7500

Support
Telephone support and a one-year warranty are provided.

Image Analyst

Image Analyst is an image-processing product for users who need to extract quantitative data from video images. Image Analyst lets users configure sophisticated image processing and measurement routines without the necessity of knowing a programming language. It is designed for such tasks as computing number and size of cells in images projected by video cameras attached to microscopes, or enhancing and measuring distances in radiographs. Image Analyst provides users with an array of field-proven video analysis techniques that enable them to easily assemble a sequence of instructions to enhance feature appearance; count objects; determine density, shape, size, position, or movement; perform object feature extraction; and conduct textural analysis automatically. Image Analyst works with either a framegrabber board and any standard video camera, or a disk-stored image.

Automatix, Inc.
775 Middlesex Tpk.
Billerica, MA 01821
508-667-7900

System Requirements
Macintosh II or larger; 5 MB of RAM; framegrabber board required to use video camera (Data Translation Quick Capture and Scion FG 2).

Price $2000

Support
Free telephone support for 6 months is provided. Training and update service are available for a fee.

MacSpin 2.0

MacSpin 2.0 is an application for viewing multivariate data in three dimensions. Users can import data from spreadsheets and other sources, and the information, or "plot," can be rotated and viewed at any angle. The system allows users to visually identify patterns, to isolate trends, and to answer what-if questions by changing variables and testing assumptions. MacSpin 2.0 includes such sophisticated features as grid surfaces, multiple windows, color, and enhanced rotating options.

D2 Software, Inc.
P.O. Box 50052
Austin, TX 78763
512-478-2393

System Requirements
Macintosh 512K or larger.

Price $300

Support
Free telephone support and 30-day money-back guarantee are provided.

NuVision

NuVision is a video-quality image processor for scientists, engineers, and high-end printers and publishers. It features a hardware accelerator for image processing operations, such as frame-grabbing and high-resolution display. It can be used in any application that needs to acquire, enhance, and extract quantitative data from video images. NuVision is housed in an external chassis and connected to a single NuBus slot through a high-speed parallel interface. The basic system includes one Video Interface board that features sophisticated digitizing and display interfaces and functions, one Smart Memory board that features 2 MB of frame storage and a digital signal processor, and an integrated software package that supports a wide array of image processing operations. Additional boards can be added to the system and a pixel processor is available for video-rate arithmetic and logic operations. A complete subroutine library and source code are provided with the system.

Perceptics Corporation
725 Pellissippi Pkwy.
Knoxville, TN 37933
615-966-9200

System Requirements
Macintosh II or larger; hard disk; gray-scale monitor.

Price $24,745 to $40,000
Basic price includes six-slot chassis, NuBus interface, Video Interface board, and Smart Memory board.

Support
Telephone and MacNET support and 90-day warranty; extended warranties available. Software updates free on MacNET or $100 by mail.

Scan Analysis

Scan Analysis will take ThunderScan "SCAN" files and allow users to integrate selected areas of an image. Scan Analysis has the functionality of a densitometer. Users can select areas of the scanned image to integrate, and then the program will integrate the area—finding peaks of density and giving the absolute peak of density—and output a plot that displays the intensity profile of the scan. Scan Analysis works under Switcher™ and MultiFinder. It will also output data in standard file formats that can be read by Excel, Cricket Graph, Text Editors, and MacDraw, allowing users to further manipulate data. On a Macintosh II, true gray scales are displayed, as well as false color enhancement and contrast manipulation.

Specom Research
3252 Cowper St.
Palo Alto, CA 94306
415-723-5811

System Requirements
Macintosh 512K enhanced or larger; ThunderScan or other scanning device or video camera.

Price $399

Support
Free telephone support, warranty, and updates are provided.

TCL-Image

TCL-Image is a software package for scientific, quantitative image processing and analysis on a Macintosh II. It provides a complete language for the capture, enhancement, and extraction of quantitative information from gray-scale images. TCL-Image has over 200 functions for image processing, and contains the other elements needed in a full programming language for algorithm development—variables and control structures. It is easily extensible through "script" (or indirect command) files. These script files are simply text files that contain TCL-Image commands. They are executed as normal commands and include the ability to pass parameters. The direct capture of video images is supported via popular frame grabber boards. TCL-Image also comes with the I-View utility that provides conversion between common image file types, such as PICT2 and TIFF.

Perceptics Corporation
725 Pellissippi Pkwy.
Knoxville, TN 37933
615-966-9200

System Requirements
Macintosh II or larger; 4 MB of RAM; hard disk; 8-bit video.

Price $3500
Educational discounts are available.

Support
Telephone or MacNET support and a 90-day warranty are provided.

Ultimage

Ultimage is scientific image processing and analysis software for the Macintosh II series. The program loads images with a minimum resolution of 64 by 64, a pixel depth of 8, 16, and 32 bits, and one image plane. Standard input and output formats include PICT, TIFF, SATIE, and AIPD. Other formats can be imported. Image enhancement features include lookup table transformations, spatial linear and nonlinear filters, frequency filtering, arithmetic and logic operators, and geometric transformations, among others. Morphological transformations include erosion, dilation, opening, closing, hole removal, object separation, and extraction of skeletons, among others. Quantitative analysis provides for objects' detection, measurement, and morphological distribution. Measures include area, perimeter, center of gravity, moment of inertia, orientation, length of relevant chords, and shape factors and equivalence. Measures are saved in ASCII format. The program also provides for macro scripting and integration of custom modules.

GTFS Inc.
2455 Bennett Valley Rd. #100C
Santa Rosa, CA 95404
707-579-1733

System Requirements
Macintosh II or larger; minimum 2 MB of RAM; 8-bit video card; color monitor.

Price $2990

Support
Telephone support; 90-day warranty on media; and one year free updates are provided. Yearly maintenance program and updates after one year are available for a fee.

Computer-Aided Software Engineering (CASE)

AdaFlow

AdaFlow is an interactive graphics object-oriented design (OOD) tool that supports hierarchical Buhr diagramming techniques.

Iconix Software Engineering, Inc.
2800 28th St., Ste. 320
Santa Monica, CA 90405
213-458-0092

System Requirements
Macintosh 512K or larger.

Price $1995

Support
Telephone support, maintenance contracts, and upgrades are available.

Adagen

Adagen automatically generates compilable Ada code bodies and specifications from detailed design diagrams. Adagen supports object-oriented diagramming methods by Colbert, Booch, and Buhr, and other techniques for object-oriented requirements analysis, top-level design, or detailed design. Adagen also supports older diagramming methods such as data-flow diagrams, real-time extensions, entity-relationship diagrams, and structure charts. Reverse engineering tools parse legal Ada code and build design diagrams showing compilation dependencies; options and filters provide a rich range of diagrams that show module and call structure. This feature aids reuse and reengineering, and it assists in documenting as-built code, component libraries, prototypes, and code delivered from contractors.

Mark V Systems
16400 Ventura Blvd., Ste. 303
Encino, CA 91436
818-995-7671

System Requirements
Macintosh SE or larger; MultiFinder 6.0.

Price $7850
Discounts for additional copies.

Support
Telephone hotline provided as part of annual maintenance fee ($1170) that includes updates and bug fixes; 90-day warranty; training available.

Aide-De-Camp Software Management System

A/UX The Aide-De-Camp Software Management System provides software configuration management, including management of code, documentation, historical records, structural information, relationships, and dependencies. Software changes are treated as individual, named logical units, which can include changes to any number of files or other information, and which can be included or deleted from subsequent software versions. Aide-De-Camp permits easy maintenance of parallel versions and migration of changes from one program version to another. List, macro, help, and other facilities allow users to tailor the software to their own operating requirements. The system supports the use of local editors and compilers. In addition, Aide-De-Camp Software Management System produces predefined and user-defined reports and tracks change requests. The system is available on a wide range of platforms and networked environments and can support any language.

Software Maintenance and Development Systems
P.O. Box 555
Concord, MA 01742
508-369-7398

System Requirements
Macintosh II or larger; 4 MB of RAM; hard disk; A/UX.

Price $1200 to $25,000
Site license available. GSA/Educational discounts.

Support
A 90-day warranty is provided. Telephone hotline support, updates, and training are available by contract.

Anatool

Anatool is a CASE tool for use by system analysts, software developers and management consultants. It implements structured systems analysis methods by creating a document with hierarchical data flow diagrams, a data dictionary, and pseudo-code specifications. Anatool checks for consistency, syntax errors, and unfinished work throughout the document. The data dictionary is created automatically from the information on the diagrams, and changes in the dictionary will be immediately reflected throughout all diagrams and definitions. The dictionary import/export function facilitates communication with other systems, such as CASE tools, database management systems, mainframe applications or desktop publishing. The specifications may be written in free English style or utilize the structural English pseudo-code editor. Consistency checks are built in. These checks can be viewed interactively or printed out. For large projects and multiple analysts working together, Anatool has the ability to merge independently created documents into one consistent master document.

Advanced Logical Software
9903 Santa Monica Blvd., Ste. 108
Beverly Hills, CA 90212
213-653-5786

System Requirements
Macintosh 512K or larger.

Price $925

Support
Free technical support is provided. Update agreement is available at $65 per year.

Deft/Mac

Deft/Mac can be used by analysts and designers to capture structured designs in the form of data flow, entity relationship, and program structure diagrams. The forms and reports for the target system can also be specified. The statistically analyzed design may optionally be transferred to any VAX/VMS or UNIX computer where SQL is generated. The SQL is specifically tailored to suit a particular database. The product currently supports INGRES and ORACLE; Rdb and SYBASE are expected towards the end of the year. The generation process creates the schema, complete with tables, views, indexes, and the target systems forms. Uses of the host software are presented with the same interface as the Macintosh-based software (Deft/Mac users experience a seamless Macintosh interface, even when running VMS software). Deft's VAX software includes configuration management capabilities for source code and object libraries.

DEFT, Inc.
557 Dixon Rd., Ste. 110
Rexdale, Ontario, M9W 1H7 Canada
416-249-2246

System Requirements
Macintosh 512K or larger; two 800K drives.

Price $2900 to $29,000
Price depends on configuration.

Support
A telephone hotline and full maintenance service, including updates and enhancements, are available for 15% of the license fee per year.

Design/OA

Design/OA is an open-architecture C development tool for creating customized, objected-oriented graphics applications and interfaces. Design/OA's toolkit handles the software developer's graphics needs, from creating the simplest objects to building the most detailed hierarchy of diagrams, allowing the developer to concentrate on solving problems of planning, design, and implementation. The graphics interface within Design/OA is easily customized for CASE, CAD/CAE, CIM, object-oriented programming, or simulation software. Databases, code generators, data processing systems, or communication networks can be tied to graphical front ends designed and implemented with the Design/OA toolkit. Design/OA, with its flexible tools, supports any graphics approach to system design, analysis, and simulation.

Meta Software Corporation
150 Cambridge Park Dr.
Cambridge, MA 02140
617-576-6920

System Requirements
Macintosh Plus or larger; 3 MB of RAM; Lightspeed C 3.0 or later.

Price $7500
Maintenance contracts are available for $1000 per year per license.

Support
The maintenance contract includes all upgrades and 20 hours of telephone hotline support. Training, consulting services, and contract development are available for a fee.

Iconix PowerTools/Structured Design

Iconix PowerTools/Structured Design is an integrated CASE tool set designed to span the entire software life cycle. PowerTools consists of four software packages, FreeFlow, FastTask, PowerPDL and SmartChart, which can operate independently or as an integrated unit. FreeFlow supports software design with structured analysis. Working with FreeFlow's text and graphics editor, analysts create leveled sets of data flow and control diagrams and process specifications (minispecs). With FastTask, engineers model a finite-state machine to support real-time development. After analysis, the minispecs are collected into a single file for use by PowerPDL and SmartChart. PowerPDL generates formatted documentation from the file. Listings include table of contents, design body, data cross-reference list, subprogram cross-reference list and subprogram nesting tree. SmartChart combines language-sensitive editing with automatic structure-chart generation. An engineer graphically reviews and refines PDL output. The tool generates structure charts from the information produced by the PDL processor as well as source code.

Iconix Software Engineering, Inc.
2800 28th St., Ste. 320
Santa Monica, CA 90405
213-458-0092

System Requirements
Macintosh 512K or larger.

Price $4495
Component prices: FreeFlow $995; PowerPDL $995; SmartChart $995; FastTask $995; ASCII Bridge $995.

Support
Telephone support is provided. Maintenance and updates are available for 15% of purchase price per year.

IDDK: DFD-Edit and ERA-Edit

DFD-Edit, a data-flow diagramming tool, is part of the Intelligent Database Design Kit (IDDK). This module allows creation of multilevel, balanced data-flow diagrams with data dictionary and structured English functional specifications. DFD-Edit also generates and prints full documentation in text form. The program generates the initial entity-relationship-attribute diagram used by another IDDK tool, ERA-Edit. ERA-Edit, a module of the Intelligent Database Design Kit (IDDK), creates models of the entity-relationship-attribute. The program offers strong object orientation and hypersemantic features that make it well suited for use as a knowledge representation tool. In addition, ERA-Edit normalizes objects to first normal form relations. It also generates and prints full documentation in text form.

The University Of Wollongong, Dept. of Computing Services
P.O. Box 1144
Wollongong, NSW2500 Australia
61-4--2270859

System Requirements
Macintosh 512K or larger; external 800K disk drive.

Price $800

Support
Lifetime upgrade program available for $200.

MacAnalyst

MacAnalyst automates industry-standard analysis techniques. Data flow diagrams showing the flow of information in a system can be created quickly and revised from a palette of tools. These diagrams can contain processes, flows, stores, external entities, and captions. Both data flow and control flow can be represented on the diagrams. Diagram leveling is fully supported, where processes on higher-level diagrams are exploded to lower-level diagrams or process specifications by double-clicking the mouse. The data dictionary contains all data relationships in the software system being modeled. Diagrams are closely integrated with the data dictionary allowing quick dictionary access for data named on a diagram or in a process specification. Extensive verification reports check the consistency and balance of data relationships and diagrams.

Excel Software
P.O. Box 1414
Marshalltown, IA 50158
515-752-5359

System Requirements
Macintosh Plus or larger.

Price $795
Site license $2385.

Support
Free periodic newsletter provided. Updates and update service contracts are available.

MacBubbles

MacBubbles is an integrated multiwindow CASE tool that provides full support for modern structured analysis in the Yourdon style and is used to create high-quality entity relationship and data flow diagrams. Only MacBubbles uses PostScript to provide curved data flows whose titles follow the shape of the data flow. A data dictionary and minispec editor are included. The real-time data flow diagram symbols of Boeing/Hatley, Ward and Mellor, and ESML are supported. MacBubbles allows data flow diagrams to be combined or leveled with a single click of the mouse. Expanded physical models containing hundreds of bubbles on a single diagram may be created when performing system archaeology. Bubbles may be clicked open to reveal lower-level diagrams or minispecs. Changes are tracked by time and person and may be highlighted on output. A variety of notes may be attached to graphic objects and dictionary entries to record decisions, information sources, open issues, and other facts pertinent to analysts and managers. Effort metrics may also be tracked by individual document.

StarSys, Inc.
11113 Norlee Dr.
Silver Springs, MD 20902
301-946-0522

System Requirements
Macintosh Plus or larger; external disk drive or hard disk; LaserWriter.

Price $779.99
Demo, $25.

Support
Telephone and CompuServe support are available.

MacDesigner

MacDesigner is a CASE software design tool that automates the structured design process or documents existing software systems. Users can easily capture and communicate software design and organization with structure charts, tree diagrams, module descriptions, and a complete data dictionary. The program supports cross-reference lists and verification of diagrams and data relationships. MacDesigner contains six types of windows and a complete set of graphic and text-editing features. Structure charts showing the organization of modules in a program can be created and revised from a palette of tools. Structure charts can contain modules, stubs, links, data couples, control couples, captions, polygons, and user-defined symbols. The text editor creates module specifications or pseudocode of software modules. The data dictionary contains all data relationships in the software system being modeled. Data on structure charts or in module specifications can be quickly defined in the data dictionary.

Excel Software
P.O. Box 1414
Marshalltown, IA 50158
515-752-5359

System Requirements
Macintosh Plus or larger; MultiFinder; ImageWriter or LaserWriter.

Price $795
Site license $2385.

Support
Free periodic newsletter provided. Updates and update service contracts are available.

MacFlow

MacFlow lets users draw any type of chart involving symbols and flow lines. Predrawn symbols are connected with lines. Text is typed into symbols and lines. The chart can be reorganized as desired; lines stretch and stay attached. Symbols can be resized, and elements can be added or deleted. If a symbol is moved, the lines remain connected. Text comments may be attached to a symbol. Symbols may also be used to launch other applications. Flowcharts can be entirely free-form and can include custom symbols. All aspects of a chart can be in color. Color palettes, custom symbols, and a variety of other defaults can be saved as a stationary document. A hierarchical organization links symbols on a top-level chart to lower-level charts. Users can zoom to different levels of detail and view multiple windows. MacFlow helps users develop an overall view of a project or logic flow. It is useful for designing or documenting flow relationships of any type, such as project flow, logic flow, operations flow, software flowcharts, experimental design, organization charts, and troubleshooting diagrams.

Mainstay
5311-B Derry Ave.
Agoura Hills, CA 91301
818-991-6540

System Requirements
Macintosh Plus or larger; System 6.0 or later.

Price $245

Support
Free telephone support; on-line support via CIS, MCI and AppleLink; newsletter; and low-cost upgrades are available.

MetaDesign

MetaDesign (formerly Design 2.0) is a powerful flow-charting and diagramming tool for designing, editing, and documenting complex systems. Business and data flows, system designs, networks, and organizational diagrams are easy to edit, with arrows that follow along as objects are moved. Users click on an object to view a hierarchy of related pages that detail the system with additional diagrams. Hypertext links related sections of text, providing another way to logical organize the model. Palettes store imported or customized objects. MetaDesign provides the graphical support and flexibility to create models, from rough sketches to multilayered presentation-quality systems designs, that are detailed, complex, and yet easy to read.

Meta Software Corporation
150 Cambridge Park Dr.
Cambridge, MA 02140
617-576-6920

System Requirements
Macintosh Plus or larger.

Price $250

Support
Free telephone support is provided.

MicroPlex Development Environment

MicroPlex Development Environment provides an integrated editor/cross-compiler development environment. The MicroPlex editor is a top-down "file-structured" editor that incorporates full symbolic aliasing capabilities. Compilers for various target machines are dynamically linked to the MicroPlex environment, allowing a single source program to be compiled rapidly to various target machines. When used with tPlex PDL, executable code for an Inmos transputer can be generated.

Micro/Research
730 E. Cypress Ave.
Monrovia, CA 91016
818-359-3503

System Requirements
Macintosh SE or larger.

Price $595
Package, including MicroPlex and tPlex PDL, $2995.

Support
Free telephone and fax support are provided. Updates are available at low cost.

PowerPDL

PowerPDL (design language processor) creates the loop for iterative design, translating PDL files initially created in FreeFlow into the nesting trees SmartChart needs to generate structure charts. Design revisions are recorded in the PDL file and run through the Processor to update structure charts automatically; the Processor also generates formatted documentation. Features include Table of Contents, which gives an easy-to-read overview of the design document; Design Body, which groups subprograms and other elements into packages; Subprograms, which describes the input, output, functions, algorithms and logics of a program module; Externals, which allows reference to subprograms defined in separate files in the current design; Comment blocks; Data Cross Reference List, which locates data items; Subprogram Cross Reference List, which shows subprogram dependencies; Subprogram Nesting Tree, which displays the design call structure; and Strip Utility, which allows PDL to be embedded within program source code as comments and automatically extracted on command.

Iconix Software Engineering, Inc.
2800 28th St., Ste. 320
Santa Monica, CA 90405
213-458-0092

System Requirements
Macintosh 512K or larger.

Price $995

Support
Telephone technical and product support, upgrades, customization, consulting, and training are available.

PowerTools

PowerTools 2.0/OOD and PowerTools 3.0 are software tools for designers. The PowerTools 2.0/OOD suite includes AdaFlow, a graphic design tool that supports such object-oriented constructs as tasks, packages, and objects. PowerTools 3.0 includes AdaFlow; FreeFlow, a structured analysis tool; FastTask, a real-time development tool; SmartChart, a structured design and coding tool; PowerPDL, a detailed design tool; and ASCII Bridge, an import/export/merge tool.

Iconix Software Engineering, Inc.
2800 28th St., Ste. 320
Santa Monica, CA 90405
213-458-0092

System Requirements
Macintosh 512K or larger.

Price $4495 to $5995
PowerTools 2.0/OOD modules available as stand-alone units. FreeFlow, FastTask and ASCII Bridge are priced at $995 each, with AdaFlow priced at $1995. Volume discounts and site licenses are also available.

Support
Telephone support, maintenance contracts, and updates are available.

Prototyper

Prototyper is an integrated user-interface builder, simulator, and code generator. It gives users an object-oriented graphic environment that allows creation of professional-looking programs by simply clicking and dragging. Prototyper uses worksheets and layout tools to design and place controls in windows. Each window has its own palette for creating buttons, pictures, lines, static and editable text, check boxes, radio buttons, lists, rectangles, popup menus, and scroll bars. Menus are created by filling out the editor, then linking the commands to open or close windows, dialog boxes, and alerts; to open the standard system "print and save" dialog boxes; and to enable other menus, menu commands, and select controls. Users can run their application with Prototyper's simulators, which allow interface designers to experience the look and feel of the application. After the interface design is complete, Prototyper automatically generates standard source code and resources for C and Pascal compilers including Think C and Pascal, MPW C and MPW Pascal, TML Pascal II, and Turbo Pascal.

SmethersBarnes
520 S.W. Harrison, Ste. 435
Portland, OR 97201
800-237-3611

System Requirements
Macintosh Plus or larger.

Price $295
Educational discounts are available.

Support
Free technical support and a 30-day money-back guarantee are provided. Upgrades are available for a nominal fee.

Refine

Refine is a software development environment for building software processing applications such as code generators, program analyzers, and language translators. Refine includes a very high-level executable specification language that is ideal for prototyping and rapid development of applications; an object-oriented database that stores programs, documentation, and user-defined objects; a language-processing system that allows users to analyze and transform programs in any existing language and to implement new languages quickly; and an X Windows-based user interface toolkit that provides windows, graphics, and menus. Refine is an open system; it provides all the interfaces necessary to integrate with other tools and to build applications that require a minimum of technical knowledge on the part of the user.

Reasoning Systems
3260 Hillview Ave.
Palo Alto, CA 94034
415-494-6201

System Requirements
Macintosh II or larger; 4 MB of RAM; 40 MB hard disk; Symbolics MacIvory or Texas Instruments MicroExplorer card.

Price $9900

Support
Maintenance contracts are available beginning at a cost of $3400 per year. A five-day training course is available for $2500 per person.

Silverrun Design Tools

The Silverrun Design Tools consist of four related software design tools—Silverrun-LDM, Silverrun-SRL, Silverrun-ERM, and Silverrun-DFD. Silverrun-LDM lets database administrators produce logical data models with a graphics tool palette or by automatically transforming entity-relationship data models created by Silverrun-ERM. Silverrun-SRL creates documented screen and report layouts. An integrated dictionary contains all specification information, which can be exported to mainframe dictionaries and application or code generators. Silverrun-ERM documents and normalizes entity-relationship data models. Programmers create data model objects (entities, relationships, attributes, relationship cardinalities) in interactive graphics windows or dictionary windows. Data models can be split or merged, and contain hundreds of entities, relationships, and attributes. Silverrun-DFD integrates the creation and documentation of data flow diagrams. Users can reassign flow from one object to another, assign data items or structures to flows, copy data items, explode a process into lower-level processes, list descriptions of all objects in a model, change zoom levels, and merge two objects in a diagram.

XA Systems Corporation
801. Ch. St. Louis, Ste. 240
Quebec City, Quebec, G1S 1C1 Canada
418-687-5764

System Requirements
Macintosh Plus or larger; 2 external disk drives.

Price $1775
Per tool.

Support
Telephone support and bug fixes are provided; updates available for a nominal fee, or may be included in annual extended support services; training is available.

TurboCASE

TurboCASE is an integrated, multiwindow, multimethodology-supporting CASE tool. It supports structured analysis with or without the real-time extension. TurboCASE is designed for expansion. It will also support data modeling, structured design, and object-oriented analysis and design in the future. TurboCASE is easy to learn and use, with some unique analysis features and unsurpassed interactive graphics. There are two versions of TurboCASE, the single-user and mulit-user versions. The multi-user version supports importing and exporting project information between team members and is capable of inter-CASE tool information exchanges.

StructSoft, Inc.
5416 156th Ave. S.E.
Bellevue, WA 98006
206-644-9834

System Requirements
Macintosh Plus or larger.

Price
Single-user version $495; multi-user version $995; volume and educational discounts; demonstration disk available.

Support
Free telephone support and one-year update are provided.

General Languages and Tools

3-D Graphics Library

The 3-D Graphics Library supports both perspective and parallel projections. The user need only describe the three-dimensional window volume and "camera" placement, and the Library does the rest. Features include simple and advanced calling interfaces; support for circles, rectangles, grids, polygons, areas, text plotting, and contour plots; special three-dimensional "animation" tools; and convenient support for cabinet, cavilier, and arbitrary oblique projections.

True BASIC, Inc.
12 Commerce Ave.
West Lebanon, NH 03784
800-872-2742

System Requirements
Macintosh 512K or larger; True BASIC Language System 2.0 or later.

Price $69.95

Support
Technical support is provided.

AdaVantage Mac Professional Developer Kit

The AdaVantage Mac Professional Developer Kit includes the Macintosh AdaVantage Compiler with Linker, AdaVantage Optimizer, AdaVantage Source Level Debugger, Utility Library and Mac Environment Library. The Meridian Mac AdaVantage compiler provides the programmer with Ada programming capability for Macintosh computers and generates C code that can be compiled by the MPW C compiler resulting in code that can execute under MPW or as a Macintosh application. A linker is provided to create stand-alone executable files for the Macintosh operating system. This compiler package includes the compiler, linker, library management tools, support packages, runtime libraries, and a configuration tool. Full generics, tasking, and separate compilation are supported and all standard packages are provided. Most implementation dependent system programming facilities are implemented. The compiler also provides a pragma INTERFACE used to make calls to subprograms written in 68000 assembly language, Meridian C, Meridian Pascal, and MPW C. A set of library management tools provide control over programming project organization and compilation unit databases. The Utility Library has defining capabilities and the Mac Environment Library includes Ada packages that may be used to manipulate windows, controls, menus, QuickDraw™, fongs, formatting, editing, scrap management, desk accessories, and commonly used low level utilities.

Meridian Software Systems, Inc.
23141 Verdugo Dr., Ste. 109
Laguna Hills, CA 92653
714-380-9800

System Requirements
Macintosh Plus or larger; 2 MB of RAM; Finder 6.01 or later. Supports software floating point in 68881 hardware floating point.

Price $1700
Includes MPW.

Support
Free updates, training, and on-line and telephone support are provided. Annual newsletter is provided.

Advanced String Library

Advanced String Library is full of handy tools that include source code. Features include pattern-matching routines, expression scanning, associative memories, text manipulation, character set manipulation, English text and Roman numeral conversion, DO programs that find and replace patterns in a current file, and a 38,000-word dictionary.

True BASIC, Inc.
12 Commerce Ave.
West Lebanon, NH 03784
800-872-2742

System Requirements
Macintosh 512K or larger; True BASIC Language System 2.0 or later.

Price $69.95

Support
Technical support is provided.

Alsys Ada Compiler for the Macintosh II

A/UX

The Alsys Ada Compiler is a complete Ada system, officially validated by the U.S. government. It includes the compiler, a MultiLibrary Environment, and Ada Run Time Executive. The compiler produces very high-quality code and includes a unique Ada high-level optimizer. The MultiLibrary Environment is implemented by three tools: the Family Manager, the Library Manager, and the Unit Manager. These provide a flexible and efficient sharing of Ada compilation units among Ada libraries in a family. Individual libraries may be transparently distributed over a local area network. The Run Time Executive supports Ada tasking, heap allocation, exception handling, and I/O. Exceptions are implemented with no overhead unless raised. Tasking includes preemptive scheduling and time slicing. Floating-point support is offered both in software and using the 68881 coprocessor. The compiler comes with a standard mathematical library. An optional Ada Developer's Toolset is available with the Compiler, consisting of AdaProbe, AdaXref, AdaMake, and AdaReformat.

Alsys, Inc.
67 S. Bedford St.
Burlington, MA 01803
617-270-0030

System Requirements
Macintosh II or larger; A/UX operating system; 4 MB of RAM; 40 MB of free disk space.

Price $4495
Includes Ada Developer's Toolset.

Support
A maintenance contract, mandatory for the first year, is available for $800 per year and includes telephone support, updates, and validation. A free newsletter is provided to all customers.

APL.68000 for the Apple Macintosh

APL.68000 for the Apple Macintosh is a highly optimized assembler-based language interpreter used for programming in APL. It offers a friendly environment and a simple method of writing applications that is especially useful for applications that need to be set up quickly or changed often. In business, APL is used for financial planning, market research, statistics, management information, and administration. It is also used extensively in scientific and engineering work, and is well suited to graphics applications. APL.68000 for the Macintosh features full integration with the Apple environment; use of standard Macintosh user interface; a built-in full-screen function editor; access to Macintosh native files; full Clipboard support for text and graphics; common system commands such as pull-down menus; full ImageWriter and LaserWriter support; user-defined dialog and alert boxes; full interface to QuickDraw graphics; arbitrary I/O via serial ports; a session manager that allows editing of screen lines; and a built-in APL/ASCII terminal emulator. Applications can use a standard ASCII keyboard and can detect mouse position and state.

Spencer Organization
366 Kinderkamack Rd.
Westwood, NJ 07675
201-666-6011

System Requirements
Macintosh 512K or larger.

Price $149
Macintosh II version $399.

Support
Free telephone support is provided for 30 days. Additional support, upgrades, bug fixes, and AppleLink are available.

AppMaker, The Application Generator

AppMaker is a software tool for creating or changing Macintosh applications quickly, directly, and consistently with a minimum of programming. With AppMaker, the user creates or enhances the user interface for an application (the menus, windows, dialogs, alerts, and their contents) by clicking and dragging to arrange elements on the screen. AppMaker automatically generates complete, ready-to-run source code for the user interface in Pascal or C, for MPW or THINK environments. AppMaker comes with a library of over 70 routines in source code form. AppMaker can be customized to suit user preferences. Both AppMaker and the generated code are MultiFinder-aware. No licensing fees or royalties are required for the generated applications.

Bowers Development Corporation
P.O. Box 9
Lincoln Center, MA 01773
617-259-8428

System Requirements
Macintosh Plus or larger; Pascal or C language system (MPW or THINK) for compiling and linking generated code.

Price $295
University discounts available.

Support
Free telephone, AppleLink, MCI mail or fax support, and 30-day money back guarantee are provided.

B-Tree HELPER

B-Tree HELPER is a set of functions to insert, find, and delete records from a B-Tree file. B-Tree HELPER includes code resources and "glue" routines that may be used with C or Pascal programs. It also includes XFCNs to be used with HyperCard. With B-Tree HELPER the user can: (1) Create B-Tree files, each file with one or more trees, each tree with different key sizes. (2) Add or delete keys from within an existing B-Tree file. With each key addition, the user chooses if the key must be unique. The user may add and delete a complete B-Tree within a file. (3) Insert or delete records to a file. Records are independent of keys. The user interprets the 32-bit value associated with a key; it may be a record address or an application-dependent code. B-Tree HELPER includes separate functions to allocate and release file space for records and to read and write records. (4) Find keys equal to, greater than, or less than certain values, using the user's own comparison functions or standard comparison functions. The speed with which B-Tree HELPER manages records depends on the size of the keys chosen, the number of keys chosen per page, and the number of records in the file.

(M)agreeable software, inc.
5925 Magnolia Ln.
Plymouth, MN 55442
612-559-1108

System Requirements
Macintosh 512K or larger.

Price $75

Support
Telephone support is provided.

C Programmer's Toolbox/MPW

The C Programmer's Toolbox/MPW contains 20 tools for the serious C programmer. Among the major tools are CDecl, which translates C declaration statements to and from English; CFlow, which determines how a program is organized and what is in the run-time library; CHilite, which highlights and prints the C source code; CLint, which syntactically checks one or more C source-code files; Cpp, which preprocesses C source-code files that have ANSI macro definitions; CPrint, which reformats the C source code; and CXref, which cross-references and checks usage of up to 17 different classes of symbols in the C source code. The Toolbox easily integrates into existing development environments. It includes support for MPW C, Lightspeed C, Aztec C, ANSI C, and many other PC and UNIX C compilers. In addition to command-line support of wildcard file and directory paths, all the tools include easy-to-use interactive Commando interfaces.

MMC AD Systems
P.O. Box 360845
Milpitas, CA 95035
408-263-0781

System Requirements
Macintosh Plus or larger; requires MPW.

Price $295
Site license available.

Support
Free telephone and AppleLink support are provided.

C-ISAM

A/UX C-ISAM is a B+ tree-based access method that allows programmers to create, manipulate, and retrieve data using indexed files. It is designed for software applications that require an indexed sequential access method without the additional capabilities provided by a database management system. C-ISAM provides fast data retrieval, comprehensive data protection, and efficient data storage. C-ISAM's indexing structure eases program development and increases file access speeds. Index keys may be composed of up to eight noncontiguous fields of differing data types. Limits are not placed on the number of fields that may be indexed within a file; duplicate values may be allowed or disallowed for each index. With index value compression, programmers can specify that leading duplicate characters, trailing blanks, and duplicate values be suppressed. File and record level locking procedures ensure data integrity in the most active multi-user environments. Optionally, programmers can specify that record locking be controlled by an application. Transaction audit trails can be specified for any or all files.

Informix Software, Inc.
4100 Bohannon Dr.
Menlo Park, CA 94025
415-926-6300

System Requirements
Macintosh II or larger; A/UX.

Price $375

Support
A 90-day warranty, a quarterly newsletter and technical notes are provided. Annual maintenance contracts, software updates and on-site or regional training are available.

Consulair 68000 Development System

Consulair 68000 Development System (formerly Macintosh 68000 Development System 2.1) is a collection of software tools designed for developing assembly language programs on a Macintosh. Features include a multiple-window editor with undo, which allows users to edit several files simultaneously with standard Macintosh text-editing features; a complete set of system traps and equates; a resource compiler for creating resources; traditional debugger/assembler; support for symbolic debugging; full access to the Macintosh ROM toolbox; and fast assembly at up to 10,000 lines per minute. The Motorola 68000 assembler includes a macro facility, which reduces coding time significantly. A flexible linker/librarian supports libraries and modular programming.

Consulair Corporation
220 First Ave. North, Ste. F
Ketchum, ID 83340
208-726-5846

System Requirements
Macintosh 512K.

Price $79.95
Site licenses are available.

Support
Free telephone support is provided.

Consulair 68020/68881 C Development System

The Consulair 68020/68881 C Development System is a direct access C compiler for the Macintosh II and for 68020/68881 upgrades on 512K or larger Macintosh models. It is a new version of Consulair's HFS-compatible C compiler that is specifically designed and optimized for Macintosh systems with enhanced hardware. It directly accesses both the MC68020 microprocessor and the internal MC68881 floating-point coprocessor for maximum performance. The compiler includes a complete built-in 68020/68881 assembler and emits code that takes advantage of the expanded 68020/68881 instruction set. Floating-point operations are compiled directly to 68881 instructions, and intermediate values are kept in the internal 68881 registers, resulting in extremely fast floating-point execution times.

Consulair Corporation
220 First Ave. North, Ste. F
Ketchum, ID 83340
208-726-5846

System Requirements
Macintosh II or larger.

Price $130
Includes MacC/MacC Toolkit. Available as upgrade to MacC for $200.

Support
Free telephone support is provided.

DB-Library

DB-Library (for MPW C 3.0) is an application programming interface that allows custom programs and third-party applications running on a client Macintosh workstation to communicate with the Sybase SQL Server database running on larger host systems such as VAX and Sun. DB-Library is an MPW C library module that can interface with MPW-compatible object libraries. This product provides standard Sybase interface capabilities such as the ability to query databases, process retrieved data a record at a time, and receive SQL Server internal information.

Sybase
6475 Christie Ave.
Emeryville, CA 94608
415-596-3500

System Requirements
Macintosh SE and larger; 2 MB of RAM; SQL Server on VAX or UNIX system, including Sun, HP 9000, IBM RT, AT&T, Pyramid, NeXT.

Price $199

Support
Training and support are available for a fee.

dBx/dBPort

dBx/dBPort is a developer's tool for moving dBASE III and III+ applications to virtually any hardware and operating system environment. A dBx/dBPort conversion yields the C source code equivalent of a dBASE application. The translation process uses a set of function calls that map dependent functions from the dBASE environment to the target environment. dBx/dBPort includes C function libraries for target environments, including DOS. The C code application is moved to the target environment and compiled with a standard C compiler. Resulting object code is linked with library function code to complete the application conversion. By including the appropriate library functions, the application can also run in other supported environments. Source code is available for function libraries for supported target environments; it is recommended for all environments except PC-DOS. dBx/dBPort does not require C programming experience; an understanding of dBASE and the application would be helpful.

Desktop Ai
303 Linwood Ave.
Fairfield, CT 06430
203-255-3400

System Requirements
Macintosh 512K; C compiler.

Price $600
Function libraries source code $400.

Support
Telephone support is provided. Priority support and conversion consultation are available for a fee.

Double Helix

Double Helix is a powerful information management system that enables the user without technical skills to create customized applications quickly. Double Helix is easy to use and provides a user-specific custom menu system with password protection, high-level support for file transfers (import/export), and an unlimited number of fields, records, and files. Double Helix includes a complete graphics interface design, posting, automatic data manipulation and prevention of data entry errors, macros, action buttons, and other features. Using the visual power and flexibility of the Double Helix environment, applications can be easily tailored to reflect changing requirements. And without modification, applications can be expanded and shared on multi-user Macintosh (no file server required) and Macintosh/VAX networks.

Odesta Corporation
4084 Commercial Ave.
Northbrook, IL 60614
312-498-5615

System Requirements
Macintosh 512K enhanced or larger; hard disk.

Price $595
Multi-user Helix, $495 for 4 nodes; Helix VMX, $4500 and up.

Support
Free technical support; OdestaLink on-line bulletin board; training seminars; custom design services; and developers' programs are available.

FlexeLint

FlexeLint (formerly Generic Lint) is a diagnostic facility for C. It finds bugs, glitches, and inconsistencies that the compiler working on one module at a time would miss. FlexeLint is distributed in "shrouded source" form. It requires only K&R C to compile but will support ANSI extensions. FlexeLint will find inconsistent declarations, argument/parameter mismatches, uninitialized variables, unaccessed variables, variables assigned but not used, suspicious macros, indentation irregularities, function inconsistencies, unusual expressions, printf-scanf irregularities, order of evaluation,and more. FlexeLint is fully customizable: all error messages can be selectively inhibited; the size of scalars can be altered; and the format of error messages can be adjusted.

Gimpel Software
3207 Hogarth Ln.
Collegeville , PA 19426
215-584-4261

System Requirements
Macintosh 512K or larger; ability to read in ASCII files from MS-DOS formatted disks; K&R C compiler.

Price $798
Educational and quantity discounts.

Support
Telephone technical support, user manual, and 30-day money-back guarantee are provided.

GEI ROMemulator

The GEI ROMemulator is an in-circuit ROM/EPROM emulator designed to allow microprocessor cross-development on the Macintosh. A desk accessory called LoadROM accepts binary and popular hex record formats for loading the ROM code from the Macintosh to the GEI ROMemulator. The system also provides extensive editing capabilities to allow ROM software patching. LoadROM is also available as an MPW tool. In this command-line version, it is invoked by the MAKE command of MPW to automatically load the ROM emulator as part of the build process. After downloading from the Macintosh, the code in the emulator is immediately available for access from the target computer. The target can be an 8-, 16-, or 32-bit system, such as the Z-80, 8031/51, 68000, 80386, 68020, or 68030.

Grammar Engine, Inc.
3314 Morse Rd., Ste. 213
Columbus, OH 43231
614-471-1113

System Requirements
Macintosh 512K enhanced or larger; target system containing ROM/EPROMS to be emulated.

Price $375 to $1895
Complete package price for standard models. Quotations available for nonstandard and high-speed ROM types.

Support
Free telephone support and a one-year warranty on materials and workmanship are provided.

Hoops Graphics System

Hoops Graphics System is a toolkit for creating two-dimensional and three-dimensional interactive graphics applications. It is based on an object-oriented declarative programming interface that simplifies the task of creating technical graphics applications. With Hoops, all interactive graphics applications are really database problems. The package provides all the tools necessary to create a hierarchical database of graphics objects. Simple declarative commands then determine which objects are displayed and how they are rendered, including hidden-line and -surface removal and multiple-light-source shading. This high-level interface greatly simplifies the design and production of advanced graphics applications and eliminates the need to specify thousands of low-level QuickDraw routines. The system-independent design of Hoops allows graphics developed on one system to be ported, without modification, to all supported platforms. Hoops comes with many device drivers, including PostScript, HP-GL, and X Windows.

Ithaca Software
902 W. Seneca St.
Ithaca, NY 14850
607-273-3690

System Requirements
Macintosh II or larger; 2 MB of RAM. Black and white or 4- or 8-bit video card. Hard disk recommended.

Price $795

Support
Telephone support and updates provided with annual maintenance contract ($200).

Hyper/DB-Library

Hyper/DB-Library is an application programming interface that allows custom HyperCard stacks running on a client Macintosh workstation to communicate with the SYBASE SQL Server database running on a larger host system such as VAX or Sun. Hyper/DB-Library is a set of HyperCard external functions that can be called from HyperCard scripts. This product provides standard Sybase interface capabilities such as the ability to query databases, process retrieved data a record at a time, and access SQL Server internal information.

Sybase
6475 Christie Ave.
Emeryville, CA 94608
415-596-3500

System Requirements
Macintosh SE or larger; 2 MB of RAM; SQL Server on VAX or UNIX system, including Sun, HP 9000, IBM RT, AT&T, Pyramid, NeXT; HyperCard.

Price $199

Support
Training and support are available for a fee.

HyperTools

HyperTools #1 and #2 provide tools that let you add versatility to HyperCard stacks, whether they are custom made or commercial products. The tools create their own HyperTalk scripts; in most cases inexperienced HyperCard users can take advantage of them. Each collection includes 16 tools. Disk #1 contains tools that edit icons, group radio buttons or check boxes, install HyperCard's alignment tools on a card, create code for scrollable fields that returns a line number even when the field is scrolled, list what XCMDs and XFCNs are installed in a stack, and more. Disk #2 offers tools that move, delete, or copy a group of buttons or fields; create multiple-choice lists for data-entry; add number or date validation to any field; automatically sort lines of data entered in a text field; reorder all or some of the cards in any stack; set numerical precision of HyperCard; and more. Both contain tools that quickly scan cards, tell how much space compressing the stack would free up, and alert users when it's time to compress the stack.

Trendware Corporation
P.O. Box 2285
Huntington, CT 06484
203-926-1116

System Requirements
Macintosh Plus or larger; HyperCard.

Price $99.95
Per disk. HyperCard included.

Support
Telephone, fax, and AppleLink support is provided.

Informix-4GL

A/UX Informix-4GL is a UNIX-based fourth-generation language designed specifically for database applications. The power and flexibility of the product allows a database developer to build sophisticated applications, and to customize applications extensively to meet the needs of end-users. Informix 4-GL offers a developer the following features: a database language (RDSQL, an extension of the Structured Query Language SQL, developed by IBM); a screen-building utility allowing the generation of default screens or the extensive customization of screens to suit any application; a menu building facility allowing user menus to be tailored to fit an end-user's needs; customized on-line help; a report generator allowing the fast creation of customized reports of any complexity; and a self-contained programming environment.

Informix Software, Inc.
4100 Bohannon Dr.
Menlo Park, CA 94025
415-926-6300

System Requirements
Macintosh II; A/UX.

Price $2495

Support
A 90-day warranty is provided. Annual maintenance contracts are available, including updates, hotdates, telephone hotlines and technical notes. Training is available.

Informix-4GL Interactive Debugger

Informix-4GL Interactive Debugger enables developers to perform debugging operations interactively within a running program. The debugger uses "hot keys" to allow a programmer to switch between the running program and a windowed screen that provides an "x-ray vision" view into the running program. The "x-ray vision" view displays both a source code window and a command window for setting break points, printing variables, and stepping through program execution.

Informix Software, Inc.
4100 Bohannon Dr.
Menlo Park, CA 94025
415-926-6300

System Requirements
Macintosh II or larger.

Price $1650

Support
A 90-day warranty is provided. Annual maintenance contracts are available, including updates, hotdates, telephone hotlines and technical notes. Training is available.

Informix-4GL Rapid Development System

A/UX Informix-4GL Rapid Development System (RDS) is a fourth-generation programming language that dramatically reduces application development time. Informix-4GL code is compiled into p-code (pseudocode), read into memory, and executed by a p-code runner, with no need for external compiler or linker. Programmers can quickly develop fully customized applications in a variety of computing environments, with features such as scrolling, windows, and color.

Informix Software, Inc.
4100 Bohannon Dr.
Menlo Park, CA 94025
415-926-6300

System Requirements
Macintosh II or larger; A/UX.

Price $2495

Support
A 90-day warranty is provided. Annual maintenance contracts are available, including updates, hotdates and technical notes. Training is avaialable.

Informix-ESQL/C

A/UX Informix-ESQL/C can be used as a stand-alone application in a C programmer's development environment for database applications, it can gather data generated from other sources and apply database tools to the data, and it complements Informix-SQL by providing the capability for C program calls within Informix-SQL reports and forms. Informix-ESQL/C enables a programmer to prepare simple or dynamic queries and to manipulate SQL databases with standard SQL statements embedded in any C program. Using these query statements, a programmer can incorporate and manipulate data in SQL databases, create new databases and tables, add indexes and select, delete, insert and update table information without formulating subroutine calls. Programs written with Informix-ESQL/C are passed through a precompiler which converts the standard SQL statements into C code. At runtime, the Informix-ESQL/C database agent processes the code, retrieves the required information or performs the required function, and returns any results to the program. Informix-ESQL/C also provides the ability to call C subroutines from the report and form facilities of Informix-SQL. A programmer can call custom C functions for purposes such as data testing, complex algebraic calculations, and checking of external files with a minimum amount of programming.

Informix Software, Inc.
4100 Bohannon Dr.
Menlo Park, CA 94025
415-926-6300

System Requirements
Macintosh II; A/UX.

Price $1095

Support
A 90-day warranty is provided. Annual maintenance contracts are available, including updates, hotdates, telephone hotlines and technical notes. Training is available.

Mac Prolog

Mac Prolog is a prolog compiler for the Macintosh that combines the power of PROLOG programming language with the user-friendly interface and enhanced graphics of the Macintosh. It makes possible a dramatic increase in programmer productivity for decision making and knowledge-based applications. The system includes a fast incremental compiler, powerful optimizing compiler, interactive symbolic debugger, declarative graphics, and foreign interface to C and Pascal.

Quintus Computer Systems
1310 Villa St.
Mountain View, CA 94041
415-965-0551

System Requirements
Macintosh 512K enhanced or larger.

Price $595

Support
One-year warranty is provided.

MAC YACC

MAC YACC, similar to UNIX YACC, is a program generator that can be used to develop assemblers, compilers, calculators, typesetting languages, and pattern analyzers. MAC YACC is designed to generate tight MPW C code based on user-defined product goals. The generated C code can then be compiled to generate the final product. Runtime library and example sources are included to be used as an application skeleton for new products.

Abraxas Software
7033 S.W. Macadam Ave.
Portland, OR 97219
503-244-5253

System Requirements
Macintosh 512K or larger; MPW.

Price $395

Support
Free technical support is provided.

The Macadvantage UCSD Pascal

The Macadvantage UCSD Pascal is an enhanced UCSD compiler. Features include support for 32-bit integers; bit manipulation intrinsics; and pointer manipulation intrinsics, which use the 32-bit absolute addresses of the Macintosh ROM and new routines that generate inline calls to ROM. Separate compilation provides for large, fast programs. The system has a symbolic debugger and interfaces units to virtually all ROM routines included as separate code files. Source code is included where appropriate so that users can customize units. There are also library utilities, a run-time configuration utility, and an R maker resources compiler to allow definition of icons, windows, fonts, and other pieces of data.

Pecan Software Systems, Inc.
1410 39th St.
Brooklyn, NY 11218
718-851-3100

System Requirements
Macintosh 512K or larger.

Price $129.95

Support
A bi-monthly newsletter and a 45-day warranty are provided.

MacApp

MacApp® is an object-oriented programming library that implements the standard features of most Macintosh application programs. This application automatically handles standard Macintosh user-interface features such as menus, desk accessories, scrolling, resizing windows, and printing. MacApp also includes a powerful, high-level debugger. MacApp programs are written using Object Pascal. Features include an object inspector, a simpler TView structure, view resources, optional 32-bit view coordinates, spreadsheet-like GridViews, and support for the toolbox TextEdit and MultiFinder background tasks. The source code for MacApp and sample programs are also included.

APDA/Apple Computer, Inc.
20525 Mariani Ave., M/S 33G
Cupertino, CA 95014
800-282-2732

System Requirements
Macintosh SE or larger; 2 MB of RAM; hard disk; MPW Pascal.

Price $100

Support
Limited technical support is available.

MacC/MacC Toolkit

The MacC/MacC Toolkit is a proven HFS-compatible C/Asm development system that includes a complete K&R C compiler (including structure assignment and enumerated types) with IEEE/SANE floating point. Features include: produces complete, stand-alone Macintosh applications in a single step; supports 64, 32 and 16-bit integer sizes; allows inline assembly code and external assembly modules; up to seven register variables for optimization; Pascal function type for interface to ROM and Pascal modules; compiles up to 5,000 lines per minute; includes symbolic debugging capability; a built-in Motorola 68000 macro assembler; an optimizing linker/librarian; extensive Macintosh support libraries; direct access to Macintosh ROM traps; complete library source code; and numerous example programs.

Consulair Corporation
220 First Ave. North, Ste. F
Ketchum, ID 83340
208-726-5846

System Requirements
Macintosh 512K or larger; external disk drive.

Price $425

Support
Free technical telephone hotline support is provided.

MacDSP Array Processor Libraries

MacDSP Array Processor Libraries provide a speed increase of up to a 20-fold over the Macintosh IIx and make algorithm development easier by extending standard high-level languages with over 125 precoded routines for vector, matrix, math, filtering, signal processing, and graphics operations. Integrated analog data input/output routines are also provided. All routines are easily callable from Lightspeed C and Pascal, MPW C and Pascal, BASIC, and FORTRAN, allowing quick and easy modification of existing Macintosh programs to take advantage of the real-time capabilities of the MacDSP coprocessor boards and data acquisition cards without any specialized knowledge of the hardware. Operations are performed on data resident in the MacDSP processor's high-speed static RAM, and a memory manager facilitates data transfers between the processor card and the Macintosh. Optional data acquisition cards include a 150-KHz 16-bit analog-to-digital (A/D) and digital-to-analog (D/A) card, a 1-MHz 12-bit analog to digital and digital to analog card, and other multichannel A/D and D/A cards.

Spectral Innovations, Inc.
4633 Old Ironsides Dr., Ste. 450
Santa Clara, CA 95054
408-727-1314

System Requirements
Macintosh II or larger; MacDSP or MacDSPXKC coprocessor card.

Price $495

Support
Free telephone support is provided.

MacExpress

MacExpress is a generic Application Manager that implements the main event loop, menu handling, panels, views, splitting, scaling (1-2000 percent), and resizing. It has support for hierarchical menus, a 32-bit memory manager, and MultiFinder. It is a kernel that directs and controls the application's user interface through a sophisticated message-sending architecture. Written in assembly language, MacExpress occupies only 15K to 34K and can be used in conjunction with Pascal, C, or 68000 assembly. MacExpress supports the entire family of Macintosh computers, including the SE/30 and IIcx. Versions are available for MPW and Lightspeed development.

ALSoft, Inc.
P.O. Box 927
Spring, TX 77383
713-353-4090

System Requirements
Macintosh 512K or larger.

Price $195

Support
Free telephone support is provided.

MacForth Plus

MacForth Plus is an interactive, multitasking programming language. Features include an assembler, an integrated text editor, graphics, floating points, a turnkey compiler (royalty fee), a multitasker, toolbox support, and extensive documentation and support. An optional product for Macintosh II developers is Mac II Tools, which features a 68020 assembler, color graphics, and 68881 coprocessor support.

Creative Solutions, Inc.
4701 Randolph Rd., Ste. 12
Rockville, MD 20852
301-984-0262

System Requirements
Macintosh 512K or larger. External disk drive or hard disk recommended.

Price $199
Mac II Tools option $79.

Support
Telephone hotline and CompuServe Public Forum support, and quarterly newsletters are provided to registered users. Updates and upgrades are available at reasonable fees.

MacFortran for MPW

MacFortran for MPW is a mainframe-caliber optimizing FORTRAN 77 compiler designed for the MPW environment. It features validatible ANSI 77, full Military 1753, and IEEE P754 specifications. It includes VAX/VMS, FORTRAN 8X, COMPLEX*16, and NAMELIST extensions, and supports SANE®, SADE, Extended data types, and Holerith for older FORTRAN 66 programs. There is no limit on code or data size, and full cross-linking is provided with MPW C, MPW Pascal, and MacAPP. Complete support is provided for the Macintosh ROM routines via direct calls exactly as documented in *Inside Macintosh*.

Absoft Corporation
2781 Bond St.
Rochester Hills, MI 48309
313-853-0050

System Requirements
Macintosh II or larger; 2 MB of RAM; one external 800K disk drive; MPW 3.0; 68020/68881 or 68030/68882 based system.

Price $295

Support
Technical support telephone hotline, technical BBS, BIX conference, and a newsletter are provided to registered users. Updates are available for $50.

MacFortran

MacFortran is a full ANSI 77, high-speed mainframe quality compiler with interactive full-screen source level symbolic debugger. It is Compatible with a 512K, Plus, SE and II. However, it provides no 68020 or 68881 support. MacFortran includes VAX, HP and several extensions from the proposed 8X standard. It generates directly executable native object code for the 68000. All code produced is position independent and reentrant. All programs are 100 percent source compatible with MS FORTRAN for the Macintosh. MacFortran requires only 46K of RAM and supports overlays in limited memory. Compile speeds of up to 2,000 lpm plus dynamic linking at runtime increase programmer productivity. MacFortran has no limit on code or data size. Also included are a linker, library manager, IEEE single and double precision floating point software, complex number support, Fortran 66 support, support of the Macintosh II ROMs, an option to generate assembler source, and a 300-page reference manual.

Absoft Corporation
2781 Bond St.
Rochester Hills, MI 48309
313-853-0050

System Requirements
Macintosh 512K or larger; external disk drive.

Price $295

Support
Free telephone support (limited) and patch notices are provided to registered users. Updates are available for $50.

MacFortran/020-A/UX

A/UX MacFortran/020-A/UX was specifically developed for program development in the A/UX environment. It includes full 68020 and 68881 support and all the functionality of the MacFortran/020 MultiFinder version. Included is a standard UNIX style command line interface as well as a Macintosh style interface written in FORTRAN (source code included with over 100 Toolbox calls). Includes MIL-STD-1753 specifications, VAX/VMS and FORTRAN 8X extensions, a natural C interface, COMPLEX*16 and NAMELIST. Compatible with sdb and provides full access to the UNIX kernal. There is no limit on code or data size. MacFortran, MacFortran/020 MultiFinder and MacFortran/020-A/UX are all 100 percent compatible, and not copy protected.

Absoft Corporation
2781 Bond St.
Rochester Hills, MI 48309
313-853-0050

System Requirements
Macintosh II or larger; A/UX.

Price $495
Educational and dealer discounts available.

Support
Telephone, BBS, and fax technical support are available. Updates are available for $50.

MacFortran/020-MultiFinder

MacFortran/020-MultiFinder is a full ANSI 77 Fortran compiler with debugger developed for a Macintosh II and 68020/68881 upgrades. Designed to facilitate porting mainframe programs from the VAX environment, MacFortran/020 includes VAX extensions, as well as extensions from the proposed 8X standard. MacFortran/020 has no limit on code or data size. It will easily support 8 MB of RAM. Additionally, support for overlays allows development of even larger programs in limited memory. Compile time options allow code generation for 68000 or 68020/30. Full 68881/82 in-line support is available in the 68020 mode. MacFortran/020 runs under MultiFinder, includes support for the Macintosh II ROMs and has a larger linker than standard FORTRAN. All code produced is position independent and reentrant. All programs are 100 percent source compatible with MS FORTRAN for the Macintosh. Also included are a linker, library manager, IEEE single and double precision floating point software, complex number support, Fortran 66 support, an option to generate assembler source and a 300-page reference manual.

Absoft Corporation
2781 Bond St.
Rochester Hills, MI 48309
313-853-0050

System Requirements
Macintosh 512K or larger.

Price $495

Support
Free telephone support (limited), technical BBS, BIX conference, and patch notices are provided to registered users. Updates are available for $50.

MacFortran/88

Running under the new MPW shell, MacFortran/88 is a 68020-based optimizing FORTRAN 77 compiler that generates assembler source code for a Motorola 88000-based coprocessor card such as Tektronix's TL88K. The compiler is fully validatible ANSI 77, with Military 1753 and IEEE P754 specifications. It includes VAX/VMS, FORTRAN 8X, COMPLEX*16, and NAMELIST extensions, and supports SANE, SADE, Extended data types, and Holerith for older FORTRAN 66 programs. There is no limit on code or data size, and a natural C interface is included. It is fully source-compatible with MacFortrans and Absoft's professional series compilers.

Absoft Corporation
2781 Bond St.
Rochester Hills, MI 48309
313-853-0050

System Requirements
Macintosh II or larger; M88000 coprocessor board with associated 88K linker, assembler and library manager (Tektronix TL88K).

Price $2000

Support
Free technical support telephone hotline, technical BBS, and a BIX conference newsletter.

Mach2 Forth/Assembly Development System

Mach2 Forth/Assembly Development System is an integrated, interactive multitasking environment for the development of stand-alone Macintosh applications. The system includes an integrated infix assembler, symbolic debugger-disassembler, text editor, and complete high-level toolbox interface. Features include subroutine threading for fast execution, normal text files, and selective loading; IEEE floating point; MacinTalk™ for spoken words; vectored I/O to serial ports, printer, AppleTalk, files, and so on; enhanced reliability with local variables and named-input parameters; switcher/edit; a symbolic debugger, single-step turnkey with no licensing fees; an integrated, multiwindow text editor with unlimited file size; and a product-support bulletin board.

Palo Alto Shipping Co.
1204 O'Brien Dr.
Menlo Park, CA 94026
415-688-1111

System Requirements
Macintosh 512K or larger; 400K drive; System 3.2 and Finder 5.3 or later. System 6.0 for larger Macintosh systems.

Price $99.95

Support
Bulletin board support is available on Genie, and direct support is available on AppleLink.

Macintosh Allegro Common LISP

Macintosh Allegro Common LISP is a complete implementation of the Common LISP standard, with additional programming and Macintosh interface tools. This product consists of three modules: Allegro CL Version 1.2.2, Foreign Function Interface, and Stand-alone Application Generator. The Macintosh Allegro Common LISP compiler produces efficient native 680x0 code. File compilation and incremental compilation are both supported. An evaluator is provided to support expression by expression execution of programs. A snapshot facility allows saving complete LISP environments for quick restarts. Macintosh Allegro Common LISP provides numerous extensions to the Common LISP language and uses Object LISP to implement windows, menus, dialogs, and streams. These predefined objects may be extended and customized by the user. Additional tools are provided to support the development of large, full-function, Macintosh-style stand-alone applications. A foreign function interface provides the capability to call external procedures; such as those written in MPW Pascal, C, or Assembler, from a LISP program. A utility called the Stand-alone Application Generator acts as an intelligent linker and removes unneeded overhead from LISP program. Using this utility, it is possible to create double-clickable Macintosh applications that do not require the presence of Macintosh Allegro Common LISP.

APDA/Apple Computer, Inc.
20525 Mariani Ave., M/S 33G
Cupertino, CA 95014
800-282-2732

System Requirements
Macintosh Plus or larger; System 6.0 or later. Hard disk and 2 MB of RAM recommended.

Price $495

Support
Limited technical support is available.

Macintosh Developer Technical Sample Code

The Macintosh Developer Technical Sample Code is a set of source code. The 12 samples included in this package are: Sample, a generic application that demonstrates how to initialize the commonly used Toolbox managers, operate successfully under MultiFinder, handle desk accessories, and create, grow, and zoom windows; TESample is a generic application, but adds TextEdit; SillyBalls demonstrates how to 32-bit QuickDraw; TubeTest shows how to use the Palette Manager in a color program; HierMenus adds hierarchical menus; PopMenus implements a pop-up menu in an modal dialog box; FracApp and FracAppPalette are color Mandelbrot graphics program written in MacApp; FracApp300 shows how to create and use a 300-dot-per-inch bitmap with port; EditCdev is a sample Control Panel device (cdev) that demonstrates the use of the edit-related messages in cdevs; GetZoneList uses AppleTalk ATP and ZIP to obtain a list of zones on an AppleTalk internet; Signals/UFailure is a set of exception routines based on MacApp's UFailure unit. Each sample is supplied in Pascal source code. In addition, Sample, TESample, SillyBalls, TubeTest, EditCdev, and Signals/UFailure are supplied in C. Sample, TESample, and Signals/UFailure are also supplied in assembly language.

APDA/Apple Computer, Inc.
20525 Mariani Ave., M/S 33G
Cupertino, CA 95014
800-282-2732

System Requirements
Macintosh 512K or larger; MacApp required for FracApp and Signals/UFailure. MPW recommended.

Price $20

Support
Limited technical support is available.

MacKeymeleon II

MacKeymeleon II allows users to design complete custom keyboard configurations for foreign languages and other specialized needs, such as Dvorak. The program lets users reassign any key and gives full control over diacritical marks, dead keys, and keyboard switching.

Avenue Software, Inc.
2162 W. Charest Blvd.
Quebec City, Quebec, G1N 2G9 Canada
418-682-3088

System Requirements
Macintosh 512K or larger.

Price $99.95

Support
Telephone support provided to registered users.

MacMUMPS

MacMUMPS is the Macintosh version of the MUMPS programming language, which is used to create and manage large filing systems on small computers. The language is designed to create a systems development environment in which the programmer and user have almost complete flexibility in designing and building systems within a self-imposed discipline. The program supports multitasking for current jobs. Multiple windows are available, so the user may start several jobs in separate windows or have jobs running in the background while working on something else. Other options include a set of utilities used to facilitate the generation of various dialogs. This set supports standard dialog elements such as radio buttons, check boxes, and picture elements. A forms utility is also included.

MGlobal
3618 Mt. Vernon, Ste. D
Houston, TX 77006
713-529-4858

System Requirements
Macintosh 512K or larger.

Price $199.95 to $399.95

Support
Telephone support is provided.

MacsBug

MacsBug, a machine language debugger, is compatible with all Macintosh monitor configurations and all versions of the Macintosh system software, including MultiFinder. MacsBug does not work with the 64K ROMs, nor does it run on the Macintosh XL computer. MacsBug is optimal for debugging assembly language programs; SADE (Symbolic Application Debugging Environment) is best for debugging applications writtten in high-level languages. MacsBug is compact and is useful in tight memory situations, regardless of the language used for the source code. With MacsBug, you can display and set memory registers; disassemble memory; set execution breakpoints; step and trace through both RAM and ROM; monitor system traps; display and check the system and application heaps. New to this version of MacsBug is the capability of extending MacsBug's features through the use of external commands, called 'dcmd's'. Included in the MacsBug document are details describing how to write 'dcmd's'.

APDA/Apple Computer, Inc.
20525 Mariani Ave., M/S 33G
Cupertino, CA 95014
800-282-2732

System Requirements
Macintosh Plus or larger.

Price $35

Support
Limited technical support is available.

MacWorkStation

MacWorkStation™ is a server application that provides standard Macintosh user interface, printing, and file services to client applications. Client applications may reside on host computers, such as DEC, VAX, or IBM 370s, or on the same computer as MacWorkStation. The product provides client applications full access to, and control over, windows, pull-down menus, dialog boxes, and other features of the standard Macintosh user interface via a high-level message-based interface. MacWorkStation handles all local processing between the user, desk accessories, the clipboard, and user interface objects created by the client application. This reduces the levels of client (host) processing necessary to maintain a graphic user interface and also reduces network messaging traffic. Developers may create communications modules to allow the MacWorkStation messages to run over a wide variety of communications networks. Several standard communications modules allow MacWorkStation to be used over asynchronous and AppleTalk networks. MacWorkStation allows for easy programming of the Macintosh user interface, printing, and filing features, without Macintosh programming expertise. Developers can now integrate the Macintosh's ease-of-use with the power of host computers.

APDA/Apple Computer, Inc.
20525 Mariani Ave., M/S 33G
Cupertino, CA 95014
800-282-2732

System Requirements
Macintosh 512K or larger.

Price $100
Per single user. Site license available.

Support
Limited technical support is available.

MacWorkStation Dialog Builder

MacWorkStation Dialog Builder allows developers to quickly build (paint) dialog boxes and store them for use by the client application. MacWorkStation dialog resources can either be added to local documents or the commands to build them can be transfered to the client application. This utility is extremely easy to use, and allows the building of dialogs from a palette of objects.

APDA/Apple Computer, Inc.
20525 Mariani Ave., M/S 33G
Cupertino, CA 95014
800-282-2732

System Requirements
Macintosh 512K or larger.

Price $25

Support
Limited technical support is available.

MacWorkStation Event Handler

MacWorkStation Event Handler allows quick prototyping of MacWorkStation applications by providing the local creation and storing of commands in response to MacWorkStation events. Event Handler can also be used to reduce client overhead and communications by responding to static events locally. The combination of MacWorkStation Event Handler and Dialog Builder allows the quick design of the application's user interface.

APDA/Apple Computer, Inc.
20525 Mariani Ave., M/S 33G
Cupertino, CA 95014
800-282-2732

System Requirements
Macintosh 512K or larger.

Price $25

Support
Limited technical support is available.

Mathematician's Toolkit

The Mathematician's Toolkit extends True BASIC to handle complex numbers and extremely high-precision calculations. Complex numbers are used in engineering, science, and mathematics, but no version of BASIC other than True BASIC can handle them. The Mathematician's Toolkit also lets engineers, scientists, mathematicians, and hobbyists perform calculations up to 100,000 digits.

True BASIC, Inc.
12 Commerce Ave.
West Lebanon, NH 03784
800-872-2742

System Requirements
Macintosh 512K or larger; True BASIC Language; System 2.0 or later.

Price $69.95

Support
Technical support is provided.

McCLint

McCLint locates questionable C programming constructs similar to UNIX lint. McCLint checks variable types (including typedefs), conditional and assignment statement usage, arithmetic operations in conditional expressions, misplaced semicolons, pointer type coercions, pointer indirection levels, function argument passing (type and number), variable initialization, and unused variables. Questionable constructs are reported in a clear, concise fashion with exact C source code file locations. McCLint supports ANSI C, Lightspeed C, and MPW C function prototypes. However, function prototypes are not required, because McCLint can perform up to two passes on the source code. McCLint also includes files containing prototypes for the Macintosh toolbox calls. McCLint incorporates a multiwindow editing and C source code highlighting system and operates as a stand-alone application. Users can selectively analyze all or part of an application program, whether it is in one or more C source files, and selectively filter error messages, thereby limiting the amount of diagnostic output.

MMC AD Systems
P.O. Box 360845
Milpitas, CA 95035
408-263-0781

System Requirements
Macintosh 512K or larger; hard disk recommended.

Price $99.95
Site license available.

Support
Free telephone and AppleLink support is provided. Updates are available at a nominal charge.

McCPrint

McCPrint reformats and beautifies C source code into a user-selected format. Users may control brace placement (for example, K&R, UNIX, Algol/Pascal), comment formats (for example, with ragged left or right margins or truncation), continuation line breaks (before or after operators), whitespace usage (space following a function name or space around operators), output line size (for example, 80- or 132-character columns), statement alignments, and other formating characteristics. McCPrint includes a powerful multiwindow editing and C source code highlighting system. Through it, users can highlight comments, keywords, or function and Toolbox calls prior to printing the final document. McCPrint operates as a stand-alone application and works with all popular development environments, including Aztec C, MPW C, and Lightspeed C. McCPrint can save users hours of time by cleaning up third-party source code and automatically transforming it into the users' personal format.

MMC AD Systems
P.O. Box 360845
Milpitas, CA 95035
408-263-0781

System Requirements
Macintosh 512K or larger.

Price $59.95
Site license available.

Support
Free telephone support is provided. Updates are available at a nominal charge.

MicroXASM

The MicroXASM 6502, 6801, 6804, and 6805 cross assemblers run under the Macintosh Programmers Workshop (MPW) development environment as MPW tools, complete with commando interface. The assemblers evaluate parenthesized subexpressions, arithmetic, relational, boolean, and shifting operators, and support conditional assembly using IF, ELSE, ELSEIF, and ENDIF as well as file inclusion using the INCLUDE psuedo operator. MPW shell executable error messages are generated, allowing quick location and correction of errors. Object code is output in Motorola S19 record format. Symbol and cross-reference tables can also be generated. Additional MPW tools to dump the S19 output and convert S19 records to Intel hex records are included with the assemblers.

Orion Avionics
15126 Cordary Ave.
Lawndale, CA 90260
213-676-0880

System Requirements
Macintosh 512K enhanced or larger; 2 MB of RAM; MPW 3.0.

Price $95
Per assembler.

Support
Free telephone support for 90 days and 90-day warranty are provided.

MPW Assembler 3.0: Macintosh Programmer's Workshop Assembler

MPW Assembler 3.0 is a full-featured assembler that provides all the software necessary for developing Macintosh applications, desk accessories, drivers, and MPW tools using 68000 family assembly language (68000, 68020, 68030, 68881, 68882, and 68851). MPW Assembler 3.0 is used with MPW Development Environment 3.0. Assembler interface libraries are included to provide complete access to the latest Macintosh hardware and system software, including interfaces for writing MultiFinder compatible applications. The libraries also support SANE, the 68881 and 68882 co-processors, and Graph3D. MPW Assembler 3.0 supports the MPW Object Module Format and SADE symbols. This allows users to link object modules produced by the MPW Assembler 3.0 with objects from any language that supports the MPW Object Module Format and to use SADE to debug programs written with the MPW Assembler 3.0.

APDA/Apple Computer, Inc.
20525 Mariani Ave., M/S 33G
Cupertino, CA 95014
800-282-2732

System Requirements
Macintosh 512K enhanced or larger; 2 MB of RAM; hard disk; System 6.02 or later; MPW Development Environment. Macintosh SE/30 or larger and 4 MB of RAM recommended; Mortorola 68000 reference.

Price $100

Support
Limited technical support is available.

MPW C 3.0: Macintosh Programmer's Workshop C

MPW C 3.0 provides the software necessary for developing Macintosh applications, desk accessories, drivers, and MPW tools using C. MPW C 3.0 is used with MPW Development Environment 3.0. MPW C 3.0 contains ANSI C enhancements, such as function prototypes and strong type checking, including ANSI C additions to the Standard Library. MPW C 3.0 also now supports a global data space that is greater than 32K in size. MPW C 3.0 supports optional code generation for the 68020 and 68030 processors, and for the 68881 and 68882 floating point units. C interface libraries are included to provide complete access to the latest Macintosh hardware and system software, including interfaces for writing MultiFinder compatible applications. The libraries also support SANE, the 68881 and 68882 co-processors, and Graph3D. MPW C 3.0 supports the MPW Object Module Format and SADE symbols. This allows users to link object modules produced by MPW C 3.0 with objects from any language that supports the MPW Object Module Format and to use SADE to debug programs written with MPW C 3.0.

APDA/Apple Computer, Inc.
20525 Mariani Ave., M/S 33G
Cupertino, CA 95014
800-282-2732

System Requirements
Macintosh 512K enhanced or larger; 2 MB of RAM; hard disk; System 6.02 or later; MPW Development Environment. Macintosh SE/30 or larger, 4 MB of RAM and C programming tutorial recommended.

Price $150

Support
Limited technical support is available.

MPW Linda C environment

The MPW Linda C environment is a software-only product that allows MPW C programmers to develop code that will run on the Chorus ComputeServer line of high-speed processors. It is the first Macintosh implementation of Linda, the emerging standard for high-level parallel programming, which is also supported on a variety of high-end computing platforms. The simulator supports standard Linda-syntax statements, which are used to control interprocessor communication between Macintosh computers and ComputeServer on a network; and interprocessor communications between Chorus's RISC floating-point processors. Code written in Linda C can be executed entirely on the Macintosh in simulation mode or recompiled for automatic scalability on all configurations of ComputeServer machines with speedups up to a hundred times. Linda C can be linked to code from other MPW-compatible languages, including Pascal and FORTRAN; these languages can be executed on the ComputeServer with Human Devices' Pascal and FORTRAN compilers.

Chorus Supercomputer, Inc.
100 Varick St.
New York, NY 10013
212-925-1715

System Requirements
Macintosh Plus or larger; 2 MB of RAM; MPW 2.0 or later.

Price $450

Support
Free updates and on-line support for one year after purchase; AppleLink.

MPW Pascal: Macintosh Programmer's Workshop Pascal

MPW Pascal provides all the software necessary for developing Macintosh applications, desk accessories, drivers, and MPW tools using Pascal. MPW Pascal is used with MPW Development Environment and includes Pascal text formatting and source code cross-reference generation tools. MPW Pascal expands on ANSI Pascal to support object-oriented programming using Object Pascal and now supports forward references made outside the current module using a symbol table of a unit's interface stored in the resource fork of the unit. It also now supports the allocation of more than 32K of globals and optional code generation for the 68020 and 68030 processors, and for the 68881 and 68882 floating point units. Pascal interface libraries are included, which support SANE, the 68881 and 68882 co-processors, and Graph3D. MPW Pascal supports the MPW Object Module Format and SADE symbols. This allows users to link object modules produced by MPW Pascal with objects from any language that supports the MPW Object Module Format and to use SADE to debug programs written with MPW Pascal. A set of example programs are supplied to show the types of programs that can be created using MPW Pascal. Resource descriptions, source code and "Make" instructions are included that show how to build several example stand-alone Macintosh applications.

APDA/Apple Computer, Inc.
20525 Mariani Ave., M/S 33G
Cupertino, CA 95014
800-282-2732

System Requirements
Macintosh 512K enhanced or larger; 2 MB of RAM; hard disk; System 6.02 or later; MPW Development Environment. Macintosh SE/30 or larger; 4 MB of RAM and Pascal programming tutorial recommended.

Price $150

Support
Limited technical support is available.

MPW: Macintosh Programmer's Workshop Development Environment

The Macintosh Programmer's Workshop (MPW) Development Environment is a software development environment for the Macintosh. At the heart of MPW is the MPW Shell, a customizable and extensive multiwindow text editor and command interpreter. The MPW Shell has many UNIX-like features, including input and output redirection, the ability to "pipe" the output of one command to the input of another command, and a UNIX-like scripting language that supports shell variables, control constructs, and text editing commands. The MPW Shell provides the ability to run MPW scripts and MPW tools, which support both a graphical interface, called Commando, and a command-line interface. MPW provides over 120 tools and scripts that help in the application creation process, which are supported by on-line help via the help command (that includes hints and shortcuts) and the Commando graphical tool interface. MPW provides the ability to develop multilingual programs. The MPW Linker allows you to write programs using any combination of languages that support the MPW Object Module Format. There are a number of languages available that run under MPW and support the MPW Object Module Format including Assembler, C, Pascal, FORTRAN, Modula-2, and Ada.

APDA/Apple Computer, Inc.
20525 Mariani Ave., M/S 33G
Cupertino, CA 95014
800-282-2732

System Requirements
Macintosh 512K enhanced or larger; 2 MB of RAM; hard disk; system software 6.02 or later; MPW Development Environment. Macintosh SE/30 or larger; 4 MB of RAM recommended. *Inside Macintosh* and *The Apple Numerics Manual* also recommended.

Price $100

Support
Limited technical support is available.

Nibble Mac Utility Pack

Nibble Mac Utility Pack is a collection of powerful utilities for Microsoft BASIC programmers. Window Dresser makes window design foolproof. The user draws the windows, selects the button type, and adds edit fields. The program writes the corresponding Microsoft BASIC program code. Cursor Editor lets the user design custom cursors. Pattern Designer writes the data statements for the background or fill patterns the user chooses. Wave Editor lets the user create sound effects and music. List Master formats BASIC listings for easier reading. Type lets the user examine text files. BCS Clicker displays mouse coordinates. Hex Calculator makes hex-decimal conversions. ASCII gives the user a chart of keyboard characters and their ASCII equivalents.

MindCraft
52 Domino Dr.
Concord, MA 01742
617-371-1660

System Requirements
Macintosh 512K or larger.

Price $29.95

Support
Technical support is provided.

NKR BASIC Compiler

A/UX

The NKR BASIC Compiler conforms to ANSI X3.113 (FIPS pub. 68-2), required for government procurement, and to the European ECMA-116 standard. A companion to the NKR BASIC Interpreter, the compiler produces efficient native code for fast execution of BASIC programs. ANSI BASIC sets a feature-rich and powerful standard, which maintains ease-of-use while incorporating modern-language features, with portability across system architectures as a key goal. Excellent A/UX integration is provided, with convenient portability to other UNIX and non-UNIX systems that support standard BASIC. Programs in other languages can be called without interfacing subroutines. Language features for engineering and scientific applications include matrix and string operations, true subroutines and functions, built-in exception handling, structured programming constructs, and a variety of file and data types.

NKR Research Inc.
4040 Moorpark Ave., Ste. 209
San Jose, CA 95117
408-249-2612

System Requirements
Macintosh II or larger; A/UX.

Price $395
Also available on Falcon GSA schedule and from APDA.

Support
Limited telephone support and updates provided to registered users; quick response given to written inquiries.

NKR BASIC Interpreter

A/UX The NKR BASIC Interpreter, a companion to the NKR BASIC Compiler, provides an easy-to-use development environment for BASIC programs. It conforms to the same ANSI and ECMA standards. The interpreter includes a built-in debugger and a help facility, with help commands that can be easily renamed. Features include a trace mode that can be speeded up or slowed down, dynamic linking of BASIC subprograms, and a built-in "make" facility such as UNIX that allows automatic scanning of changed source files. Excellent A/UX integration is provided, with convenient portability to other UNIX and non-UNIX systems that support standard BASIC.

NKR Research Inc.
4040 Moorpark Ave., Ste. 209
San Jose, CA 95117
408-249-2612

System Requirements
Macintosh II or larger; A/UX.

Price $395
Also available on Falcon GSA schedule and from APDA.

Support
Limited telephone support and updates provided to registered users; quick response given to written inquiries.

NKR FORTRAN Compiler

A/UX NKR FORTRAN is a mianframe-quality production compiler that includes VAX/VMS FORTRAN and MIL-STD-1753 extensions to ANSI 78. The compiler includes a global optimizer built specially for the FORTRAN language with two optimization levels available. The compiler provides seamless intergration within A/UX; it calls programs in other languages without interfacing subroutines. A true 32-bit compiler, NKR FORTRAN has no 16-bit limits to file-record size or other elements. It generates in-line code to make full use of MC6881/6882 math coprocessor. The compiler also provides full runtime support for real-time applications. Under the VxWorks real-time system, this includes fully reentrant FORTRAN libraries, full FORTRAN I/O, and the ability to execute the entire program (or any subroutine) from shell or to call C routines from FORTRAN code. Most VAX/VMS FORTRAN extensions are supported. The compiler has been valiudated by the U.S. Government, and it allows convenient portability to and from other UNIX environments.

NKR Research Inc.
4040 Moorpark Ave., Ste. 209
San Jose, CA 95117
408-249-2612

System Requirements
Macintosh II or larger; 4 MB of RAM; A/UX.

Price $495
Also available on Falcon GSA schedule and from APDA.

Support
Limited telephone support and updates provided to registered users; quick response given to written inquiries.

NKR GW Converter

A/UX The NKR GW Converter translates Microsoft GW BASIC source code to NKR BASIC with more than 90 percent automatic conversion for machine-independent statements. The converter allows users to port Microsoft BASIC applications to workstations and other platforms where ANSI BASIC is available. The converter is user-friendly: detailed and specific error messages are provided, the converted program is uniformly indented and documented for easy reading, and untranslatable constructs are pinpointed. The converter correctly translates Boolean expressions and correctly resolves the names of different variables with the same identifiers. The converter comes with a large support library so GW-BASIC users can continue to use many of the same statements. The NKR GW Converter is easily portable to all environments where NKR BASIC is supported.

NKR Research Inc.
4040 Moorpark Ave., Ste. 209
San Jose, CA 95117
408-249-2612

System Requirements
Macintosh II or larger; A/UX; NKR BASIC interpreter or compiler.

Price $295

Support
Limited telephone support and updates provided to registered users; quick response given to written inquiries.

NSChart

NSChart is a Nassi-Schneiderman structured flowchart generator. NSChart converts NSPDL, a simple program design language into a Nassi-Schneiderman flowchart, performing automatic sizing, centering, and outlining. If the chart needs to be modified, the NSPDL is edited and the chart regenerated, with no need to drag, resize, or reconnect flowchart graphics by hand. NSPDL's easy-to-use keywords denote flowchart constructs and text strings enclosed in double quotes denote text that will appear in the chart. Flowchart files are saved as TEXT files, so they can be prepared by or exported to other editors or word processors. Translators are also available that convert FORTRAN, C, Pascal, SDDL, CFG PDL, and 4th Dimension into NSPDL.

Siltronix Inc.
9449 Balboa Ave. #311
San Diego, CA 92123
619-541-2502

System Requirements
Macintosh 512K or larger; System 3.2 or later.

Price $149
Site licenses and volume discounts available.

Support
Free telephone support and minor updates are provided. AppleLink support is available.

NuTools: Numerical Methods 1.2

NuTools: Numerical Methods 1.2 is a comprehensive assortment of over 200 numerical algorithms implemented in ANSI C. These consistent and extensible routines are based on core numerical types, including real numbers, complex numbers, real number vectors, complex number vectors, real number matrices, complex number matrices, polynomials, and rational polynomials. All numerical types are supported by arithmetic primitives and advanced operations. Advanced operations include curve fitting, eigenvalues and vectors, interpolation, integration, linear systems, ordinary differential equations, root solving, and signal processing. In addition to numerical routines, over 100 input and output routines are included. This diverse selection provides entry, display, and editing dialogs, expression parsers, 2- and 3-dimensional graphics, and file dialogs. This product supports both THINK C and MPW C. Extensive documentation, C source code, project files, and MAK files are included.

Nicus
32 Tremont Dr., #2
College Place, WA 99324
509-525-7120

System Requirements
Macintosh Plus or larger; THINK C 4.0 or MPW C 3.0.

Price $295
Site license available.

Support
Free telephone and AppleLink support are provided.

Objectworks for Smalltalk-80

Objectworks for Smalltalk-80 is an interactive development and delivery system for the creation and management of software projects. Integrated with the Smalltalk-80 language and incremental native code compiler, Objectworks provides access to the full capabilities of object-oriented programming plus true application portability. It enables a graphical application developed on one computer to be delivered on different types without changes to or recompilation of source code. Supported machines include the Macintosh, MS-DOS PC, and UNIX workstations. The integrated development system supplies browsers for modifying class libraries, inspectors for modifying the state of objects, symbolic source-level debugging for easy modification of code and data, dynamic cross referencing for finding all references to code and objects, automatic formatting and spell checking of code, and binary object storage. Over 300 class libraries are included, providing pretested code modules as beginnings of new libraries and programs. Objectworks for Smalltalk-80 supports integration with the Macintosh environment including screen sharing and cut/paste, desk accessories, MultiFinder compatibility, MPW link format, and access to the toolbox through user primitives. The 68020 and 68881 instruction set are also supported.

ParcPlace Systems
1550 Plymouth St.
Mountain View, CA 94043
415-691-6700

System Requirements
Macintosh SE or larger; 4 MB of RAM; hard disk. Macintosh II or larger recommended.

Price $595
Educational discounts are available.

Support
Object support service, $495 per year per site. Update service, $149 per year per CPU. Ninety-day warranty on media. Extensive training services are available.

PICT Detective

PICT Detective is a graphics analysis package for Macintosh programmers. It allows the user to view and analyze any QuickDraw picture, providing solutions for previously unsolvable picture compatibility problems. PICT Detective provides a complete description of each element of a PICT or PICT-2, including shape, location, font, and color. The description can be modified and recompiled using MPW resource tools. The user can also generate C or Pascal source code that uses QuickDraw routines to draw the picture. The generated source is compatible with MPW and leading third-party compilers. PICT Detective analyzes any PICT or PICT-2; pastes PICTs from clipboard; allows copying of source code to editors; parses standard and custom picture comments; and includes a new stand-alone application as well as the original MPW Tool (describes the properties of QuickDraw objects including size, shape, location, and color).

Palomar Software
2964 Oceanside Blvd., Ste. E
Oceanside, CA 92054
619-721-7000

System Requirements
Macintosh 512K enhanced or larger.

Price $125

Support
Telephone technical support, sample documents, illustrated manual, and a limited warranty are provided.

Preditor

Preditor is a programming and text processing program. It is a complete text editor with extra features to aid the programmer. Preditor is fully programmable (via macros), supports many programming languages, and has no limits on the size of a file (memory constrained only). Preditor supports rectangular selection, "tagging" of routines and data types, automatic recognition of comments and reserved words, and other situations.

EVATAC Software
5005 S.W. Murray #701
Beaverton, OR 97005
503-644-4606

System Requirements
Macintosh 512K or larger.

Price $90
Site license available.

Support
Free telephone support and upgrade to version 1.1 are provided. Future updates at additional cost.

Professional Programmer's Extender

Professional Programmer's Extender combines Programmer's Extender Volumes 1 and 2, with 100 percent source code, to simplify and enhance Macintosh programming by fully implementing the user interface to reduce application development time. Windows, menus, controls, scroll bars, dialogs and alerts, text editing, graphics, list manager, printing, and other routines are part of the user's arsenal. Extensive documentation includes tutorial, reference, index, and many sample programs. Professional Programmer's Extender is available for THINK's Lightspeed Pascal, THINK's Lightspeed C, MPW Pascal, TML Pascal, and Turbo Pascal compilers.

Invention Software Corporation
P. O. Box 3168
Ann Arbor, MI 48106
313-996-8108

System Requirements
Macintosh Plus or larger; external 800K disk drive; Pascal or C compiler.

Price $395

Support
Free technical and AppleLink support, and upgrades are provided to registered users.

Programmer's Extender Volumes 1 and 2

Programmer's Extender Volume 1 is a mixture of routines that implements the Macintosh user interface for the developer. Areas supported include windows, menus, dialogs, alerts, controls, text editing, and user hooks. The program provides 90 percent of the source code with no secondary licensing fees, a tutorial manual, and demonstration programs. Programmer's Extender Volume 2 (which requires Volume 1) is a library of additional high-level routines that support Macintosh application development. Features include List Manager support, such as scrolling lists of pictures or text, spreadsheet type lists, and list editing; graphics support, such as reading and writing MacPaint or MacDraw pictures, creation and handling of off-screen bitmaps, and a picture grabber with marquee to select and copy screen images; printing support; I/O support, such as saving and recalling a variety of data types; pop-up menus; tiling and stacking windows; and easy string manipulation in dialogs. The program provides 25 percent of the source code with no secondary licensing fees and a tutorial manual with numerous demonstration programs.

Invention Software Corporation
P. O. Box 3168
Ann Arbor, MI 48106
313-996-8108

System Requirements
Macintosh 512K enhanced or larger; external 800K disk drive; Pascal or C compiler.

Price $119.95
Per volume.

Support
Free technical and AppleLink support and upgrades are provided to registered users.

The Programmer's Online Companion

The Programmer's Online Companion (POC) is a disk-based database reference to *Inside Macintosh,* Volumes I through V, and the *Apple Numerics Manual.* It is a utility that allows programmers quick and easy access to essential bits of information from within any language development system. On-line reference information is accessed directly from the editor screen. The program is designed to be used while editing a source file in any of the Macintosh editors. Designed to complement *Inside Macintosh* and the *Apple Numerics Manual,* it includes almost all of the system calls, system globals, and assembly equates found in those volumes. It can be modified, added to, and reconfigured so that it becomes a natural extension of the programming process. Version 2.0 provides a choice of either the original POC interface or a classic desk acces-

Addison-Wesley Publishing Co.
Rte. 128
Reading, MA 01867
617-944-3700

System Requirements
Macintosh Plus or larger.

Price $49.95

Support
Support is provided to registered users.

QUED/M

QUED/M is a macro-programmable text editor for programmers or anyone who performs text manipulation. It includes unlimited undos; search and replace using a superset of the text-pattern description language GREP; search through unopened files; file compare; and 10 fully editable clipboards. Macros can be recorded, edited, and programmed. The number of open files is limited only by memory. QUED/M can be used to convert and reformat text databases or files from other computers. It includes a large library of editable macros that can perform the following functions among others: get the location (full path on disk) to all files that contain any one of several key words; extract an address list from all the designated files; sort an address list by zip code; and extract all paragraphs from designated files that contain the specified reference.

Paragon Concepts, Inc.
4954 Sun Valley Rd.
Del Mar, CA 92014
619-481-1477

System Requirements
Macintosh 512K or larger.

Price $119

Support
Free telephone support is provided.

RDD-100 System Designer

The RDD-100 System Designer is an automated blueprint for architects of critical, complex systems where behavior is key. Requirements Driven Development (RDD) is supported with both a method and a graphics/hypertext tool that encodes the method. RDD provides explicit behavioral descriptions broken into components and partitioned for software designers. The RDD-100 System Designer preserves the input and output characteristics, performance criteria, and relationships to other functions of the component functions at each stage of development, so the designer will know exactly what behavior to produce.

Ascent Logic Corporation
180 Rose Orchard Way, Ste. 200
San Jose, CA 95134
408-943-0630

System Requirements
Macintosh II or larger; 40 MB hard disk; 8 MB of RAM; LaserWriter.

Price $39,000

Support
Telephone hotline support and nine-month warranty are provided. Training is available for a charge.

ResEdit

ResEdit™ is a graphical resource editor for creating and editing elements of the Macintosh user interface such as menus, windows, alerts, dialogs, and strings. ResEdit allows users to prototype a number of different user interfaces quickly, as well as modify an existing user interface. ResEdit can be extended to edit new resource types, including those already defined.

APDA/Apple Computer, Inc.
20525 Mariani Ave., M/S 33G
Cupertino, CA 95014
800-282-2732

System Requirements
Macintosh 512K enhanced or larger.

Price $30

Support
Limited technical support is available.

SADE: Symbolic Application Debugging Environment

SADE: Symbolic Application Debugging Environment is a source-level, symbolic debugging environment which can be usde to debug applications and MPW tools written using a programming language that supports the MPW Object Module Format and SADE symbols, such as MPW C, MPW Pascal, and MPW Assembler. SADE provides a multiwindow editor for source display and debugger command input and output. The MPW Object Module Format and SADE symbols provides SADE with complete information about variables, types, procedures, functions, and source statements in your program. SADE knows Macintosh system symbols, ROM entry points, and low-memory globals and it can be easily extended and customized using the SADE scripting language. This feature allows users to automate repetitive or complex debugging tasks, and to customize SADE to meets their needs. SADE comes with a set of pre-defined menus that provide all of the basic debugging features such as setting breakpoints, viewing variables and structures at the source level, and stepping through code.

APDA/Apple Computer, Inc.
20525 Mariani Ave., M/S 33G
Cupertino, CA 95014
800-282-2732

System Requirements
Macintosh SE or larger; 2 MB of RAM; hard disk; System 6.02 or later. Macintosh SE/30 or larger; 4 MB of RAM recommended.

Price $75

Support
Limited technical support is available.

Scientific Graphics Toolkit

The Scientific Graphics Toolkit extends True BASIC to handle many common kinds of scientific, engineering, and mathematical graphics. High-level routines make it easy to draw good-looking graphs and data plots in many different formats. Low-level routines give the user complete control over the graph. Scientific Graphics Toolkit is suitable for anyone who wants to draw graphs of functions or data sets.

True BASIC, Inc.
12 Commerce Ave.
West Lebanon, NH 03784
800-872-2742

System Requirements
Macintosh 512K or larger; True BASIC Language System 2.0 or later.

Price $69.95

Support
Technical support is provided.

SIMSCRIPT II.5

SIMSCRIPT II.5 is a simulation programming language that simplifies writing programs for simulation modeling. Simulation models written in SIMSCRIPT II.5 average 75 percent fewer statements than equivalent routines written in FORTRAN and require less time and money to build, modify, and maintain. The varied models are clear and naturally reflect the organization and logic of the system they represent. The models are portable to most mainframes, minicomputers, and microcomputers. CACI closely controls development of SIMSCRIPT, providing full support, documentation, and updates to users.

CACI Products Company
3344 N. Torrey Pines Crt.
La Jolla, CA 92037
619-457-9681

System Requirements
Macintosh II or larger; 2 MB of RAM; hard disk; MPW and MPW C compiler.

Price $16,500
Special offer available to educators. Free 60-day trial available.

Support
One year of techincal support provided. Training is available.

Sorting & Searching Library

The Sorting & Searching Library includes 14 subroutines for sorting arrays. All are "in-place" sorts, which means they require little memory over and above that taken by the array and require no disk access. Features include fast, in-place Quicksort; the ability to define customized comparison routines; pointer sorts; binary search routines; heap sorts, selection sorts, and bubble sorts; sample programs; and source code.

True BASIC, Inc.
12 Commerce Ave.
West Lebanon, NH 03784
800-872-2742

System Requirements
Macintosh 512K or larger; True BASIC Language System.

Price $69.95

Support
Technical support is provided.

Stack Cleaner

Stack Cleaner, a set of utilities for HyperCard stackware developers, offers tools for optimizing and extending HyperCard features. Menu Maker lets users create and modify standard or pop-up menus and submenus for stacks. Script Cleaner reduces stack size by substituting HyperTalk's abbreviations in scripts. Split Stack lets developers create a new stack from an existing one by selecting cards and backgrounds to copy. Merge Stack combines two stacks. Clone Stack lets users duplicate a stack and then clear text from selected cards and backgrounds. HyperCard and Apple Computer's ResCopy resource moving utility are included.

TRENDWARE Corporation
P.O. Box 2285
Huntington, CT 06484
203-926-1116

System Requirements
Macintosh Plus or larger. HyperCard, included.

Price $49.95

Support
Telephone, on-line services, and fax support is provided.

SuperCard

SuperCard is a HyperCard-compatible personal software "toolkit" that gives Macintosh users the power to create authentic Macintosh software. By combining a powerful scripting environment with rich graphic creation capabilities, SuperCard is ideal for scripting anything from simple personal productivity stacks to full-color multimedia presentations and stand-alone commercial applications. Users can easily script from scratch using SuperCard's intuitive programming language and on-line scripting reference. SuperCard's graphics creation environment provides color painting and drawing, animation, color cycling, ink effects, and AutoTrace features. In SuperCard, every Paint or Draw graphic is an object that can have a script, and anything can be a button. SuperCard imports HyperCard stacks and standard Macintosh resources (sounds, icons, cursors, and other resources) as well as TIFF, PICT, and MacPaint graphic formats. High-resolution printing, full-screen support, resizable windows, and the ability to open multiple windows and stacks add to SuperCard's versatility and functionality.

Silicon Beach Software, Inc.
9770 Carroll Center Rd., Ste. J
San Diego, CA 92126
619-695-6956

System Requirements
Macintosh Plus or larger; System 6.0 or later.

Price $199
Educational site license available.

Support
Technical support is available.

THINK C

THINK C quickly takes programmers from idea to finished product. THINK C's fast compiler and linker can accomplish turnaround—the edit/compile/link/run cycle—in only a few seconds. THINK C offers object extensions that let programmers write flexible, extensible, and reusable code. The THINK Class Library provides code for standard Macintosh user interface components and behaviors, eliminating the need for developers to write such code. The integrated, source-level debugger lets programmers find bugs faster, even in object-oriented programs.

Symantec Corporation
135 South Rd.
Bedford , MA 01730
617-275-4800

System Requirements
Macintosh Plus or larger; two external disk drives; System 5.0 or later. The debugger requires MultiFinder and 2 MB of RAM. Hard disk and System 6.0 or later are recommended.

Price $249
Formerly Lightspeed C

Support
Telephone, CompuServe, and AppleLink support is provided.

THINK Pascal

THINK Pascal is a Macintosh development environment for both novices and professionals. It features a language-sensitive editor, a fast compiler, a nearly instantaneous linker, and a full source-level debugger that dramatically reduces development effort. Programmers can create flexible, extensible, and reusable code with Object Pascal aided by a source-level debugger. The THINK Pascal project manager keeps track of files and coordinates the multi-window text editor, the compiler and linker, the automake facility, and the source-level debugger so programmers can concentrate on writing programs. When it is time to produce a final application, the smart linker eliminates unreferenced code so programs are as small as possible.

Symantec Corporation
135 South Rd.
Bedford, MA 01730
408-253-9600

System Requirements
Macintosh Plus or larger; two 800K drives; System 5.0. Hard disk and System tools 6.0 recommended.

Price $149

Support
Telephone, CompuServe, and AppleLink support is provided.

TML Pascal II and TML Source Code Library II

TML Pascal II is a Pascal compiler designed for creating any type of Macintosh program, including desktop and textbook programs, MPW tool applications, definition procedures, HyperCard XCMDs and XFCNs, and desk accessories. Implemented within Apple's MPW environment, TML Pascal II offers Macintosh programmers great flexibility. The compiler handles data types greater than 32 KB in size, integrates code with all other MPW languages, creates both assembly source code and object code output, supports conditional compilation, supports Object Pascal, compiles MacApp versions 1.0 and 2.0, creates 68881/68882 and 68020/68030 code, fully supports Apple's new Symbolic Application Debugging Environment (SADE), uses constant expression evaluation, and is compatible with MultiFinder. The companion TML Source Code Library II brings together sample code that demonstrates virtually every type of Macintosh code, from programming palette windows and tear-off menus to HyperCard XCMDs and MultiFinder. Each example is completely documented to define source code intentions.

TML Systems, Inc.
4241 Bay Meadows Rd. Ste. 2
Jacksonville, FL 32217
904-636-8592

System Requirements
Macintosh Plus or larger; hard disk.

Price
TML Pascal II $195; TML Pascal Source Code Library II $69.95.

Support
Free telephone support is provided.

TOUCH OSI Macintosh Developer's Kit

The TOUCH OSI Macintosh Developer's Kit is a set of software, tools, and documentation that facilitates the development of Open System Interconnect (OSI) based distributed applications for the Macintosh. A distributed OSI application extends the power of the Macintosh into the world of "open systems," such as Technical Office Protocols (TOP) and Government OSI Procurement (GOSIP), tapping the resources of an OSI network made up of computers from multiple vendors. The Macintosh Developer's Kit allows a developer to take advantage of the TOUCH OSI network services provided with the TOUCH OSI family of networking products via the language- and platform-independent TOUCH Programmatic Interface. It provides a programmer direct access to each service within the seven layers of the OSI protocol stack. The Programmatic Interface was designed to ensure language and platform independence. Only the standard OPEN, CLOSE, READ, and WRITE commands are required to use the interface. Any language that supports these commands can be used in the development of distributed OSI applications.

Touch Communications, Inc.
10 Victor Sq.
Scotts Valley, CA 95066
408-438-4800

System Requirements
Macintosh SE or larger; 2 MB of RAM; System 4.2; Finder or MultiFinder 6.0; any EtherTalk compatible Ethernet (IEEE 802.3) controller.

Price $995

Support
Telephone support, product updates, incident reporting, and product training; and 30 days of customer support free. After 30 days, the customer may join the maintenance and support program.

tPlex PDL

tPlex PDL generates executable code for an Inmos transputer when linked to the MicroPlex Development Environment. Programs developed in this environment are written in an inherently top-down fashion and may be targeted for either sequential or massively parallel execution.

Micro/Research
730 E. Cypress Ave.
Monrovia, CA 91016
818-359-3503

System Requirements
Macintosh SE or larger; MicroPlex Development Environment.

Price $2750
A package including tPlex PDL and MicroPlex, $2995.

Support
Telephone and fax support is provided. Product updates are available at low cost to registered users.

TREES-pls

See complete description under Manufacturing.

Trendware XCAL

Trendware XCAL allows calculations to be added to new or existing HyperCard stacks. XCAL adds spreadsheet capabilities to HyperCard with a transparent grid window that displays over the cards in the stack. Users can create formulas for fields and buttons by clocking objects in the grid window. Formulas similar to those available with most stand-alone spreadsheet programs can be created. XCAL enhances stacks by allowing operations to be performed automatically when information is entered into a field or an object is clicked. Calculations can be performed on groups of cards and subsets that match a search criterion. Advanced capabilities can be achieved with the macro editor.

Trendware Corporation
P.O. Box 2285
Huntington, CT 06484
203-926-1116

System Requirements
Macintosh Plus or larger; HyperCard (licensed copy included).

Price $149.95

Support
Telephone, AppleLink, and fax technical support is available.

True BASIC

True BASIC is a structured programming language that follows the proposed standard for BASIC defined by the American National Standards Institute (ANSI). It produces an intermediate b-code that is compact and fast. There is no need to reinterpret each time a program is loaded from disk. Features include access to the full memory of the machine; matrix math; and control structures, such as SELECT CASE, nested IF-THEN-ELSE, and DO-LOOP. True BASIC's graphic capabilities are supported by multiple windows and user-defined coordinates. Additional features include on-line screen help; extensive syntax checking; errors pointed out in the source code and reported in simple English; and a full screen editor, which allows both novice and experienced programmers to develop and edit code. The Runtime Package for creating stand-alone, double-clickable applications is now included at no extra cost.

True BASIC, Inc.
12 Commerce Ave.
West Lebanon, NH 03784
800-872-2742

System Requirements
Macintosh 512K or larger.

Price $99.95

Support
Technical support is provided.

TWM-pls

See complete description under Manufacturing.

V.I.P. (Visual Interactive Programming)

V.I.P. is a visual language in which a graphic interface replaces a text editor. The program is composed of graphic elements that can be cut, copied, and pasted. A program is developed by clicking on logic form icons and procedure class icons to choose desired procedures. The program provides more than 225 precompiled toolbox procedures and functions that greatly simplify programming. The V.I.P. Translators automatically transform a V.I.P. program into C or Pascal. The V.I.P. Speech Manager Procedure Set adds Macintalk-compatible speech procedures. The V.I.P. Grid Manager Procedure Set adds grid procedures that can be selectively added to the programming environment. The V.I.P. ISAM Manager Procedure Set adds ISAM (Indexed Sequential Access Method) routines to V.I.P. records procedures, providing extremely fast keyed file accessing performance. The Manager is based upon optimized B+ Tree routines and handles fixed and variable length records. The V.I.P. Multiuser Database Manager Procedure Set provides multiuser ISAM capability under AppleShare. It also includes powerful report generation procedures. The V.I.P. Matrix Manager Procedure Set adds matrix manipulation and computation capability.

Mainstay
5311-B Derry Ave.
Agoura Hills, CA 91301
818-991-6540

System Requirements
Macintosh Plus or larger.

Price
V.I.P. $124.95; V.I.P. Translators for Lightspeed C, Lightspeed Pascal, MPW C, MPW Pascal, and Turbo Pascal $89.95 each; V.I.P. Speech Manager Procedure Set $49.95; V.I.P. Grid Manager Procedure Set $59.95; V.I.P. ISAM Manager Procedure Set $59.95; V.I.P. Multiuser Database Manager Procedure Set $150; V.I.P. Matrix Manager Procedure Set $95.

Support
Free telephone support and on-line support via CIS, MCI, and AppleLink; and newsletter are provided.

Vector

See complete description under Mechanical—Design/Drafting.

Videodisc Authoring Toolkit

The Videodisc Authoring Toolkit is a collection of software tools to aid in the construction of interactive videodisc applications. The toolkit includes a compiler, a debug downloader, and an EPROM formatter for use with the VIPS Intelligent Keypad (INKPAD) controller. Used in conjunction with a Pioneer LD-V4200 videodisc player and a monitor, the INKPAD controller provides a complete, low-cost interactive education, training, or advertising system. A touch screen or printer is optional. The Videodisc Authoring Toolkit facilitates the preparation, debugging, testing, and production of final object files suitable for videodisc manufacturing. Alternatively, an EPROM can be prepared to place the programs in the INKPAD itself.

Video Image Presentation Systems
25062 Linda Vista
Laguna Hills, CA 92653
714-951-9169

System Requirements
Macintosh Plus or larger; an Editor that edits and stores ASCII files (EDIT or MacWrite); INKPAD videodisc controller.

Price $450

Support
Telephone support is provided. Extended support, training, and consultation available for a fee.

WE DSP32 Development Tools

The WE DSP32 Development Tools allow programmers to create custom programs for the WE DSP32 and WE DSP32C floating-point microprocessors, which are featured on the MacDSP coprocessor boards. The WE DSP32 C compiler is a full standard C language compiler that is compatible with the MPW programming environment. It allows easy integration of DSP32 C language and assembler source into other Macintosh programming languages. Advanced optimization techniques are used to create efficient code for real-time applications. Optional math and signal-processing libraries, as well as specialized speech and image-processing libraries, with UNIX support, are available as C and Assembler source code. Complete simulation of the DSP32 and DSP32C devices is provided, including high-level interactive and automatic testing features. A resource-generation utility for embedding DSP32 code into Macintosh applications is also included.

Spectral Innovations, Inc.
4633 Old Ironsides Dr., Ste. 450
Santa Clara, CA 95054
408-727-1314

System Requirements
Macintosh SE or larger; MPW.

Price $1500

Support
Free telephone support is provided.

XVT for the Macintosh.

The XVT (Extensible Virtual Toolkit) library of C functions provides a common programmer interface across the Apple Macintosh, Microsoft Windows, and Presentation Manager. Identical XVT source code can run on the various platforms, with the native look and feel of each system preserved. XVT's high-level functions allow for easier and faster development than programming directly to the native toolkit functions. The C subroutine libraries generate native toolkit calls. One XVT call can produce multiple native toolkit function calls and handle many details. Direct calls are supported for those applications needing access to the native toolkit. XVT supports events (keyboard, mouse, update, menu, scroll bars), windows, graphics primitives, fonts and text output, cursors and carets, menus, modal and modeless dialogs, file handling, printing, clipboard, and a help system. Two additional platforms will be available soon: XVT for X Window System and XVT for Character Screens.

Graphic Software Systems, Inc.
9590 S.W. Gemini Dr.
Beaverton, OR 97005
503-641-2200

System Requirements
Macintosh 512K or larger; external 800K disk drive; MPW or Lightspeed C compiler.

Price $595
Other platforms are $395 to $595 each.

Support
Free telephone support and 90-day warranty are provided. Udpates at $225 per year.

ZBasic 5.0

ZBasic 5.0 is an interactive BASIC compiler that creates true, double-clickable, standalone applications that take advantage of the features of the Macintosh. The compiler includes math precision to 1024 points and color support. It offers complete Toolbox support, structured code, fast execution and compilation, and MSBasic conversion utilities. In addition, ZBasic comes with on-line help and hundreds of example programs, including paint. ZBasic also offers the Program Generator, an application that creates source code for drawn windows and edits fields, buttons, menus, and dialog boxes. The Program Generator lets inexperienced Macintosh programmers create Macintosh-like applications right away.

Zedcor, Inc.
4500 E. Speedway, Ste. 22
Tucson, AZ 85712
602-881-8101

System Requirements
Macintosh 512K enhanced or larger; external disk drive.

Price $199.95

Support
Free unlimited telephone support is provided.

Artificial Intelligence Languages and Tools (AI)

Allegro Common LISP (A/UX)

A/UX

Allegro Common LISP (A/UX) is an advanced Common LISP programming environment for the Macintosh II computer running A/UX. Allegro Common LISP (A/UX) is a complete implementation of Common LISP, the industry standard for artificial intelligence and other complex programming tasks. Allegro Common LISP (A/UX) conforms to the Common LISP standard as defined in *Common LISP: The Language* allowing complete portability of Common LISP programs. Allegro Common LISP (A/UX) includes an efficient compiler; object-oriented programming extensions; an inspector and stepper; a foreign-function interface to C and FORTRAN; Flavors, the most commonly used object-oriented programming paradigm; and numerous programming aids.

Franz, Inc.
1995 University Ave.
Berkeley, CA 94704
415-548-3600

System Requirements
Macintosh II or larger; A/UX. 2 to 4 MB of RAM recommended.

Price $1500
Includes all extensions. Academic discount and site license are available.

Support
Telephone and fax support are available unless purchased as unsupported.

Cognate

Cognate provides an environment and language to facilitate the building of knowledge-based systems such as expert systems. It is a forward-chaining, rule-based system that uses the fast Rete pattern matching algorithm. The environment includes an integrated editor that can construct the facts and rules that make up the knowledge base. The knowledge base can then be compiled at the click of a mouse or loaded from a text file. As the knowledge base is exercised and tested, new facts and rules can be added incrementally without the need for recompilation. To aid in debugging and testing, Cognate's browsing windows and tracing functions allow the knowledge base to be examined during program execution.

Peridom, Inc.
P.O. Box 1812
Bowie, MD 20716
301-390-9570

System Requirements
Macintosh 512K enhanced or larger; external disk drive or hard disk.

Price $150

Support
Free telephone support, bug fixes, and electronic mail support via MCI Mail, Genie, CompuServe, and BIX are provided.

Cognate Developer's Kit

The Cognate Developer's Kit supplies the inference engine used in Peridom's knowledge-base development tool, Cognate. The inference engine is provided in two formats: as a library of linkable object code in Macintosh Programmer's Workshop (MPW) format; and as C source code in ASCII text file format. Using the linkable object libraries, the Cognate environment may be extended to fit specific needs, such as customized interfaces and data-acquisition functions. In addition, the library allows the Cognate inference engine to be embedded in a stand-alone application using MPW C and Pascal. The Cognate inference engine is based on CLIPS (C Language Integrated Production System), developed by the Johnson Space Center. CLIPS has been ported to a variety of machines. CLIPS source code is provided with the Cognate Developer's Kit. To further aid in debugging the knowledge base in an embedded application, object code for much of the Cognate interface is also provided. The Cognate Developer's Kit includes the Cognate environment.

Peridom, Inc.
P.O. Box 1812
Bowie, MD 20716
301-390-9570

System Requirements
Macintosh Plus or larger; 2 MB of RAM; hard disk; MPW C; MPW Pascal or MacApp.

Price $250

Support
Free telephone support, bug fixes, and electronic mail support via MCI Mail, Genie, CompuServe, and BIX are provided.

ExperCommon Lisp

ExperCommon LISP is a comprehensive version of Common LISP, a tool that offers language features to ease the development of any application as well as sophisticated AI and symbolic processing applications. The program includes a memory-resident Common LISP compiler that generates 68000-native code directly from Common LISP source code. It fully supports editing multiple documents simultaneously; cutting, copying and pasting text between windows; using the Clipboard and Scrapbook; balancing LISP expressions with blinking parentheses that work both forward and backward; editing in multiple font sizes; and interactively compiling selections of code. The symbolic debugger provides fast response time so novices can quickly pinpoint problems and create solutions. It uses dialog boxes to display error messages, and allows users to step back through the sequence of operations, correct the error and resume execution. More than 60 predefined Toolbox objects are provided to improve upon the "records" associated with Toolbox programming. This allows a user to symbolically access the fields within an object and to isolate the components of the program.

ExperTelligence, Inc.
5638 Hollister Ave., Ste. 302
Goleta, CA 93117
805-967-1797

System Requirements
Macintosh Plus or larger.

Price $995

Support
Telephone support is provided.

ExperLisp

ExperLisp is a high-performance, compiled version of LISP. Users have access to all of the graphics routines, pull-down menus, multiple windows and operating system routines, a well as the power and speed of LISP code that is optimized for the MC68000-based Macintosh. It is a "modern" LISP with modern control structures, such as DOLIST, DOTIMES, CASE, CATCH and THROW, all of which are compiled in-line. Functions can have optional arguments with initialization forms and a catch-all argument. A break package allows a user to interrupt execution, examine and change variables and functions, and then resume execution. Features include: a compiler that optimizes code for fast execution and list processing; support of large program libraries; Load-On-Return, which allows a user to run programs larger than the machine's memory; editor windows on files that can be simultaneously displayed and text that can be moved among them; a graphics window and text window that can share the screen; several program libraries, including a list structure editor and an optimizing file compiler; a LOAD-FASL function, which allows a user to load ExperLisp compiled files; scoping of variables; expanded SETF; a Search & Replace feature on the Edit menu; expanded parenthesis matching in text windows; and more.

ExperTelligence, Inc.
5638 Hollister Ave., Ste. 302
Goleta, CA 93117
805-967-1797

System Requirements
Macintosh Plus or larger; external disk drive or hard disk.

Price $495

Support
Telephone support is provided.

ExperOPS5-Plus

ExperOPS5-Plus provides tools for customizing a user interface for a user's expert systems. This is done with customized dialog boxes that can incorporate MacPaint or MacDraw graphics and can receive responses through radio buttons, checkboxes, and OK and yes/no buttons.

ExperTelligence, Inc.
5638 Hollister Ave., Ste. 302
Goleta, CA 93117
805-967-1797

System Requirements
Macintosh 512K or larger; external disk drive or hard disk; ExperLisp.

Price $495

Support
Telephone support is provided.

ExperProlog II

ExperProlog II is an interpreter that allows a user to interactively load, execute, extend and modify Prolog programs, while taking advantage of all the facilities of the Macintosh environment. Features include: conditional deferred resolution and unification, declared inequality of variables, worlds manipulation, and infinite trees and global assignments. A built-in editor is featured along with a trace window, special graphic printing routines which represent complex trees on the screen, and access to the host system environment through special calls.

ExperTelligence, Inc.
5638 Hollister Ave., Ste. 302
Goleta, CA 93117
805-967-1797

System Requirements
Macintosh 512K or larger; external disk drive or hard disk.

Price $495

Support
Telephone support is provided.

GoldWorks II

GoldWorks II is an expert system shell for developing and delivering advanced knowledge-based applications. GoldWorks II offers a broad range of tools for representing complex knowledge and controlling the inferencing process, and is the only high-end shell that runs in native mode on the Macintosh II computer. Developers can build rule-based applications without programming, and access the complete functionality of Common LISP for procedural extensions. The Graphics Layout Tool lets developers create expressive user interfaces in simple point-and-click fashion and includes a full set of predefined dynamic graphic images such as dials, gauges, and graphs. GoldWorks II includes Apple's Macintosh Allegro Common LISP and a comprehensive set of reference manuals and user guides.

Gold Hill Computers, Inc.
26 Landsdowne St.
Cambridge, MA 02139
617-621-3300

System Requirements
Macintosh II or larger; 8 MB of RAM; 5 MB hard disk; System 6.0 and Finder 6.1 or later.

Price $7900
Educational organizations $1995.

Support
Free telephone support and 90-day warranty are provided. Annual service contracts are available after 90 days.

HyperX

HyperX is a basic course on expert systems and artificial intelligence, and the first expert system development tool written entirely in HyperCard. HyperX allows users to combine expert systems with multimedia to solve problems that spreadsheets and databases can't handle. Computer assisted instruction, decision support, diagnostics, data analysis, intelligent forms, and automation of complex procedures are examples of applications that can be created with HyperX.

Millennium Software
1970 S. Coast Hwy.
Laguna Beach, CA 92651
714-497-7439

System Requirements
Macintosh Plus or larger; HyperCard 1.2.2 and MacNET included. Hard disk recommended.

Price $99.95

Support
Telephone, AppleLink, and MacNET support is provided.

MacScheme

MacScheme is an implementation of the Scheme programming language, an important modern dialect of LISP. It is designed for use in university computer science courses ranging from the introductory level to graduate courses in artificial intelligence. Scheme's simplicity, its support for continuations, and its use of a single lexical environment distinguish it from other major dialects of LISP. MacScheme takes advantage of the window and menu capabilities of the Macintosh to create an integrated programming environment that is easy to learn and to use. MacScheme is compatible with *Structure and Interpretation of Computer Programs,* a textbook based on the introductory computer science course at MIT. In addition, it conforms to the 1986 Scheme standard. Most Scheme programs will run, without changes, in either MacScheme on the Macintosh or Texas Instrument's PC Scheme on the IBM PC. MacScheme includes a native code compiler, a fast interpreter, a source code debugger, and a tracer. Its integrated editor helps with Scheme syntax by highlighting matching parentheses and by suggesting proper indentation. MacScheme also includes a Scheme-like subset of QuickDraw graphics commands.

Lightship Software, Inc.
P.O. Box 1636
Beaverton, OR 97075
503-643-6909

System Requirements
Macintosh SE or larger.

Price $150
Site licenses and quantity discounts are available.

Support
Free telephone support is provided. Updates are available to registered users for a fee.

MacScheme+Toolsmith

MacScheme+Toolsmith is a complete software development system that features the Scheme programming language, an important modern dialect of LISP. The program provides the facilities needed to write stand-alone applications entirely in Scheme. These facilities include a selective linker, high-level objects for interactive windows and menus, a comprehensive library of toolbox data definitions and traps, and extensive samples. Applications may be distributed without royalties. MacScheme+Toolsmith includes an incremental native-code compiler for speed-critical applications, as well as a fast byte-code interpreter that aids during development and minimizes the size of object code. Code may be compiled to native-code or byte-code, allowing a single application to include both compiled and interpreted sections. Other features include multitasking and an interrupt-driven event system that make it possible to design applications in the manner most appropriate to the problem at hand. Development tools, such as a source-code debugger, tracer, and integrated editor, are also part of the system. These tools continue to operate in parallel with interactive objects created by user programs under test, which is an aid to debugging.

Lightship Software, Inc.
P.O. Box 1636
Beaverton, OR 97075
503-643-6909

System Requirements
Macintosh Plus or larger.

Price $395

Support
Free telephone support is provided. Updates are available to registered users for a fee.

MicroExplorer

The MicroExplorer is a fully integrated artificial intelligence workstation based on the Macintosh II computer, with an advanced, high-performance LISP coprocessor. The system is capable of advanced artificial intelligence development with sophisticated CASE tools as well as a platform for a range of popular third-party artificial intelligence application shells. Texas Instruments also offers specific solutions for the transportation industry, health care, and manufacturing.

Texas Instruments
P.O. Box 202230
Austin, TX 78720
800-527-3500

System Requirements
Macintosh II or larger; 2 MB of RAM; 40 MB hard disk.

Price $11,995
Includes upgrade board and software. System prices including Macintosh II begin at $15,995.

Support
A 90-day warranty and support are provided. Extended service, technical support, training, upgrades, and consulting are available.

NEXPERT*SQL

NEXPERT*SQL, the software bridge between NEXPERT and ORACLE, is bundled in a special version of NEXPERT (either Development System or Runtime version). The expert system application can retrieve and write data directly to an Oracle database, locally on the same Macintosh, or by accessing a remote server on a network. The data is mapped into NEXPERT's object-oriented knowledge base and processed by the inference engine. A full SQL query interface is provided to edit the database access. NEXPERT*SQL runs locally with ORACLE for the Macintosh. It also needs SQL*NET from ORACLE in order to run in a network environment.

Neuron Data
444 High St.
Palo Alto, CA 94301
415-321-4488

System Requirements
Macintosh Plus or larger; 2 MB of RAM; NEXPERT OBJECT.

Price $800

Support
Free telephone support and 24-hour bulletin board are provided for three months.

NEXTRA

NEXTRA is a high-end knowledge acquisition product and transfer tool for use by knowledge designers and domain experts in expert systems development. NEXTRA elicits knowledge from users through interactive interviewing, structures it into logical relationships, then provides graphic representations and analysis. It provides structure and focus to the expertise required in a particular system being developed, and it automatically generates rules and objects for NEXPERT OBJECT, Neuron Data's leading expert system shell. NEXTRA combines several knowledge acquisition techniques including automated repertory grids and hierarchical clustering with spatial representations to help elicit and process data. Then it provides graphic representations for review and editing. NEXTRA uses inductive reasoning to construct rules from facts and opinions supplied. NEXTRA and NEXPERT OBJECT together provide the first integration of a knowledge acquisition system and a performance expert system shell.

Neuron Data
444 High St.
Palo Alto, CA 94301
415-321-4488

System Requirements
Macintosh II or larger.

Price $4000

Support
Free telephone support, 24-hour bulletin board, and updates are provided for three months and are available for $1000 per year thereafter. Training courses available.

Prolog II

Prolog II is a full Macintosh implementation of the Prolog artificial-intelligence language, used for developing expert systems and for natural language processing. The program supports pull-down menus, windows, and other Macintosh features. It also offers finite and infinite trees; equation on trees; coprocessing; the freeze predicate; a tracing mechanism (with or without tree drawing); tree drawing of a term; and Prolog routines that can be linked with MPW Pascal.

Avenue Software, Inc.
2162 W. Charest Blvd.
Quebec City, Quebec, G1N 2G9 Canada
418-682-3088

System Requirements
Macintosh 512K or larger.

Price $495

Support
Free telephone support is provided to registered users.

Prolog II+ Compiler

The Prolog II+ Compiler, designed for professional developers, provides speedy compiling at 25,000 LIPS, open architecture that lets users link modules written in other languages, and standardization.

Avenue Software, Inc.
2162 W. Charest Blvd.
Quebec City, Quebec, G1N 2G9 Canada
418-682-3088

System Requirements
Macintosh 512K enhanced or larger; MPW shell software.

Price $1295

Support
Free telephone and AppleLink support are provided. Upgrades are available for $100.

Scheme Express

Scheme Express is an implementation of the Scheme programming language, a dialect of LISP. It is designed for use in university computer science coureses, but is suitable for hands-on learning as well. It includes a fast interpreter, a source-code debugger, and a tracer. Scheme Express also includes a Schemelike subset of QuickDraw graphics commands. Functionally identical to MacScheme (although slower), Scheme Express is an inexpensive way to learn Scheme, and it is an excellent introduction to AI languages as a whole.

Lightship Software, Inc.
P.O. Box 1636
Beaverton, OR 97075
503-643-6909

System Requirements
Macintosh 512K enhanced or larger.

Price $69.95
Site licenses are available.

Support
Free telephone support is provided.

Expert System Tools

ExperFacts

ExperFacts is a rule-based expert system shell that allows the representation of knowledge in several forms. It incorporates a powerful control language to both define rules and control the behavior of the inference engine. The program allows a user to partition knowledge into logical parts which can limit search during the matching process between rules and relations. It also offers both forward and backward chaining. At any point while running the system, a user may ask for justification for the line of reasoning and the system will respond with a tree diagram explaining the line of reasoning. From this point, a user may select one of the leaves of the tree for more information.

ExperTelligence, Inc.
5638 Hollister Ave., Ste. 302
Goleta, CA 93117
805-967-1797

System Requirements
Macintosh 512K or larger; external disk drive or hard disk; ExperLisp.

Price $495

Support
Telephone support is provided.

Instant-Expert

Instant-Expert is an expert system shell that allows the user to develop applications in various expert domains. The user enters an expert's knowledge in rule form, and the program provides advice, makes decisions, solves problems, and offers selections. Features include an inference engine using forward chaining and backward chaining techniques, as well as a mixed strategy in which both forward and backward reasoning are used; 500 rules; the capacity to explain "why" a particular question is asked; the capacity to justify "how" a particular recommendation is made.

Human Intellect Systems
1670 S. Amphlett Blvd., Ste. 326
San Mateo, CA 94402
415-571-5939

System Requirements
Macintosh SE or larger; external disk drive or hard disk.

Price $69.95
Educational discount. Site licenses available.
No runtime fees.

Support
Telephone support is provided.

Instant-Expert Plus

Instant-Expert Plus takes Instant-Expert a step beyond, with graphics, a powerful command library, the fastest inference engine, hypermedia, and hyperinference. Easy-to-use features give users the power of a professional programmer. The graphic manager lets the user create custom user interfaces by importing graphic files. The command interpreter makes it easy to execute over 70 special commands. With Instant-Expert Plus, the user's applications can link with other programs, perform calculations, and execute hundreds of variable manipulations.

Human Intellect Systems
1670 S. Amphlett Blvd., Ste. 326
San Mateo, CA 94402
415-571-5939

System Requirements
Macintosh 512K enhanced or larger.

Price $498
Site license is available.

Support
Free telephone hotline and disk on file service are provided. Consultation is available for a fee.

Level 5-Mac

Level 5-Mac is an expert system shell for developing custom applications composed of rules and facts. With Level 5's rule-based approach, the process of capturing, maintaining, and distributing expert knowledge and experience throughout a company is greatly simplified for programmers and nonprogrammers alike. Level 5-Mac takes advantage of the Macintosh user interface and is MultiFinder friendly. Special features include an English syntax rule grammar, dynamic reporting capabilities, engineering mathematic functions, confidence weighting, debugging tools, and the ability to sublaunch external programs via parameter passing.

Level Five Research
503 Fifth Ave.
Indialantic, FL 32903
305-729-9046

System Requirements
Macintosh 512K or larger.

Price $685
Price includes inference engine, knowledge base compiler and editor, database access modules, report facilities, engineering mathematical functions, and logic debugging tools.

Support
Free unlimited telephone support is provided. Self-study guides, beginning- and advanced-knowledge engineering courses, and consulting are available.

NEXPERT Hyper Bridge

NEXPERT Hyper Bridge is a software link between NEXPERT's AI Library and the HyperCard, SuperCard, or Plus hypermedia packages. The NEXPERT Library is embedded with the hypermedia application and is available through an external comand (XCMD) from any HyperTalk or compatible script. This library provides full control of NEXPERT's inference engine and all functions of the kernel, such as reading from or writing to databases or getting information about variables. Software developers can use the NEXPERT Hyper Bridge to develop two types of hypertext-enhanced expert systems applications—a hypertext graphic user interface and an expert navigation tool for hypertext applications. The hypertext graphic user interface provides the cards to allow users to query or enter data and provides users with browsing abilities. The expert system navigator allows users to browse, view results, and retrieve information from the hypertext application in a nonlinear fashion.

Neuron Data
444 High St.
Palo Alto, CA 94301
415-321-4488

System Requirements
Macintosh Plus or larger; 2 MB of RAM; HyperCard 1.2 or later.

Price
$500 for development version, free with NEXPERT Runtime.

Support
Telephone support; 24-hour bulleting board; free support is provided for three months.

NEXPERT Object

NEXPERT Object is a hybrid rules- and object-based expert system building tool. It is based on the principle of knowledge design, allowing experts to be fully involved in the construction of the knowledge base. Through NEXPERT interface, experts have direct access to the expert system and are able to manipulate high level tools to model a task. Applications include diagnostics, finance, troubleshooting, simulation, decision support, planning and process control. Key features include knowledge representation, browsing rules and object networks, inference engine, non-monotonicity, and open AI architecture and extensions.

Neuron Data
444 High St.
Palo Alto, CA 94301
415-321-4488

System Requirements
Macintosh Plus or larger. Large monitor recommended.

Price $5000
Volume and educational discounts are available.

Support
Free telephone support and updates are provided for 90 days, and for $1,000 per year thereafter. A 24 hour bulletin board service is available for all registered users.

NEXPERT Runtime Library (MPW)

The NEXPERT Runtime Library, under the Macintosh Programmer's Workshop (MPW), is the kernel of NEXPERT, provided as an MPW object file, which can be linked with any MPW code (C, Pascal, Assembler, MacApp, or other language). In addition to the features of NEXPERT Object, the library also allows NEXPERT to be fully embedded in custom applications—the application's code has full control over the kernel, the interface is through a set of function calls that give access to all features in the kernel. NEXPERT can be used to customize the interface of the expert system, as the AI module in an existing MPW application, or as an MPW tool running under the MPW shell. Knowledge bases built with the development system can be used directly with the NEXPERT Runtime Library, but the library also provides editing functions to create or modify a knowledge base.

Neuron Data
444 High St.
Palo Alto, CA 94301
415-321-4488

System Requirements
Macintosh Plus or larger; MPW Development Environment.

Price $750
Bundled with Stand-alone Runtime.

Support
Free telephone and 24-hour bulletin board support are provided for three months.

SuperExpert

SuperExpert is an example-based expert system shell. When historical data, experience, or sample situations are entered, the program automatically creates rules, which describe how decisions have been made in the past, from the information. A novice may then question the expert system to find similar decisions. Since SuperExpert is example-based, a developer does not need programming or artificial intelligence experience to create sophisticated expert systems. Program features include backward and forward chaining, trace and "what if" capabilities during the query, and import/export capabilities from database and spreadsheet files. The user is notified if examples contradict others already entered. The query session is run using natural language. MacinTalk is used so that the expert system can speak. The runtime desk accessory allows the user to run just the query session, with no need to see the development tools and no worry about accidentally ruining the examples and rules.

Softsync, Inc.
162 Madison Ave.
New York, NY 10016
212-685-2080

System Requirements
Macintosh Plus or larger, external disk drive or hard disk.

Price $199.94
Runtime modules license (1 to 100) $300; (101 and up) $1,000.

Support
Free telephone and AppleLink support, and a 90-day warranty are provided. Upgrades are available for $9.50.

Conceptual Design

Adobe Illustrator 88

Adobe Illustrator 88 software is a powerful graphics program with which beginners and experts alike can create and produce high-quality artwork. Built into the Adobe Illustrator 88 program are features for freehand sketching, for automatic tracing, and for rapidly turning scanned images into finished art. There's also a blending tool for creating airbrush effects with a few clicks of the mouse; a PostScript language-patterning tool; and full Pantone Matching System capability. With Adobe Illustrator 88, artwork can be manipulated and refined quickly and easily, without starting over each time.

Adobe Systems, Inc.
1585 Charleston Rd.
Mountain View, CA 94039
415-961-4400

System Requirements
Macintosh Plus or larger.

Price $495

Support
Free product support for registered users is provided.

Adobe Streamline

Adobe Streamline automatically converts a bitmapped graphics file into an Adobe Illustrator file or an encapsulated PostScript file. Users can convert an image and then refine it in Adobe Illustrator or paste the converted image into a word processing or page layout document. Adobe Streamline lets users select a whole image or just a portion for tracing and allows processing of bitmapped files one at a time or in batches.

Adobe Systems, Inc.
1585 Charleston Rd.
Mountain View, CA 94039
415-961-4400

System Requirements
Macintosh Plus or larger; 800K external disk drive.

Price $395

Support
Free support to registered users is provided.

APERTURE

See complete description under Architecture/Engineering/Construction—Design/Drafting.

CA-Cricket Draw

CA-Cricket Draw is an object-oriented drawing program designed to take advantage of the graphic capabilities of PostScript printers, from the LaserWriter to the Linotronic 300. The package consists of two integrated programs: a drawing window and a PostScript language editor. The programs can be used separately or in conjunction. Features include: use of graded tints (shadows and fountains); free rotation and tilting of all objects in .05 point increments; line shading and screening capabilities in 100 levels; include and incorporate output from other PostScript generating programs; import of MacDraw, MacPaint, PICT and ESPF files; import, resize, crop and set grayscale on bitmaps, zoom in/out capabilities and a full featured PostScript editor where existing code (based on the drawing window) can be modified. Text can be shadowed, rotated, tilted and/or placed on a curved path. Multiple fonts, sizes, and styles are available within a block of text. Color is supported on the Macintosh II and ImageWriter II.

COMPUTER ASSOCIATES INTERNATIONAL, INC.
10505 Sorrento Valley Rd.
San Diego, CA 92121
800-531-5236

System Requirements
Macintosh Plus or larger.

Price $295

Support
Six months technical support is provided.

CAD to MAC

CAD to MAC converts AutoCAD files into Adobe Illustrator files.

Output Network/GeoPacific, Inc.
6039 W. Alameda Ave.
Lakewood, CO 80226
303-238-1338

System Requirements
Macintosh 512K enhanced or larger.

Price $145

Support
Telephone support is available.

Canvas 2.0

Canvas 2.0 is an object-oriented drawing program with significant paint features. It allows precision hairlines up to 1/1000 of an inch and positioning with accuracy of 1/64,000 of an inch. Canvas 2.0 has a Bézier curve tool that allows continuous Bézier curves and an autotrace function that makes it easy to convert bitmaps to objects. Canvas 2.0 has a number of features found only in CAD applications, including automatic area, height, width, length, and perimeter calculations. Canvas reads and writes PICT, PICT2, MacPaint, MacDraw, and TIFF files. Canvas 2.0 has all the features needed for business graphic presentations, desktop publishing, or architectural rendering.

Deneba Software
3305 N.W. 74th Ave.
Miami, FL 33122
305-594-6965

System Requirements
Macintosh SE or larger. Color monitor recommended.

Price $299.95

Support
Free telephone technical support is provided. A demonstration is available on Genie and CompuServe.

Drawing Table

Drawing Table is a professional-quality drawing tool for design professionals and non-artists. The program includes tools and features usually found only in more expensive programs as well as extensive clip-art libraries. Drawing Table's wide range of applications includes the creation of illustrations, maps, diagrams, floor plans, flyers, posters, logos, and letterheads.

Brøderbund Software
17 Paul Dr.
San Rafael, CA 94903
415-492-3200

System Requirements
Macintosh Plus or larger; two 800K drives or one 800K drive and hard disk; ImageWriter or LaserWriter.

Price $129.95

Support
Free telephone support and 90-day warranty are provided.

DynaPerspective

See complete description under Architecture/Engineering/Construction—Design/Drafting.

LaserPaint Color II

LaserPaint Color II provides designers with a wide range of PostScript line-drawing, bit-mapped image-manipulation, and text-editing capabilities. LaserPaint Color II supports 8- and 24-bit color and 32-bit QuickDraw. Built-in drivers for the Sharp JX-450, JX-300 Howtek Scanmaster, Howtek Scanmaster 35, Howtek Scanmaster 35-II, and Data Translation's Quick Capture and Color Capture are included. Scans can be cropped, scaled, rotated, flipped, mirrored, retouched, and color corrected. Parts of both 8- and 24-bit color scans can be pasted together to create photo montage images. Images can be magnified up to 800 percent. Any number of color palettes can be created. Up to 150 PostScript fonts can be installed and are available in sizes from 3 to 7,000 points. Configurable rulers, meters, grids, column guides, crop marks, trim marks, and registration marks assist designers in creating layouts. Four color or spot color separations of any artwork can be produced automatically. Full control over linescreen frequency, rotation angle, and halftone dot shape is supported, as are most Macintosh graphic file formats.

LaserWare Inc.
P.O. Box 668
San Rafael, CA 94915
415-453-9500

System Requirements
Macintosh II or larger; 2 MB of RAM.

Price $595
Site licenses are available.

Support
Free telephone support is provided. Periodic upgrades are available for a nominal fee.

Mac3D

Mac3D is a two- and three-dimensional graphics package for technical and free-form drawing, designing, modeling, and desktop publishing. Models can be formed with a set of two- and three-dimensional shape tools. Two-dimensional outlines can be spun around to create three-dimensional objects. The program allows users to shape and combine objects into any form, add custom patterns, shade objects from six adjustable light sources, conceal surfaces, and to dimension objects for useful presentations automatically. It rotates objects in 1-degree increments and works with custom changeable scales. The rules and other precision information allow users to create accurate models.

Challenger Software
18350 Kedzie Ave.
Homewood, IL 60430
312-957-3475

System Requirements
Macintosh Plus or larger. An 800K internal drive, or two 400K disk drives; ImageWriter.

Price $249

Support
Free telephone support is provided.

MacConcept

See complete description under Mechanical—Design/Drafting.

MacDraw II

MacDraw II is a structured graphics program that satisfies user needs in graphic arts, presentations, desktop publishing and computer-aided design. Features include on-screen color; output in color for color separations; the ability to customize up to 16,000 different monochrome or color patterns; a virtually unlimited layering capability—up to 500 layers on a 1 MB Macintosh; overlapping transparent layers can be hidden, shown and rearranged in any order; zooming capability that enlarges a drawing area up to 32 times or down to three percent of its original size; drawing accuracy up to 2000 dots-per-inch; customized ruler settings for drawing to any scale from inches to miles, centimeters to kilometers; rotate objects and text at any angle from 0 to 360 degrees in increments as small as 1/100 degree; libraries of named objects; single-letter type font, style, and size editing; customizable pen widths, dashed lines, and patterns; and a plotter driver for output to selected plotters up to "E" size from Hewlett-Packard and Houston Instruments.

Claris Corp.
5201 Patrick Henry Dr.
Santa Clara, CA 95052
408-987-7000

System Requirements
Macintosh Plus or larger; external 800K disk drive.

Price $399
Upgrade from MacDraw $200.

Support
Telephone support is provided. Training materials are available.

MacFlow 3.0

See complete description under Software Development—Computer-Aided Software Engineering (CASE).

MacPaint

MacPaint is a design tool for creating free-form drawings and manipulating existing images. Its design capabilities enable users to create any kind of artwork—from advertising to layouts to book illustrations. It provides users with a canvas and a palette of tools and shapes for creating all types of illustrations, as well as special effects.

Claris Corp.
5201 Patrick Henry Dr.
Santa Clara, CA 95052
408-987-7000

System Requirements
Macintosh 512K enhanced or larger.

Price $125

Support
Telephone support is provided.

StrataVISION 3d

StrataVISION 3d, Computer-Aided Visualization for the Macintosh, allows users to create photo-realistic three-dimensional scenes in full color using Apple's 32-bit QuickDraw. The program provides three-dimensional modeling, scene composition, and rendering. Objects may be created using StrataVISION 3d's modeling tools or may be imported from StrataVISION libraries and other three-dimensional formats, including Super 3D, MiniCAD, DXF, and IGES. Two-dimensional objects created using StrataVISION 3d's drawing tools or imported from other applications can be lathed and extruded. Objects in a scene can be modified and manipulated as desired. The controls are intuitive and provide a high degree of feedback. Unlimited light sources of varying type, color, intensity, and direction can be added to a scene. The program includes wire frame, ray-tracing, Phong, Gouraud, and flat-shaded rendering in 1- to 32-bit color. A variety of rendering options and mapping types are available. StrataVISION 3d supports color printers, film recorders, or video.

Strata Inc.
249 E. Tabernacle, Ste. 201
St. George, UT 84770
801-628-5218

System Requirements
Macintosh SE/30 or larger; 2 MB of RAM; hard disk; System 6.03 or later; 32-bit QuickDraw .

Price $495

Support
Free telephone support and a newsletter are provided to registered users.

Super 3D

Super 3D is a three-dimensional graphics and animation program, ideal for modeling, visualization, and graphic design. Two-dimensional draw graphics can be imported into or created in Super 3D and easily converted into complex three-dimensional objects with Revolve, Sweep Surface, and Extrude commands. Models can be viewed as wire-frame or solid shapes, with perspective on or off. Intuitive "spin wheels" to manipulate three-dimensional objects and camera dollying and zoom controls allow users to view models from any angle or camera perspective. Models can be shaded with up to four light sources and displayed in up to 64 colors from a palette of 16 million. Model animations can be created automatically with the Translate Model command and played back at up to 60 frames per second. Animating models is simple with Super 3D's powerful "tweening" function, which interpolates transitions between position, shape, and color of models between key frames.

Silicon Beach Software, Inc.
9770 Carroll Center Rd., Ste. J
San Diego, CA 92126
619-695-6956

System Requirements
Macintosh Plus or larger; hard disk recommended.

Price $495
Educational site licenses available.

Support
Technical support is provided.

SuperPaint

SuperPaint combines the spontaneity of MacPaint with the precision of MacDraw in a single, easy-to-use graphics program. More than 25 new features include AutoTrace, which automatically transforms bit-mapped graphics into MacDraw-style line art; a customizable airbrush; a freehand Bézier tool; customizable arrows and dashed lines; and color preview for color printing. In Draw mode, text styles, fonts, and sizes can be mixed in a single text block, and text or graphics can be freely rotated, stretched, slanted, and distorted without sacrificing high-resolution output. Oversized images automatically tile over multiple pages. Users can design custom graphics tools and add them to the program.

Silicon Beach Software, Inc.
9770 Carroll Center Rd., Ste. J
San Diego, CA 92126
619-695-6956

System Requirements
Macintosh Plus or larger; System 6.0 or later.

Price $199
Educational site licenses are available.

Support
Telephone support is provided.

Swivel 3D

Swivel 3D is a three-dimensional color drawing and modeling program for graphic design, visualization, business presentations, and animation. Its object manipulation interface let users quickly create and move three-dimensional objects. The package includes a three-dimensional clip art library, with human forms, alphabets, common shapes and other images. New features include tweening with multiple key frames, to easily create intermediate animation frames; anti-aliasing to smooth jagged edges; an optimized color palette for greater control over range and contrast of colors and shadows; the ability to superimpose two-dimensional graphics, such as wood grain or a marble finish, onto the surface of three-dimensional objects; customized rulers; and the ability to create a new object from a linked series of cross sections. Swivel 3D exports in several formats, including Illustrator 88 and PICS for MacroMind Director.

Paracomp, Inc.
123 Townsend St., Ste. 310
San Francisco, CA 94107
415-543-3848

System Requirements
Macintosh Plus or larger. Hard disk and 2 MB of RAM are recommended; color monitor and video card that supports 256 colors is recommended for the Macintosh II.

Price $495

Support
Free telephone support and a demonstration version are provided.

ZING

ZING is a graphics package that allows users to create and manipulate three-dimensional images in up to 16.7 million simultaneous colors, including automatic three-dimensional text. Once images are created, they can be exported to most desktop publishing, presentation, page layout and word processing programs. File formats include PostScript, EPS, Illustrator 1.1, Paint, and PICT. One font is included with the package, four other fonts are available from Enabling Technologies' Clip3D Fonts package.

Enabling Technologies, Inc.
600 S. Dearborn St., Ste. 1304
Chicago, IL 60605
312-427-0408

System Requirements
Macintosh Plus or larger.

Price $199.95

Support
Free technical support; free clip-art upon registration.

Data Analysis/Simulation

AutoMod^{2e}

AutoMod^{2e}, an industrial simulation system, incorporates discrete event simulation technology with realistic three-dimensional graphic animation as an integral part of model creation for Macintosh II environments. AutoMod^{2e} is easy-to-use but has the power to model the internal interactions of elements in virtually any complex material handling, manufacturing, and distribution system. Dialog boxes, menus, and mouse controls offer flexibility for novice and expert users to create timely, accurate, and user-intuitive simulation models. The system is fully compatible and upgradable to AutoMod II. A starter kit is available.

AutoSimulations, Inc.
655 E. Medical Dr.
Bountiful, UT 84010
801-298-1398

System Requirements
Macintosh II or larger; 4 MB of RAM; 8-bit video card; color monitor. 40 MB hard disk recommended.

Price $7995
Site licenses are available.

Support
Training is available. A service contract is available for $1200 per year.

Best Answer

Best Answer uses linear programming to determine which combination of variables on the user's spreadsheet will produce the best possible result. The user sets up a model in Excel using linear spreadsheet formulas, saves it as a SYLK file, and then opens it from within Best Answer. The user can then identify which cells are variables, which contain constraints, and which cell the user wishes to optimize. The program does the rest, rapidly finding the best answer under the conditions specified. The program comes with full instructions and several models set up for the user to learn from and to modify for specific problems. The models cover examples of manufacturing product mix, staff scheduling, portfolio selection, media buying, planning for nutritional requirements, and cash flow planning. Features include large problem size (up to 250 constraint and 250 adjustable cells); shadow prices (determines how much additional profit would be attainable for each additional unit of a constrained resource); contribution ranges (shows how much one unit of each variable is contributing to the end result); and flexible operation and formatting.

Heizer Software
1941 Oak Park Blvd., Ste. 30
Pleasant Hill, CA 94523
415-943-7667

System Requirements
Macintosh 512K or larger; Microsoft Excel.

Price $99

Support
Telephone support is provided.

CA-Cricket Graph

CA-Cricket Graph allows users to create high-quality graphs and charts using business, scientific and engineering data. Features include: a choice of 12 different chart and graph types; support for importing data from spreadsheets, word processors and databases; easy direct entry and editing of data; a full range of mathematical operations on data, including logarithmic, trigonometric and exponentiation functions; over 2000 distinct data points which can be plotted on one graph; full text editing capacity; regression curve fits, interpolation and error bars; full page layout with editing tools; export to page layout, word processing and graphics programs; graphic macros for storing graph formats; and support for color on the Macintosh II, ImageWriter II and Hewlett-Packard plotters.

COMPUTER ASSOCIATES INTERNATIONAL, INC.
10505 Sorrento Valley Rd.
San Diego, CA 92121
800-531-5236

System Requirements
Macintosh Plus or larger.

Price $195

Support
Free technical support for six months is provided.

Crystal

Crystal draws stereographic projections for any crystal system, or orientation, with great circles. Users can identify poles or circles with the mouse; rotate the pole or crystal orientation; measure angles between poles or directions; save and retrieve the orientation, unit cell shape, or sets of poles; and print full page projections on the LaserWriter.

Crystal Software
54166 Pine Rd.
South Bend, IN 46628
219-239-5642

System Requirements
Macintosh Plus or larger; external 800K disk. LaserWriter is recommended.

Price $160
Per site license.

Support
Free telephone support is provided.

Crystal Ball

Crystal Ball is a powerful forecasting and risk management program that helps take the mystery out of decision making. The user sets up a model in Excel, saves it as a SYLK file, and then opens it from within Crystal Ball. Each uncertain variable in the model is assigned a probability distribution by the user describing how that variable behaves. Using a technique known as Monte Carlo simulation, the program predicts the results most likely to occur in a given situation. The results are charted in an easy-to-understand format that gives the user a strong intuitive feel for the problem at hand. Features include large problem size (up to 250 variables and 30 forecasts); descriptive statistics on any forecast; sensitivity analysis; reporting capability; flexible operation through preference settings; background execution under MultiFinder; and comprehensive documentation. Applications include economic forecasting, environmental assessments, system reliability studies, and facilities planning.

Market Engineering, Corporation
1675 Larimer St., Ste. 600
Denver, CO 80202
303-893-0100

System Requirements
Macintosh Plus or larger; Microsoft spreadsheet application.

Price $395
Site license available; educational discount.

Support
Unlimited telephone support is provided.

Design/CPN

Design/CPN supports the development of large hierarchical and executable graphic models for complex concurrent systems such as communication protocols, telephone switching networks, distributed processing systems, flexible manufacturing systems, software designs, and hardware architectures. Design/CPN combines the power of formal mathematical inscriptions based on Colored Petri Nets (CPN) with the clarity of graphic models to provide a concise representation of system behavior. Future updates of Design/CPN will include formal CPN analysis methods other than simulation. Tutorials, customized support, and consulting services to help customers build successful Design/CPN applications are available.

Meta Software Corporation
150 Cambridge Park Dr.
Cambridge, MA 02140
617-576-6920

System Requirements
Macintosh II or larger; 4 MB of RAM. Standard ML compiler included in price.

Price $20,000
University price $10,000.

Support
Basic phone support and upgrades for the first year are included in the product's price. Consulting services are available for a fee.

Extender GrafPak

Extender GrafPak is a set of library routines that can be incorporated into the user's applications. It contains object code libraries for creating high-quality, completely customizable color or black-and-white graphs and plots for scientific and financial graphing. Compatible with large high-resolution displays, Extender GrafPak graphics may be drawn directly or saved in PICT or PICT2 format for incorporation into any page layout or presentation graphics program. The program's features include line, scatter, x-y, bar, column, semilog, log-log, and dB plots; titles and labels in any font, size, or style; regular notation, scientific notation, or both; multiple curves on one plot; error bars and drop lines; custom grid patterns; patterns under curves (area plots); and multiple plots in one graph.

Invention Software, Inc.
P.O. Box 3168
Ann Arbor, MI 48106
313-996-8108

System Requirements
Macintosh 512K enhanced or larger; Pascal compiler. 1 MB of RAM; hard disk; and 68881 coprocessor are recommended.

Price $89.95

Support
Free technical support and upgrades are provided to registered users.

HyperMonitor

See complete description under Manufacturing.

IGOR

IGOR is a powerful interactive environment for experimentation with scientific and engineering data and production of publication-quality graphs. Multiple data sets of any length can be quickly displayed in any number of graphs and tables. Page layouts display graphs, tables, text boxes, and PICTs. Each curve in a graph has its own color, style, line size, and optional error bars. Each axis, whether linear or logarithmic, can be independently scaled manually or automatically. Fonts, type sizes, and type styles can be mixed in axis labels and annotations, which also support superscripts and subscripts. IGOR prints graphs using the printer's highest resolution, producing clean, professional results. Analyses include Fourier transforms, curve fitting to built-in or user-defined functions, histograms, integration and differentiation, and a mathematical expression evaluator. IGOR includes a simple but powerful structured macro language that allows automation of importing, analysis, printing, and all other operations.

WaveMetrics
P.O. Box 2088
Lake Oswego, OR 97035
503-635-8849

System Requirements
Macintosh Plus or larger; one external 800K disk drive.

Price $195
Site and multi-user licenses available. Quantity discount.

Support
Context-sensitive on-line help; technical telephone support; 30-day money-back guarantee.

KaleidaGraph

KaleidaGraph is a data analysis and graphics presentation application that uses pull-down menus for quick plot selection and user style modifications. Data is entered through screen editing and flexible file processing. Powerful data transformations and numerical calculations can be performed on the programmable calculator. Flexible read/skip formats allow data to be imported from CricketGraph, Excel, Wingz, VersaTerm, and other applications. KaleidaGraph supports numeric, text, and time data formats. It also supports up to 80 open data windows containing up to 256 columns by 32,000 rows. Cubic spline, weighted curve fits, and least squares regressions are supported. Plot types include line graph (or line/scatter), scatter plot, double y plot, probability plot, x-y probability plot, stack histogram, box plot, percentile plot, horizontal bar plot, stack bar plot, column plot, stack column plot, polar plot, and template plot. Up to 20 dependent variables can be plotted at once in up to 16 plot windows. Plots can be fully customized and templates created for use in plotting future data sets. Plots can be saved as KaleidaGraph, PICT, or MacPaint documents. KaleidaGraph supports high-resolution output on the LaserWriter.

Synergy Software
2457 Perkiomen Ave.
Reading, PA 19606
215-779-0476

System Requirements
Macintosh Plus or larger. LaserWriter is recommended.

Price $249

Support
Free technical support is provided. Updates and additional services are available for a fee. Newsletter notification provided to registered users.

MacMohr

MacMohr is a Mohr's circle calculation program. Graphic displays of Mohr's circles, and analytical information concerning various stress parameters, are calculated from triaxial compression test values. The position of Mohr's envelope can also be calculated, thereby defining the stable and unstable stress fields for a particular material. MacMohr is an ideal tool for students of structural geology as well as for the serious geotechnical engineer. The program's three modes of operation are Interactive, Linear fit, and Curvilinear fit. Users plot Mohr's circles in Interactive mode by entering the compressive stress and the confining pressure. The Linear fit option reads a series of triaxial compressino test values from a user-created text file, plots the appropriate circles, and finds the best-fit linear solution for the Mohr's envelope. The Curvilinear fit option works in much the same way, except that the best-fit curvilinear solution for Mohr's envelope is calculated for the data set. Printed output may be obtained for any of the three modes. Graphic images can also be copied to the Clipboard in PICT format.

RockWare, Inc.
4251 Kipling St., Ste. 595
Wheat Ridge, CO 80033
303-423-5645

System Requirements
Macintosh 512K or larger.

Price $100

Support
Free technical support and a 30-day money-back guarantee are provided.

Monte Carlo Simulations (Advanced Version) 2.0

See complete description under Scientific/Research—Mathematics/Statistics.

NCSA Scientific Visualization Software Suite

The NCSA Scientific Visualization Software Suite is a set of tools designed to provide a complete environment for data analysis through two-dimension color raster imaging. The user can calculate a new scientific data set in NCSA DataScope; transfer it into NCSA Image for imaging analysis and experimentation; tailor a palette in NCSA PalEdit; and annotate the resulting images, palettes, and data in NCSA Layout to create effective presentation-quality slides and photographs.

National Center for Supercomputing Applications
605 E. Springfield Ave.
Champaign, IL 61820
217-244-0072

System Requirements
Macintosh II and larger; 2 MB of RAM; 256-color capability.

Price
Product is free; charge for disk and handling.

Support
Electronic mail support and source code are available.

Professional Extender GrafPak

Professional Extender GrafPak contains source code libraries for creating graphs and plots on the Macintosh with 100 percent Pascal source code. Professional Extender GrafPak lets users create professional presentation quality, completely customizable, color or black and white graphs and plots. It is ideal for scientific and financial graphing. Compatible with large high-resolution displays, Professional Extender GrafPak graphics may be drawn directly or saved in PICT or PICT2 format for incorporation into any page layout or presentation graphics package. The program features line, scatter, x-y, polar, bar, column, semilog, log-log, and dB plots; titles and labels in any font, size, or style; regular notation, scientific notation, or both; multiple curves under one plot; error bars and drop lines; custom grid patterns; patterns under curves (area plots); and multiple plots on one graph.

Invention Software, Inc.
P.O. Box 3168
Ann Arbor, MI 48106
313-996-8108

System Requirements
Macintosh 512K enhanced or larger; one external 800K disk drive; Pascal compiler.

Price $159.95

Support
Free technical support and upgrades are provided to registered users; AppleLink support is available.

Rosy

Rosy is a two-dimensional orientation analysis program that will produce graphics displaying full-rose and half-rose diagrams and histograms from the data. All of these images can be interactively scaled by the user to obtain the optimum size for a particular data set or maintain the same scale for sample sites within a project area. The graphics can be printed directly from the program or copied onto the Clipboard in PICT format. Rosy will read unidirectional or bidirectional data from a user-created text file of azimuth data. The data can be plotted using either 5 or 10 degree cell widths. The cells may be viewed as either filled or unfilled. In addition, Rosy can calculate various statistical parameters for the data. The vector mean, resultant length, and standard error of the mean can be calculated for either grouped or ungrouped data. To test for the degree of uniformity of the data set, Rayleigh's test is applied. The results of the statistical analysis can be viewed on-screen in a convenient table format for each data set or printed.

RockWare, Inc.
4251 Kipling St., Ste. 595
Wheat Ridge, CO 80033
303-423-5645

System Requirements
Macintosh 512K or larger; word processing application; LaserWriter or ImageWriter.

Price $175

Support
Free support and a 30-day money-back guarantee are provided.

STELLA Software for Business

STELLA Software for Business is a graphically oriented simulation and modeling package. It is designed to simulate linear and nonlinear systems of relationships in the physical and social sciences. Specific areas of application include the simulation of dynamic systems in operations management, biology, ecology, chemistry, mechanics, fluids, pharmacokinetics, and process engineering. Relationships underlying an issue are mapped out by selecting, positioning, and "hooking up" four kinds of icons on the Macintosh screen. As users lay out their thinking graphically, many of the equations needed to simulate the system of relationships are generated automatically "behind the scenes." The remaining relationships are easily clicked with a mouse. Model output is produced as an animation of the diagram, time series, or scatter plots or printed numeric values. Any part of a STELLA model, such as the diagram, plots, numeric data, or equations, can be exported to other Macintosh applications.

High Performance Systems, Inc.
13 Dartmouth College Hwy.
Lyme, NH 03768
603-795-4857

System Requirements
Macintosh 512K enhanced or larger; ImageWriter or LaserWriter.

Price $450
Macintosh II version available.

Support
Free telephone support is provided; three-day training program is available.

Animation

Diaquest DQ-MAC Macintosh Videographic Animation Controller

The Diaquest DQ-Mac Macintosh Videographic Animation Controller is a NuBus board and software product that provides frame-accurate video animation control of a wide range of broadcast and professional videotape recorders, and video/digital disk recorders in NTSC and PAL formats. The product operates in serial and parallel modes. Serial mode provides control for all popular digital, 1-inch, 1/2-inch component, BVU-style, and 900 series 3/4-inch VTRs. In parallel mode, the product controls industrial 3/4-inch and professional S-VHS machines and also features an on-board time-code generator and reader, providing true SMPTE time code. The DQ-MAC controller allows for frame-accurate sequential digitizing. When used in conjunction with third-party frame buffers and two-dimensional and three-dimensional software products, this capability allows for paint effects as well as electronic rotoscoping of live video backgrounds and texture maps.

Diaquest, Inc.
1440 San Pablo Ave.
Berkeley, CA 94702
415-526-7167

System Requirements
Macintosh II or larger; color video board with recordable output.

Price
$3200 in serial mode; $3500 in serial and parallel mode.

Support
Telephone, AppleLink, and fax technical support are provided. One-year warranty on parts and 90-day warranty on labor are provided. VTR device drivers for new machines are updates.

Desktop Presentations

CA-Cricket Presents

CA-Cricket Presents is an integrated desktop presentation program that offers a comprehensive, flexible environment for creating presentations. CA-Cricket Presents lets users work efficiently by providing tools that organize information; create frames, tables, graphs, and supporting materials; and produce color and black-and-white overhead transparencies and 35mm color slides. A template library of frames, formats, charts, and graphs helps users achieve professional results. The Acta Outline Processor is included to aid in planning presentations. Auto Presents lets users convert Acta outlines directly into presentations. The program includes a 220,000 word spelling checker and thesaurus, plus automatic or manual kerning. A color blending feature creates smoothly graduated color backgrounds. Also included are a driver for the Autographix Overnight Slide Service and the AGXit! program, enabling users to transfer files via modem or by mail for full-color 35mm slides.

COMPUTER ASSOCIATES INTERNATIONAL, INC.
10505 Sorrento Valley Rd.
San Diego, CA 92121
800-531-5236

System Requirements
Macintosh Plus or larger; hard disk; System 6.0 or later.

Price $495

Support
Six months of free support is provided.

Edit Worx

Edit Worx provides the capabilities of a powerful database system for video tape editing and production management. Edit Worx increases editing and post-production productivity by handling script management, SMPTE time-code calculations, edit list management, list cleaning, ripple calculations, and budgeting. Frame editing, transitions, and insertions are point-and-click operations. Edit Worx can be used as both an off-line or an on-line editor, allowing operators to determine the level of complexity and detail with which they wish to work. Edit Worx is compatible with CMX style editors, and features a universal tape machine compatibility as well as support for videodisc recorders. The Edit Worx system can be integrated with both Audio and Title Worx.

Julian Systems, Inc.
2280 Bates Ave., Ste. J
Concord, CA 94520
415-686-4400

System Requirements
Macintosh II or larger; 4 MB of RAM; video tape recorder or video disc player or recorder.

Price $10,000 to $60,000.

Support
Telephone support and a 24-hour bulletin board service are provided. Service contracts, on-site installation and maintenance contracts, and training are available.

HyperVideo

HyperVideo software drivers allow HyperCard programmers to control the NTSC Converter and GENLOCK Converter from their own HyperTalk script. HyperVideo can create interactive videodisc programs in which HyperCard data appears on the television screen; touch-screen applications; enhanced video editing systems; video effects and titling from HyperCard libraries; and other applications requiring the display of Macintosh screen graphics on television. Specific capabilities of the HyperVideo driver set include the ability to select an overlay color, select the source of video overlay, turn video overlays on or off, and perform other functions related to video output and effects. Code is available that lets developers include the drivers in non-HyperCard applications.

Julian Systems, Inc.
2280 Bates Ave., Ste. J
Concord, CA 94520
415-686-4400

System Requirements
Macintosh Plus or larger; HyperCard; Apple video card; Julian NTSC or GENLOCK Converter.

Price $100

Support
Telephone support and a worldwide bulletin-board system are available.

MORE II

MORE II is a productivity tool for managers who need to organize information, write reports, and present ideas. Powerful outlining lets the user turn information into project plans, status reports, business proposals, and presentations. From the outline, the user can instantly create bullet charts and sophisticated organization charts. With the powerful style sheets in MORE II the user can create any type of document and then format and style the work into high-quality reports. Professional-looking overheads, color slides, and on-screen slide shows complete with transition effects and text builds offer professional solutions to everyday business problems.

Symantec Corporation
10201 Torre Ave.
Cupertino, CA 95014
408-253-9600

System Requirements
Macintosh Plus or larger; one 800K disk drive; hard disk.

Price $395

Support
Free telephone and CompuServe support are available to registered users.

NTSC Converter

The NTSC Converter allows the user to connect the Macintosh II with either an Apple or SuperMac video interface card to standard video devices such as VCRs and video projectors. The NTSC Converter is the perfect device for preparing video-based presentations, using the Macintosh computer as the presenting engine. To use the NTSC Converter, the user connects the special cable (available separately) to the Macintosh II, to the monitor, and to the NTSC Converter, and then runs the software provided to synchronize the Macintosh video output to standard NTSC. The NTSC Converter does not "GenLock," and so saves the expense of an additional video source or synchronizer when recording. However, GenLocking is required for special effects such as superimposing or blending images. The GENLOCK Converter adds these abilities. The NTSC Converter can also be used to encode other RGB video sources with sync, thus allowing the recording or display of those signals on a normal televison or VCR.

Julian Systems, Inc.
2280 Bates Ave., Ste. J
Concord, CA 94520
415-686-4400

System Requirements
Macintosh II or larger; Apple 4- or 8-bit video card.

Price $599
Dealer and quantity prices are available.

Support
Telephone and world-wide bulletin-board support is provided.

Personal Vision

Personal Vision is a live video/frame grabber board for the Macintosh II that allows the user to run standard NTSC and RGB devices (VCRs, laser disc players, camcorders, and RGB cameras) in a Macintosh window. Window resizing, real-time panning, and zooming are possible. Personal Vision is also a frame grabber. The user can capture an image on the fly, digitize it, and store it in one of eight file formats. ReView image enhancement software is included free with Personal Vision. This software allows the user to manipulate the contrast, brightness, and focus of an image. Other tools included with ReView are magnification and image inversion options. The Orange Micro Converter option is needed to convert color-composite NTSC signals to RGB.

Orange Micro, Inc.
1400 N. Lakeview Ave.
Anaheim, CA 92677
714-779-9772

System Requirements
Macintosh II or larger; 2 MB of RAM; video source (NTSC or RGB).

Price $2899
Orange Micro Converter $799.

Support
Free telephone technical support and a 30-day full money-back guarantee provided.

PhotoMac

PhotoMac is a software program that works with 24-bit color images on a standard Macintosh II system with Apple 8-bit color. PhotoMac can cut, paste, retouch, modify, and color-correct images and print them on a color film printer, export them to a page layout program, or save them as PostScript color-separation files. PhotoMac lets users do electronic color stripping on a Macintosh SE or larger computer. It works with PageMaker, Quark XPress, and Ready,Set,Go! Stripped and color-separated page layouts can be printed on film by any PostScript-compatible imagesetter. Input files can be in color PICT, TIFF24, or Targa formats.

Avalon Development Group
100 Locke Dr.
Marlboro, MA 01752
508-481-3700

System Requirements
Macintosh SE or larger; 2 MB of RAM; 20 MB hard disk; color monitor.

Price $795

Support
Free support for the lifetime of the product is provided.

Powerpoint

Powerpoint is an easy-to-use tool for creating professional quality presentation materials—black-and-white or color overhead transparencies, 35mm slides, presentation notes, and handout pages. Users create text or graphics directly on slide images or import images, graphs, tables, or text from other popular programs. Powerpoint offers either customizable color schemes or 5000 predefined color schemes, over 16 million color choices, 44 varieties of shaded backgrounds, and a selection of drawing tools. The program also includes a word processor with a spelling checker, a slide sorter, slide-show mode, templates, and the SmartScrap desk accessory. Powerpoint also includes a Genigraphics' driver and GraphicsLink Telecommunications Program that lets users prepare and send files via modem directly to the Genigraphics Services Center for conversion to slides.

Microsoft Corp.
16011 N.E. 36th Way
Redmond, WA 98073
206-882-8080

System Requirements
Macintosh Plus or larger; two 800K external disk drives or a hard disk; System 4.1 or later; color output device is recommended.

Price $395

Support
Free telephone support is provided. Training is available through authorized training centers and class-in-a-box courseware.

RGB Decoder

The RGB Decoder makes it unnecessary for users of frame grabbers to purchase a special high-cost camera. The RGB Decoder converts standard composite video from a source such as a camcorder, VCR, or high-quality television into RGB video suitable for high-quality frame grabbing. Composite video signals are the most common form of video signal used by consumer or professional systems, but RGB video signals allow for precise definition of colors and thus provide better quality images. Most existing frame grabber or digitization systems available today require an RGB camera. Digitized video can be used for incorporating television or other video images into desktop publishing documents, for creating simple color separations for printing, and with computerized animation and effects systems.

Julian Systems, Inc.
2280 Bates Ave., Ste. J
Concord, CA 94520
415-686-4400

System Requirements
Macintosh 512K enhanced or larger; system cable; composite video source; RGB monitor.

Price $499
System cable $49.95.

Support
Free telephone support and 24-hour bulletin board are provided. Service contracts are available.

Title Worx

Title Worx gives users the ability to create effective color images that move and are closely integrated with their related sound and text. Users can work with images videotaped or Macintosh-generated, as well as images scanned in from a book or imported from a desktop publishing application. These can then be painted or colorized using a palette of 16 million colors. Users can create custom animations using a combination of their own images and images or sequences created using the automatic animation tools built into Title Worx. Final results from Title Worx can be output to video tape or over- or underlayed to enhance professional production quality.

Julian Systems, Inc.
2280 Bates Ave., Ste. J
Concord, CA 94520
415-686-4400

System Requirements
Macintosh II or larger; 8 MB of RAM; other software and hardware depending on exact application.

Price $3000 to $25,000.

Support
Telephone and 24-hour bulletin board support is provided. Service contracts; on-site installation and maintenance; and training are available.

The Worx

The Worx integrates digital audio digital graphics and video, and digitally controlled videotape- and videodisc-based editing into a single, complete production system. The Worx system lets users quickly and simply produce in-house video and training materials, product videotapes, or other video-based materials. Based on the Macintosh II technology, Worx features multitasking and multi-user capabilities, built-in networking, and compatibility with the established base of graphics and business applications. Worx gives users complete control over video and audio production. It brings high-quality production in-house, and allows users to make instant changes up to the last minute to provide a more effective presentation.

Julian Systems, Inc.
2280 Bates Ave., Ste. J
Concord, CA 94520
415-686-4400

System Requirements
Macintosh II or larger; 4 MB of RAM; CD ROM.

Price $3000 to $100,000.

Support
Telephone, AppleLink, and 24-hour bulletin board support is provided. Service and maintenance contracts, on-site installation, and training are available.

Technical Publishing

EROFF

A/UX EROFF is a complete professional typesetting system, ideal for publishing manuals, proposals, research papers, and other medium- to large-size documents on LaserJet or PostScript printers. With EROFF users can bring together bitmapped graphic images, tables, scientific equations, pictures, and plotted graphs in one document. Printing can be done in portrait or landscape mode. The program includes many enhancements to the standard UNIX markup language, troff, to provide a system that is a complete professional publishing package. EROFF comes with printer drivers and X/11 and ASCII page previewer.

Elan Computer Group, Inc.
888 Villa St., 3rd fl.
Mountain View, CA 94041
408-964-2200

System Requirements
Macintosh II or larger; A/UX; LaserWriter.

Price $895

Support
A warranty, telephone hotline, bug fixes, and updates are provided.

Fontastic Plus

Fontastic Plus is a specialized bit-mapped font editor designed to create new fonts and typefaces or customize existing character sets with distinctive characters, logos, and graphics. Using the tools available in Fontastic Plus, users can create bit-mapped logos, foreign characters, clip art, and custom fonts. Scaling (up to 127 points high), rotation, styling, and editing capabilities provide the means to design fonts and graphics. Fontastic Plus supports kerning pairs and fractional character widths, while allowing for the highest-quality output on QuickDraw printers. An integrated font mover makes it easy to install fonts.

Altsys Corporation
720 Avenue F, Ste. 109
Plano, TX 75074
214-424-4888

System Requirements
Macintosh 512K enhanced or larger; ImageWriter.

Price $99.95

Support
Free telephone, AppleLink, and CompuServe support are provided. Upgrades are available for a fee.

Fontographer

Fontographer is a specialized graphics editor designed to simplify the creation of high-quality fonts, logos, and other intricate PostScript artwork on the Macintosh. As an added benefit, Fontographer provides the means to assign graphic images to any key or combination of keys and the ability to instantly repeat and resize images anywhere. Fontographer allows creation of new images and enhancement of existing characters, and has a tracing mode for outlining scanned images. Background scanned images can be scaled and moved into position and then deleted after tracing is complete. Letters and special symbols from fonts can be altered to build logos of unlimited complexity, with scaling, rotation, skewing, stretching, obliquing, and shades of gray. Because characters are defined with cubic Bézier curves and straight lines, they can be attractively produced in any size or resolution.

Altsys Corporation
720 Avenue F, Ste. 109
Plano, TX 75074
214-424-4888

System Requirements
Macintosh Plus or larger; LaserWriter.

Price $495
Fontographer Fonts are available as add-on products. Site license available.

Support
Free technical support provided.

Formulator

Formulator is a powerful WYSIWYG equation processor for mathematicians, statisticians, scientists, or anyone who wants to integrate mathematical expressions with text. A built-in text editor with commands for saving and printing documents may be used as a stand-alone application. Equations created in Formulator can also be copied and pasted into any Macintosh word processor or desktop publishing application. With Formulator's user-defined styles, the user can create chemical structures and align equations, justifying them left, right, or center and numbering them to the right or the left, all within a user-defined width. Formulator can also write text files that can be read by TeX processors such as Mac Tex and TeXtures. A HyperCard tutorial is available.

ICOM Simulations, Inc.
648 S. Wheeling Rd.
Wheeling, IL 60090
312-520-4440

System Requirements
Macintosh 512K enhanced or larger.

Price $149.95

Support
Free technical support, warranty, and upgrade notification are provided to registered users.

Haber/Thomson

Haber/Thomson consists of two "convenience" fonts for chemists, physicists, and other scientists. Haber/Thomson makes many of the characters of the symbol font accessible for standard word processing without the necessity of switching typefaces. They provide standard sans-serif fonts along with more than 50 of the most commonly used scientific symbols from the symbol font, including the complete Greek alphabet. Eleven custom symbols have been constructed to complete the set, including seven dead keys that make it possible to print vector, matrix, and operator notation and to indicate negative lattice points in crystallography.

Allotype Typographics
1600 Packard Rd., Ste. 5
Ann Arbor, MI 48104
313-663-1989

System Requirements
Macintosh 512K or larger; LaserWriter or other PostScript printer.

Price $75

Support
Telephone support is provided to registered users.

Interleaf Publisher

Interleaf Publisher is a full engineering workstation software product running on a Macintosh II. It combines word processing, graphics, manual page layout and automated page layout for documents thousands of pages long. Due to its formatting power, combined with features such as automatic continuous repagination, automatic hyphenation and justification, automatic indexing and automatic cross referencing, Interleaf Publisher is especially useful for creating long complex documents, such as technical manuals, strategic plans, financial reports, and directories. Interleaf Publisher allows for hand-drawn graphics, data-driven charts entered at the keyboard or transferred from spreadsheet files, scanned images, and imported CAD drawings and files from MacDraw, MacPaint, MacWrite and Microsoft Word. Once in the system, graphics can be manipulated extensively and combined with text at any time. Interleaf Publisher enables a Macintosh II to be networked with major engineering workstations and makes advanced use of Apple networking capabilities, which link documents so that when one copy is changed, all linked copies are automatically updated. Output is to PostScript laser printers and typesetters.

Interleaf, Inc.
10 Canal Pk.
Cambridge, MA 02141
617-577-9800

System Requirements
Macintosh II or larger; 5 MB of RAM; 40 MB hard disk.

Price $995

Support
Free support for 90 days is provided. Additional support available for a fee.

Lightspeed StudioLink

Lightspeed StudioLink gives Crosfield Studio 800 owners an on-line connection to desktop publishing and design system customers. Installed at the prepress site, StudioLink allows full-color layouts and designs to be accurately read directly onto the Studio 800's work screen. This builds a closer relationship between design studios and prepress houses by giving designers a convenient channel into Crosfield prepress equipment—they can enter the production cycle by sending their design work on a disk. StudioLink improves the productivity of the Studio 800 itself. Operators can concentrate on retouching and stripping-in artwork rather than recreating the customers' page geometry and layout mechanicals. The prepress shop can thus handle more jobs without sacrificing job quality. All system levels include: Macintosh IIx with 8 MB of RAM, 80 MB hard disk, and a 19-inch color monitor. Level 1 includes an RS 232 Interface to Studio System, and 90 standard fonts. Level 2 includes a 150 MB external hard disk, Ethernet interface, and 90 standard fonts. Level 3 includes a 150 MB external hard disk, Ethernet interface, Scripter PS RIP, and 35 PostScript fonts.

Crosfield Lightspeed Inc.
47 Farnsworth St.
Boston, MA 02210
617-338-2173

System Requirements
Includes Macintosh IIx and related system components.

Price
Level 1 $39,000; Level 2 $59,000; Level 3 $99,000.

Support
AppleLink support and one-year warranty are provided.

Mac∑qn

Mac∑qn is a desk accessory that provides an environment for generating equations for inclusion in technical word processing documents. The program understands the format of technical equations and provides users with the ability to include such constructs as integrals, summations, products, fractions, supersubscripts, and others into documents without having to exit the word processor. These constructs can be nested, such as a subscript with a subscript with a subscript. Equations are stored in standard Macintosh picture format and can be pasted into almost any Macintosh application that uses pictures. The program is designed to work with LaserWriter fonts and prints equations on a LaserWriter at full resolution.

Software for Recognition Technologies
55 Academy Dr.
Rochester, NY 14623
716-359-3024

System Requirements
Macintosh 512K or larger; MacWrite, Microsoft Word or other word processing program; LaserWriter.

Price $44.95

Support
Technical support and updates are available.

MAPO

MAPO converts HPGL files into EPSF files. With MAPO it is possible to print the results of CAD software, which can usually only be plotted. MAPO produces the output directly in PostScript; therefore the definition of printed drawings depends on the laser printer in use. MAPO allows maximum resolution of lines, with the possibility of assigning to each of the eight pens used by the plotter a line thickness in mm, from 0 to infiinite. MAPO can be used in all fields where precision and high definition of printed drawings are important, such as in technical desktop publishing. Drawings converted by MAPO can be used with DTP software that recognizes EPSF format.

Cigraph S.r.l
Via Brunacci 9B
Mestre, Venezia, I-30175 Italy
041/93 23 88

System Requirements
Macintosh Plus or larger.

Price $480

Support
Free updates are provided for one year.

MathType

MathType 2.0 is a tool for performing mathematical typesetting on a Macintosh. It allows engineers, scientists, teachers, and professors to create mathematical equations and incorporate them into classroom materials, engineering reports and proposals, articles for scientific journals, and other forms of technical documentation. It can be used in conjunction with any word processor or page layout program. Its user interface is intuitive and visually oriented. For each basic mathematical construct, such as a fraction or an integral, there is a template consisting of symbols and empty "slots." The user inserts templates by clicking on icons in pull-down menus and then fills in the slots by typing or by clicking on special symbol icons. More than 119 templates, 158 special symbols, and the Greek alphabet are provided. MathType automatically selects fonts, styles, sizing, spacing, and positioning symbols according to the rules of mathematical typesetting. As the equation is being edited, the display is continually updated. Cut-and-paste operations are used to transfer MathType equations into documents. High-quality output can be produced on ImageWriter, LaserWriter, or a high-resolution PostScript printer. MathType can be run as either a desk accessory or an application.

Design Science, Inc.
6475-B E. Pacific Coast Hwy.
Long Beach, CA 90803
213-433-0685

System Requirements
Macintosh 512K or larger.

Price $149
Educational discounts and site licenses are available.

Support
Free telephone support is provided.

MathWriter

MathWriter is a typesetting editor that creates and edits mathematical expressions of any complexity with a word processor. It handles a mixture of fonts, styles, sizes, and special symbols typical of mathematical typesetting. It automatically manages mathematical typographic conventions such as placement and sizing of fraction bars; parentheses, brackets, and braces; multiple levels of subscripts and superscripts; integral and summation symbols; and the limits of integration and summation. It offers an on-screen palette menu that includes the Greek alphabet and some of the most common mathematical structures. The user can add a user-selected alphabet and any of the symbols in the LaserWriter Symbol font. Other features include the ability to prescribe defaults for symbol placement; locally lengthen or shorten parts of an expression; adjust vertical placement of diacritical marks; align the rows and columns in matrices; center matrices in an equation; vertically stretch or shrink certain symbols; stretch or shrink an entire equation after it is pasted into another application; superimpose multiple characters; and align equations with horizontal and vertical tabs. MathWriter2Tex automatically translates MathWriter expressions into TeX, a page-description language widely used in the mathematical and physical sciences.

Cooke Publications
P.O. Box 4448
Ithaca, NY 14852
607-272-2708

System Requirements
Macintosh 512K enhanced or larger.

Price $79.95
MathWriter2Tex $49.95.

Support
Telephone support is provided.

PageMaker

PageMaker desktop publishing software integrates text and graphics, allowing Macintosh users to design, edit, and produce high-quality printed communications in an office setting. By bringing production in-house, it gives the user complete flexibility and control over the design and production process. PageMaker 3.0 builds on the strengths of Aldus' original interactive desktop publishing platform to address the communication needs of both business and creative professionals. Specifically, it adds new support for long documents, expanded graphics capabilities, user interface enhancements, and a variety of built-in templates. PageMaker 3.0 features include automatic text flow through an entire document; user-defined style sheets; 20 complete page designs (templates) for business materials; support for spot color; automatic text wraparound graphics; and image controls for scanned photographs and bit-map illustrations.

Aldus Corporation
411 First Ave. South, Ste. 200
Seattle, WA 98104
206-622-5500

System Requirements
Macintosh Plus or larger; hard disk; System 4.1 and Finder 5.5 or later.

Price $595

Support
Extended technical support is available for $100.

PCPLOT

PCPLOT is a high-resolution scientific and financial graphics program that produces pixel-resolution screen and printer graphs. The program can be used to create line graphs, bar charts, stacked bar charts, stock market charts, and graphs with error bars. Axes can be scaled to linear or logarithmic scales, enabling users to create linear, semi-log, and full-log graphs. PCPLOT supports two y axes that share a common x axis; each axis can be independently scaled and linear/log coordinates specified. Gridlines or tickmarks may be superimposed on the data or an open scatterplot may be specified. PCPLOT will plot data written in BASIC, Pascal, FORTRAN, or from data entered manually from the keyboard. The program contains a complete data editor that enables users to change, add, insert, and delete data points. An autoexecute feature enables users to plot multiple data sets automatically without user intervention. Template files, which specify the physical appearance of the graph, are fully compatible with the PDP, BV Engineering's plotter driver.

BV Engineering
2023 Chicago Ave., Ste. B13
Riverside, CA 92507
714-781-0252

System Requirements
Macintosh 512K or larger; System 3.2 and Finder 5.3 or later. ImageWriter II or LaserWriter optional.

Price $125

Support
Free telephone support and low-cost upgrades provided to registered users.

PDP

PDP is a stand-alone program that makes multicolor scientific and financial graphs on most popular pen plotters. Data may be entered manually or from previously generated data files. Data files can originate from BASIC, FORTRAN, or Pascal programs, word processors, text editors, or other BV Engineering software such as ACNAP or SPP. Data from different files may be plotted on the same graph. PDP is menu driven and interactive, but also supports an automode in which PDP plots graphs without user intervention. PDP will draw up to six plots per graph having up to 1,000 points per plot. Multiple y axes can be linearly or logarithmically scaled. Users may plot line graphs, bar charts, stacked bar charts, and plots with error bars. Dotted, dashed, or solid lines may be specified. Gridlines or tickmarks may be superimposed on the data or an open scatterplot may be specified. Alphanumeric labels can be placed anywhere on the plotting surface. Template files, which specify the physical appearance of the graph, are fully compatible with PCPLOT.

BV Engineering
2023 Chicago Ave., Ste. B13
Riverside, CA 92507
714-781-0252

System Requirements
Macintosh 512K or larger; pen plotter; System 3.2 and Finder 5.3 or later.

Price $95

Support
Free telephone technical support and upgrades at half price are provided.

ProType Math

ProType Math combines all the Bedford Professional Publishing text handling and mathematical/scientific capabilities into one package using PostScript as the page description language. ProType Math is capable of setting complex mathematical and scientific equations. When setting fractions, the underbar automatically adjusts with the addition or subtraction of characters. Special Bedford math spacing, which saves time by eliminating the need for adding additional space between equations, is set at the beginning of a page file. The operator maintains control over all math defaults, such as point size and set size, which may be changed to fit a particular application. Complex mathematical and scientific equations can be dropped into text blocks easily—the leading adjusts to accommodate multiple line equations. Pi characters are supported and the results appear on the screen immediately as the equations are changed. The Bedford Toolbox includes a translation package, genstring, reader, expage, GCT, and a utility package with font, KBD, and database utilities.

Bedford Computer Corporation
23 Industrial Dr.
Londonderry, NH 03053
603-668-3400

System Requirements
Macintosh II or larger; 4 MB of RAM; internal 800K disk drive; SuperMac STD9100 monochrome monitor.

Price $9995
Bedford Toolbox $3000.

Support
Telephone support and tutorials are provided.

ProType Plus

ProType Plus combines Bedford's text handling capabilities, such as professional page control, full kerning, whitespace control, image manipulation and integration, and mathematical/scientific capabilities in one software package using PostScript as the page description language. ProType Plus gives users the ability to combine text and graphics into full pages. Users can also output 4-up imposed signatures with text rotation, and image manipulation and integration for full professional control. Additional features such as batch pagination and items such as custom networking, scanning, output, and other peripheral devices are available from Bedford to create a system customized for a user's particular application.

Bedford Computer Corporation
23 Industrial Dr.
Londonderry, NH 03053
603-668-3400

System Requirements
Macintosh II or larger; internal 800K drive; SuperMac STD9100 monochrome monitor; other scanning, output, peripheral, or networking devices may be required; an Apple 21" monitor may be used.

Price $11,995
Bedford Toolbox $3000.

Support
Phone support and tutorials are provided.

TechFonts

TechFonts is a set of bitmap and PostScript fonts for use in technical documentation. The set includes both equation fonts and electronic circuit fonts. Equation fonts contain all the math and physics symbols and allow two levels of sub- and superscripts; creation of one-line fractions; sub- and superscripts vertically aligned; and a cursive font for extra equation symbols or cursive writing. Electronic circuit fonts include all analog and digital circuit symbols. They can be used in any word processor to type complete circuits, or in any drawing program to draw complete circuits.

Paragon Concepts, Inc.
4954 Sun Valley Rd.
Del Mar, CA 92014
619-481-1477

System Requirements
Macintosh 512K or larger.

Price
Bitmap version $99; bitmap and PostScript version $195.

Support
Free telephone support is provided.

TeXtures

TeXtures is a Macintosh implementation of the TeX typesetting standard. Users can compose and typeset all types of material, including technical manuals, proposals, scientific papers, product documentation, catalogs, and journal articles. The program can handle documents up to several hundred or thousands of pages in length. Users have full typographic control, including a macro programming language for handling complex table construction, precision ruled forms, and multicolumn layouts. TeXtures can number and cross-reference pages, sections/chapters, paragraphs, footnotes, and illustrations/exhibits, and automatically performs hyphenation, justification, pagination, kerning, and ligature insertion. The WYSIWYG format lets users preview pages, including graphics; editing and viewing windows can be displayed on screen simultaneously. TeXtures is compatible with PostScript printers and typesetters, and works with Adobe Illustrator and other applications that produce Encapsulated PostScript, as well as with text files and other types of graphic files.

Blue Sky Research
534 S.W. Third Ave.
Portland, OR 97204
800-622-8398

System Requirements
Macintosh Plus or larger.

Price $495
Educational discount, $395; site license and networks available.

Support
Free telephone support and 90-day return privilege are provided.

Project Management

AEC Information Manager

AEC Information Manager is an information-management tool designed for people who manage projects, activities, documents, processes, people, or any information that needs to be organized and tracked. The program can organize, schedule, automate, and track correspondence, transmittals, RFIs, RFPs, suppliers/vendors, subcontractors, consultants, clients, submittals, shop drawings, working drawings, equipment, preventive maintenance logs, personnel logs, meeting logs, telephone logs, purchase orders, expenses, revisions, change orders, proposals, punch lists, finish schedules, door schedules, leases, and project schedules. Alarms, customized work calendars, notepads, time-dependent fields, and powerful reporting and graphing capabilities make it possible to manage any kind of critical information.

AEC Management Systems, Inc.
20524 Amethyst Ln.
Germantown, MD 20874
301-428-3694

System Requirements
Macintosh Plus or larger.

Price $695

Support
Free telephone support is provided for 45 days from the first call. Extended support contracts are available.

MacProject II

MacProject II is for any professional who plans, manages, and communicates projects of any size. Users enter, evaluate, and present schedules, resources, and costs, using multiple charts and tables. These include PERT charts, Gantt charts, resource histograms, and project and cash flow tables. MacProject II calculates and displays the schedule, critical path, workloads, cash flows, and more. Recent enhancements include interactive and automatic resource leveling to smooth workloads; unlimited employee calendars; resource analysis across multiple projects; linked subprojects; import and export to other Macintosh, PC, or mainframe programs; calculations with either planned or actual data; and the ability to view multiple charts at one time. On-line help, a spelling checker, and plotter drivers for up to "E" size are included.

Claris Corporation
5201 Patrick Henry Dr.
Santa Clara, CA 95052
408-987-7000

System Requirements
Macintosh Plus or larger; one external 800K disk drive.

Price $499
Upgrade from MacProject II 1.0 $65; from MacProject $199.

Support
Free unlimited technical support. Technical newsletter free to all registered users.

MacSchedule

MacSchedule automates the design and creation of Gantt-type schedule charts. The user works directly with the schedule graphics instead of with a classic numeric interface. MacSchedule facilitates status tracking—work progress, early and late starts, and schedule slips are handled automatically. Schedules can be quarterly, monthly, bimonthly, weekly, daily, or free-form. Time-to-go and elapsed time can also be displayed. Standard stop, start, and milestone symbols are provided, or the user can create custom symbols. Charts can be printed on a LaserWriter or ImageWriter, or exported to any desktop publishing program such as PageMaker or ReadySetGo! for inclusion in proposals and reports.

Mainstay
5311-B Derry Ave.
Agoura Hills, CA 91301
818-991-6540

System Requirements
Macintosh Plus or larger.

Price $195

Support
Free telephone support, newsletter, and on-line support via CIS, MCI, and AppleLink are provided.

Micro Planner

Micro Planner aids managers in finishing projects on time and within budget. The program features critical path analysis, which tells users when a project can be expected to start and finish and identifies the tasks most likely to delay it. Micro Planner highlights resource constraints and optimizes resource usage to minimize schedule delays, automatically updates the project to reflect actual results and to pinpoint slippages, highlights problem areas, and customizes action reports by project phase and responsibility. Graphics options include customized PERT or Gantt charts and other management reports. Micro Planner handles up to six calendars at once, allowing for five-, six-, or seven-day work weeks; holidays; overtime; or weekend-only work within the same project. A conversion utility imports or exports files to or from other applications and hardware, such as Macintosh, IBM PC, or mini/mainframe computers. The program also allows users to establish subproject libraries and merge, replicate, or delete subprojects, as well as convert MacProject files to Micro Planner.

Micro Planning International
235 Montgomery St., Ste. 840
San Francisco, CA 94104
415-788-3324

System Requirements
Macintosh 512K enhanced or larger.

Price $595

Support
Free telephone support, 90-day warranty on media, and upgrade notification are provided. Training and consulting available for a fee.

Micro Planner X-Pert

Micro Planner X-Pert project management software lets users do critical path scheduling for up to 10,000 activities, with unlimited relationships between files. X-Pert provides multifile linking for unlimited project size and unlimited work breakdown schedules. Users enter data in the form of outlines, bar charts, spreadsheets, or network diagrams. The network diagram offers either precedence or the arrow method style, and it can be drawn automatically or by the user. Time units range from minutes to weeks, and there are up to 200 resource categories. Other features include complex resource analysis, four archives for comparing what-if analyses, earned-value analysis with CSSR compliance, and unlimited project calendars. A report editor facilitates the preparation of customized reports.

Micro Planning International
235 Montgomery St., Ste. 840
San Francisco, CA 94104
415-788-3324

System Requirements
Macintosh Plus or larger; hard disk.

Price $1995

Support
Free telephone support and 90-day warranty on media are provided. Training and consulting are available for a fee.

Open Plan

Open Plan project management software is totally integrated with a relational database, dBASE or FoxBASE, to allow both flexibility and customization. Open Plan can schedule up to 10,000 activities with unlimited relationships per activity, in both arrow (ADM) and precedence (PDM) networks. It schedules in minutes, hours, days, or weeks and provides unlimited calendars per system, with 256 calendars per network. It operates through existing or user-defined menus, or an English-like command language. Help messages are accessible on every menu, and more than 70 specific error messages with details print as needed. Open Plan has more than 60 standard reports, each one easily modifiable with Welcom Reporting Language (WRL). WRL also enables users to write user-designed graphic or tabular reports.

Welcom Software Technology
15995 N. Barkers Landing, Ste. 275
Houston, TX 77079
713-558-0514

System Requirements
Macintosh Plus or larger; 2.5 MB of RAM; FoxBASE+/Mac 2.0.

Price $4200
Site license available.

Support
Maintenance is free for first year, $840 per year thereafter. Maintenance includes telephone support, bulletin board, and updates. Training and consulting are also available.

Project Billing

Project Billing is a time billing package designed for professionals who bill for their time and expense. It has features specifically designed for ad agencies, graphics designers, architects and engineers. It provides tools to manage, to bill, and to set and maintain budgets for projects where there are several employees and expenses with a variety of markups. The system tracks time, costs and billable rates for employees and freelancers and can automatically mark up expenses for each client, individually or globally. A number of management reports are available that allow analyses of expenses, services, income, and profitability by employee, type of service, date, and project. Custom reports can also be generated. Project Billing integrates with Satori's components General Ledger.

Satori Software
2815 2nd Ave., Ste. 560
Seattle , WA 98121
206-443-0765

System Requirements
Macintosh 512K enhanced or larger; two 800K disk drives.

Price $595

Support
Free technical support and a 90-day limited warranty for disk defects are provided. Updates are available for $10.

Think 'n Time

Think 'n Time is designed to manage ideas, projects, people, tasks, plans, and goals. It automatically organizes information into a visual tree of icon-based sheets and piles. These can be opened, collapsed, and expanded to quickly store and access information. Reorganizing is accomplished by dragging sheets and piles into new positions. Think 'n Time also offers date/time and numeric capability. A unique "What's Next?" feature provides a time-line view of multiple projects and activities. The program's integrated, free-form approach allows for versatile organization, such as a calendar in a project description or a budget in a calendar. Memos and estimates can also be included. Think 'n Time information can be printed in a visual tree format or as text. The information can also be saved as text or exported to Living Videotext's More for desktop presentations.

Mainstay
5311-B Derry Ave.
Agoura Hills, CA 91301
818-991-6540

System Requirements
Macintosh Plus or larger.

Price $99.95

Support
Free telephone support; on-line support via CIS, MCI and AppleLink; and a newsletter are provided.

TopDown

TopDown is a hierarchical flowcharting tool for business and systems use. It facilitates the breakdown of large projects into smaller, more manageable tasks. Each symbol on the flowchart can be exploded into a detailed level, allowing users to keep the details hidden until needed. Each symbol can have a 32,000-character Notecard associated with it that is used to store additional information about the symbol. Symbols can be connected with lines to form a relationship that is maintained when one of the symbols is moved or resized. The program provides three types of reports. The Outline report provides a list of all symbols in hierarchical order. The Cross-Reference report contains a list of symbols attached to each symbol in the document. The Errors report lists symbols that have data coming in and none going out or vice versa.

Kaetron
11318 Ericston Dr.
Houston, TX 77070
713-320-0278

System Requirements
Macintosh Plus or larger. Hard disk recommended.

Price $295

Support
Free telephone hotline and Bulletin Board provided to registered users.

TQM Gantt

TQM Gantt creates simple Gantt or Milestone schedule charts based on Dr. W. E. Deming's 14 points on total quality management and the Shewart Plan-Do-Check-Act cycle for problem analysis and continuous process improvement. Users enter task and event information through a spreadsheet-like grid. The program switches easily between the grid and a graphical presenation of the same information. TQM Gantt can be used independently or as one of several integrated modules that share data.

Full Scale Development Corporation
5148 Fino Dr.
San Diego, CA 92124
619-569-6070

System Requirements
Macintosh Plus or larger. Hard disk recommended.

Price $295
Site licenses available.

Support
Support and training are available for a fee.
AppleLink support is available.

Databases

1stTEAM

1stTEAM is a multi-user, automated, macro-programmable database that looks and feels similar to 1stFILE and offers the significant advantage of multi-user capability. It automatically produces small work files in the read-only mode from large master files. Each subfile then becomes a personal file to be worked on, updated, transmitted, or printed. Only one administrator has access to the master file, while others can retrieve specific records through relational joins. 1stTEAM supports large screens, color, blueprint lockout, hidden and mandatory fields, time and date calculations, indexed fields, adjustable field, placement/justification, up to 255 characters per field and 255 fields per record. It is fully HyperCard compatible and complementary.

1stDesk Systems, Inc.
7 Industrial Park Rd.
Medway, MA 02053
508-533-2203

System Requirements
Macintosh Plus or larger.

Price $495

Support
Free telephone hotline and Bulletin Board provided to registered users.

4th Dimension 2.0

4th Dimension is a multi-user relational database for all requirements, from basic record management to sophisticated, customized database applications. Any 4th Dimension database can be used in a single or multi-user environment. Features include the usual database functions of searching, sorting, and reporting, as well as built-in capabilities to design forms and reports with a MacDraw-like editor; store pictures; create graphs; customize the interface; develop custom applications; import/export data and text; communicate via serial ports; incorporate routines written in languages such as C, Pascal, and Assembler; and perform background processing under MultiFinder. 4D Runtime, the runtime version of 4th Dimension, allows users to enter and modify records, perform searches, and utilize all aspects of a custom database or application, but not to create or modify the database design. It helps to reduce costs for multi-user support because network users can use 4D Runtime rather than the full 4th Dimension package.

ACIUS, Inc.
10351 Bubb Rd.
Cupertino, CA 95014
408-252-4444

System Requirements
Macintosh Plus or larger.

Price $795
4D Runtime $295 (contains four disks for four users.)

Support
Free technical and AppleLink support is provided for all registered users; training classes are available.

Db_VISTA III Database Development System

Db_VISTA III is a database management development system combining both relational and network model database technologies. Three modules comprise the system. The db_VISTA module is a high-performance database management system that uses both relational B-tree indexing and the network database model for fast access to data with minimal data redundancy. The db_QUERY module is an SQL-based query and report writer that provides a relational view of the high-performance network model database. The combination offers relational capability with the inherently better performance of the network model. The db_REVISE module lets developers completely restructure a database, with nearly any type of change, a level of flexibility not typically found with network model technology.

Raima Corporation
3245 146th Pl. S.E.
Bellevue, WA 98007
206-747-5570

System Requirements
Macintosh Plus or larger; MPW or Lightspeed C compiler.

Price
Sold per module: single-user object $355; single-user source $985; multi-user object $1195; multi-user source $1495.

Support
Free telephone, BBS, or fax support and updates are provided for 60 days. Updates available thereafter for 10% of license price per module per year; support and update service at 15% of license price per module per year. Training classes, custom training, and consulting are available.

dbVIEW

See complete description under System Components—Accelerators/Coprocessors/Add-on Boards.

Fast Trax Engineering Drawing Management System

See complete description under Architecture/Engineering/Construction—Administration.

GQL

GQL is a family of database-query products for accessing host computer SQL databases. GQL/User provides a graphic data model of the host database. With the mouse, the user selects information to be displayed and the relationships between the pieces of information. The host DBMS sends the results of the query back to the Macintosh computer, where they are displayed in spreadsheet form. Results may be copied to other programs such as word processors or spreadsheet packages. Users need not know SQL to query the host database. GQL/Admin creates the data model by uploading database information. The administrator can customize the data model for each user. GQL/Design lets the database designer use a graphical approach, using the same graphic representation as the two GQL modules.

Andyne Computing Limited
544 Princess St., Ste. 202
Kingston, Ontario K7L1C7 Canada
613-548-4355

System Requirements
Macintosh Plus or larger; host database system with SQL.

Price
GQL/User $295; GQL/Design $495; GQL/Admin $1995. At least one GQL/Admin is required.

Support
Telephone support is provided. Updates are available for a small fee.

Informix-4GL

See complete description under Software Development—General Languages and Tools.

Informix-ESQL/C

See complete description under Software Development—General Languages and Tools.

Omnis 5

Omnis 5 is a comprehensive program for developing business data management applications. It is a multi-user, multiplatform database management system for the Macintosh and IBM compatible personal computers. SQL connectivity allows Omnis 5 to connect to a VAX or mainframe. Omnis 5 is particularly suitable for developing Macintosh-like applications. The event manager allows users to have complete point and click control over multiple open windows in a finished application containing multiple fonts, colors, and graphics. Omnis 5 offers a complete development system for professional developers and resellers of business applications. This includes runtime options and multi-user support, together with the programming power and flexibility needed to built large data management systems. Data files can be up to 2,560 MB. Application files can be up to 32 MB, and there is no limit on the number of records. Omnis 5 applications and data can be shared with IBM PS/2 computers on a mixed networking using DOS and OS/2 versions of Omnis 5.

Blyth Software, Inc.
2929 Campus Dr., Ste. 425
San Mateo, CA 94403
415-571-0222

System Requirements
Macintosh Plus or larger; printer.

Price $695
Additional users $145 each.

Support
Free telephone support for 6 months and 60-day warranty are provided. Continuing support is available for a fee.

PROGRESS

PROGRESS is a fourth-generation language and relational database managemment system that features a multithreaded, multiserver architecture and allows resellers, MIS professionals, and government agencies to develop transaction-oriented business applications. PROGRESS is available on hundreds of mini- and microcomputers and is transparently portable across VAX/VMS, MS-DOS, UNIX, XENIX, ULTRIX, AIX, A/UX, and CTOS/BTOS operating systems, as well as networks. With PROGRESS, programmers can build an application on a PC and port it to a multi-user UNIX-based system, or vice versa, without changing a single line of code. PROGRESS also features ANSI-standard SQL and an automatic crash-proof database engine that ensures the integrity of the database in the event of power, hardware, or software failure or operator error. Test Drive, a demonstration version, is available for a small fee.

Progress Software Corporation
5 Oak Pk.
Bedford, MA 01730
617-275-4500

System Requirements
Macintosh II or larger; 4 MB of RAM.

Price $1800 to $2400

Support
On-line bulletin board, on-site consulting, implementation support, software warranty, training, upgrades, and newsmagazine are available. Updated maintenance contract is required.

Reference Manager

Reference Manager is a bibliographic management system for creating, storing, and retrieving a personalized database of reference information. The system is fast, flexible, and easy to use. It generates bibliographies in virtually any journal style and incorporates appropriate reference citations into manuscripts. The optional Capture module directs the importing of files downloaded from database services such as Medline and BRS Colleague. The optional 100+ Common Journal Formats module includes over 100 formats designed for generating bibliographies. References can be entered via the Capture module; by manually keyboarding information through guided input screens; or by exporting from Research Information System's REFERENCE UPDATE current journal subscription service. References can be easily retrieved by any combination of author, keyword, journal name, publication year, or words and phrases appearing in the text, title, or notes. Notes or text from an article may be entered without length limitation.

Research Information Systems, Inc.
1991 Village Park Way, Ste. 205
Encinitas, CA 92024
619-753-3914

System Requirements
Macintosh Plus or larger.

Price $538
Capture module, $59; Journal Formats module, $39.

Support
Free telephone support is provided.

General Productivity

ArchiText

ArchiText, a hypertext processor, operates as a "freeform database" for text organization, retrieval, analysis, and presentation. It can be used to organize interrelated documents such as business correspondence, magazine articles, legal briefs, research notes, and information downloaded from on-line databases. ArchiText's features include fast Boolean searches, keyword indexing (including modifiable stop lists), and network compatibility. Built-in presentation tools allow the creation of hypertext documents for distribution.

BrainPower, Inc.
30497 Canwood St., Ste. 201
Agoura Hills, CA 91301
818-707-1712

System Requirements
Macintosh 512K enhanced or larger.

Price $395
Demonstration version $10.

Support
Free telephone support is provided; update notifications sent to registered owners.

Business Filevision

Business Filevision combines filing, drawing, and reporting. It allows the user to graphically reach database records by directly attaching the drawing page graphic object to its Info page database record. Business Filevision features a fully functional 8-inch by 10-inch multilayer drawing page, uses standard object-oriented drawing tools to create graphics, and features pop-up drawing page legends and supplementary information boxes. Users can highlight drawing page objects and Info page records with an easy-to-use criteria selection dialog. Business Filevision also allows flexible form design with computed fields, automatic data entry and formatting, initial text fields, and graphic and annotation fields on a 30-inch by 30-inch layout (always editable). Other Business Filevision features allow the user to store and print custom forms, reports, and labels using mixed Macintosh fonts, text styles, and formats; combine text and graphic output; run statistics (counts, sums, averages, running totals); format output headers, footers, date, time, and page numbers; use internal mail merge capabilities, labels, and form letters; and print to disk, screen, or printer.

Marvelin Corporation
3420 Ocean Park Blvd., Ste. 3020
Santa Monica, CA 90405
213-450-6813

System Requirements
Macintosh 512K enhanced and larger; 1 MB of RAM; external 800K drive or hard disk. LaserWriter or ImageWriter recommended.

Price $395

Support
Free telephone support is provided to all registered users.

ClickArt Series of Images

The ClickArt Series of Images provides 200 to 1100 images per collection for enhancing newsletters, reports, overhead transparencies, slides, announcements, invitations, and other published documents. Seven collections are available: five collections of bit-mapped images, and two encapsulated PostScript portfolios. Art ranges from animals, borders, and cartoons to business and industrial symbols, to flow chart templates and office equipment images. Other subjects include food and drink, travel and transportation, maps, headlines, seasonal images, and religious images. Bit-mapped portfolios come with art in both MacPaint files and a HyperCard stack. ClickArt ClipOut, an accompanying desk accessory, allows users to access MacPaint files without leaving the current application.

T/Maker Company
1390 Villa St.
Mountain View, CA 94041
415-962-0195

System Requirements
Macintosh 512K or larger; HyperCard or MacPaint.

Price $49.95 to $129.95
Licensing options and an educational discount are available.

Support
Unlimited support for registered users.

The Curator

The Curator comes as both a desk accessory and an application. It finds graphic files where they are left in folders, on the desktop, or on external floppies. Users can search by name, thumbnails, or keywords. The Curator has a pictorial table of contents made up of miniature representations of all artwork in any folder. Since The Curator is a desk accessory, it opens the graphic while the user is in word processing or desktop publishing programs. If the graphic is Encapsulated PostScript and is copied and pasted into a word processor that accepts PICT, it will keep its PostScript when printed from the word processor on a LaserWriter. The Curator converts or "saves as" in the standard formats, including Encapsulated PostScript, TIFF, MacPaint, Glue, and PICT.

Solutions International
30 Commerce St.
Williston, VT 05695
802-658-5506

System Requirements
Macintosh 512K or larger.

Price $139.95

Support
Telephone, fax, and on-line support; and a product guarantee are provided.

DB/Write

DB/Write combines two normally separate software functions: word processing and a relational database manager. DB/Write is a set of 4th Dimension external procedures that can be linked to any 4th Dimension database application to add full word processing and mail-merge features. The word processing functions include WYSIWYG multipage word processing; multiple fonts, styles, and sizes; several styles of tabs; and the ability to establish unique formatting for different paragraphs, by ruler settings. Users can mimic page composition by saving documents to a 4th Dimension picture field, pasting in graphics, and flowing text along the graphic.

Metropolis Software, Inc.
499 Hamilton Ave., Ste. 202
Palo Alto, CA 94301
415-322-2001

System Requirements
Macintosh Plus or larger; 4th Dimension.

Price $179

Support
Free telephone support and a 30-day guarantee are provided.

FileGLU

FileGLU is a custom utility that enables the user to assign text or numeric attributes to any symbol or object in a drawing; it can be equated to an electronic notepad for the CADD user. The external information file, created in ASCII format, can be used in conjunction with most word processors, spreadsheets, database programs, and HyperCard. This versatility allows the user to create reports, calculate data, and manipulate information to meet individual requirements.

Professional CADD Services
S.W. Westgate Dr., Ste. 145
Portland, OR 97221
503-292-0763

System Requirements
Macintosh II or larger; VersaCAD Macintosh version 2.1.1 only.

Price $88.50

Support
Free telephone support is provided.

MAC-ART LIBRARY

The MAC-ART LIBRARY is one of the largest collections of professional clip-art available with 12 disks and over 1000 images. Designed for laser printers, the MAC-ART LIBRARY provides optimum quality with the richness and detail of full bit-map graphics. The MAC-ART LIBRARY is a good basic starter set for any clip-art collection. The disks are Animals, Buildings, Farm, Greeting Cards, Geography, Kitchen, People, Flowers/Trees/Plants, Signs/Symbols/Borders, Sports, Tools, and Transportation.

COMPUCRAFT
P.O. Box 3155
Englewood, CO 80155
303-791-2077

System Requirements
Macintosh 512K or larger; page layout, word processing, or graphics software.

Price $250
Per set of 12 disks; $39.95 per individual disk.

Support
Free telephone support is available.

Micro Dynamics MARS

Micro Dynamics MARS (Multi-User Archival and Retrieval System) is a fully integrated archival and retrieval system for storing vast numbers of documents and computer files and retrieving them from Macintosh computers. Using scanners, Micro Dynamics MARS scans paper documents and microfilm and stores the digital images on WORM optical disks and eraseable magneto-optical disks. It retrieves documents by key words; it also includes full text searching on text files. It displays PICT images in 32-bit color. Jukeboxes, OCR, and compression devices (CCITT Group IV) are available. Micro Dynamics MARS is currently used for litigation support, student records, marketing information, financial data, proposals, and other tasks involving large numbers of documents.

Micro Dynamics, Ltd.
8555 16th St., Ste. 701
Silver Spring, MD 20910
301-589-6300

System Requirements
Macintosh SE or larger (three CPU's required); 2 MB of RAM; one or more optical disk drives; scanner.

Price
Series 1000, for up to 10 users, $45,000–$120,000; Series 3000, for up to 20 users, $95,000–$275,000; Series 5000, for up to 100 users, $250,000–$1.2 million.

Support
Warranties, installation, training, support, upgrades, and customization are available for a fee.

MindWrite

MindWrite offers power and flexibility in organizing, combining, writing, and rewriting documents. Outline structure is allowed anywhere in the document. Sections and lists are automatically renumbered and revisions are tracked. MindWrite can select and act on multiple blocks of text at once, accumulate cut and copied text on the Clipboard, and hide and show text to eliminate scrolling. The program counts characters, words, and paragraphs; creates tables of contents; displays as many windows as memory allows; zooms windows to convenient sizes; opens MacWrite, Microsoft Word 1.0 and 3.0, ThinkTank, and text-only documents; and saves in MacWrite or text-only format. MindWriteExpress incorporates all features of MindWrite and also reads and writes several MS-DOS and VAX/VMS formats. Both versions provide an integrated spelling checker based on Spellswell.

DeltaPoint Inc.
200 Heritage Harbor, Ste. G
Monterey, CA 93940
408-648-4000

System Requirements
Macintosh Plus or larger. Hard disk recommended.

Price
MindWrite $195; MindWriteExpress $245.

Support
Telephone support is provided.

PictureBook

PictureBook is a multi-window scrapbook utility with a Finder-like interface that allows the user to open multiple scrapbook windows and transfer clippings between them. PictureBook comes with a Clipboard Editor for precise resizing and cropping, allows users to name and annotate each clipping, and prints scrapbook catalogs or individual clippings. Version 3.0 can read EPS, MacPaint, and PICT format files directly. EPS data are embedded within PICT; these data print like EPS data but paste like PICT. The program includes a utility to convert from SmartScrap and regular scrapbooks to PictureBook format. PictureBook is well suited to documentation preparation, organizing art collections, or storing CAD libraries.

Loop Software
1300 Oak Creek Dr., Ste. 405
Palo Alto, CA 94304
800-288-7631

System Requirements
Macintosh 512K or larger. Hard disk recommended.

Price $69.95

Support
Free telephone support is provided.

SmartScrap and The Clipper II

SmartScrap and The Clipper II are a pair of desk accessories designed for users who handle graphics. SmartScrap is an improved Scrapbook. With it, a user can find pictures easily within any scrapbook, see large pictures by using horizontal and vertical scroll bars and select any rectangle of a scrapbook picture for copying. The Clipper II is a cropping tool designed for proportionally or non-proportionally resizing a picture on the Clipboard before it is pasted.

Solutions International
30 Commerce St.
Williston, VT 05695
802-658-5506

System Requirements
Macintosh Plus or larger.

Price $89.95

Support
Telephone, fax, and mail support; newsletters and money-back guarantee are provided.

SuperGlue II

SuperGlue II is used to export fully formatted Macintosh files from programs that do not allow export and provides the ability to print to disk rather than to the printer. The multipage spreadsheet, balance sheet, database report, or other file can then be copied and pasted into any other product that accepts PICT graphics. SuperGlue's SuperImage Saver turns newsletters, charts, or other files into multipage images (binary files), which are the common denominator of Macintosh communications. Users can transmit the images to any Macintosh user on a network, extract text as an ASCII file to send to an IBM or compatible, or send images to a scrapbook file. The program's SuperViewer is a desk accessory used to read ImageSaved or MacPaint files. SuperViewer allows users to access images of full-page MacPaint or PICT documents while on line or in another application, and to select and copy parts of a large image or MacPaint document with a marquee or bit-map lasso. It is fully color compatible with the new GlueNotes (the electronic equivalent of Post-it) feature.

Solutions International
30 Commerce St.
Williston, VT 05695
802-658-5506

System Requirements
Macintosh Plus or larger.

Price $119.95

Support
Telephone support, newsletters, and a money-back guarantee are provided.

Trapeze

Trapeze is a desktop presentation package with text, charting, graphics and calculations all on the same worksheet. All information in a worksheet remains "live," allowing last-minute additions or changes. The program combines professional desktop publishing with live calculations and charts, so users can quickly create one-page presentations or a series of up to 32 pages. The built-in spreadsheet and database capabilities let users evaluate numerical and textual information on the same worksheet. The program contains comprehensive charting features. Eleven basic chart types, with thousands of combinations, allow users to graphically present calculations and information.

DeltaPoint Inc.
200 Heritage Harbor, Ste. G
Monterey, CA 93940
408-648-4000

System Requirements
Macintosh Plus or larger. Hard disk recommended.

Price $295

Support
Unlimited telephone support is provided.

Voice Navigator and Voice Navigator XA

Voice Navigator and Voice Navigator XA allows users to operate their computer by using vocal commands to pull down menus, answer dialogs, execute commands, access information, enter information, and do limited dictation. Voice Navigator allows up to 200 words active at any one time, and Voice Navigator XA allows up to 1,000 words active. However, the total number of words for a particular application can be significantly larger, as word lists are structured into hierarchical word sets, each of which can have a maximum of 200 or 1,000 words. The Voice Navigator works with most Macintosh applications and uses state-of-the-art voice-recognition techniques. The drivers are speaker dependent, discrete utterance recognizers. Because each user trains the vocabulary to his or her particular speech patterns and language, the recognizer works equally well with any user, any accent, and any language. The result is consistently high-quality speech recognition.

Articulate Systems, Inc.
2380 Ellsworth St., Ste. A
Berkeley, CA 94704
415-549-1013

System Requirements
Macintosh Plus or larger; 2 MB of RAM.

Price
Voice Navigator $1295; Voice Navigator XA $1795.

Support
Telephone hotline, dealer support, and one-year warranty are provided. Extended support beyond 90 days is available for a fee.

XPsort

XPsort is a utility program for sorting Macintosh data files. It sorts any size file, with fixed or variable length records, on one to six keys, and provides multiple strategies for the fastest sort with available resources. Each key may be case-sensitive and specified as an offset in a record or from a TAB. Lightspeed Pascal programs can call XPsort, using the library provided. XPsort supports background processing with MultiFinder.

Stackhouse Software
13 Sawin St.
Natick, MA 01760
617-653-6949

System Requirements
Macintosh Plus or larger; System 4.1 and Finder 5.5 or later.

Price $35

Support
Warranty for updates or refund if the product does not perform as specified in the user's guide.

Textile Design

Design & Weave

Design & Weave is a tool for use by textile designers in fashioning complex weaves. Program features include the capability of interfacing with the AVL Loom and the use of an ImageWriter or LaserWriter for pattern printouts. Design & Weave also automatically computes weaves such as twills, satins, and plain weaves, and on a Macintosh II features the use of more than 16.7 million colors.

AVL Looms
601 Orange St.
Chico, CA 95928
916-893-4915

System Requirements
Macintosh Plus or larger.

Price $300

Support
Free telephone hotline is provided. Updates are available periodically at a nominal fee.

Embroidery Expert

Embroidery Expert is a computerized embroidery software package that runs on the Macintosh II family of computers. Artwork can be scanned directly into the program with a color scanner or traced using a digitizing tablet and Designer's Edge. Color stitch display, rapid stitch generation, and a variety of stitch fills enable embroidery designers to produce quality work with speed and accuracy. Thread and background colors can be changed within the software to match the desired finished product. Any single stitch or group of stitches within the design can be inserted, deleted, repositioned, mirrored, or duplicated. The actual size and density of stitches created as objects can be increased or decreased within the software. Embroidery Expert allows designers to read, punch, and translate between Barudan, Eltac, Tajima, Marco, Melco, and Ultramatic formats.

Graphic Applications, Inc.
616-D Guilford College Rd.
Greensboro, NC 27409
919-852-1608

System Requirements
Macintosh II or larger; 2 MB of RAM; digitizing tablet or scanner.

Price $27,550

Support
Technical support and 5 days of training are included. Additional training is available at $400 per day. Lifetime updates are available at cost of media, shipping, and handling (approximately $25).

Embroidery Plus

Embroidery Plus is a computerized embroidery software package that allows the user to generate and display stitches automatically. Any single or group of stitches within the design can be inserted, deleted, respositioned, mirrored or duplicated. The program allows the user to read, punch and translate between Barudan, Eltac, Tajima, Marco, Melco and Ultramatic formats. Artwork can be traced into the computer using a digitizing tablet and Designer's Edge software, then transferred into Embroidery Plus. Designs can also be scanned into the computer.

Graphic Applications, Inc.
616-D Guilford College Rd.
Greensboro, NC 27409
919-852-1608

System Requirements
Macintosh Plus or larger; Designer's Edge.

Price $8200
Software only. Complete systems, including hardware and software, start at $14,600.

Support
Technical support and 3 days of computer and software training are included. Additional training is available at $400 per day. Updates are available at $25.

ModaCAD Data Management

ModaCAD Data Management is an integrated database that automatically generates spec and cost sheets, keeps track of suppliers, and helps users estimate labor costs. With ModaCAD the designer can keep an eye on costs throughout the design process; the result of an alteration in buttons or trim shows up instantly on the bottom line. ModaCAD is designed to interface with a variety of database, order processing, inventory, and scheduling systems.

ModaCAD, Inc.
1954 Cotner Ave.
Los Angeles, CA 90025
213-312-6632

System Requirements
Macintosh II or larger.

Price $5000 to $30,000

Support
Training and 90-day warranty are provided.
Upgrades and maintenance contracts are available.

ModaCAD Design Module

ModaCAD Design Module allows designers to drape fabric over a form automatically and simulate how a finished garment will look on a live model, accounting for fabric weight, highlights, shading, folds, and other characteristics. A ModaDRAPE simulation is so real that the full-color image can be used as output for camera-ready art for storyboards, catalogs, and advertisements—without a single piece of real fabric having been cut or sewn. The ModaCAD Design Module also includes ModaSKETCH, with state-of-the-art image processing, drawing, and painting; over 400 special effects and drawing tools; and high-resolution color in up to 16.7 million colors. Fabric simulation tools allow designers to stretch fabric and add pleats or folds. ModaCAD lets designers scan sketches, photographs, and fabric swatches. Color is calibrated with five methods of registering colors. An on-line optical disk library holds an extensive fashion-history library for quick design inspiration.

ModaCAD, Inc.
1954 Cotner Ave.
Los Angeles, CA 90025
213-312-6632

System Requirements
Macintosh II or larger.

Price $10,000
Site licenses available.

Support
Upgrades, a 90-day warranty, and maintenance contracts are available; training is included.

ModaCAD Textile Design

ModaCAD Textile Design delivers state-of-the-art textile design capabilities, with ModaWEAVE and its on-screen weaving and textile-design preparation features. The manufacturing and layout plans are generated automatically, so that traditional layout preparation is completely eliminated. ModaWEAVE has exact color controls and weaves the fabric on-screen in photo-realistic detail and color. After users prepare the initial design with ModaWEAVE, the information is transferred automatically to electronic card-cutting machines. ModaWEAVE-DOBBY will drive card-cutting machines for Dobby design, thus virtually eliminating manual errors and saving days in preparation time on every design.

ModaCAD, Inc.
1954 Cotner Ave.
Los Angeles, CA 90025
213-312-6632

System Requirements
Macintosh II or larger.

Price $10,000

Support
Upgrades, a 90-day warranty, and maintenance contracts are available; training is included.

PAD (Pattern-Aided Design)

PAD (Pattern-Aided Design), an intelligence-based pattern-making system, lets users generate patterns automatically to the specifications of their own body measurements. Patterns are generated from user-definable intelligent blocks. Patternmakers need only alter the measurements, and new patterns are generated automatically. Because body measurements are entered into the system on predefined basic block patterns, digitizing, although supported by the system, can be eliminated. PAD is ideal for complicated structured garments. The system responds to body measurements to produce custom-fit first patterns as well as production patterns. Patternmakers interact with the system to build correct-by-construction patterns. PAD can instantly build style lines, including pleating and pattern separation. PAD recognizes construction lines, seam allowances, gracing specifications, bodices, skirts, darts, pleats, and other components. Complete patterns are created on a construction plan from which pieces such as linings or canvas facings are extracted. PAD works with a variety of plotters.

ModaCAD, Inc.
1954 Cotner Ave.
Los Angeles, CA 90025
213-312-6632

System Requirements
Macintosh II or larger.

Price $15,000

Support
Upgrades, a 90-day warranty, and maintenance contracts are available; training is included.

Accelerators/Coprocessors/Add-on Boards

A/UX ComputeServer

The ComputeServer product family (CS1–CS16) is a group of supercomputer-class accelerators for the networked Macintosh environment. Each model is a floor-standing unit containing up to 16 high-speed RISC floating-point processors. A ComputeServer connects to networked Macintosh computers to form a multi-user desktop computing environment with 8 to 32 Mflops performance. The computing power makes possible such tasks as engineering simulation and interactive photorealistic graphics using applications from companies such as Visual Information, MacroMind, and Pixar. For programmers, the ComputeServer provides high-level extensions to the standard MPW C, Pascal, and FORTRAN development environments; the Linda system software handles all development chores normally associated with parallel processing and networking. The ComputeServer supports LocalTalk™, FlashTalk, and EtherTalk and is available in configurations with from 1 to 16 RISC floating-point processors, with either 1 MB or 4 MB per floating-point processor.

Chorus Supercomputer, Inc.
100 Varick St.
New York, NY 10013
212-925-1715

System Requirements
Macintosh Plus or larger; available in A/UX format.

Price
CSI $9700; CS4 $25,500; CS8 $42,300; CS12 $59,100; CS16 $75,900.

Support
One-year warranty and free on-line support for one year is provided. Extended warranty available for 10% of the purchase price per year.

dbVIEW

dbVIEW is a database accelerator add-in card and retrieval software for dBASE.DBF files. dbVIEW works as a stand-alone function or as an integrated user function within other programs such as Clipper, dBASE, and C. It is LAN and terminal emulation compatible. Queries are 100 times faster than dBASE IV. Index file contains multikey capability and is ten times smaller than an equivalent dBASE index. Reports, forms, mail merge, and labels are included.

Forbes and Rouse
P.O. Box 9248
Bakersfield, CA 93389
805-323-5857

System Requirements
Macintosh II or larger; database accelerator add-in card.

Price $495

Support
Free limited support, one-year warranty on hardware, local service, and training are available.

FlashCard II

FlashCard II is a high-speed FORTH coprocessor card and software that is used for data acquisition and process control systems that use FORTH or C as the high-level system language. The product utilizes the NOVIX NC4016 FORTH engine. Clocked at 4 to 10 MHz, it yields performance of from 4 to 10 million instructions per second. FlashCard II currently uses a 16-bit wide I/O mapped port to the NuBus. Future versions will use a dual port memory design. Different versions of the product will be produced to support high speed audio-to-digital (A/D) and digital-to-audio (D/A) conversion, parallel input and output, and multichannel serial input and output.

CPSA
166 South J St.
Livermore, CA 94550
415-449-7744

System Requirements
Macintosh II or larger.

Price $1595

Support
Free telephone and AppleLink support; 90-day warranty and updates are provided. Training available at extra cost.

GENLOCK Converter

The GENLOCK Converter is a card that lets users connect a Macintosh II computer, with an Apple or SuperMac video interface card, to standard video devices such as VCRs or video projectors and to perform sophisticated special effects from the computer. The GENLOCK Converter allows the overlay of computer generated graphics onto or behind live or recorded video images. It is also designed to accept signals from auxiliary video equipment, such as that found in a studio or production center, yet remain simple for enough for novices. The AutoSync capability allows operation without an external video source. The CasCade feature allows multiple display card or GENLOCK Converter pairs to be used to create multiplane graphics and gives users the ability to use an external key signal for overlaying.

Julian Systems, Inc.
2280 Bates Ave., Ste. J
Concord, CA 94520
415-686-4400

System Requirements
Macintosh II or larger, video interface card.

Price $999
Dealer and quantity pricing available. Demonstration video $19.95 (applicable to purchse).

Support
Telephone support, customizing, and maintenance service are available. One-year warranty is provided.

Hurdler II

Hurdler II is a series of add-on boards designed to make the NuBus interface easier for the hardware engineer to understand and work with, thereby increasing the use of other boards and devices on the Macintosh II computer. It converts NuBus to Intel/Zilog and Motorola-compatible signals and provides 16 sources of vectored interrupts, three 16-bit timers, an 8-bit parallel port with four handshake lines, and a large wire wrap area. Significant signals are brought out to wire wrap pins. A declaration ROM is provided that may be replaced with up to 8K of RAM for development purposes. The following Hurdler specific interfaces connect directly to the tailored bus and do not include wire wrap sockets: Hurdler II-STD directly connects to an STD card cage; I/O mapped STD peripheral cards appear in the 68020 address space; Hurdler II-PC directly connects to an IBM PC I/O expansion chassis; and Hurdler II-IOC directly connects to a Motorola I/O channel ribbon cable. Cards may be mounted above the Hurdler card or in a separate external chassis. Each Hurdler board is shipped with a configuration ROM that includes an appropriate driver for that board.

Creative Solutions, Inc.
4701 Randolph Rd., Ste. 12
Rockville, MD 20852
301-984-0262

System Requirements
Macintosh II or larger.

Price
ROM Development Tools $149; Hurdler II Prototyper $279; Hurdler II IOC $249; Hurdler II STD $299; Hurdler II IBM PC $349.

Support
Hotline telephone and CompuServe support, and quarterly newsletters are provided.

Hurdler II Serial Boards

The Hurdler II Serial Boards (HDS and HQS) are dual- and quad-port serial boards with mini-din connectors and signals that are the same as those provided with the Macintosh II computer. Features include an onboard 68008 microprocessor, speeds in excess of 38,400 baud per channel, and buffered I/O. The Hurdler-HDS is upgradable from two to four ports. Driver software is provided with each board in ROM.

Creative Solutions, Inc.
4701 Randolph Rd., Ste. 12
Rockville, MD 20852
301-984-0262

System Requirements
Macintosh II or larger; any serial device.

Price
Two ports $299; four ports $379.

Support
Technical telephone hotline, and CompuServe support, newsletters, and a system manual are provided.

Hurdler SE/30 Prototyping Card

The Hurdler SE/30 Prototyping Card provides approximately 30 square inches of wire wrap protoyping space and includes a soldered-on 120-pin connector. All signals are brought out to pads suitable for the installation of 0.1-inch wire wrap or mass termination posts. The extender board extends the 120-pin connector signals up to 2 inches and provides a right-angle connector so that during development or testing, cards may be installed horizontally (component side facing up), extending from the right-hand side of the open chassis.

Creative Solutions, Inc.
4701 Randolph Rd., Ste. 12
Rockville, MD 20852
301-984-0262

System Requirements
Macintosh SE/30 or larger.

Price $59.95
Optional Extender Card $49.95.

Support
Technical telephone hotline and Compuserve support; and newsletters are provided.

Mac86 and Mac286

Mac86 and Mac286 coprocessor boards add MS-DOS capability to the Macintosh computer, providing complete access to MS-DOS programs and files. The Mac86, for the Macintosh SE, contains an 8086 processor and 256K of RAM, while the Mac286, for the Macintosh II family of computers, comes with an Intel 80286 processor and 1 MB of RAM. With processors and RAM dedicated to running MS-DOS programs, the two boards are faster than available MS-DOS compatibility software. Both boards run MS-DOS programs, exchange text or images between MS-DOS files and Macintosh documents, and share files over AppleShare, TOPS, and Novell networks. The accompanying Drive D: software provides pull-down menu commands for easily converting entire files—whether simple text files or complex AutoCAD drawings—from the Macintosh desktop to MS-DOS and back again.

Orange Micro, Inc.
1400 N. Lakeview Ave.
Anaheim, CA 92677
714-779-9772

System Requirements
Macintosh SE or SE/30 for Mac86; Macintosh II or larger for Mac286. Apple 5-1/4" disk drive recommended for Mac86; color monitor recommended for Mac286.

Price
Mac86 $699; Mac286 $1599

Support
Telephone support and one-year warranty are provided. Training dependent upon size of order.

MacDiaDac

MacDiaDac is a data acquisition card that can be configured for 16 single end or 8 differential analog inputs. The aid converter chip is a 25 microsec ADJ74/674. A daughter board is available that will allow 4 analog output signals and 24 digital I/O lines. The mother board contains an 8253 timer that can be externally triggered.

CGRS Microtech, Inc.
513 Fairview Ave.
Langhorne, PA 19047
215-757-0284

System Requirements
Macintosh II or larger.

Price $425
Plug on control card $225.

Support
Telephone support and 90-day warranty are provided. Engineering support available for a fee.

MacDSP Coprocessor Card

The MacDSP Coprocessor Card is a 32-bit floating-point accelerator based on the AT&T DSP32, which runs up to 1000 times faster than the Macintosh IIx computer. It is ideal for Digital Signal Processing, image processing and graphics, speech and music processing, neural networks, robotics and control, communications, and all other scientific computations that are floating-point intensive. Two 12 Mbit/sec DMA serial ports and a direct processor interface for a variety of programmable data acquisition daughter cards enable real-time signal processing and control in a single-slot solution (multiple boards can be used together or independently). Available in 8 and 12 MFLOP versions, it comes with 64 KB of zero-wait state SRAM. Drivers are provided to interface the Macintosh to the MacDSP Coprocessor Card. Optional software includes the MacDSP Signal Analysis Package with real-time processing and display capabilities; Array Processor Libraries supported in Lightspeed C and Pascal, MPW C and Pascal, BASIC, and FORTRAN; and a DSP32 C compiler, assembler, linker, and simulator. Optional data acquisition cards include a 150 kHz 16-bit A/D and D/A card, a 1 MHz 12-bit A/D card, and multichannel A/D and D/A cards.

Spectral Innovations, Inc.
4633 Old Ironsides Dr., Ste. 450
Santa Clara, CA 95054
408-727-1314

System Requirements
Macintosh II or larger.

Price $1995 to $2995

Support
Free telephone support is provided.

MacDSPXKC Coprocessor Card

The MacDSPXKC Coprocessor Card is a 24 MFLOP 32-bit floating-point accelerator based on the AT&T DSP32C. It is ideal for Digital Signal Processing, imaging processing and graphics, speech and music processing, neural networks, robotics and control, communications, and all other scientific computations that are floating-point intensive. Two 16 Mbit/sec DMA serial ports, internal and external interrupts, and a direct processor interface for a variety of programmable data acquisition daughter cards enable real-time signal processing and control in a single-slot solution (multiple boards can be used together or independently). The MacDSPXKC Coprocessor Card comes with up to 256 KB of zero-wait state SRAM, or up to 2 MB of 3-wait state SRAM. Drivers are provided to interface the Macintosh computer to the MacDSPXKC Coprocessor Card. Optional software includes the MacDSP Signal Analysis Package with real-time processing and display capabilities; Array Processor Libraries supported in Lightspeed C and Pascal, MPW C and Pascal, BASIC, and FORTRAN; and a DSP32 C compiler, assembler, linker, and simulator.

Spectral Innovations, Inc.
4633 Old Ironsides Dr., Ste. 450
Santa Clara, CA 95054
408-727-1314

System Requirements
Macintosh II or larger.

Price $3995 to $8995

Support
Free telephone support is provided.

MacSnap

MacSnap is a series of expansion boards for the Macintosh family of computers. MacSnap Plus 2 expands the Macintosh Plus to 2 MB of contiguous RAM and is nonexpandable. MacSnap 2SE expands the Macintosh SE to 2 MB of contiguous RAM and is nonexpandable. MacSnap 524 expands the 512K Macintosh to 1 MB of contiguous RAM. MacSnap 524E expands the 512K enhanced Macintosh to 1 MB of contiguous RAM and is available with optional SCSI interface. The MacSnap 548 expands the 512K Macintosh to 2 MB of contiguous RAM. The MacSnap 548E expands the 512K enhanced Macintosh to 2 MB of contiguous RAM and is available with optional SCSI interface. The MacSnap One Meg SIMMS is available in put-ups of 2, 4, and 8 SIMMS; memory is contiguous. It is available in low-profile, surface-mount, or high-profile DIP SIMMS. All MacSnap products are easy to install and require no physical modification to the computer.

Dove Computer Corporation
1200 North 23rd St.
Wilmington, NC 28405
919-763-7918

System Requirements
Macintosh Plus or larger.

Price $299 to $1200

Support
Free telephone and AppleLink support; on-line Genie and MacNET support and one-year warranty are provided.

Marathon 020 and 030 Accelerator Cards

A/UX

The Marathon 020 is a powerful, cost-effective accelerator that increases the operating speed of the Macintosh SE computer up to 50 percent. An optional math coprocessor doubles the speed of numerical calculations. It is equipped with a full 32-bit microprocessor operating at 16 MHz, and accepts 1 or 4 MB of additional on-board RAM. The Marathon 030 and 030x are 32 MHz accelerators that feature a 256-byte interval data cache and a 256-byte instruction cache. They install easily into the existing 020 socket. An optional 68882 math coprocessor is available for the 030. The 030 improves performance up to 10 times over the standard Macintosh II computer. For the 030x, a PMMU is available for use with the A/UX systems. The 030x doubles the processor's clock speed and increases performance up to 50 percent.

Dove Computer Corporation
1200 North 23rd St.
Wilmington, NC 28405
919-763-7918

System Requirements
Marathon 020 Accelerator: Macintosh SE or larger; INIT file included. Marathon 030 Accelerator: Macintosh II and larger; Marathon INIT file included. Marathon 030x Accelerator: Macintosh IIx.

Price
Marathon 020 Accelerator $699; options include additional RAM and math coprocessor. Marathon 030 and 030X Accelerators $1599.

Support
Toll-free technical support is provided; AppleLink; Genie and MacNET on-line support; one-year warranty. Marathon 020 Accelerator: free repairs depending on problem. Marathon 030 and 030x Accelerators: repairs $35 per hour.

Marathon Serial Parallel

Marathon Serial Parallel is a NuBus card that adds one additional serial (RS-232-C) and one additional Centronics parallel port to the Macintosh II computer. Users can connect high-speed line printers, typesetting equipment, plotters, and other IBM-compatible peripherals to the Macintosh system. Software is included for full port control.

Dove Computer Corporation
1200 North 23rd St.
Wilmington, NC 28405
919-763-7918

System Requirements
Macintosh II or larger. Driver software included.

Price $299

Support
Free telephone support and on-line bulletin board support on Genie and MacNET; and one-year warranty are provided.

Microtech 68020 and 68882 Accelerators

The Microtech 68020 Accelerator clips onto the 68000 processor in the Macintosh Plus or Macintosh SE computers and includes a coprocessor socket that directly accesses a 68881 or 68882 at speeds up to 33 MHz. Coprocessor frequency is asynchronously controlled by a crystal oscillator. The Microtech 68020 Accelerator uses a 12 MHz 68020, operating at the current system frequency of 8 MHz, and a proprietary design implementation that increases speed without increasing the clock frequency of the 68020. Expansion circuitry allows the addition of 32-bit RAM and upgrades are available. The Microtech 68882 Accelerator replaces the 68881/2 in the Macintosh II or IIx computers with Motorola's new 68882 Floating Point Unit with an increased clock speed of up to 33 MHz, and can dramatically increase the performance of calculation-intensive programs that directly access a math coprocessor. The Microtech 68882 accelerator can be easily installed into the existing 68881/2 socket of the Macintosh II or IIx computers, and is compatible with standard Macintosh II and IIx programs. It is offered for the Macintosh II or IIcx systems with a 25 or 35 MHz coprocessor and crystal oscillator installed.

Microtech International, Inc.
158 Commerce St.
East Haven, CT 06512
800-325-1895

System Requirements
Microtech 68020 Accelerator: Macintosh Plus or larger. Microtech 68882 Accelerator: Macintosh II or larger.

Price
Microtech 68020 Accelerator $599. Microtech 68882 Acclerator $1299. Volume pricing available.

Support
Free telephone, AppleLink, MicroLink, and 24-hour bulletin board are available. One-year limited warranty is provided.

Microtech 68030 Design Board

A/UX The Microtech 68030 Design Board is easily installed into the 68020 socket of the Macintosh II computer, while remaining completely software-code compatible. The board provides immediate capability for evaluating the programmer's model and instruction set for the 68030, and for developing hardware and software to utilize the 68030's advanced features. These include an on-board Paged Memory Mangement Unit (PMMU). This eliminates the need for an external MC68851 MMU option in the Macintosh II, and is ideally adapted for Apple's A/UX operating system. The 68030's unique Harvard-style parallel bus architecture allows instructions and data to be grabbed simultaneously for storage in both on-board 256-byte caches. The Microtech 68030 Design Board is offered for the Macintosh II with a 16 MHz 68030 installed.

Microtech International, Inc.
158 Commerce St.
East Haven, CT 06512
800-325-1895

System Requirements
Macintosh II or larger.

Price $995
Volume pricing available.

Support
Free telephone, MicroLink, and 24-hour bulletin board support is available. One-year limited warranty is provided.

Nu-THOR

Nu-THOR is an array processor for Macintosh II platforms. The array processor computes at 12.5 million floating point operations per second with standard 64K of 45ns static RAM, and 4K of high speed internal RAM. Includes PASCAL and C callable subroutine library, complete with source code. Supports TML Pascal, MPW Pascal and C, and Lightspeed. Complete portability between Macintosh II computers, IBM PC/XT/AT, and standard bus for all software. Full 32 bit floating point precision available from stock.

Causal Systems Inc.
9227 6th Ave.
Inglewood, CA 90305
213-754-7157

System Requirements
Macintosh II or larger.

Price $1195

Support
Free telephone support, application notes and bulletin board service are provided.

Pro-Board

Pro-Board is a plug-in enhancement that combines acceleration, memory expansion, and high-performance large-screen display in one easily installed expansion card. The Pro-Board transforms a Macintosh 512K enhanced or Macintosh Plus computer into a workstation with the speed and power of a Macintosh II system, while retaining the portability of the original machine. The Pro-Board even includes a SCSI port. The Pro-Board SE offers the same performance enhancements for the Macintosh SE computer.

Spectra Micro Development
548 E. Speedway Blvd.
Tucson, AZ 85705
602-884-7402

System Requirements
Macintosh 512K enhanced, Plus, or SE.

Price $1495

Support
Telephone support and a bulletin board service are available.

Quadputer

Quadputer is a single-slot, full-length parallel processing board for the Macintosh II computer. It includes the control logic for up to four transputers with 1 or 4 MB of dedicated memory per processor. The ability to vary the number of processors and memory configurations allows the user to tailor the Quadputer to specific needs. A Quadputer provides 40 MIPS of processing power and 4.8 to 6.0 MFLOPS of FPU performance.

Microway, Inc.
P.O. Box 79
Kingston, MA 02364
508-746-7341

System Requirements
Macintosh II or larger.

Price $2495

Support
Free telephone technical support provided for one year.

Radius Accelerator Cards

The Radius series of accelerator cards speeds processing on various Macintosh models. The QuickColor Graphics Accelerator for the Macintosh II increases the speed of some QuickDraw operations up to 600 percent. The 32-bit QuickDraw-compatible QuickColor card is based on a 6 MIPS RISC processor running 10 MHz and 64K of zero-wait-state static RAM. Common operations such as window movement, scrolling, area fills, and PICT displays take place up to six times faster. To maximize its performance, the card requires NuBus Block Transfer, which is a standard feature of Radius color video cards. The Accelerator 25, based on the 25 MHz 68020 processor, speeds SE performance up to six times. An optional 68882 floating-point coprocessor for the card executes numerical operations up to 100 times faster than the Macintosh SE alone. The Accelerator 16, based on the 16 MHz 68020 processor, improves Macintosh Plus or SE processing speed by up to four times. The Accelerator 16 also supports an optional 68881 floating-point coprocessor.

Radius, Inc.
1710 Fortune Dr.
San Jose, CA 95131
800-527-1950

System Requirements
Macintosh Plus or SE for Accelerator 16; Macintosh SE for Accelerator 25; Macintosh II for QuickColor Graphics Accelerator.

Price $795 to $1895
Shipped with software that patches 32-bit QuickDraw so that it recognizes the RISC processor as well as the Radius operating system.

Support
A one-year warranty and free updates are provided to registered users.

Si3033

Si3033 is a 33 MHz 68030 accelerator for the Macintosh II and IIx computers. It is a modular two-card design, an accelerator card, and a card specific for the Macintosh II or IIx. The Macintosh II version ships with a card that fits into the 68020 and PMMU sockets on the motherboard, and the IIx version ships with a card that fits into the existing 68030 socket. Since the Si3033 does not use a NuBus slot, there is plenty of room for additional expansion boards. A unique feature of the Si3033 is its high-performance 64 KB instruction cache. This cache supports burst-mode access by the CPU, which significantly enhances overall system performance. It is also possible to run the Si3033 either in 33 Mhz mode or in nonaccelerated mode (60820 in Macintosh II or 68030 in Macintosh IIx running at 16 MHz). The Si3033 allows the user to add Motorola's 33 MHz 68882 floating-point math coprocessor.

SiCLONE Sales and Engineering Corporation
1515 Centre Pointe Dr.
Milpitas, CA 95035
800-862-2636

System Requirements
Macintosh II or larger.

Price $3995
$5495 with 68882 included.

Support
Free telephone technical support and a one-year warranty are provided.

SpringBoard

SpringBoard, Model 1260 I/O Processor, is a 68020-based NuBus card that can act as an intelligent input/output controller for the Macintosh computer. it can accept IndustryPack plug-in modules, which can add analog to digital, digital to analog, IEEE-488, serial and digital input/output, servo motor control, and other input/output support. SpringBoard is a platform for Apple Computer's A/ROSE multitasking real-time kernel for smart cards. It is compatible with native Macintosh development tools. The Macintosh computer's device manager has been emulated on SpringBoard. The card is a 32-bit master and slave on the NuBus. It can manage the details of data acquisition and control or rest in the Finder.

GreenSpring Computers, Inc.
1204 O'Brien Dr.
Menlo Park, CA 94025
415-327-1200

System Requirements
Macintosh II or larger; GreenSpring's IndustryPack I/O plug-in modules.

Price $1495
With 4 MB of RAM, add $695.

Support
Telephone hotline support is provided. A one-year warranty and service contracts are available.

SupportBoard

SupportBoard, Model 1270 IndustryPack Carrier, is a NuBus card which accepts up to two plug-in Industrypack I/O modules. Interfaces such as A/D, D/A, Servo motor control, IEEE-488, serial, OPTO-22, and digital I/O are available. SupportBoard allows a Macintosh II computer system to connect to a broad range of I/O. and can be controlled by the computer or by a GreenSpring SpringBoard within the system.

GreenSpring Computers, Inc.
1204 O'Brien Dr.
Menlo Park, CA 94025
415-327-1200

System Requirements
Macintosh II or larger.

Price $295

Support
Telephone hotline support is provided. A one-year warranty is provided and service contracts are available.

SurfBoard

A/UX SurfBoard is an SCSI/DMA accelerator card that speeds up I/O transfer rates to 2.5 MB per second. The speed improvement depends on the ability of peripheral devices to accept higher transfer rates, and on the amount of I/O involved. Manufacturer tests show up to 500 percent improvement under A/UX. The product includes a NuBus board and installation software.

Jets Cybernetics
540 Bryant St.
Palo Alto, CA 94301
415-322-7070

System Requirements
Macintosh II or larger.

Price
Macintosh operating system version $1295;
A/UX version $1995.

Support
Free telephone support and warranty are provided for 90 days.

CPUs

650T Tempest Macintosh IIx

The Tempest 650T Macintosh IIx system consists of a TEMPEST CPU, from one to four disk drives, an Apple extended keyboard, and a mouse. The 650T is available in three physical configurations—desktop, rack mount, and tower. The base CPU is available with one FDHD™ disk drive and 2 MB or 4 MB of memory; one FDHD disk drive plus a 40 MB removable 3.5-inch hard drive with 2 MB or 4 MB of memory; or one FDHD diskette drive plus an 80 MB removable 3.5-inch hard drive with 2 MB or 4 MB of memory. Available options include a 12-inch monochrome monitor and 13-inch color monitor, 8 bit video cards, and TEMPEST LocalTalk cables. Storage options include one additional FDHD disk drive, 40 MB/80 MB removable 3.5-inch hard drives, and a 44 MB removable cartridge disk drive. The system supports up to two removable drives and two FDHD disk drives. The Mitek Model 130T is a high-perfromance TEMPEST PostScript printer based on the QMS PS 810, with four types of interfaces, including LocalTalk. The Model 130T has 2 MB of RAM standard (3 MB of RAM optional), and is compatible with the 650T Macintosh IIx through the serial AppleTalk interface.

Mitek Systems, Inc.
6225 Nancy Ridge Dr.
San Diego, CA 92121
619-587-9157

System Requirements
Not applicable.

Price $11,195
Base price.

Support
Toll-free telephone support and 90-day warranty are provided. AppleLink is available. Maintenance, training, setup and repair are $90 per hour. Maintenance contracts are also available.

AI-90 FACTORYMAC

See complete description under Manufacturing.

Dash 30 Workstation

The Dash 30 Workstation is an accelerated Macintosh computer using a 52-MHz 68030 chip. At 14.3 million instructions per second, the Dash 30 Workstation runs all Macintosh software three to five times faster than a Macintosh II or IIcx. The workstation design permits enclosure of up to 5 gigabytes of storage, including tape drives, removable cartridge drives, optical drives, and numerous other SCSI and storage options. This combination of speed, storage, and expandability makes the Dash 30 Workstation an excellent choice for serious Macintosh applications including publishing, prepress, high-quality imaging, three-dimensional design and engineering, simulation modeling, and numerical analysis.

Sixty Eight Thousand Inc.
26346 Carmel Rancho Ln.
Carmel, CA 93923
408-626-1711

System Requirements
Not applicable.

Price $16,750

Support
A one-year warranty on parts and labor is provided.

The Industrial Mac—CAD/CAM/CAE Workstation

The Industrial Mac—CAD/CAM/CAE Workstation is an engineering, design, science and manufacturing turnkey workstation that includes The Industrial Mac with Enhanced Operating System; upgraded components; tilt-base; two disk drives; mouse; trackball; and an Ethernet connector. Other options include a file server; hard drive; additional memory (up to 14 MB); 68020 processor; color; wide screen; graphics tablet; NuBus and SCSI connections; and a variety of printer options. The standard software package includes desktop accessories, drafting and drawing, word processing, spreadsheets and communications.

JMES
6791 Skyview Dr.
Huntington, CA 92647
714-898-2050

System Requirements
Not applicable.

Price $2995
Base price.

Support
Installation, training, maintenance, 90-day warranty, and updates are available.

Rack II

Rack II is a Macintosh II computer modified for use in audio and video studios, laboratories, moving vehicles, and other environments where a more rugged system is needed. Features include a shock-mounted steel casing, enhanced RFI/EMI shielding, dual 5.25-inch hard disk mountings, front-mounted control switches, remote video and desktop bus, and compatibility with existing Macintosh II expansion cards and software. Optional features include slide mounting for easy access, a processor for math-intensive operations that provides up to a 400 percent increase in performance, and a processor for MS-DOS compatibility.

Julian Systems, Inc.
2280 Bates Ave., Ste. J
Concord, CA 94520
415-686-4400

System Requirements
Not applicable.

Price $1300 to $10,000

Support
Installation, repair, and maintenance services are available.

RackMac 1200 Industrial Macintosh

RackMac 1200 is a rack mountable Macintosh II or IIx computer in a rugged steel and cast-aluminum enclosure mounted on heavy slides. The front bezel opens for access to the floppy disk drive and power switch; when closed the front seals the disk drive opening to airflow with an O-ring. A steel bar holds NuBus cards in place, preventing them from vibrating loose. The RackMac's enhanced cooling, air filtration, shock-resistant disk drive, and shock-mounted logic board make it suitable for industrial rack-mount applications. Add-on products include SpringBoard, an I/O coprocessor; SupportBoard, which allows the Macintosh II to accept plug-in IndustryPacks (small boards that provide specific I/O interfaces); TouchDisplay, an industrially packaged Apple high-resolution RGB monitor; and the IP-ADC, IP-DIGITAL 24, and IP-488 IndustryPack I/O interfaces for the Macintosh II.

GreenSpring Computers
1204 O'Brien Dr.
Menlo Park, CA 94025
415-327-1200

System Requirements
Not applicable.

Price $7299 to $7995
Add-on products are available from $250 to $2450.

Support
A one-year warranty and telephone support are provided. Service contracts are available.

Digitizers/Tablets

3Space Digitizer, Tracker, and Isotrak

The 3Space Digitizer, Tracker, and Isotrak are three electromagnetic, six-degree-of-freedom measurement instruments that capture complex nonmetallic geometries and three-dimensional motion data for inputting into a database. Possible applications include three-dimensional mouse input devices, graphics controller, medical measurement of rotation and range-of-motion, and head or hand tracking for work in virtual environments.

Polhemus Incorporated
1 Hercules Dr.
Colchester, VT 05446
802-655-3159

System Requirements
Macintosh 512K or larger; interface software.

Price $3000 to $14,000

Support
Telephone hotline support and 90-day warranty are provided. Extended warranty is available for annual fee.

23120A Template Systems

CalComp Template Systems, plastic digitizer tablet overlays, enhance the versatility, speed, and accuracy of interacting with Macintosh application software. Three template kits, designed for PageMaker, Word Perfect, and VersaCAD, are available. Each kit comes with an overlay for the application program and a master template that works with the Macintosh desktop pull-down menus.

CalComp, Inc.
2411 W. LaPalma Ave.
Anaheim, CA 92803
714-821-2325

System Requirements
Macintosh SE or larger; 23120A digitizer tablet.

Price $200
Per kit.

Support
Free telephone hotline support is provided.

DIGI-PAD with ADB Option

DIGI-PAD with ADB Option allows the DIGI-PAD line of digitizers to interface with the Macintosh SE and Macintosh II computers. The ADB Option bypasses the serial ports and connects directly to the Apple Desktop Bus, leaving the Macintosh serial ports free for connecting with other peripherals. DIGI-PAD with ADB Option is compatible with all DIGI-PAD options, including the 3-button stylus and 4- and 16-button cursors. A separate power supply is required; a user's disk and interface cable are supplied. The user's disk includes installation instructions, driver installation, and sample applications. HyperCard functions are provided to give tablet access to user-written programs. The tablet driver provides a mouse emulation for use with existing programs and also provides full-resolution coordinates and all button codes for applications programs written to take advantage of the tablet's full features. The DIGI-PAD with ADB Option is ideal for users who require a large tablet to digitize existing drawings. Translucent and rear-project tablets can now be used with the Macintosh. Smaller sizes are ideal for graphic arts applications such as painting and tracing.

GTCO Corp.
7125 Riverwood Dr.
Columbia, MD 21045
301-381-6688

System Requirements
Macintosh SE or larger.

Price $495 to $4000

Support
Unlimited telephone hotline, one-year warranty on tablet, and 90-day warranty on accessories, including parts and labor, are provided.

DrawingBoard 2300A Digitizers

The DrawingBoard 2300A series is a family of digitizers for use in CAD, desktop publishing, and other applications requiring menu selection and cursor steering. The digitizers convert graphic information into digital form for entry into the computer; they offer more accuracy than a mouse when high-precision drawing or tracing is required. Three models are available in different sizes; 23120A 12 by 12 inches, 23180A 12 by 18 inches, and 23240A 18 by 24 inches. Each digitizer comes with a 16-button cursor, MacMaster template, cable, and driver software.

CalComp, Inc.
2411 W. LaPalma Ave.
Anaheim, CA 92803
714-821-2325

System Requirements
Macintosh SE or larger.

Price $595 to $2495

Support
A five-year warranty is provided.

FrameGrabber 324N and 324NC

FrameGrabber 324N and 324NC are 24-bit RGB video digitizing boards for the Macintosh II computer. Images are digitized to a resolution of 640 by 486 at 24-bits of color for each pixel. FrameGrabber has 1.5 MB of RAM on-board for use as a frame buffer. Both 8-bit and 32-bit color PICT2 formats are supported. Frames are captured as 1/230 of a second and displayed in a window. ColorGrab-324 software is included, featuring interactive focus, mouse trigger, continuous digitizing, image saving, image cropping, and image enhancement (including contrast, brightness. and gamma correction). Cable (9-pin connector to RGB/Sync BNC connectors) and a manual are included. FrameGrabber 324N is the same as the FrameGrabber 324N board, but it also accepts NTSC (composite video) and S-video (Super VHS) input signals.

RasterOps Corporation
2500 Walsh Ave.
Santa Clara, CA 95051
408-562-4200

System Requirements
Macintosh II or larger; 2 MB of RAM; 4 MB of RAM required to work with 32-bit QuickDraw.

Price
FrameGrabber 324N $2495; FrameGrabber 324NC $2995.

Support
Free technical support and a 90-day warranty provided.

Macintizer ADB

Macintizer ADB is an electromagnetic digitizing tablet that plugs into the Apple Desktop Bus leaving the serial ports available for other peripherals. Macintizer ADB comes complete with a choice of a three-button stylus or four-button cursor, interface cable, and a user's disk. The user's disk includes installation instructions, driver installation, and sample applications. HyperCard functions are provided to give tablet access to user written programs. The tablet driver provides a mouse emulation for use with existing programs; and full-resolution coordinates and all button codes for applications programs written to take advantage of the tablets full features. The Macintizer ADB is ideal for painting and tracing in graphics arts preparation and menuing in CAD applications.

GTCO Corp.
7125 Riverwood Dr.
Columbia, MD 21045
301-381-6688

System Requirements
Macintosh SE or larger.

Price $495

Support
Unlimited telephone hotline support, a 90-day warranty on accessories, and one-year warranty on tablet are provided.

MacMASTER

The MacMASTER template series consists of durable plastic template overlays along with an ADB tablet driver and template manager, allowing easy access to a particular application's commands. The MacMASTER template plus a subtemplate provides a quick, easy way to enter and manipulate information in desktop publishing or CAD documents. The MacMASTER template series places all options on logically grouped color-coded templates. MacMASTER is modular in design: the Master Template incorporates HyperCard and System commands and also includes a die-cut area for interchangeable subtemplates, currently available for PageMaker, WordPerfect, and VersaCAD.

Promontory Systems, Inc.
1325 South 800 East
Orem, UT 84058
801-224-8833

System Requirements
Macintosh SE or larger; digitizer.

Price $195
Subtemplates are available for $195 each.

Support
Thirty minutes of toll-free technical support is provided.

MacTRAC

The MacTRAC is a high-quality trackball designed to replace the standard Apple mouse in most pointing device applications. The MacTRAC allows the user to completely control data input without lifting the hand from the device. The unit is highly stable and its work-surface footprint is smaller than the clear area required by a mouse. The MacTRAC is directly plug-compatible with the standard Macintosh mouse. Versions of MacTRAC are available for both quadrature and ADB interface applications. Standard features include two axes pointing capability; small work-surface footprint; high-resolution trackball for x and y axis input; left- and right-handed operation; and automatic cursor drag with illuminated indicator. The MacTRAC has three buttons. The left and right buttons are the same as the click button on the Macintosh mouse. The middle button is the drag lock. When pressed, the cursor will drag until another button is pressed. When the MacTRAC is in drag lock mode the panel indicator is illuminated.

MicroSpeed, Inc.
44000 Old Warm Springs Blvd.
Fremont, CA 94538
415-490-1403

System Requirements
Macintosh 512K or larger.

Price $99

Support
Telephone support and one-year warranty are provided.

MacVision

MacVision is a low-cost, easy-to-use video digitizer system that allows images of three-dimensional objects such as people, buildings, and equipment to be captured and then edited, merged with text, printed, and saved as files in a variety of formats. MacVision produces images with 256 shades of gray that are compatible with all popular publishing and graphic arts programs, including PageMaker, HyperCard, MacPaint, and Adobe Illustrator. Features include 256 gray shades with 640 by 480 pixel resolution, and file format compatibility: RIFF, TIFF, EPS, PICT 1 and 2, and MacPaint. Brightness and contrast manipulation are available in the hardware and software. Images can be cropped, rotated, or modified with special effects.

Koala Technologies Corporation
70 N. Second St.
San Jose, CA 95113
408-287-6311

System Requirements
Macintosh Plus or larger; camcorder, VCR (4 heads, freeze frame) or laserdisc player. ImageWriter or LaserWriter optional. 2 MB of RAM recommended.

Price $399.95

Support
Customer support line and notification of upgrades are provided.

Personal Writer 10SL and 15SL

Personal Writers 10SL and 15SL are graphic tablet-based systems that allow graphic artists or page-layout designers to draw, trace and sketch images into the Macintosh computer with a ballpoint pen on a regular sheet of paper. Personal Writer 10SL's macro-command interface and multi-purpose command area allows users to fully customize keyboard and menus to specific applications. Personal Writer's 15SL provides handwriting recognition, a 100,000 word real time dictionary, two drawing modes, and 50 macro-command boxes.

Personal Writer, Inc.
1900 Avenue of the Stars #2870
Los Angeles, CA 90067
213-556-1001

System Requirements
10SL: Macintosh 512K or larger. 15SL: Macintosh Plus or larger; 2MB of RAM; hard disk.

Price
10SL $799; 15SL $1299.

Support
Free telephone support is provided.

Video Digitizer

The Video Digitizer, a single plug-in card, produces color video images in a Macintosh window at 30 frames per second. It can store video images in sequence or by single frames in Macintosh memory. The video images can be scaled, cropped, and coordinate transformed. The Video Digitizer supports 8-, 16- and 32-bit QuickDraw and both U.S. and European video format standards. Optional audio digitizing capability is available.

Workstation Technologies Inc.
18004 Skypark Circle, Ste. 240
Irvine, CA 92714
714-250-8983

System Requirements
Macintosh II or larger; 8-bit or larger color monitor.

Price
Prices based on quantity ordered.

Support
Telephone and AppleLink support are provided; training is available.

Monitors/Displays

ARTIST Mac10 Graphic Controller

The ARTIST Mac10 Graphic Controller offers a high refresh rate of 75 Hz to eliminate the flicker found on 60 Hz graphics cards. It offers the software-selectable choice of 1, 2, 4, or 8 bits per pixel, depending on the memory configuration of the ARTIST Mac10 controller. The base controller displays 1 or 2 bits-per-pixel. Memory can be added to upgrade the product to 4 or 8 bits per pixel. It displays up to 256 colors or shades of gray, has a displayable resolution of 1024 by 768 pixels, and has a palette of 16.7 million colors. The ARTIST Mac10 fully supports 32-bit QuickDraw and software packages such as AutoCAD, VersaCAD, MicroStation, PageMaker, and Ventura Publisher.

Control Systems, Inc.
2675 Patton Rd.
Saint Paul, MN 55113
800-826-4281

System Requirements
Macintosh II or larger.

Price
Monochrome $1695; 16-color $1995; 256-color $2495.

Support
Free telephone support and five-year warranty are provided when purchased from an authorized dealer.

ColorBoard Video and Graphics Boards

The ColorBoard series of video and graphics boards provides color capability at various resolutions and with numerous special features. ColorBoard 224 offers 32-QuickDraw compatibility at 640 by 480 pixels, 800 by 600 pixels, or 1024 by 768 pixels, selected by a DIP switch on the board. The 224 board includes 3 MB of video RAM, allowing 1, 2, 4, 8, or 24 bits per pixel. ColorBoard 224 supports video in/out in S-video, NTSC, and PAL formats; pan and zoom in hardware as well as an extended desktop up to 4096 by 1023 pixels. ColorBoard 232 is compatible with 32-bit QuickDraw that supports the Apple 13-inch RGB color monitor and functional equivalents. It works with S-video and NTSC video formats. The 232 board offers resolution of 640 by 480 pixels at 1, 2, 4, 8, or 32 bits and includes 2 MB of video RAM. ColorBoard 264 is a 32-bit QuickDraw compatible board for the Apple 13-inch color monitor, with 1, 2, 4, 8, or 24 bits per pixel. It outputs 8-bit gray-scale signal directly to VCRs or television screens. It also outputs RGB NTSC video for external encoding in 24 bit. ColorBoard 108+ is a color-capable video graphics board that supports resolutions of 1024 by 768, 800 by 600, or 640 by 480 pixels in 1, 2, 4, 8, or 24 bits. Optional pan/zoom and extended desktop software and ROM are available for the 108+.

RasterOps Corp.
2500 Walsh Ave.
Santa Clara, CA 95051
408-562-4200

System Requirements
Macintosh SE/30 or larger for ColorBoard 264 or 108+; Macintosh II or larger for other boards; 32-bit QuickDraw for ColorBoard 224. 4 MB of RAM recommended for ColorBoard 224 and 232 for work with large color images.

Price $995 to $5195
SFX option available for ColorBoard 224 and 232 at additional cost.

Support
One-year warranty on all products and unlimited telephone support are provided.

ColorMAX Trinitron

ColorMAX Trinitron is a color display system that offers sharp high-resolution images in living color. It features 1024 by 768 (72 dots-per-inch) resolution on a high-quality Sony Trinitron 19-inch color screen. At 72 dots-per-inch, what you see is what you get: exact, true-size graphics for creating and measuring artwork in exact detail. With 256 colors, ColorMAX Trinitron is a premium display for all desktop publishing, presentation, graphic design and color imaging, and engineering design (CAD/CAC) applications.

Sigma Designs, Inc.
46501 Landing Pkwy.
Fremont, CA 94538
415-770-0100

System Requirements
Macintosh II or larger; supports all standard Macintosh software and A/UX.

Price $6195

Support
Free telephone and AppleLink support is provided.

CrystalEyes

CrystalEyes is a high-performance stereoscopic add-on for the Macintosh II computer that enhances the user's ability to accurately and clearly visualize complex three-dimensional images, thereby speeding up the design or decision cycle. As a communication tool, CrystalEyes helps the user to make high-impact presentations using true three-dimensional products in fields such as molecular modeling, aerial mapping, engineering design, medical imaging, flight simulation, and teleoperations. The heart of the CrystalEyes concept is eyewear with liquid crystal (LC) lenses used to select the appropriate image for the appropriate eye. The CrystalEyes device is linked by infrared to the other components in the system.

StereoGraphics Corporation
2171-H E. Francisco Blvd.
San Rafael, CA 94901
415-459-4500

System Requirements
Macintosh II or larger; software that displays stereo 3-D pairs; stereo 3-D monitor (normal and double vertical scan rate); graphics card.

Price $1995 to $3990
Stereo 3-D monitors available.

Support
Free telephone hotline, return-to-factory service, one-year warranty on parts and 90 days on labor are provided. Consulting services are available for a fee.

E-Machines Color Monitors

E-Machines offers three color displays based on the Trinitron monitor for Macintosh SE/30 and II computers. ColorPage T16, for the Macintosh II, is a 16-inch, full-page, 256-color display with 832 by 624 pixel resolution. If needed, the T16 screen is refreshed 67 times per second; it comes with a tilt-and-swivel stand. E-Machines T19 and TX for the Macintosh SE/30 and II are flat, two-page, 256-color display with 1024 by 808 resolution and a refresh rate of 72 times per second. They display 85 dots-per-inch in 256 colors. The TX is a 16-inch monitor light enough to rest on top of the Macintosh II; the T19 is a 19-inch monitor. All three products come with a video board and software that controls brightness and contrast and dims the idle screen to extend its life.

E-Machines, Inc.
9305 S.W. Gemini Dr.
Beaverton, OR 97005
503-646-6699

System Requirements
Macintosh II or larger for the T16, Macintosh SE/30 or larger for the T19 and TX.

Price $3595 to $6195
The prices cover the entire system. TX $4495; T16 $4295; T19 $6195. All monitors include controller card and cables.

Support
A one-year warranty and telephone support and AppleLink are provided.

Gray Scale Display Adapter

The Gray Scale Display Adapter provides a 1152 by 870 pixel resolution and 256 gray shades on the Apple Two-Page Monochrome Monitor. The adapter is fully compatible with high-end gray-scale scanners such as DataCopy and Microtek. It also takes full advantage of the advanced gray-scaling capabilities of applications such as Illustrator 88, PageMaker, and ImageStudio. The Gray Scale Display Adapter, used with the Apple 21-inch monitor, turns the Macintosh II computer into a graphics imaging system.

Sigma Designs, Inc.
46501 Landing Pkwy.
Fremont, CA 94538
415-770-0100

System Requirements
Macintosh II and larger; supports all standard Macintosh software and A/UX. Apple Two-Page Monochrome Monitor required.

Price $1899

Support
Free telephone and AppleLink support are provided.

L-View

The L-View display system is an ultra-high-resolution monochrome display system that offers workstation-level performance with full Macintosh compatibility. L-View features high resolution of 1664 by 1200 (120 dots-per-inch), ideal for viewing large technical drawings, spreadsheets, and multiwindows. A second user-selectable display mode of 832 by 600 (60 dots-per-inch) gives additional flexibility for daily activities such as word processing.

Sigma Designs, Inc.
46501 Landing Pkwy.
Fremont, CA 94538
415-770-0100

System Requirements
Macintosh SE or larger. Supports all standard Macintosh software and A/UX.

Price
Macintosh SE $2395; Macintosh II $2495

Support
Free telephone and AppleLink support is provided.

Mac Genius Full and Dual Page Monitors

The Mac Genius monitors provide monochrome display. The 411 Full Page Monitor is a 15-inch noninterlaced display. The 412 Full Page Monitor is a 15-inch noninterlaced monitor that displays 66 or 25 lines; it is compatible with virtually all Macintosh software. The 1012 Dual Page Monitor is a 19-inch noninterlaced monitor that displays two facing pages at either 66 or 25 lines. The 1012 works with virtually all Macintosh software. All three displays come with their own adapter boards and operate in normal or reverse video.

Micro Display Systems, Inc.
755 East 31st St.
Hastings, MN 55033
800-328-9524

System Requirements
Macintosh 512K enhanced or larger for 411 model; Macintosh SE or larger for 412 and 1012 models.

Price $995 to $1995
Video boards are available separately at $495 and $895.

Support
A one-year warranty, 24-hour BBS, and toll-free telephone support are provided. Extended warranty is available.

Nutmeg 30/2

The Nutmeg 30/2 can drive either the Apple Two-Page Monochrome Monitor or the Apple Macintosh Portrait Display, due to the card's use of an auto-sensing circuit that detects which monitor is in use and then sends the appropriate signal to that monitor. If no external monitor is connected, the card allows the SE/30 monitor to run by itself. No software is required or provided, since the SE/30 uses the same display management technique as the Macintosh II. With the Nutmeg 30/2 the user of the powerful SE/30 can have portability and still benefit from the increased productivity a big screen offers, simply by plugging in one of Apple's two new displays. The Nutmeg 30/2 is the only third-party card that drives the Apple displays at their intended resolution. The Apple Macintosh Portrait Display is driven at 640 by 870 pixels and the Apple Two-Page Monochrome Monitor at 1152 by 870 pixels. Both are driven at one-bit monochrome for a crisp, clear black and white image.

Nutmeg Systems, Inc.
25 South Ave.
New Canaan, CT 06840
203-966-3226

System Requirements
Macintosh SE/30; Apple Two-Page Monochrome Monitor or Apple Macintosh Portrait Display.

Price $699

Support
For support information, call Nutmeg Systems, Inc.

PageView

PreView is a full-page display system that offers viewing flexibility and comfort for all Macintosh SE and Macintosh II users. A true WYSIWYG display mode provides exactly 72 dots-per-inch resolution for precision artwork or full-scale measurements. The full-page display mode shows an entire 8.5- by 11-inch page being composed for convenient layout and word processing. PageView also provides an extended 88 dots-per-inch mode, which is ideal for viewing large spreadsheets, European A4-size pages, or nearly all of an 8.5- by 14-inch legal document.

Sigma Designs, Inc.
46501 Landing Pkwy.
Fremont, CA 94538
415-770-0100

System Requirements
Macintosh SE or larger. Supports all standard Macintosh software and A/UX.

Price $1299 to $1399
Macintosh SE $1299, Macintosh II $1399.

Support
Free telephone and AppleLink support is provided.

QuickView Z21 and Z21 IQ

QuickView Z21 IQ is a 21-inch gray scale display system with a high refresh rate to eliminate screen flicker. Its viewing area of 16 inches by 12 inches gives the user room to display two pages at true actual size. Four viewing resolutions can be chosen with just a keystroke. The four resolutions allow user flexibility to display facing pages or large spreadsheets in actual size or magnify images to allow the user to zoom in on fine detail. The Z21 IQ's video memory can be easily arranged via the Control Panel into any screen size and shape configuration, including a virtual screen, up to 2048 by 1024 pixels. With Tracking Menus, the Macintosh menu bar will track with the viewable screen as it pans across the virtual screen. This will occur in all resolutions. With Centering Menus, dialog boxes will automatically open in the center of the viewable screen. Dimmer software comes with the Z21 IQ giving the user the option of manipulating the brightness and contrast through software and implementing a screen dimmer for extended CRT life. The QuickView Z21 takes the same desk space as most 19-inch monitors but provides more than 30 percent more viewable area. It has a built in tilt and swivel stand and a flat screen with anti-glare treatment. The QuickView Z21 IQ has the addition of a memory upgrade module which provides additional RAM for gray scale capability and/or larger virtual screens. The memory module option allows users to upgrade to a gray scale display system when their needs demand it. The user may specify 1, 2, 4, or 8 bits per pixel form the Control Panel.

E-Machines, Inc.
9305 S.W. Gemini Dr.
Beaverton, OR 97005
503-646-6699

System Requirements
Macintosh II or larger.

Price $2395 to $3495.
Price includes 21" monitor and 8-bit video controller Swivell stand.

Support
Free telephone support and one year warranty are provided.

RackMac 1240 Industrial Display

The RackMac 1240 Industrial Display is a Macintosh-compatible RGB display specifically engineered for the industrial/media/mobile user. It features enhanced cooling and air filtration, a heavy steel and cast aluminum case, rackmounting on slides, compatibility with Apple's 13-inch monitor and video card, and styling that matches GreenSpring's model 1200 industrial Macintosh computer. An optional touchscreen provides Apple Desktop Bus emulation of the mouse, compatible with Macintosh software.

GreenSpring Computers
1204 O'Brien Dr.
Menlo Park, CA 94025
415-327-1200

System Requirements
Macintosh II or larger.

Price $1995
With optional touchscreen $3295.

Support
Telephone support and a one-year warranty are provided. Service contracts are available.

Radius Color Display System

The Radius Color Display System comprises a high-resolution, 19-inch, two-page color display; its companion 8-bit video card that supports the display of 256 colors; and attendant software. The display features 1152 by 882 resolution and 71 Hz refresh rate. The combination offers the clarity required for professional publishing, graphics, or design engineering. Software includes menu customization options, a screen saver, and a screen capture utility. The two DirectColor video cards for the Radius Color Display allow the display of 16- or 24-bit color; both cards support 32-bit QuickDraw. The DirectColor/16 allows the display of 32,768 colors at one time. The DirectColor/24 displays the full 24-bits of color available for the Macintosh II, for the user building a professional level color workstation. The DirectColor Memory Expansion Kit upgrades DirectColor/16 to DirectColor/24.

Radius, Inc.
1710 Fortune Dr.
San Jose, CA 95131
800-527-1950

System Requirements
Macintosh II or larger.

Price $6190 to $9290
Radius color display $4295; Radius GS/C Video Interface Kit $1895; DirectColor/16 Video Interface Kit $3695; DirectColor/24 Video Interface Kit $4995; DirectColor Memory Expansion Kit $1495.

Support
A one-year warranty, telephone support, and dealer support are provided.

Radius Full Page Display

The Radius Full Page Display (FPD) is a 15-inch high-resolution monochrome monitor that lets the user see an entire 8.5- by 11-inch page without the need for reducing or scrolling. It provides a rich, flicker-free image and is ideal for applications such as word processing, desktop publishing, and graphic design. The FPD works side-by-side with the Macintosh system, which remains fully active to hold desk accessories, subsidiary windows, or tool palettes. The Radius Full Page Display monitor provides a resolution of 864 by 640 pixels with a refresh rate of 69 Hz. It maintains brightness, contrast, and focus across the entire screen. On the Macintosh SE, the FPD can also be configured for hardware panning, displaying a full 1,024 by 864 pixels—enough to show landscape documents with crystal clarity. The FPD offers a variety of software features that are accessible through a convenient on-screen Preference Panel. There is a larger, more readable, 16-point menu font, and zoom boxes can be added to application software. The Wide Display Option on the Macintosh SE effectively enlarges the viewing area to 13 inches by 11 inches, providing more room for opening multiple windows or multiple applications in MultiFinder.

Radius, Inc.
1710 Fortune Dr.
San Jose, CA 95131
800-527-1950

System Requirements
Macintosh 512K or larger.

Price $1490
Full Page Display $895; Video Interface Kit $595 (Macintosh Plus or SE) or $695 (Macintosh II).

Support
Customer support and one-year warranty are provided.

Radius Gray Scale Display System

Radius offers a full line of monochrome and gray-scale monitors and video interface cards. The Radius Gray Scale Display System for the Macintosh II family includes a video card and 19-inch, two-page display that reproduces scanned images in 256 levels of gray. It has a resolution of 1152 by 882 and a refresh rate of 71 Hz.

Radius, Inc.
1710 Fortune Dr.
San Jose, CA 95131
800-527-1950

System Requirements
Macintosh II or larger.

Price
Gray Scale Display $1495; GS/C Video Interface $1895; Two Page Display $1495.

Support
A one-year warranty; telephone and dealer support are provided.

Radius Two Page Display

The Radius Two Page Display (TPD) is a complete display system that converts a Macintosh SE computer into a professional publishing or engineering workstation. For exacting page layouts and graphic design, the TPD displays two 8 1/2- by 11-inch pages or a B-size drawing. It features a 19-inch monochrome screen, dealer-installed controller board, interface cables, and extensive utility firmware. The TPD was designed with a paperlike image that maintains superior brightness, contrast, and focus across the entire screen and offers a variety of unique software features. The Macintosh interface has been extended with tear-off menus to allow any menu window to be detached from the menu bar and placed on either screen for immediate and continuous access. Magnifier transforms a Macintosh SE screen into a magnifying glass focused on the user's work area on the TPD. Additional software enables the user to save the screen in a bit-map file format. All features are conveniently selectable through the Apple Control Panel.

Radius, Inc.
1710 Fortune Dr.
San Jose, CA 95131
800-527-1950

System Requirements
Macintosh SE or larger.

Price $2190
Two Page Display $1695; TPD video interface card $695.

Support
Telephone and dealer support are provided. One-year warranty on all of its products.

SFX Video Option

The SFX Video Option works with the RasterOps ColorBoard 224 or 232 to mix live video with images from Macintosh graphics applications. The resulting mixed signal is output for viewing or recording. Software accompanies the board to allow chroma keying, overlay keying, and variable transparency levels via the alpha channel. Subcarrier phase-shift control is provided for use in professional production environments. The system handles input and output in S-video, NTSC, or PAL formats.

RasterOps Corporation
2500 Walsh Ave.
Santa Clara, CA 95051
408-562-4200

System Requirements
Macintosh II or larger; ColorBoard 224 or 232.

Price $1495

Support
Unlimited telephone support and one-year warranty are provided.

SilverView

SilverView is a family of high-resolution monochrome display systems that offer full size, full precision, and full gray shading for the Macintosh SE or larger. Full size is achieved by a flat-screen 21-inch monitor providing nearly 12-inches by 16-inches of active display area to show full-height pages and spreads. For full precision layout and measurements, SilverView features 870 by 1152 pixels, yielding a standard 72-dots-per-inch resolution. Finally, with a choice of 2 (B/W), 16, or 256 gray-shade models, SilverView is a premium display system for all publishing, graphic design, medical imaging, and general office applications.

Sigma Designs, Inc.
46501 Landing Pkwy.
Fremont, CA 94538
415-770-0100

System Requirements
Macintosh SE or larger; supports all standard Macintosh software and A/UX.

Price
$1999 for mono (SE/Macintosh II); $2499 for 16 shades (Macintosh II); $2999 for 256 shades (Macintosh II).

Support
Free telephone and AppleLink support is provided.

Spark Video Display Boards

Spark Video Display Boards are available for a variety of uses. The Spark V-II is a high-resolution video board that can be used for high-resolution gray scaling or as a 1-, 2-, 4-, or 8-bit color board. The Spark SE lets the Macintosh user connect a large monochrome monitor to the system. It comes with driver software and provides 78 Hz vertical refresh and 72 dots-per-inch resolution. The Spark II allows users to connect a large-screen monitor; it has a 78 Hz vertical refresh rate and 72-dot-per-inch resolution. The Spark V-030A Entry Level Color Board for SE/30 is a 640 by 480 pixel, 8 bits-per-pixel color graphics board for the Macintosh SE/30. The Spark V-030X, also for the SE/30, offers selectable resolution from 640 by 480 pixels to 1024 by 768 pixels, with 8 bits-per-pixel, hardware pan and zoom, a virtual desktop capability of up to 4096 by 1536, and a 74 Hz refresh rate for a rock-solid image. The Spark GAC (Graphics Accelerator Card) is a 16 MHz 68020 accelerator with 32-bit data bus that also allows users to use a monochrome large-screen monitor with 256K of video memory on board. The Spark 030 for the Macintosh SE offers 1024 by 768 pixel resolution on a 19-inch monitor. The Spark 44 is a 44 MB removable hard drive system that can be used in any application requiring storage of information that needs to be retrieved quickly.

Spark International Inc.
1929 Waukegan Rd. Ste. 107
Glenview, IL 60025
312-998-6640

System Requirements
Spark II and V-II: Macintosh II or larger.
Spark 030, 030A, 030X: Macintosh SE/30.
Spark SE or GAC: Macintosh SE.
Spark 44: Macintosh Plus or larger.
Spark Video Display Boards support a variety of monochrome, gray scale, and color monitors.

Price $499 to $1699
Price depends on the particular board purchased.

Support
A one-year warranty and free telephone support for one year are provided.

Stepping Out II: The Software Big Screen

Stepping Out II is for CAD/engineering users who need more screen area. The user can define any screen size, and the view of the page slides over when the cursor hits the edge of the screen. Objects can be moved and lines drawn quickly from the top to the bottom of a full page. Stepping Out II also offers 2X to 16X magnification capability and 25, 50, and 75 percent reductions. Menu and formula bars can be fixed at the top or left-hand side of the screen. This feature transforms Stepping Out II into a useful big-screen alternative to larger hardware. The user can create a huge screen and work on any part of it without losing quick access to the menu.

Berkeley Systems
1700 Shattuck Ave.
Berkeley, CA 94709
415-540-5535

System Requirements
Macintosh Plus or larger; System 4.1 or later.

Price $95

Support
Free telephone support is provided.

Networking/Communication

1stBBS

1stBBS is a remote, programmable relational database and bulletin board. It incudes a host and remote module that allows database access from a remote location. 1stBBS minimizes on-line time and expense by allowing users to submit HyperAccess macros to the host for processing. The database allows on-line data entry, blueprint duplication, and data searches from the remote location. Users can either have the host call back when the file or report is done, or can wait and call back. The bulletin board has messaging and file-transfer capabilities. The host module automatically maintains an activity log.

1stDesk Systems, Inc.
7 Industrial Park Rd.
Medway, MA 02053
508-533-2203

System Requirements
Macintosh Plus or larger; modem.

Price $195

Support
Telephone support and a 30-day warranty are provided.

3+Share

3+Share is a network operating system that provides file, print, and name services for Macintosh clients. It contains both server and workstation software, supports Macintoshes on LocalTalk and Ethernet. The entire network can be administered from any Macintosh workstation anywhere on the network. 3+Share supports internetwork routing, electronic mail, and remote dial-in software.

3Com Corporation
3165 Kifer Rd.
Santa Clara, CA 95052
408-970-2045

System Requirements
Macintosh Plus or larger; either 3Com 3S/200, 3S/400, or 3S/500 server, or PCAT 286 or 386 compatible network media; LocalTalk or Ethernet.

Price $2995
3+Mail for Macintosh, 1 to 5 users, $595; unlimited users $1190.

Support
Free telephone and Ask 3Com on CompuServe support are provided. AppleLink is available. Other support as follows: Infoline $2495 per year; Guardian $10,000 per year includes on-site maintenance and 8-hour response time. Express $3500 per year includes hardware/software support, 8-hour response time, and software upgrades.

A-115 Asynchronous Line Driver

The A-115 Asynchronous Line Driver supports building-to-building connectivity at speeds up to 115.2 KB per second. The A-115 Line Driver and TeleBridge from Shiva Inc. make high-speed bridging of LocalTalk LANS possible. With these products LocalTalk LANS as distant as 3.5 miles can be bridged at 57.6 KB per second in native async over existing copper wiring. Error rates are lower than 1 in 10 million bits. The A-115 Line Driver is ideal for college campuses, industrial parks, military bases, large office complexes, factory floors, and small towns.

Digital Access Corporation
11501 Sunset Hills Rd., Ste. 200
Reston, VA 22090
800-666-2325

System Requirements
Macintosh 512K or larger.

Price $489

Support
Free telephone, on-site, and mail support are available.

ACTINET ARCTalk Interface Cards

ACTINET ARCTalk Inteface Cards link AppleTalk communications with ArcNet cabling. ArcNet is a 2.5 MB per second token-passing network system. The boards allow AppleShare-compatible programs to run transparently on ArcNet networks.

Actinet Systems, Inc.
360 Cowper, Ste. 11
Palo Alto, CA 94301
415-326-1321

System Requirements
Macintosh SE or larger.

Price
ActiNet SE $495; SE/30 and II $695.

Support
Telephone support and one-year warranty are provided.

AsyncServer

AsyncServer is VAX/VMS software that communicates with a client Macintosh system over an ordinary asynchronous modem, providing users with access to all AppleTalk capabilities available through the VAX. Supported AppleTalk services include not only advanced Macintosh-to-VAX networking products, such as AlisaTalk and PacerShare, but also access to other AppleTalk-based services, such as Apple's LaserWriter printers and AppleShare servers. Locally connected computers can use AsyncServer to network with their host VAX systems over dedicated asynchronous lines at high baud rates, in many cases eliminating the expense of specialized network bridge hardware. Similarly, remote users can dial into their host VAX systems and join the VAX host's AppleTalk internetwork by using existing modem hardware and communication lines.

Computer Methods Corporation
525 Route 73 South, Ste. 300
Marlton, NJ 08053
609-596-4360

System Requirements
Macintosh 512K enhanced or larger; modem; AppleTalk for VMS.

Price $595 to $1895

Support
A 90-day warranty and training are available.

BACKFAX

BACKFAX communications software replaces the software shipped with the AppleFax™ modem. It allows the user to send and receive faxes in the background with or without MultiFinder. Faxes can be set for release in the future, and can be converted to GLUE, PICT, TIFF, or Paint.

Solutions Inc.
30 Commerce St.
Williston, VT 05695
802-658-5506

System Requirements
Macintosh Plus or larger; AppleFax modem.

Price $245

Support
Free telephone, fax, or E-mail support; a guarantee and newsletter are provided.

BlueMax DataMixer

BlueMax DataMixer allows the Macintosh to communicate with up to four separate devices that have RS-232 output but no buffering of data. Custom programs are designed to respond to output or to make records or reports from output. Multiple devices may communicate on a single Macintosh port.

Ohio Valley Research Associates
16901 McIntosh Rd.
Wellsville, OH 43968
614-283-7274

System Requirements
Macintosh 512K or larger; any external device unable to follow RS-232 protocol.

Price $295

Support
Free telephone support is provided. Training and warranty are available.

ComputeServer

See complete description under System Components—Accelerators/Coprocessors/Add-on Boards.

FastNet Adapters

FastNet SE is an Ethernet adapter that plugs into the Macintosh SE computer's internal expansion slot to connect the SE to an Ethernet network. It supports all types of full-function networking applications and accommodates most protocols. FastNet SE/30 is an Ethernet adapter that connects an SE/30 to an Ethernet network. The card connects via a standard 120-pin connector. Ethernet and Cheapnet connections are easy to access from the auxiliary transceiver board. FastNet III is a price-performance Ethernet adapter for the Macintosh II, which accommodates numerous protocols and supports all types of full-function networking applications. It is easy to install and simple to use. FastNet LAN 020 is a high-performance multifunction board that combines a 68020 accelerator and an Ethernet adapter for the Macintosh SE. Equipped with a full 32-bit microprocessor operating at 16 MHz, FastNet LAN 020 increases the performance and power of the Macintosh SE by up to four times its normal speed. It also provides an Ethernet link to other Macintosh computers or to other systems in a wider networking environment.

Dove Computer Corporation
1200 North 23rd St.
Wilmington, NC 28405
919-763-7918

System Requirements
For FastNet SE, Macintosh SE or larger; Ethernet network. For FastNet SE/30, Macintosh SE/30 or larger; Ethernet network. For FastNet III, Macintosh II or larger, and FastNet LAN 020, Macintosh SE or larger.

Price
FastNet SE, FastNet SE/30, and FastNet III $599; FastNet LAN 020 $1499. For FastNet LAN, options include math coprocessor and additional RAM.

Support
Free telephone technical and AppleLink support, on-line support through Genie and MacNET, and one-year warranty are available.

GatorBox

The GatorBox fully integrates a Macintosh computer into Ethernet network environments. It comes pre-configured with network interfaces for the LocalTalk network and Ethernet or thin Ethernet. By connecting both networks to the GatorBox, gain access to the following network services: file, terminal, mail, print and presentation. GatorBox lets Macintosh users use the AppleShare user interface while accessing larger computers which support other file-sharing protocols, such as the Network File System (NFS) from Sun Microsystems. As a gateway, Gatorbox lets the Macintosh user share files with Sun, VAX, Apollo, and other NFS file servers as if they were AppleShare file servers. Because the GatorBox lets Macintosh users run all AppleTalk applications over Ethernet, popular mail programs can connect Macintosh and PC systems on LocalTalk with Macintosh and PC systems on Ethernet. GatorBox software allows Ethernet-based Macintosh computers to print via the LaserWriter and other LocalTalk-based printers. The GatorBox will serve as Cayman's platform for bringing presentation services like the X Window System to Macintosh users on either AppleTalk or Ethernet.

Cayman Systems, Inc.
26 Landsdowne St.
Cambridge, MA 02139
617-494-1999

System Requirements
Macintosh 512K or larger; LocalTalk or Ethernet.

Price $2795

Support
Free unlimited telephone support and a one-year warranty are provided.

GatorCard E/II

GatorCard E/II provides a direct Ethernet connection for the Macintosh II family of computers. GaterCard E/II uses the full 32-bit bandwith of the NuBus in transferring data between the network and the Macintosh motherboard. Because the GatorCard supports EtherTalk, users can preserve the benefits of AppleTalk networking while also realizing the dramatic speed advantage of Ethernet over LocalTalk. GatorCard E/II also supports standard internetworking protocols such as TCP/IP (Transmission Control Protocol/ Internet Protocol) and DECnet. Because Cayman provides the NCSA Telnet application along with GatorCard E/II, users get high-speed terminal emulation access to UNIX-based workstations and minicomputers on Ethernet. GatorCard E/II comes with a 15-pin D-type connector for standard Ethernet connections and a BNC connector for RG-58 thin Ethernet cabling.

Cayman Systems, Inc.
26 Landsdowne St.
Cambridge, MA 02139
617-494-1999

System Requirements
Macintosh II or larger, thin or standard Ethernet cabling.

Price $595

Support
Unlimited free telephone support and a one-year warranty are provided.

GatorShare

A/UX GatorShare is file-sharing software that translates AppleShare into NFS—the standard file-sharing protocol in TCP/IP (Transmission Control Protocol/Internet Protocol) networking environments. Like GatorPrint and GatorMail, GatorShare works with GatorBox—the intelligent LocalTalk-to-Ethernet gateway. When downloaded into the GatorBox, GatorShare lets Macintosh systems on LocalTalk or Ethernet access AppleShare to share files with UNIX- or VMS-based computers that support NFS, such as Sun, Apollo, VAX, and NeXT computers, Macintosh computers running A/UX, and many other workstations and minicomputers. Because GatorShare runs directly on the GatorBox, no additional networking software is required.

Cayman Systems, Inc.
26 Landsdowne St.
Cambridge, MA 02139
617-494-1999

System Requirements
Macintosh 512K or larger on a LocalTalk network and any number of NFS servers (including Macintosh II with A/UX) on Ethernet or thin Ethernet, and GatorBox Gateway.

Price $1995

Support
Unlimited free telephone support.

IDEAcomm Mac

IDEAcomm Mac allows a Macintosh SE or any Macintosh II computer to be connected directly to an IBM midrange computer (S/36, S/38, or AS-400). The product consists of an internal board, a T-connector for twinax cable, and communications software. The three basic functions of IDEAcomm Mac include four-session terminal emulation, file transfer, and printer emulation. File transfer uses HyperCard and can be fully automated.

IDEAssociates, Inc.
29 Dunham Rd.
Billerica, MA 01821
508-663-6878

System Requirements
Macintosh SE or larger; HyperCard; twinax cable connection to IBM midrange computer.

Price
Macintosh SE $995; Macintosh II $1195.

Support
Free telephone and technical field support; and one-year warranty are provided.

Mac MasterLink

Mac MasterLink gives users the ability to upload, download, or update their mainframe data from their Macintosh computers. Supported Macintosh file types are binary, Char/, Transp, DI7, and SYLK. The mainframe portion handles the multiple levels of security and maintains the data dictionary of available files and fields. The mainframe portion can retrieve items such as database files, USAM, in addition to Power/Jes files. This allows system administrators to distribute n.3 data without fear of security violations. Users may then manipulate the data with accounting, database, spreadsheet, mail-merge, and other software packages.

Performance Software, Inc.
575 Southlake Blvd.
Richmond, VA 23236
804-794-1012

System Requirements
Macintosh Plus or larger; method for accessing IBM mainframe as a 3270 terminal (MACIRMA], MACMAC Mainframe, Apple Coax/TwinAx, all with correct API/SPI) or asynchronous access to a protocol converter.

Price $7500 to $14,500
Priced per mainframe and dependent on configuration. Site licences available.

Support
Technical telephone hotline support and free maintenance for the first year. Optional maintenance and updates available thereafter for a fee.

MacConnect

MacConnect is a NuBus-compatible, IEEE 802.3 and 10Base2 compliant data link controller board to connect the Macintosh II, IIx, or IIcx computer to Ethernet networks. Each board comes with MacConnect driver software, written to Apple's EtherTalk application program interface, that is fully compatible with the Macintosh operating system. Every board comes with NCSA for the Macintosh, which makes possible connection to TCP/IP mainframe hosts. The board also supports OSI, DECnet, and AppleTalk protocols.

Racal Interlan
155 Swanson Rd.
Boxbow, MA 01719
508-263-9929

System Requirements
Macintosh II or larger; Ethernet connection.

Price $549
Volume discounts are available.

Support
Free telephone support is provided. Software subscription and repair service are available.

MacIRMA

MacIRMA hardware and software allow a Macintosh computer to function as an IBM 3278/79 terminal to communicate with an IBM mainframe computer and access mainframe applications such as IBM PROFS. MacIRMA allows copy and paste from these applications. This product includes file transfer facilities through DCA's IRMA link and ForteNet, as well as IBM's IND$FILE. Background file transfer is also supported. MacIRMA features include simple installation, built-in diagnostics, and a tear-off QuickPad, an easy alternative to keystroke combinations. The MacIRMA hardware is RAM-based for easy upgrades. MacIRMA supports MacIRMA API and MacIRMA Graphics.

DCA
1000 Alderman Dr.
Alpharetta, GA 30201
404-442-4000

System Requirements
Macintosh SE or larger; 3174, 3274, or 3276 control unit.

Price $1195

Support
A 90-day media and hardware warranty is provided. International support is also available.

MacIRMA API

MacIRMA API is a Macintosh-based programming tool used to develop custom applications that use DCA MacIRMA to communicate to an IBM mainframe. These applications may be written in C or HyperTalk. MacIRMA API is compatible with a subset of IBM EEHLLAPI 1.2.0 for CUT-based emulators and provides 29 function calls. These functions are called from within an application on the Macintosh computer and use MacIRMA to access data/functions in a host session. The API allows the development of "programmed operator" applications that simulate routine operator functions, such as log on procedures, file transfer, and complicated data transfer operations.

DCA
1000 Alderman Dr.
Alpharetta, GA 30201
404-442-4000

System Requirements
Macintosh SE or larger; 3174, 3274, or 3276 control unit; DCA MacIRMA hardware; IBM IND$FILE for file transfer functions.

Price $195

Support
Customer and developer services and 90-day warranty on media and hardware.

MacIRMA Graphics

MacIRMA Graphics software allows a Macintosh computer equipped with DCA MacIRMA hardware to access IBM GDDM-PCLK host graphics as an all-points-addressable workstation. It allows copy and paste from popular mainframe graphics packages such as SAS/GRAPH, TELL-A-GRAF, and IBM Interactive Chart Utility into Macintosh applications. MacIRMA Graphics stores mainframe graphics on the Macintosh in PICT format for use on a Macintosh computer and in PIF format for use on a Macintosh, PC, or mainframe computers. Once a mainframe graphic is received on the Macintosh, MacIRMA Graphics can print it to any standard Apple printer.

DCA
1000 Alderman Dr.
Alpharetta, GA 30201
404-442-4000

System Requirements
Macintosh SE or larger; 3174, 3274, or 3276 control unit; IBM GDDM 2.1.1 or later and PCLK/F.

Price $1295
Includes Macintosh II hardware. Software upgrade to MacIRMA $195.

Support
90-day warranty on media and hardware is provided. AppleLink support is available.

NetMap

NetMap provides a diagnostic means for visually troubleshooting AppleTalk networks. NetMap is a desk accessory that lets users track down problems such as broken connectors in an AppleTalk network; retrieve and display in a convenient columnar format, information on device names, device types, network names and numbers, device nodes, and sockets found on any given AppleTalk network; create a spreadsheet-ready data file; select a target network from a network list; and customize look-up requirements to fit network traffic and size.

Advanced Electronic Support Products, Inc.
1810 N.E. 144 St.
Miami, FL 33181
800-446-2377

System Requirements
Macintosh 512K or larger; AppleTalk.

Price $75.90

Support
Free telephone support is provided.

NetSerial

The NetSerial is a high-speed interface between serial peripherals and AppleTalk networks. It allows users to share any serial device, such as printers, plotters, scanners, and high-speed synchronous and asynchronous modems, on the AppleTalk network. Accessible from the Macintosh computer, the NetSerial can even be used as a gateway to minicomputers and mainframes. The NetSerial has an internal 8K of RAM memory, uses the 8-pin Mini-DIN connector, and provides a maximum transfer rate of 57,600 bps.

Shiva Corporation
155 Second St.
Cambridge, MA 02141
617-864-8500

System Requirements
Macintosh 512K enhanced or larger; AppleTalk; serial device.

Price $399

Support
Free telephone support is provided.

Nuvotech Network Bridges

Nuvotech Network Bridges include TurboStar, TurboBridge, TurboNet, and TurboNet ST. TurboStar is a fully automated active network hub designed to work in a star configuration network running AppleTalk over twisted-pair telephone wire. It contains a Motorola 68000-family processor and is fully programmable from any Macintosh computer connected to it via AppleLink. TurboBridge is an AppleTalk device designed to organize a large network into smaller, faster, and less congested networks called zones. The TurboBridge contains two TurboNet STs, a feature that allows the bridge to operate at the hub of a star configuration. Its repeater/amplifier function permits the extension of the AppleTalk network beyond standard limits to accommodate an expanding network. TurboNet is an AppleTalk compatible networking system that uses StarLAN technology. TurboNet uses standard twisted-pair writing and positive locking RJ-11 modular connectors. TurboNet ST is a self-terminating AppleTalk connector that runs on standard RJ-11 telephone cabling. It features traffic indicator lights that alert users to any network activity. The presence and strength of signals are visible through TurboNet ST's clear black casing.

Nuvotech
2015 Bridgeway #204
Sausalito, CA 94965
415-331-7815

System Requirements
Macintosh 512K or larger.

Price
TurboStar $1795; TurboBridge $499; TurboNet $49.95; and TurboNet ST $59.95.

Support
Free telephone support. TurboBridge has one-year warranty; TurboNet and TurboNet ST have lifetime warranties.

The Personal Server Network

The Personal Server Network (PSN) offers an easy-to-use, low-cost distributed network that allows Macintosh, MS-DOS, and UNIX computers to share files. Because it's a distributed network package, The Personal Server Network works without dedicating a Macintosh system to running the network. With The Personal Server Network, any Macintosh, UNIX, or MS-DOS computer can act as server or client. The server is the only computer on the network that requires PSN software that allows users on the network to access authorized files from other computers on the network, no matter what type of computer. The Personal Server Network is compatible with AppleShare, uShare, AlisaShare, and PacerShare network software.

Information Presentation Technologies, Inc.
23801 Calabasas Rd., #2008
Calabasas, CA 91302
818-347-7791

System Requirements
Macintosh 512K or larger for client; Macintosh SE or larger for server; AppleTalk-compatible network.

Price $289 to $999
Per number of users: 2 users $289, 4 users $529, 10 users $999

Support
Free telephone, on-line, and fax support is provided.

PhoneNET Connector and PhoneNET Repeater

The PhoneNET Connector and PhoneNET Repeater are networking products for use on AppleTalk networks. PhoneNET Connector allows different devices on an AppleTalk network, such as computers, printers, and file servers, to communicate with one another over ordinary telephone cables. PhoneNET Connectors come in three models: Mini DIN-8 plug, DB-9 plug, and DB-25 plug. The connectors are compatible with LocalTalk cabling, FlashTalk, and DaynaTalk. PhoneNET Repeater regenerates and reclocks AppleTalk and FlashTalk signals, which allows networks to extend longer distances. It permits linking a variety of network topologies, including backbones, daisy-chains, and stars—even connecting StarControllers and networks in different buildings. For very long networks, users can link multiple PhoneNET Repeaters together with more than a mile of ordinary telephone cable between each Repeater. The package includes built-in PhoneNET connectors for attaching one or two wire pairs directly to the Repeater.

Farallon Computing
2201 Dwight Way
Berkeley, CA 94704
415-849-2331

System Requirements
PhoneNET Connector requires Macintosh 512K or larger. PhoneNET Repeater requires Macintosh 512K enhanced or larger.

Price $59.95 to $495
PhoneNET Connector $59.95 to $75; ten-pack $395. PhoneNET Repeater $495.

Support
Unlimited free technical support; five-year warranty for hardware and 90-day warranty for software.

PhoneNET StarController

PhoneNET StarController builds large AppleTalk networks in an active star configuration, isolates branches, reduces error rates, and continually monitors the network for problems such as jamming. It has 12 ports and supports up to 12 network segments, each up to 3,000 feet of cable, and StarControllers can be linked to form networks through a building or across a campus. StarCommand software, included with each StarController, lets users manage and control the network from a Macintosh computer anywhere in the network by turning ports on or off, testing the wiring, locating problems, and monitoring network load.

Farallon Computing
2201 Dwight Way
Berkeley, CA 94704
415-849-2331

System Requirements
Macintosh 512K enhanced or larger; StarCommand.

Price $1695

Support
Unlimited free technical support; 90-day warranty for software; and one-year warranty for hardware.

PHOTOLINK

PHOTOLINK is a cable-replacement product that connects computers or terminals in open office arrangements through an infra-red data transmission medium. PHOTOLINK supports AppleTalk and LocalTalk and works with all Macintosh computers and peripheral devices.

Photonics Corporation
200 E. Hacienda
Campbell, CA 95008
408-370-3033

System Requirements
Macintosh 512K or larger.

Price $995

Support
Free telephone and AppleLink support. One-year limited warranty, updates for registered users, and a replacement policy for defective units are provided.

RELAY Mac

RELAY Mac transfers files between the Macintosh computer and IBM mainframes. No extra hardware is required for error-free file transfers. RELAY Mac transfers any type of file and supports MultiFinder so users can transfer files in the background. It also supports the MacWorkStation.

Microcom Software Division
Still River Corporate Center, 55 Federal Rd.
Danbury, CT 06810
203-798-3800

System Requirements
Macintosh 512K enhanced or larger; IBM or compatible mainframe running MVS/TSO or VM/CMS; RELAY/VM or RELAY/TSO software for the mainframe.

Price $149

Support
Telephone support is provided.

Sniffer Network Analyzer

The Sniffer family of LAN analyzers consists of diagnostic tools for maintaining, troubleshooting, fine-tuning, and expanding a LAN. It is capable of dealing with the broadest range of network problems, from the simplest to the most complex. The Sniffer is a hardware and software system that plugs in as a normal node on the LAN and allows users to look into the LAN, recognize problems, and locate their source almost instantly. It is the first LAN analysis tool for network developers that uses both LocalTalk and either Ethernet or Token Ring networks, as well as the full range of AppleTalk protocols, thereby facilitating the seamless incorporation of any Macintosh computer into corporate networks built around IBM and DEC systems.

Network General Corp.
1945A Charleston Rd.
Mountain View, CA 94043
415-965-1800

System Requirements
Local Area Network.

Price $15,750 to $24,000
Add-on module $5000; Protocol Interpreter Suites $995 to $1995.

Support
Telephone support is provided.

SoftPC

SoftPC is a software-only solution for Macintosh computer IBM PC-compatibility. Using SuperDrive, SoftPC reads and writes 720 KB and 1.44 MB PC disks; under MultiFinder, it continues to run in the background while working in another Macintosh application. SoftPC allows bidirectional copy and paste. SoftPC easily incorporates the convenience and power of the Macintosh computer into any PC environment.

Insignia Solutions, Inc.
254 San Geronimo Way
Sunnyvale, CA 94086
408-522-7600

System Requirements
Macintosh SE/30 or larger; 2 MB of RAM.

Price $149 to $399

Support
Telephone support is provided.

Systemizer Plus

Systemizer Plus is a modular peripheral sharing device that allows up to 31 Macintosh, PC, and other computer users to share as many as 31 printers, plotters, modems, or other peripheral devices. Additional features include up to 1 MB of buffering per user; programmable printer and plotter emulations, which facilitate real plotter sharing, even when bidirectional communication is required; universal serial/parallel adapting (the Systemizer Plus acts as the common denominator linking different kinds of hardware, including Macintosh computers and PCs); distributed processing; compatibility with all operating systems and software; and easy installation.

Applied Creative Technology, Inc.
8333 Douglas Ave., Ste. 700
Dallas, TX 75225
214-739-4200

System Requirements
Macintosh 512K or larger.
RS-232 serial or Centronics parallel device.

Price $399

Support
Free telephone support and a one-year warranty are provided.

Timbuktu

Timbuktu is a versatile network desk accessory application that allows users to observe or control another Macintosh computer over any AppleTalk network. Mutltiple users can share screens across the network, thereby turning any software application into a team activity. Timbuktu also includes file transfer, which allows users to send files to others on the network or let others copy files to and from a user's system. Timbuktu includes password protection and options for complete host control. Possible applications for Timbuktu include work-group collaboration, user support, network management, shared resources, teaching, and training.

Farallon Computing
2201 Dwight Way
Berkeley, CA 94704
415-849-2331

System Requirements
Macintosh Plus or larger; AppleTalk-compatible network.

Price $149
30 copy package $1995.

Support
Unlimited free telephone support, 90-day warranty on software, and one-year warranty on hardware are provided.

TrafficWatch

TrafficWatch is for network managers who must decide where to place bridges, servers, and printers on an AppleTalk network to achieve maximum network performance. It measures the amount of traffic each user generates on the network, detects bottlenecks and low traffic areas, reports network errors, collects data over time, and, with a Microsoft Excel macro, displays traffic flow graphically in real-time bar charts or in spreadsheet tables.

Farallon Computing
2201 Dwight Way
Berkeley, CA 94704
415-849-2331

System Requirements
Macintosh 512K enhanced or larger; 1 MB of RAM; TrafficChart macro requires Microsoft Excel 1.5 or later.

Price $195

Support
Unlimited free telephone support; 90-day software warranty; and one-year hardware warranty are provided.

uShare

uShare provides a common network environment between Macintosh and UNIX computer systems. The easy-to-use human interface and large amount of personal productivity software for the Macintosh are transparently integrated with the full capabilities of high-performance UNIX-based computer systems. uShare provides a high-capacity AppleShare-compatible server, industry-standard electronic mail, flexible print spooling, automatic backup of data, terminal emulation, and support of computer-intensive applications.

Information Presentation Technologies, Inc.
23801 Calabasas Rd., #2008
Calabasas, CA 91302
818-347-7791

System Requirements
Macintosh 512K or larger; 1 MB of RAM; LocalTalk or Ethernet connection to UNIX OS.

Price
uShare software base price $1195; full package $2995. Site license and quantity discounts available.

Support
90-day warranty on all hardware is provided; 2% of host cost per month provides unlimited telephone, fax, and modem support with upgrades.

VersaTerm and VersaTerm Pro

See complete description under System Components—Terminal Emulation.

Printers/Plotters/Drivers/Output Devices

18 Series Pen Plotters

The 18 Series Pen Plotters include sheet-fed models 1824 (D width) and 1825 (E width) and sheet-fed or roll-fed models 1834SR (D width) and 1835SR (E width). All machines support eight pens. Standard features include a plot buffering system that frees up the host computer, patented head technology for excellent line quality, vector optimization for fast plot throughput, and pen speeds of up to 47 inches per second. All four models accept any medium, and all popular pen types can be used. The 18 Series Pen Plotters suit many applications, including architectural or mechanical CAD/CAM, computer board design, cartography, and creation of PERT charts. They are supported by all popular CAD and business graphics packages with Benson, HP-GL, or HI-DM/PL data formats.

Océ Graphics USA Inc.
385 Ravendale Dr.
Mountain View, CA 94043
415-964-7900

System Requirements
Macintosh 512K or larger; any popular CAD software.

Price $4790 to $8890

Support
Free telephone support; 90-day warranty; and various maintenance agreements are available.

Agfa Slidemakers and Film Recorders

ProColor is a desktop film recorder for quick, easy creation of slides from a personal computer. Optional formats include a 3 by 4 module for producing instant prints. Optional interfaces include MacHarmony for sharing a Macintosh computer and PC with the MS-DOS version of ProColor, and ChromaScript, for imaging color PostScript files. SlideWriter is the entry-level professional film recorder designed exclusively for the Macintosh. For the sophisticated desktop user or the low-volume professional designer, the SlideWriter offers excellent image quality on 35mm slides. The QCR-Z is a professional film recorder for use in corporate graphic service departments and slide production houses. ChromaScript is a color PostScript raster image processor (RIP) that connects to the ProColor, PCR, SlideWriter, and QCR-Z film recorders to produce color PostScript output. This stand-alone rasterizer accepts files from a variety of workstations and images them to the film recorder. The RIP includes 16 MB of RAM, 73 fonts, an 80 MB hard disk, and the Adobe Atlas RIP.

Agfa Matrix Division
1 Ramland Rd.
Orangeburg, NY 10962
914-365-0190

System Requirements
ProColor, SlideWriter, and QCR-Z: Macintosh SE30 or larger; 4 MB of hard disk space. ChromaScript Color PostScript RIP: Macintosh 512K or larger; hard disk.

Price $6495 to $24995
ProColor $6495; Polaroid 3x4 option $1095. SlideWriter $11,795. ChromaScript $17,900. QCR-Z $24,995; MacHarmony $1995; 4x5 module $3400; 8x10 module $4500.

Support
ProColor: Toll-free telephone support and a one-year warranty are provided. Slidewriter, Color Postscript RIP, and QCR-Z: Toll-free telephone support and 90-day warranty are provided. AppleLink is available.

Bruning Zeta Pen Plotters

The Bruning Zeta 600 Workstation Pen Plotter is a D-size, cut-sheet workstation pen plotter designed for mechanical, electrical, and architectural CAD applications. The Zetadraf 900 E-size pen plotter is designed for high-throughput CAD departments; it can be shared by multiple users and workstations. The Zeta 912 Desktop Pen Plotter offers exceptional plot quality and throughput for color presentation graphics, finance, process control, and science. The Zeta 924 and 924PS Dual Mode Pen Plotters are specifically designed for CAD/CAM and project management hard copy output. The Zeta 936 and 936PS Dual Mode Pen Plotters are E-size pen plotters for mechanical, electrical, architectural, engineering, and construction CAD. The Zeta 3620 and 5400 Plotters both have four pen speeds between 35 and 50 inches per second. The E-size Zeta 3620 handles 36-inch media, while the 5400 handles 54-inch media and comes with a 36-inch adapter. Both models will handle up to 240 feet of media.

Bruning Computer Graphics
777 Arnold Dr.
Martinez, CA 94553
415-372-7568

System Requirements
Macintosh 512K or larger; MicroSpot MacPlot Professional.

Price $3950 to $44900
Zeta 600 $4395; Zetadraf 900 $6395; Zeta 912 $3950; Zeta 924 $5950; Zeta 924PS $6950; Zeta 936 $7950; Zeta 936PS $8950; Zeta 3620 $32,900; Zeta 5400 $44,900. Rental program available.

Support
Toll-free customer support hotline, on-site service, and maintenance contracts available; 90-day warranty, parts and labor.

Bruning Zeta Thermal Printers

The A-size Bruning Zeta CT-100 color thermal transfer printer is designed for CAD/CAM 3-D imaging and shading, check plots, scientific modeling, and presentation graphics. Realistic color imaging is ensured by a resolution of 300 dots-per-inch, a palette of up to 16 million colors, and advanced registration technology. A new media/wax combination provides crisp, bold color reproduction. Users can opt for monochrome output, three-pass printing for maximum economy, or four-pass printing for rich black tones. Prints are produced in less than one minute. Transparencies can be produced for overhead presentations.The Zeta CT-150 is an A/B-size color thermal transfer printer that also offers a palette of up to 16 million colors and 300-dot-per-inch resolution. Ideally suited for CAD/CAM three-dimensional imaging and shading, check plots, scientific modeling, and presentation graphics, the Zeta CT-150 offers the latest technology for color printing with exact registration. Chooser level support is provided for two different digital interfaces; or the user can choose from three fast-capture video interfaces that produce 4912, 1.4 million, or 16 million colors. Local scaling, rotation, and color correction are all supported.

Bruning Computer Graphics
777 Arnold Dr.
Martinez, CA 94553
415-372-7568

System Requirements
Macintosh 512K or larger; MicroSpot MacPlot Professional.

Price
CT-100, $4995, plus interface ($1000-$4500); CT-150, $8995, plus interface ($1000-$6000); rental program available.

Support
Free customer support telephone hotline, on-site service, and maintenance contracts are available. 90-day warranty on parts and labor is provided.

Buffer Plus

Buffer Plus contains an advanced 64K to 1 MB buffer with parallel or serial operation (or conversion), pause, copy, and unique user-customizable features. Like the Systemizer Plus, it is fully bidirectional and accepts HP-GL commands. Buffer Plus is compatible with any CAD and business presentation graphics package. Similar to the Buffer Box, it is also compatible with virtually any computer or peripheral device, pauses between pages for paper changes, can selectively reprint jobs, and can cancel jobs quickly.

Applied Creative Technology, Inc.
8333 Douglas Ave., Ste. 700
Dallas, TX 75225
214-739-4200

System Requirements
Macintosh 512K or larger;
RS-232 serial or Centronics parallel device.

Price $369

Support
Free telephone support and a one-year warranty are provided.

DMP-60 Series Pen Plotter

The Houston Instrument DMP-60 series large-format drafting pen plotters are expandable output devices for precision drawing of architectural and engineering documents. The DMP-61 handles media from 8.5- by 11-inches up to 36- by 48-inches. Either DMP-60 model is available as a single-pen unit, or users can add the Multi-Pen Accessory. Other options include a 1 MB expanded memory board and a Kanji character-set board.

Houston Instrument Division of Ametek
8500 Cameron Rd.
Austin, TX 78753
512-835-0900

System Requirements
Macintosh II or larger; CAD software that supports DM/PL or HP GL 758X emulation language.

Price $4295 to $5795
Multi-Pen Accessory $495; 1 MB Buffer Board $995; Kanji Character Set Board $495.

Support
Free telephone support and 90-day replacement service are provided. An extended warranty and overnight service are available at varying fees. Priority-response leasing is available.

DPX-3300

The DPX-3300 is an eight-pen, D-size, flatbed, Hewlett-Packard compatible plotter. It features 18 lps, accuracy to 04 inches, electrostatic paper hold, self-capping pens, and a centronics and serial interface.

Roland Digital Graphics
5300 S. Eastern Ave., Ste. 110
Los Angeles, CA 90040
213-722-6933

System Requirements
Macintosh 512K or larger; HP plotter software (MacPlot, etc.).

Price $7495

Support
Free telephone support, a one-year warranty, regional servicing and a newsletter are provided.

G5232-CPS Color PostScript Printer

The G5232-CPS Color PostScript Printer prints Adobe PostScript images at 300 dots-per-inch using color thermal transfer printing technology. Developed in conjunction with Adobe Systems, the printer provides professional-quality color vibrancy, line definition, and media durability. The G5232-CPS maintains the quality and definition of symbols, characters, and images regardless of how they are rotated or scaled, thus producing full-color plots and annotated diagrams while ensuring the quality of output associated with monochrome PostScript printers. It can be configured to support A-size and B-size output. The G5232-CPS connects to any Apple LocalTalk network via a standard AppleTalk interface.

Océ Graphics USA Inc.
385 Ravendale Dr.
Mountain View, CA 94043
415-964-7900

System Requirements
Macintosh 512K or larger; any software that generates color PostScript.

Price $16,000 to $22,000

Support
Free telephone support and a 90-day warranty are provided. Several maintenance agreements are available.

GRX-300 and GRX-400 Pen Plotters

The GRX-300 is an eight-pen, D-size, roll-bed, Hewlett-Packard compatible plotter. It features 24 lps, accuracy to .78 microns, self-capping pens, a micro-stepper motor, a centronics and serial interface, and an IMB buffer. The GRX-400 is an E-size Hewlett-Packard compatible plotter with the same features as the GRX-300.

Roland Digital Graphics
5300 S. Eastern Ave., Ste. 110
Los Angeles, CA 90040
213-722-6933

System Requirements
Macintosh 512K or larger; HP plotter software (MacPlot, etc.).

Price
GRX-300 $4995; GRX-400 $6495.

Support
Free telephone support, one-year warranty, regional service, and a newsletter are provided.

HP 7600 Series Electrostatic Plotters

The HP 7600 Series Electrostatic Plotters combine pen-plotter quality with fast print speed to meet the high-performance and volume demands of an entire department. With a built-in vector-to-raster converter, both model 240D and model 240E quickly produce crisp, clean drawings, including long-axis plots, for a wide range of applications, from machine and part design to floor plans and circuit layouts. Actual plotting time for a typical full-size drawing is less than a minute, including vector-to-raster conversion time. Model 240D accepts 24-inch-wide report grade or premium grade paper, vellum, or translucent paper; model 240E accepts 36-inch-wide media. Each HP 7600 plotter comes with three industry-standard interfaces and HP-GL compatibility. Installation is included in the purchase price.

Hewlett-Packard Co.-San Diego Division
16399 W. Bernardo Dr.
San Diego, CA 92127
619-487-4100

System Requirements
Macintosh Plus or larger; Peripheral Adapter Cable; HP Serial Cable or Apple ImageWriter Cable.

Price
Model 240D $22,900; Model 240E $27,500.

Support
A 90 day on-site warranty is provided. Service contracts and helpline are available.

HP Color Graphics Plotters

The HP ColorPro Graphics Plotters offer a range of capabilities and provide high-quality output on standard A4/A and A3/B papers, glossy papers, overhead transparency film and polyester film. The HP 7440A delivers color graphics features an eight-pen carousel providing a spectrum of colors in two widths. The Graphics Enhancement Cartridge (HP17440A) accessory adds advanced capabilities to the plotter such as HP-GL instructions to draw arcs, circles and polygons; a large buffer, and 14 ISO character sets. The HP 7475A graphics plotter is designed for a variety of scientific and design applications. The six-pen carousel accepts fiber-tip pens available in 10 colors and two widths. Refillable, short-body liquid-ink drafting pens are also available in six tip widths and have their own carousel. The 7550A is a desktop plotter that provides high-performance, automatic sheet-feed capabilities. Eight pens can be loaded into the carousel at a time. Graphics are drawn in any direction at 80 cm/s (31.5 inch/s). Pen choices include disposable liquid-ink, rollerball, and fiber-tip pens.

Hewlett-Packard Co.-San Diego Division
16399 W. Bernardo Dr.
San Diego, CA 92127
619-487-4100

System Requirements
Macintosh Plus or larger; HP17302A cable or equivalent.

Price:
HP 7440A $1295; HP Graphics Enhancement $165; HP 7475A $1895; HP 7550A $3995.

Support
Telephone support is available. A one-year warranty and semiannual customer newsletters are provided. Service contracts are available.

HP DeskWriter Printer

The HP DeskWriter Printer is a 300-dot-per-inch, personal, plain-paper printer based on HP's thermal inkjet technology. The printer includes the QuickDraw-based printing resource, which supports the standards of the familiar Macintosh user interface and allows sophisticated output features such as scalable outline fonts, polygon graphics smoothing using Bézier curves, font rotation in 90 degree increments, and document enlargement and reduction. The printer comes with Times, Helvetica, Courier, and Symbol screen fonts and the corresponding fully scalable printer outline fonts in normal, bold, italic, and bold-italic versions. Hewlett-Packard also offers the DeskWriter Font Collection, which includes the seven additional font families familiar to LaserWriter printer users. The DeskWriter printer handles letter, legal, and A4 paper sizes from the front-loading sheet feeder.

Hewlett-Packard Co.-San Diego Division
16399 W. Bernardo Dr.
San Diego, CA 92127
619-487-4100

System Requirements
Macintosh Plus or larger, hard disk.

Price $1195

Support
A one-year warranty is provided. Service contracts and an HP Helpline is available.

HP DraftPro and DraftMaster Pen Plotters

The HP DraftPro plotter (HP 7570A) is an eight-pen drafting plotter designed especially for personal CAD systems. It draws on single sheets with widths from 550 mm to 640 mm and lengths from 400 mm to 1,000 mm, including ISO A2 and A3 sizes, ANSI C and D sizes and architectural C and D sizes. It draws on paper, vellum and polyester film and supports fiber-tip, disposable liquid-ink and refillable liquid-ink pens. The plotter has a mechanical resolution of 0.013mm (005-inch) and an addressable resolution of 0.025mm (01-inch) to ensure smooth arcs and crisp letters. With its repeatability of 0.1mm (04-inch), drawings will have precise corners and circles that close. In addition to its 2g acceleration and 40 cm/s (15.7-inch) velocity, the plotter has several other features that help minimize plotting time. For example, a pen sorting feature reduces the number of pen picks by grouping lines of the same color together and drawing them at the same time. HP DraftPro DXL and EXL are the latest additions to our DraftPro line of large-format plotters, bringing you A4/A- through A1/D- and Ao/E-size capability at an attractive price. Both are designed for personal CAD system users who require excellent line quality output on a wide variety of media. Their fast pen speed means less time waiting for your drawings. And by adding either of two extended buffer options, you can quickly download an entire plot and use your computer for other tasks.

Hewlett-Packard Co., San Diego Division
16399 W. Bernardo Dr.
San Diego, CA 92127
619-487-4100

System Requirements
Macintosh Plus or larger; Peripheral Adapter Cable; HP Serial Cable or Apple ImageWriter Cable.

Price
HPIB (IEEE 400-1978) Interface $295; DraftPro DXL $4995; DraftPro EXL $6495; 1 MB buffer $995; 2 MB Buffer $1696; DraftMaster I $8495; DraftMaster II $10,995.

Support
A one-year on-site warranty is provided. Service contracts and helpline are available.

HP PaintJet Printer

The HP PaintJet is a color-graphics printer that produces vivid color graphics for overhead transparencies and reports. It produces text and graphics with 180 by 180 dots-per-inch resolution and near-letter-quality (NLQ) text at a speed of 167 characters per second. The device can produce a typical text page in about 40 seconds, and a full page of color graphics in about four minutes. It handles z-fold or cut-sheet paper and single-sheet transparency film in either A (8 1/2- by 11-inches) or A4 (210 by 297mm) matrix sizes. While HP PaintJet paper is recommended for highest-quality output, many widely available printer papers can be used with satisfactory results for draft-quality output.

Hewlett-Packard Co.-San Diego Division
16399 W. Bernardo Dr.
San Diego, CA 92127
619-487-4100

System Requirements
Macintosh Plus or larger. Hard disk recommended.

Price $1395
HP PaintJet Printer Interface kit $125.

Support
A one-year warranty is provided. Service contracts and a helpline are available.

Hurdler Centronics Parallel Interface (CPI)

The Hurdler-CPI is used to connect the Macintosh II to any device that uses a Centronics-compatible interface. It includes a 25-pin D-type connector that has the same connector pinouts as IBM PC printer interfaces. The ROM on the CPI board can be customized for OEMs who wish to have a custom driver installed.

Creative Solutions, Inc.
4701 Randolph Rd., Ste. 12
Rockville, MD 20852
301-984-0262

System Requirements
Macintosh II or larger; any parallel printer/plotter/scanner.

Price $199
Cable available for $15.95.

Support
Telephone hotline and CompuServe on-line support is available.

LFR-Lasergraphics Film Recorder and CPS-Color Printer System

The LFT 4000-line resolution digital film recorder and CPS color thermal printer with MacRascol Image Management Software produce boardroom-quality slides or color hardcopy. MacRascol takes user-generated color images and processes and outputs color slides, prints, or transparencies in less than two minutes. It supports 24-bit color and improves the quality of high-resolution images by letting the user substitute scalable fonts for any Macintosh screen font. The user can crop images, group images into queues for output at a convenient time, and enhance images for better reproduction at high-resolution. The CPS color printing system produces high resolution images on 8-1/2- by 11-inch paper or transparent film.

Lasergraphics, Inc.
17671 Cowan Ave.
Irvine, CA 92714
714-660-9497

System Requirements
Macintosh Plus or larger; graphics software package.

Price $14,750
Price includes LFR/CPS with MacRascol.

Support
Telephone support and a 90-day warranty on parts and labor are provided. An extended warranty is available.

Mac Rascol Print

The Mac Rascol Print color printer controller with MacRascol Image Management Software, which links it to the Macintosh computer, allows users to choose the color printer that best fits their price, quality, and speed requirements. MacRascol supports 24-bit color images and over 16.7 million colors for subtlety of color shading. It improves the quality of high-resolution images by letting users substitute scalable fonts for any Macintosh screen font. Images can be cropped, grouped into queues for output at convenient times, and enhanced for better reproduction. The queueing feature allows users to save complete presentations in a single file. Enhancement settings are maintained with the queue, so there is no need to readjust the settings every time the file is printed. Users may work on their Macintosh computers while MacRascol drives Mac Rascol Print and the printer in the background.

Lasergraphics, Inc.
17671 Cowan Ave.
Irvine, CA 92714
714-660-9497

System Requirements
Macintosh Plus or larger; graphics software package.

Price $1995
Price includes Lasergraphics.

Support
Telephone support and a one-year warranty are provided. An extended warranty is available.

MacPlot Color Thermal Printer Drivers

MacPlot Color Thermal and MacPlot DMA Color Thermal are chooser level plotter drivers from the MacPlot Series. Both drivers provides full color, high resolution output from most Macintosh software to nearly any plotter. The MacPlot DMA Color Thermal is a plug-in NuBus card for Macintosh II computers enabling direct raster output to color thermal plotters. MacPlot Color Thermal may be installed on the hard disk or application disk.

Microspot
21060 Homestead Rd., Ste. 207
Cupertino, CA 95014
408-739-0222

System Requirements

Price $495 to $1295.

Support
Telephone support and minor updates are provided. Major updates are available for a fee.

MacPlot Pen Plotter Drivers

MacPlot Pen Plotter Drivers allow full color, high resolution output to nearly any plotter using most Macintosh software. MacPlot Pen Plotter Standard supports plotters with paper sizes A and B only. MacPlot Pen Plotter Professional has a special plot command file for instant plotting supports paper sizes A through E. MacPlot Electrostatic supports the full range of Versatec and Calcomp plotters and will plot directly from applications using Page Set-up and Print commands. The MacPlot DMA Electrostatic provides direct raster output to color thermal plotters using a plug-in nubus card for the Macintosh II series. The system takes data by direct memory access and transfers it at very high speeds to the plotter, making it even faster than the standard color thermal plotter driver.

Microspot
21060 Homestead Rd., Ste. 207
Cupertino, CA 95014
408-739-0222

System Requirements
Macintosh 512K or larger; serial plotter cable. MacPlot DMA Electrostatic requires a Macintosh II or larger; 2 MB of RAM; parallel plotter cable.

Price
MacPlot Pen Plotter Standard $199; Professional $399; Electrostatic $995; DMA Electrostatic $2495.

Support
Telephone support and minor updates are provided. Major updates are available for a fee.

MacPlots II—Drafting Version

MacPlots II—Drafting Version is a package designed to allow engineers the flexibility of using plotters as well as printers for their drawings. Drawing files saved in PICT format, paint files, and Clipboard files can all be plotted. Clipping, or hidden line removal, is supported by WYSIWYG drawing. MacPlots recognizes and plots fill patterns and allows users to design unique fill patterns, such as sand or concrete. Variable line thicknesses are supported and line specification makes specific line widths possible, especially for circuit board design. Plotter text and bit-image text can be plotted together on a single document , and character sets may be designed and plotted for special needs, such as engineering symbols.

Engineered Software
P.O. Box 18344
Greensboro, NC 27419
919-299-4843

System Requirements
Macintosh 512K or larger; plotter; cable; drafting or drawing software.

Price $250

Support
Free telephone support and updates for 60 days are available to registered users. After 60 days, updates are available for $20.

MacSerial488

The MacSerial488 plotter converter connects the Macintosh computer to plotters that have an IEEE 488 (GPIB/HP-IB) interface. The MacSerial488 performs bidirectional protocol conversion from the Macintosh serial port to the plotter's IEEE port. The unit has a 32K data buffer that holds an entire plot to free the computer for other activities while the plotter completes its work. MacSerial488 works with any Macintosh software that generates plotter output. For applications that don't include plotter support, MacPlot software is available separately; the software converts PICT graphics for plotters. A built-in A-B-C switch automatically connects the serial port from the Macintosh computer to an auxiliary connector when the MacSerial488 is powered down.

IOtech Inc.
25971 Cannon Rd.
Cleveland, OH 44146
216-439-4091

System Requirements
Macintosh 512K or larger; IEEE 488 devices.

Price $495

Support
Telephone support; 30-day money-back guarantee; and two-year warranty are provided.

Mesa Graphics Plotter Utility

Mesa Graphics Plotter Utility is a plotting application used for the production of accurate engineering and architectural drawings, as well as scientific and business plots. The program provides accurate control of output scaling and a flexible color interface for PICT documents (object-oriented drawings created with MacDraw, MacDraft, MacProject, Cricket Graph, Chart, Jazz, Excel, or any other application that can save drawings as PICT documents). Mesa Graphics Plotter Utility offers 24 fill patterns and optional hidden-line removal for lines obscured by rectangles, ovals and circles. The program can handle paper sizes A through E and uses three pen speeds for paper, vellum and mylar transparencies. Another feature allows for dividing large graphics into multiple page plots. Plotters supported by Plot-It include the Apple Color Plotter and several models from Hewlett-Packard and Houston Instruments.

Mesa Graphics
P.O. Box 600
Los Alamos, NM 87544
505-672-1998

System Requirements
Macintosh 512K enhanced or larger; MacDraft, MacDraw, SuperPaint; plotter.

Price $125

Support
Free telephone technical support is provided. Minor and major upgrades are available at a nominal fee.

PlotMaker

See complete description under Architecture/Engineering/Construction—Design/Drafting.

Printer Optimizer

Printer Optimizer is an advanced, fully customizable, multi-function printer/plotter/data buffer expandable to 1 MB. The product provides pause, copy, reset, remote control of printer features, and data translation. Optional interface cards can be plugged in, which add the ability to convert serial to parallel and vice versa, as well as provide multiple inputs and outputs. Printer Optimizer supports bidirectional communication, used to buffer modems and plotters. An optional disk enables output from a Macintosh computer to an ImageWriter II printer at 38.4 kilobaud.

Applied Creative Technology, Inc.
8333 Douglas Ave., Ste. 700
Dallas, TX 75225
214-739-4200

System Requirements
Macintosh 512K or larger; RS-232-C serial or Centronics parallel device.

Price $349

Support
Free telephone support and a one-year warranty are provided.

Roland DPX-2000 and DPX-3300 Plotters

The DPX-2000 is an eight-pen, C-size, flatbed, Hewlett-Packard compatible plotter. It features a plotting speed of 16 inches per second, and accuracy to 0.0004 inches, electrostatic paper hold, self-capping pens, and centronics and serial connections. The DPX-3300 is a D-size plotter with all the same features as the DPX-2000 plus a maximum plotting speed of 18 ips.

Roland Digital Graphics
5300 S. Eastern Ave., Ste. 110
Los Angeles, CA 90040
213-722-6933

System Requirements
Macintosh 512K or larger; HP plotter software (MacPlot, etc.).

Price
DPX-2000 $2995; DPX-3000 $4995.

Support
Free telephone support, one-year warranty, regional service, and a newsletter are provided.

Roland DXY Series Pen Plotters

The DXY-1100 is a high-speed, A/B-size desktop plotter. Standard features include eight self-capping pens, full HP-GL compatability, 16 inches per second plotting speed, 0.0004-inch resolution, and a built-in stand to minimize desk space. The DXY-1200 is an accurate eight-pen desktop plotter with a maximum plotting speed of 16 ips. An electrostatic paper-hold system assures high-quality drawings, as the DXY-1200 has a resolution of 004 inches. Other standard features include a full 11-inch by 17-inch plotting area, full HP-GL emulation, a soft pen landing mechanism for noiseless operation, and standard serial and parallel interfaces for full hardware compatibility. The DXY-1300 is the top-of-the-line desktop plotter. With a maximum plotting speed of 16 ips and a resolution of 0.0004 inches, this is the perfect solution for design professionals looking for high-quality output. A 1 MB buffer is standard on the DXY-1300. Other standard features include an electrostatic paper hold, eight self-capping pens, a full 11-inch by 17-inch plotting area, HP-GL emulation, and standard serial and parallel interfaces.

Roland Digital Graphics
5300 S. Eastern Ave., Ste. 110
Los Angeles, CA 90040
213-722-6933

System Requirements
Macintosh 512K or larger; HP plotter software (MacPlot, etc.)

Price $1300–$2495
DXY-1100 $1295; DXY-1200 $1895; DXY-1300 $2495.

Support
Free telephone support, one-year warranty, regional service and a newsletter are provided.

Systemizer Plus

See complete description under System Components—Networking/Communication.

Tektronix Color Printers

Tektronix Color Printers offer four ways to produce color output from the Macintosh computer. The ColorQuick Ink-jet Printer provides 216-dot-per-inch resolution, 11 fonts corresponding to the LaserWriter and ImageWriter LQ fonts, and the ability to print on media up to 12 by 18 inches. The 4693DX Color Image Printer produces 300-dot-per-inch color thermal-wax printouts. Its built-in image processor provides the Macintosh interface to produce quick QuickDraw-generated images. The Phaser CPS Color PrintStation produces 300-dot-per-inch, color thermal wax printouts. It has a PostScript-compatible printer controller that provides spooling and an AppleTalk connection. The Phaser CPS is expandable, with room to add memory, controller boards, and additional printers. The Phaser PS PrintStation carries the same printer controller as the Phaser CPS, offering the same network resource sharing potential. The Phaser PS provides an upgrade to PostScript compatibility while maintaining support for QuickDraw printing. Both Phaser models include a 40 MB hard disk and 35 built-in typefaces.

Tektronix, Inc.
P.O. Box 500
Beaverton, OR 97077
503-627-2596

System Requirements
Macintosh 512K or larger.

Price
ColorQuick $2495; 4693DX $8995; Phaser CPS $15,995; Phaser PS $9995.

Support
An annual service contract is available.

TT200

The TT200 Thermal Transfer Printer is designed for desktop presenters who need full color prints and overheads for informal presentations. For professional designers, it provides a means for quick proofing of slides. This 200-dot-per-inch printer creates full color images for less than 50 cents per copy, using cyan, magenta, and yellow inks. With the addition of the appropriate interface, one TT200 can be shared by both Macintosh II and PC users.

Agfa Matrix Division
1 Ramland Rd.
Orangeburg, NY 10962
914-365-0190

System Requirements
Macintosh II or larger; hard disk.

Price $5590

Support
Free telephone support and a 90-day warranty are provided.

Versadapter

Versadapter is a serial-to-parallel or parallel-to-serial converter all in one. Versadapter supports a range of communication parameters, including adjustable baud rates, word length, stop bits, parity, and handshaking. It is particularly useful for connecting Macintosh computers to Epson and other parallel printers.

Applied Creative Technology, Inc.
8333 Douglas Ave., Ste. 700
Dallas, TX 75225
214-739-4200

System Requirements
Macintosh 512K or larger;
RS-232-C serial or Centronics parallel device.

Price $119

Support
Free telephone support and a one-year warranty are provided.

VP-10 Graphic Element Processor

The VP-10 Graphic Element Processor is a versatile controller that allows the connection of color and monochrome raster output devices to a host computer. The VP-10 eliminates the host computer overhead normally associated with the expensive, time consuming graphic element and vector to raster conversion task. The VP-10 Graphic Element Processor is compatible with a variety of raster output devices such as those manufactured by Calcomp, Mitsubishi, and Seiko.

KMW Systems Corp.
6034 W. Courtyard Dr.
Austin, TX 78730
512-338-3000

System Requirements
Macintosh Plus or larger.

Price $5995

Support
Telephone support, technical hotline, data sheets, reference manuals, application notes, and warranty are provided.

Scanners

Abaton Scan 300/S and 300/GS

The Abaton 300/S and 300/GS are four-bit, 300-dot-per-inch scanners. The 300/S offers 16 levels, and the 300/GS offers 256 levels, of gray-scale scanning. Both models can scan line art, halftones, and gray-scale images. Sixteen brightness levels and eight contrast levels on the 300/S let users adjust for a light or dark original. The 300/GS has 255 brightness settings and 255 contrast settings. The flatbed model, the Abaton Scan 300/GS, facilitates accurate alignment of documents up to 8.5 by 14 inches; the removable lid allows scanning of oversized drawings or maps. Abaton Scan DA, included with both models, lets users scan images without quitting their current Macintosh application. Scanned images may be edited with any popular image processing software.

Abaton Technology Corp.
48431 Milmont Dr.
Fremont, CA 94538
415-683-2226

System Requirements
Macintosh Plus or larger.

Price
300/S $1495; 300/GS $1795; interface kit $295–$395.

Support
Free 90-day on-site maintenance and extended warranty are available.

Barneyscan

Barneyscan, an integrated desktop color slide scanner, delivers color pictures to the Macintosh, together with applications that solve professional problems for publishers, designers, presenters, and mutlimedia authors. Based on fiber-optic technology, the scanner provides saturated color and broad dynamic range. The system features a proprietary 35mm film scanner that scans images from 35mm slides. Associated photo design software enables users to manipulate the scanned images.

Barneyscan Corporation
1198 10th St.
Berkeley, CA 94710
415-524-6648

System Requirements
Macintosh II or larger; 4 MB of RAM; video card for display.

Price $9495
Includes scanner, interface card, software, and cable. Interface card and software $1290.

Support
Telephone support, 90-day warranty, and periodic applications notes and software upgrades are provided.

ChromaScan

ChromaScan scans images in color, grayscale, and black and white. Eight-bit color choices include Apple standard colors; 256 custom colors automatically generated to best match the original artwork; or a user-defined table of 256 colors. All may be used in combination with dithering. Twenty-four-bit color images use either Apple's 32-bit QuickDraw or the RasterOps 24-bit support. Features include interconnected dialog boxes to control size, mode, and tone settings; a size control panel to quickly preview the scanner bed for custom sizing; and a tone control panel to adjust brightness, contrast, and color correction settings. Frequently used scanning parameters may be saved for recall as a user-defined menu item. Multiple windows may be tiled or stacked. Scan & Save command combines two tasks for scanning large numbers of similar images; images are automatically numbered. Scans can be rotated 90 degrees to accommodate wide artwork. Print to any chooser-selectable printer.

Imagenesis
901 N.E. Loop 410, Ste. 630
San Antonio, TX 78209
512-824-1746

System Requirements
Macintosh II or larger; 4 MB of RAM; Sharp JX300 or JX450, Howtek Scanmaster, or Imapro 450i color flatbed scanners.

Price $195

Support
Telephone support is provided.

Data Scan

Data Scan, an image processing utility, converts bitmapped graphs to coordinate data. Used with a scanner, Data Scan can extract numerical data from graphs in newspapers, journals, or any hard-copy source if the original data are not available. The program can convert bar charts, line charts, and area charts, as well as log/log, log/linear, and linear plots. It analyzes bitmapped charts in MacPaint, uncompressed FOTO (PageMaker 1.2), TIFF, or ThunderScan formats.

BrainPower, Inc.
30497 Canwood St.
Agoura Hills, CA 91301
818-707-1712

System Requirements
Macintosh 512K enhanced or larger.

Price $199.95

Support
Free telephone support and update notification for registered owners are provided.

Fast Trax Engineering Drawing Management System

See complete description under Architecture/Engineering/Construction—Administration.

HP ScanJet Plus

The HP ScanJet Plus, an 8-bit gray-scale, high-resolution scanner reads 256 levels of gray and has a wide-range of contrast/intensity controls in gray-scale, dithered, and line-art modes. A scanner appropriate for either graphics or text, the HP ScanJet Plus works with all popular graphics and OCR software.

Hewlett-Packard Co.-San Diego Division
16399 W. Bernardo Dr.
San Diego, CA 92127
619-487-4100

System Requirements
Macintosh Plus or larger; 2 MB of RAM; interface kit.

Price $1595
Interface kit $595.

Support
Telephone support and one-year warranty are provided.

LightningScan

LightningScan is a hand-held scanner for the Macintosh computer and includes scanning software and a desk accessory. It scans 32 dithered grays and 16 true grays. The controller is equipped with a buffer to prevent scanning overruns and is externally terminated to fit easily into the SCSI chain. The desk accessory features rotation, flip, and selective saving ability. LightningScan saves images in popular file formats to import into desktop publishing and design programs. The dropout color is yellow-green.

Thunderware, Inc.
21 Orinda Way
Orinda, CA 94563
415-254-6581

System Requirements
Macintosh Plus or larger.

Price $549
Educational pricing available.

Support
Technical support and 90-day warranty are provided.

Microtek Scanners

The Microtek MSF-300G/GS is a 300-dot-per-inch, 6 bit-per-pixel, gray-scale, flatbed desktop scanner capable of recognizing up to 256 shades of gray. The 300G/GS includes a built-in SCSI interface, while the 300Q includes an external SCSI interface. The MSF 300G/GS features 8 bits-per-pixel. The MSF-400G features 400 dots-per-inch and 8 bits per pixel. The MS-II is a 300-dot-per-inch sheet-fed desktop scanner with a 50-page built-in automatic document feeder specifically for OCR applications. The MS-II can also be used to scan line art and halftones. It simulates up to 64 shades of gray and has resolution settings ranging from 75 to 300 dots-per-inch. Scaling settings range from 25 percent to 100 percent. Like all of the Microtek desktop scanners, the MS-II is compatible with most popular desktop publishing and OCR software programs.

Microtek Lab, Inc.
680 Knox St.
Torrance, CA 90502
213-321-2121

System Requirements
MSF-300Q/QS, 300G/GS, and 400G: Macintosh Plus or larger; 2 MB of RAM. MS-II: Macintosh Plus or larger.

Price
MSF-300Q $1750; MSF-300G/GS $2195; MSF-400G $3995; MS-II $1495.

Support
Technical support and 6-month warranty are provided. Update program available for $95 per year.

ThunderScan for Macintosh

ThunderScan for Macintosh converts any ImageWriter printer except the LQ to a high-resolution scanner. It supports resolutions up to 300 dots-per-inch, magnifications from 25 percent to 800 percent, and gray scales with 32 levels (5 bits deep per pixel). ThunderScan saves files in PICT, TIFF, EPS, Paint, and proprietary format. The product includes software and supports the Macintosh 512K, Plus, and SE. Use of ThunderScan with the Macintosh II or larger requires an accessory.

Thunderware, Inc.
21 Orinda Way
Orinda, CA 94563
415-254-6581

System Requirements
Macintosh 512K enhanced or larger; ImageWriter.

Price $249
Power accessory for Macintosh II $49.

Support
Free unlimited telephone and AppleLink technical support; and periodic newsletters provided to all registered users.

TIB

TIB (Truvel Image Buffer), which comes with a built-in SCSI unit, increases the versatility of the TruScan series of high-resolution scanners by providing a disk drive dedicated to the storage of scanned images. The TIB allows large files of black-and-white, gray-scale, and 24-bit color images to be scanned directly to a disk, regardless of computer memory size. The TIB is available with various disk sizes in fixed and removable configurations. The TIB eliminates the need for a dedicated workstation just for scanning as the computer's SCSI interface is no longer employed during a scan. Once a scan command is sent to the Truvel scanner, the host computer is free to engage in any activity of the operator's or network's choice.

Truvel Corp.
8943 Fullbright Ave.
Chatsworth, CA 91311
818-407-1031

System Requirements
Macintosh II or larger; minimum 5 MB of RAM; TruvelScanner.

Price $4995

Support
Telephone support, factory or authorized-dealer service, a 90-day warranty extendable to one year, and training are available.

TimeWand

TimeWand is a portable barcode reader designed for fast, reliable data entry. About the size of a credit card, the TimeWand fits into a pocket and will hold a battery charge for two to three days. Available in 8K and 16K sizes, the wand stores each scan, along with its date and time, until information is downloaded to a computer via the serial port. The data is stored in an ASCII text file, which can then be used to track documents, record timecards, or calculate inventory.

Videx, Inc.
1105 N.E. Circle Blvd.
Corvallis, OR 97330
503-758-0521

System Requirements
Macintosh 512K or larger.

Price $696
Starting price.

Support
Full telephone support and 90-day warranty are provided. Service after the first 90 days available for 10% of purchase price ($25 minimum).

TruScan Scanners

TruScan Scanners come in a variety of models to meet different needs. The T-35BWC is a high-resolution 35mm slide scanner with 256 levels of gray; a hopper feed allows up to 40 slides to be scanned unattended when the scanner is attached to a TIB. The TZ-3BWC is a combination black-and-white/grayscale and 24-bit color scanner with 75- to 900-dot-per-inch resolution; the open flatbed accommodates single sheets, bound documents, and three-dimensional objects. The TF-3X is a fixed-resolution x-ray scanner with 256-dot-per-inch resolution and 256 levels of gray; fixed resolution is especially useful for repetitive scans of x-rays that are of the same type and size. The TZ-3 is a black-and-white/grayscale scanner with 75- to 900-dot-per-inch resolution; this flat-bed scanner allows a maximum scan area of 12 inches by 17 inches. The TZ-3X is a high-resolution x-ray film scanner with from 64- to 720-dot-per-inch resolution and 256 levels of gray; the scan area can be from 24mm to 14 inches wide, with length limited only by the available memory.

Truvel Corp.
8943 Fullbright Ave.
Chatsworth, CA 91311
818-407-1031

System Requirements
Macintosh II or larger; minimum 5 MB of RAM.

Price
T-35BWC $7995; TZ-3BWC $9495; TF-3X $11,995; TZ-3 $5995; TZ-3X $12,495.

Support
Telephone support, factory or authorized-dealer service, a 90-day warranty extendable to one year, and training are available.

Zebra

Zebra is a line-art image enhancement board for capturing very fine lines and detail in line-art scans. Zebra fits into Truvel reflective scanners, and is recommended for users who need to scan logos, etchings, antique manuscripts such as birth certificates, and very fine line art.

Truvel Corp.
8943 Fullbright Ave.
Chatsworth, CA 91311
818-407-1031

System Requirements
Macintosh II or larger; minimum 5 MB of RAM; Truvel scanner.

Price $995

Support
Telephone support, 90-day warranty extendable to one year, factory or authorized dealer service, and training are available.

Storage Devices

CD-ROM Subsystems

Massachusetts Micro Data Systems offers a Macintosh-compatible version of the Laser Magnetic Storage International (LMSI) line of CD-ROM drives. Several different packages are available, including a stand-alone CD-ROM subsystem, as well as SCSI CD-ROM drives with no case or power supply. All packages include a software driver for all standard CD-ROM formats, including HFS, ISO 9660, High Sierra, and audio. The LMSI drive is an extremely reliable CD-ROM with an MTBF of 32,000 hours. LMSI is certified by the Department of Defense and all LMSI CD-ROM drives are manufactured in the United States.

Massachusetts Micro Data Systems, Inc.
36 Commerce Way
Woburn, MA 01801
617-935-2679

System Requirements
Macintosh SE or larger.

Price $995

Support
Free telephone support is provided.

Disk Pack

The Disk Pack line of SCSI disk drives that use portable, removable storage packs range from 21 MB to 200 MB in capacity. The interchangable storage packs are small enough to carry in one hand, making them appropriate for transporting large applications or data from one machine to another, for holding backed up data, and for securing sensitive data. Access time is as low as 13 milliseconds.

Mega Drive Systems, Inc.
1900 Avenue of the Stars, Ste. #2870
Los Angeles, CA 90067
213-556-1663

System Requirements
Macintosh 512K or larger.

Price $1299 to $2899
40 MB $1299; 80 MB $1899; 110 MB $2299; 135 MB $2899.

Support
Free telephone support is provided.

Hammer Disk 600

Hammer Disk 600 is an erasable optical removable drive that provides 600 MB of storage, 66 ms of access time, and a ten-year media shelf life. It includes utility software for partitioning, password protection, encryption, and hard disk update.

FWB, Inc.
2040 Polk St., Ste. 215
San Francisco, CA 94109
415-474-8055

System Requirements
Macintosh Plus or larger.

Price $4995

Support
Free technical support; one-year warranty, parts and labor.

Hammer Hard Disks

Hammer Hard Disks are high-performance hard disks for the Macintosh computer. Internal disks are available in 91, 188, and 300 MB capacities for the Macintosh II. The external version is available at 188, 300, and 600 MB. Hammer Hard Disks feature 16.5 to 18 ms access time and 1.07 to 2.0 MB/s transfer rate. Software for partitioning, password protection, encryption, and hard disk upload is included.

FWB, Inc.
2040 Polk St., Ste. 215
San Francisco, CA 94109
415-474-8055

System Requirements
Macintosh Plus or larger.

Price $1695 to $5495
Internal Hard Disks: 91 MB $1695; 188 MB $2295; 300 MB $3995. External Hard Disks: 188 MB $2795; 300 High Speed $4695; 600 MB $5495.

Support
Free technical support and one-year warranty on parts and labor are provided.

Hammer Tape 150/300

Hammer Tapes are high-performance tape backup systems at 150 and 300 MB, providing file-by-file, image, and partition image backup at 7 and 14 MB a minute. Hammer Tapes feature full network support, delayed backup, and timer script support.

FWB, Inc.
2040 Polk St., Ste. 215
San Francisco, CA 94109
415-474-8055

System Requirements
Macintosh Plus or larger.

Price
150 MB $1895; 300 MB $2695.

Support
Free technical support and one-year warranty on parts and labor are provided.

LaserStor for Macintosh

LaserStor for Macintosh, an optical WORM (write-once, read-many) storage device, features an SCSI interface and an 800 MB WORM media cassette. LaserStor's software allows it to appear on the Macintosh desktop like any other disk.

Storage Dimensions
2145 Hamilton Ave.
San Jose, CA 95125
408-879-0300

System Requirements
Macintosh SE or larger.

Price $4999

Support
Telephone, AppleLink, and dealer support; and one-year warranty on parts and labor are provided.

MacCider

A/UX MacCider hard drive systems are available in sizes from 20 MB to 764 MB. All current Macintosh products are supported both internally and externally. MacCider Macintosh II, IIc, and IIcx high-capacity drives are a perfect fit for the AU/X operating system.

BSM Computers
1355 Glenville
Richardson, TX 75081
214-699-8300

System Requirements
Macintosh SE or larger. Hard drive subsystem comes with software and hardware.

Price $595 to $3995
Price varies depending on size of system.

Support
Support is available under authorized dealer program.

MacDisk EM330

The MacDisk EM330 provides 318 MB of high-performance storage capacity on a hard-disk system with only 18 millisecond average access time.

Priam Corporation
350 East Plumeria
San Jose, CA 95134
408-434-9300

System Requirements
Macintosh Plus or larger.

Price $4195
Dealer and developer pricing available upon request.

Support
Three-year warranty is provided.

MacinStor Erasable

A/UX MacinStor Erasable, a high-capacity, erasable optical SCSI device, features an average seek time of 35 milliseconds. Its rate of data transfer is 10 Mbits per second. The device comes with an erasable storage cartridge that holds 1 gigabyte (1000 MB) of data; ANSI standard 650 MB cartridges are also available. The MacinStor Erasable's accompanying software provides SCSI partitioning, password-protected partitions, manual or automount partitions, full A/UX support, and extensive diagnostic utilities. Other utilitity software for the storage subsystem handles backing up and restoring data, recovering data, encrypting data, and optimizing the disk. The MacinStor Erasable software allows the Macintosh operating system and A/UX on the same subsystem. Data reliability safeguards include automatic reallocation of bad data blocks.

Storage Dimensions
2145 Hamilton Ave.
San Jose, CA 95125
408-879-0300

System Requirements
Macintosh SE or larger.

Price $7999

Support
Telephone and AppleLink support; and one-year parts and labor warranty are provided.

MacinStor HCV

A/UX The MacinStor HCV series of high-performance mass-storage subsystems offers four sizes: 320 MB, 345 MB, 595 MB, and 650 MB. All MacinStor HCV subsystems come preformatted and ready to start up. Accompanying software provides SCSI partitioning, password-protected partitions, manual or automount partitions, full A/UX support, and extensive diagnostic utilities. Other utilitity software for the storage subsystem handles backing up and restoring data, recovering data, encrypting data, and optimizing the disk. The MacinStor HCV software allows the Macintosh operating system and A/UX on the same subsystem. Data reliability safeguards include automatic reallocation of bad data blocks.

Storage Dimensions
2145 Hamilton Ave.
San Jose, CA 95125
408-879-0300

System Requirements
Macintosh Plus or larger.

Price
MacinStor 320-HCV $4499; 345-HCV $4999; 595-HCV $6499; 650-HCV $7999

Support
Telephone, AppleLink, and dealer support; and one-year parts and labor warranty are provided.

MacStreamer

MacStreamer is a 1/2-inch, 9-track tape drive for the Macintosh computer that allows users to read and write mainframe or minicomputer tapes. MacStreamer handles ASCII/EBCDIC conversions and reads IGES, AutoCAD, and other files into the Macintosh. Files can be moved between the Macintosh computer and other computer systems. A complete backup and file-restoration software package is included.

NovaStor Corporation
31828 Village Center Rd.
Westlake Village, CA 91361
818-707-9900

System Requirements
Macintosh Plus or larger.

Price $3995 to $7995
NST-1054 (1600/3200 BPI) $3995; NST-1260 (1600/6250 BPI) $7995.

Support
Free telephone support and updates during one-year warranty are provided. Updates after warranty period available for $100 per year and individual updates for $50 per occurrence.

MacTAPE

MacTAPE is a 1/2-inch 9-track tape system that allows full backup and restore via application programs. MacTAPE also allows import and export of data. A set of library routines written in Lightspeed C and Counsulair C can be linked with the application program to allow users to write custom software and embed the application.

Blackhole Technology Inc.
225 East St.
Winchester, MA 01890
617-729-7715

System Requirements
Macintosh Plus or larger.

Price $5500 to $10,500

Support
Free telephone support and a one-year warranty are provided.

Memorybank

Memorybank (Mass Storage Subsystem) is a high-capacity hard disk with integrated tape backup. It is designed for use with Macintosh systems and provides up to 940 MB of disk storage. It is the ideal storage solution for engineering and scientific models, graphics documents, critical databases, and as the central mass storage subsystem on a local area network. Memorybank includes easy-to-use routines for time-delay backup, incremental backup, folder/file backup, and volume restoration, plus the ability to back up without shutting down AppleShare. Memorybank operates with an average access speed of 16 ms, a transfer rate of 1.5 MB per second, and tape backup of up to 10 MB per minute. A fast copy routine copies and verifies volumes at 25 MB per minute.

Northern Telecom, Inc.
100 Phoenix Dr.
Ann Arbor, MI 48106
313-973-4502

System Requirements
Macintosh 512K or larger.

Price $8900 to $17,900
Price depends on configuration.

Support
Free telephone support, unlimited software updates and documentation, and user manual are provided. Service contract for hardware is available.

Microtech Hard Disk Drives

The Microtech N20 is a 20 MB winchester hard disk drive for external use with a Macintosh Plus or larger, which features a 65 ms access time. The Microtech N40 is a 40 MB winchester hard disk drive that features a 19 ms access time. The Microtech N80 and N100 each offer a 19 ms access time. The Microtech N150 offers a 16 ms access time. The Microtech N40i is a 40 MB winchester hard disk drive for internal use with a Macintosh SE or larger. The Microtech N80i offers 80 MB, and the N100i offers 100 MB. The Microtech N150i/II is a 150 MB winchester hard disk drive for internal use with a Macintosh II computer or larger. The Microtech N320i/II offers 32 MB, and the N650i/II offers 650 MB. All of these drives are shipped with formatting, partitioning, and diagnostic software. They include DS BACKUP, an easy-to-use archiving utility; MacTREE Plus, a visual tree display of finder information; and a generous helping of shareware and public domain software.

Microtech International, Inc.
158 Commerce St.
East Haven, CT 06512
800-325-1895

System Requirements
Microtech N20, N40, N80, N100, N150: Macintosh 512K enhanced or larger. Microtech N40i, N80i, N100i: Macintosh SE or larger. Microtech N150i/II, 320i/II, 650i/II: Macintosh II or larger.

Price
Microtech N20 $520; N40 $649; N80 $1019; N100 $1099; N150 $1469; N40i $569; N 80i $919; N100I $999; N150i/II $1399; N320i/II $2699; N650i/II $3430. Volume pricing available.

Support
Toll-free telephone support; AppleLink; MicroLink, a 24-hour bulletin board; and five-year limited warranty are provided.

Microtech R45

The Microtech R45 is a 45 MB removable winchester hard disk drive for external use with a Macintosh Plus and larger. This drive features 25 ms access time and is shipped with formatting, partitioning, and diagnostic software. The drive also includes DS BACKUP, an easy-to-use archiving utility; MacTREE Plus, a visual tree display of finder information; and a generous helping of shareware and public domain software. The drive is shipped with two SCSI cables, terminator, cartridge, power cable, and documentation.

Microtech International, Inc.
158 Commerce St.
East Haven, CT 06512
800-325-1895

System Requirements
Macintosh 512K enhanced or larger.

Price $1099
Volume pricing is available.

Support
Toll-free telephone support, MicroLink, a 24-hour bulletin board, and a two-year limited warranty are available.

Microtech T60 and T150

The Microtech T60 is a 60 MB and the T150 is a 150 MB streaming tape archival system for external use with a Macintosh Plus computer or larger. These systems feature a very fast data transfer rate and an easy-to-use graphic interface. They will back up by application or file date, type, or folder, and will do unattended backups over a network. The systems are shipped with two SCSI cables, terminator, tape, power cable, and documentation.

Microtech International, Inc.
158 Commerce St.
East Haven, CT 06512
800-325-1895

System Requirements
Macintosh 512K enhanced or larger.

Price
Microtech T60 $799; Microtech T150 $1099.
Volume pricing available.

Support
Toll-free telephone support; AppleLink; MicroLink, a 24-hour bulletin board; and two-year limited warranty are available.

Novastor NST2.3G

The Novastor NST2.3G is a complete network backup system on an 8 mm cartridge. The drive backs up at more than 8 MB per minute and provides full backup and restore capabilities. It can back up by type, creator, date, time, or color. It reads VAX Save sets and TAR Savesets, such as Sun backups. The product has an alarm system for unattended backups, and it can handle multivolume or multidrive backups.

NovaStor Corporation
31828 Village Center Rd.
Westlake Village, CA 91361
818-707-9900

System Requirements
Macintosh Plus or larger.

Price $6995

Support
Free telephone support and updates during one-year warranty are provided. Updates after warranty period available for $100 per year and individual for $50 per occurrence.

Qualstar 1/2-Inch 9-Track Tape Drive

The Qualstar 1/2-Inch 9-Track Tape Drive is an SCSI streaming tape subsystem for the Macintosh computer that supports data transfer between Macintosh systems and dissimilar systems such as the IBM mainframe, DEC, VAX, Sun Microsystems, Intergraph, and others. The 9-track tape subsystem consists of model 1054 or model 1260 and the Qutape software package. Qutape is used for transferring files between the tape and the Macintosh computer; it supports ASCII/EBCDIC data displayed to screen, backup, and file archive for any combination of files and folders. The Restore function allows users to selectively restore backed up data. Applications include universal translation of CAD/CAM files, data acquisition, data analysis, database, and program conversion. Model 1054 supports 1600/3200 BPI density; model 1260 supports 1600/6250 BPI density.

Qualstar Corporation
9621 Irondale Ave.
Chatsworth, CA 91311
818-882-5822

System Requirements
Macintosh Plus or larger.

Price
Model 1054 $3995; model 1260 $7995.

Support
Telephone support and a 90-day warranty are provided. Service is available from the factory. Updates are available for $50.

REO-650

REO-650 is the first erasable optical storage system for the Macintosh computer. Each optical disk holds up to 650 MB of data. The disks are fully rewritable over one million times. Pinnacle has erasable optical systems from 650 MB to 16 GB.

Pinnacle Micro, Inc.
15265 Alton Pkwy.
Irvine, CA 92718
800-553-7070

System Requirements
Macintosh Plus or larger.

Price $4995
Software for Macintosh $495.

Support
Free telephone support is provided.

Rodime Internal and External Hard Drives

Rodime offers a comprehensive array of internal and external SCSI hard disk drives for the Macintosh computer, in four lines. All external disk drives fit neatly under the Macintosh Plus, SE, or SE/30. The five Plus external hard drives range from 20 MB to 140 MB capacity, with an average access time as low as 28 milliseconds and a transfer rate of 7.5 Mbits per second. The internal versions of the same drives, the RX series, feature a mounting bracket that allows the SE to accommodate the hard disk and both floppy disk drives. The four Cobra external hard disk drives range from 45 MB to 210 MB capacity, and they feature an average access time of 18 milliseconds, a transfer rate of up to 10 Mbits per second, and a 16K look-ahead caching buffer. The four Cobra drives offer automatic head park and lock, quiet operation, Fastback backup software, and Rodime utilities for partitioning, password protection, and other functions. The internal Cobra drives fit in all Macintosh cases, including the Macintosh IIcx and Macintosh SE computer with two floppy disk drives.

Rodime Systems
851 Broken Sound Pkwy.
Boca Raton, FL 33487
407-994-5585

System Requirements
Macintosh Plus or larger; Macintosh 512K or 512K enhanced with adapter.

Price
20–140 Plus $899 to $2199; 200–1400RX $799 to $2099; Cobra 45e–215e $1399 to $2549; Cobra 45i–215i $1299 to $2449.

Support
Telephone and AppleLink support and one-year limited warranty are provided.

Terminal Emulation

Contact

Contact is a Burroughs TD/MT/ET terminal emulation program that also supports IBM 3270, VT100, and TTY. It offers sophisticated data capture, monitor mode, multiple pages and addresses, password protection and user identification, soft keys, and a separate printer address. CANDE and Xmodem file transfer are supported.

Avenue Software, Inc.
2162 W. Charest Blvd.
Quebec City, Quebec, G1N 2G9 Canada
418-682-3088

System Requirements
Macintosh 512K or larger.

Price $395

Support
Telephone support is provided to registered users.

SoftPC

See complete description under System Components—Networking/Communication.

TextTerm+Graphics

TextTerm+Graphics is a fast terminal emulator for data communications with industry standard text and graphic emulation and background file transfer (MultiFinder compatible). As a text terminal, the VT100 is emulated with reverse scrolling, file transfer (text, Xmodem, Kermit), and text/table saving. As a graphic terminal the Tektronix 4014, 4012, 4010, 4016, 4006, and 4105 are emulated. Color support is provided for screens, plotters, and printers. Object-oriented graphics can be saved for use by MacDraw, MacDraft, MacPaint, MacWrite, and PageMaker. High-quality laser output is supported. TextTerm+Graphics includes a built-in editor for electronic mail.

Mesa Graphics
P.O. Box 600
Los Alamos, NM 87544
505-672-1998

System Requirements
Macintosh 512K enhanced or larger; modem or direct host connection.

Price $195

Support
Free telephone support is provided. Minor upgrades at $10 and major upgrades with new manual at $25 are available.

TGRAF-07/MAC

TGRAF-07/MAC is a Tektronix 4107 graphics terminal emulation software package. TGRAF eliminates the need for an expensive graphics terminal by allowing a Macintosh II or Macintosh SE/30 to access host-based graphics applications via serial, dial-up, or network communication lines. TGRAF-07/MAC has true overlay text, as well as an optional separate dialog area, supports 640 by 480 resolution or higher with the ability to display 16 colors, runs in a window, operates under MultiFinder, and has twice the drawing speed of a Tektronix 4107. This package has been carefully integrated into the Macintosh environment with pull-down menus, cut and paste, sizeable graphics window, and other Macintosh interface features.

GRAFPOINT
1485 Saratoga Ave.
San Jose, CA 95129
408-446-1919

System Requirements
Macintosh SE or larger; 2 MB of RAM; Modem; 8-bit color graphics card; color monitor; RS-232; host communications via serial; dial-up, or network.

Price $995

Support
A 30-day warranty, free technical support, and updates for one year are provided.

VersaTerm and VersaTerm Pro

VersaTerm and VersaTerm Pro are text and graphics communications programs/terminal emulators suitable for file transfer, information services, and mini/mainframe access. The programs provide text emulation for DEC VT100 and Data General D200, as well as full Tektronix 4010, 4012, and 4014 graphics emulations. An internal text editor and text translation capabilities are supported. In addition to all the features of VersaTerm, VersaTerm Pro provides a powerful and complete Tektronics 4105 color graphics emulation. VersaTerm Pro maintains the full high-resolution vector image of the graphic in memory and allows zoom and pan in either the 4105 or 4104 emulation. A wealth of object-oriented functions can be performed, such as printing high-resolution graphics with a LaserWriter printer and creating MacDraw-like documents from memory. File transfer capability is compatible with Xmodem, Ymodem, and Kermit protocols in Text, Binary, and MacBinary formats. All autodial modems are supported, as are multitasking background operation of file transfers, printing, and terminal sessions with MultiFinder.

Synergy Software
2457 Perkiomen Ave.
Reading, PA 19606
215-779-0522

System Requirements
VersaTerm requires Macintosh 512K enhanced or larger; VersaTerm Pro requires Macintosh Plus or larger. Both require direct host connection or any auto-dial modem.

Price $149
VersaTerm $149; VersaTerm Pro $295

Support
Free support; updates and additional services available for a fee; notification to registered users by newsletter.

Product/Company Index

1stBBS
1stDesk Systems, Inc. 227
1stTEAM
1stDesk Systems, Inc. 194
3+Share
3Com Corporation 227
3-D Graphics Library
True BASIC, Inc. 134
3-D Pipe Clearance
Heizer Software 1
3Space Digitizer, Tracker, and **Isotrak**
Polhemus Incorporated 217
4th Dimension 2.0
ACIUS, Inc. 195
18 Series Pen Plotters
Océ Graphics USA Inc. 237
254/255 FreeForm
HyperActive, Inc. 46
556 Measurement and Control System
Keithley Instruments, Inc. 114
650T Tempest Macintosh IIx
Mitek Systems, Inc. 215
23120A Template Systems
CalComp, Inc. 217
A-115 Asynchronous Line Driver
Digital Access Corporation 227
Abaton Scan 300/S and **300/GS**
Abaton Technology Corp. 246
Accounting 4 Construction
Software Constructors, Inc. 42
Accu-Weather Forecaster
Metacomet Software 115
ACNAP
BV Engineering 85
ACTFIL
BV Engineering 85
ACTINET ARCTalk Interface Cards
Actinet Systems, Inc. 228
AD/ART/PLUS "Architectural Graphics"
FREEMYERS DESIGN 1
AdaFlow
Iconix Software Engineering, Inc. 127
Adagen
Mark V Systems 127
AdaVantage Mac Professional Developer Kit
Meridian Software Systems, Inc. 134
ADD3D
Future Vision Computer Systems LTD. 2
Adobe Illustrator 88
Adobe Systems, Inc. 171
Adobe Streamline
Adobe Systems, Inc. 171
ADS-MGMStation—ELECTRONICS
COMPU-ARCH 81
ADS-MGMStation—Symbol Libraries
COMPU-ARCH 2
Advanced String Library
True BASIC, Inc. 134
AEC Fonts, Library Modules, and Setup Sheets
SLNB Architects, Inc. 2
AEC Information Manager
AEC Management Systems, Inc. 191
Agfa Slidemakers and Film Recorders
Agfa Matrix Division 237
AI-90 FACTORYMAC
Automatix, Inc. 73
Aide-De-Camp Software Management System
Software Maintenance and Development Systems 128
AISC Code Check
Micro-BESST 3
Allegro Common LISP (A/UX)
Franz, Inc. 163
Alsys Ada Compiler for the Macintosh II
Alsys, Inc. 135
Anatool
Advanced Logical Software 128
ANSYS-PC/LINEAR 4.3
Swanson Analysis 58
Aperture
Aperture Technologies, Inc. 3
APL.68000 for the Apple Macintosh
Spencer Organization 135
Applied Stats
Applied Statistics, Inc. 73
AppMaker, The Application Generator
Bowers Development Corporation 135
Arch-T2
KETIV Technologies, Inc. 3
ArchAccount
The Gardner Partnership, Architects 46
ArchiCAD
GRAPHISOFT 4
ArchiText
BrainPower, Inc. 197
Architosh
E. T. Vermurlen & Associates Architecture, Inc. 4
Architrion II/Series 5
Gimeor, Inc. 4
ARTIST Mac10 Graphic Controller
Control Systems, Inc. 220
ASD Professional CAD Symbol Library
Advanced System Design, Inc. 5
Ashlar Vellum
Ashlar Inc. 53
Astronomy
E&M Software Co. 95
AsyncServer
Computer Methods Corporation 228
Atelier Interiors
Artel Software Inc. 28
Auto-Architect
DCA Engineering Software, Inc. 5
AutoCAD
Autodesk, Inc. 5
AutoKIT
Applied Software Technology, Inc. 6
AutoMod^{2e}
AutoSimulations, Inc. 176
Autovision 90
Automatix, Inc. 74
Azimuth
Graphsoft, Inc. 33
B-Tree HELPER
(M)agreeable software, inc. 136
BACKFAX
Solutions International 228
Barneyscan
Barneyscan Corporation 247
BEAM MAC and **BEAM MAC II**
Compuneering Inc. 28
Beam Analysis
Heizer Software 28
BEAMJOIS
J. J. JORDAN, ARCHITECT-ENGINEER 6
Beams and Columns
Computer Detailing Corporation 6
Berol RapiDesign/Drawing Symbols Libraries
Berol USA 7
Best Answer
Heizer Software 176
Bid Master
Building Pro Software 42
BIGBEAMS
J. J. JORDAN, ARCHITECT-ENGINEER 7

Biomedical Research Chart Tool Kit
Sof-Ware Tools 104
BlueMax DataMixer
Ohio Valley Research Associates, Inc. 228
Blueprint
Graphsoft, Inc. 7
Bruning Zeta Pen Plotters
Bruning Computer Graphics 238
Bruning Zeta Thermal Printers
Bruning Computer Graphics 238
Buffer Plus
Applied Creative Technology, Inc. 238
Building Code Analyst
Architectronica 8
Business Filevision
Marvelin Corporation 198
C Programmer's Toolbox/MPW
MMC AD Systems 136
C-ISAM
Informix Software, Inc. 136
CA-Cricket Draw
COMPUTER ASSOCIATES INTERNATIONAL, INC. 172
CA-Cricket Graph
COMPUTER ASSOCIATES INTERNATIONAL, INC. 177
CA-Cricket Presents
COMPUTER ASSOCIATES INTERNATIONAL, INC. 181
CAChe worksystem
Tektronix, Inc. 97
CAD to MAC
Output Network/GeoPacific, Inc. 8, 172
CADMOVER
Kandu Software Corp. 8
Canvas 2.0
Deneba Software 172
CD-ROM Subsystems
Massachusetts Micro Data Systems, Inc. 250
Chameleon
Spectrum Computing, Inc. 104
Chem3D
Cambridge Scientific Computing, Inc. 97
ChemConnection
SoftShell International, Ltd. 97
ChemDraw
Cambridge Scientific Computing, Inc. 98
ChemIntosh Desk Accessory
SoftShell International, Ltd. 98
ChromaScan
Imagenesis 247
Claris CAD
Claris Corp. 53
CLAS 4000 Logic Analysis System
Gould Inc., Design & Test Systems Division 86
Clerk of the Works: Accounting Software for Architects
Samsara Ltd. 47
ClickArt Series of Images
T/Maker Company 198
CLR ANOVA
Clear Lake Research 105
Cognate
Peridom, Inc. 163
Cognate Developer's Kit
Peridom, Inc. 163
COGOMASTER II
Guenzi Surveys 33
ColorBoard Video and Graphics Boards
RasterOps Corporation 220
ColorMAX Trinitron
Sigma Designs, Inc. 221
Composite Wing Optimization
Aircraft Designs, Inc. 58
Composites Design Software
Think Composites 54
ComputeServer
Chorus Supercomputer, Inc. 207
Concept to Completion
MAXSolutions 42
Concrete Estimator
Heizer Software 43
Constructimator II
Softouch Software, Inc. 47
Construction Calculators
Heizer Software 43
Construction Contractor Management
Exceiver Corp. 43
Construction Cost Estimator—Residential
Heizer Software 43
Construction Cost Project Manager
Accuware Business Solutions Ltd. 44
Construction Form Maker
Tight Line Software 44
Construction Progress Billing
Heizer Software 44
Construction Project Management System II
Softouch Software, Inc. 47
Consulair 68000 Development System
Consulair Corporation 137
Consulair 68020/68881 C Development System
Consulair Corporation 137
Contact
Avenue Software, Inc. 256
COSMOS/M
Structural Research & Analysis 59
Crystal
Crystal Software 177
Crystal Ball
Market Engineering Corporation 177
CrystalEyes
StereoGraphics Corporation 221
Dash 30 Workstation
Sixty Eight Thousand Inc. 216
Data Desk
Odesta Corporation 105
Data Record 'n Plot
The Metal Works Industrial Furnaces, Inc. 59
Data Scan
BrainPower, Inc. 247
DataFlash
CPSA 115
DAYLITE
Solarsoft 29
DB-Library
Sybase 137
DB/Write
Metropolis Software, Inc. 199
Db_VISTA III Database Development System
Raima Corporation 195
dbVIEW
Forbes and Rouse 207
dBx/dBPort
Desktop Ai 138
DCA Civil Engineering Module
DCA Engineering Software, Inc. 9
DCNAP
BV Engineering 86
Deed Plotter
Engineering Desktop Solutions 34
Deft/Mac
DEFT, Inc. 128
Design & Weave
AVL Looms 203
Design/CPN
Meta Software Corporation 178
Design/IDEF
Meta Software Corporation 74
Design/OA
Meta Software Corporation 129
DesignWorks
Capilano Computing 81
DIAFRAMS
J. J. JORDAN, ARCHITECT-ENGINEER 9
Diaquest DQ-MAC Macintosh Videographic Animation Controller
Diaquest, Inc. 181

DIGI-PAD with ADB Option
GTCO Corp. 217
Digital Darkroom
Silicon Beach Software, Inc. 124
DIGITIZE
RockWare, Inc. 34
Discsim
SeaSoft Systems 59
Disk Pack
Mega Drive Systems, Inc. 251
DMP-60 Series Pen Plotter
Houston Instrument Division of Ametek 239
Double Helix
Odesta Corporation 138
Douglas CAD/CAM Professional System
Douglas Electronics, Inc. 91
Douglas CAD/CAM System Basic, Print & Plot
Douglas Electronics, Inc. 91
Douglas Drill Tape Creator
Douglas Electronics, Inc. 92
Douglas Gerber File Creator
Douglas Electronics, Inc. 92
DPX-3300
Roland Digital Graphics 239
DragonWave
Nedrud Data Systems 86
Drawing Table
Brøderbund Software 172
DrawingBoard 2300A Digitizers
CalComp, Inc. 218
DrawStructures for Chemists
SoftShell International, Ltd. 99
Dreams
Innovative Data Design, Inc. 9
DS-Concrete
Daystar Software, Inc. 10
DS-Steel
Daystar Software, Inc. 10
DS-Wood
Daystar Software, Inc. 10
dv/dt
Engineerium 87
Dynamax HPLC Method Manager
Rainin Instrument Co., Inc. 99
DynaPerspective
Dynaware Corporation 11
E-Machines Color Monitors
E-Machines, Inc. 221
Edit Worx
Julian Systems, Inc. 182
Embroidery Expert
Graphic Applications, Inc. 203
Embroidery Plus
Graphic Applications, Inc. 203
Engineer's Aide I: Process Engineering
EPCON 11
Engineer's Aide II: Mechanical
EPCON 60
Engineer's CAD
EPCON 54
Engineering Symbols Library
Northstar Engineering Design 11
Engineering Tool Kit
Sof-Ware Tools 105
Entrepreneur
J.A.G. Enterprises 48
Equilibrium
E&M Software Co. 99
EROFF
Elan Computer Group, Inc. 185
Event Monitor System
Ansan Industries, Ltd. 74
ExperCommon Lisp
ExperTelligence, Inc. 164
ExperFacts
ExperTelligence, Inc. 168
ExperLisp
ExperTelligence, Inc. 164
ExperOPS5-Plus
ExperTelligence, Inc. 164
ExperProlog II
ExperTelligence, Inc. 165
Exstatix
Select Micro Systems, Inc. 106
Extend
Imagine That, Inc. 87
Extender GrafPak
Invention Software Corporation 178
EZ-CAM IV
Bridgeport Machines, Inc. 68
EZ-EDM
Bridgeport Machines, Inc. 68
EZ-MILL
Bridgeport Machines, Inc. 69
EZ-SURF PLUS
Bridgeport Machines, Inc. 69
EZ-TURN
Bridgeport Machines, Inc. 69
FASTAT. Fast Statistics for the Mac.
SYSTAT, Inc. 106
FastNet Adapters
Dove Computer Corporation 229
FastTrax Engineering Drawing Management System
E.I. DuPont De Nemours & Co. (Inc.) 48
FEHT
F-Chart Software 87
FileGLU
Professional CADD Services 199
FlashCard II
CPSA 208
FlexeLint
Gimpel Software 138
FlexiCAD 1.2
Amiable Technologies, Inc. 12
Foam-Line 2000 CAD/CAM Cutting System
R.O.F. 70
Fontastic Plus
Altsys Corporation 185
Fontographer
Altsys Corporation 186
FOREST-pls
AVYX, INC. 75
Formulator
ICOM Simulations, Inc. 186
FRAME MAC
Compuneering Inc. 29
FrameGrabber 324N and 324NC
RasterOps Corporation 218
FrameMac Section Tables
Intuitec Software, Inc. 29
G5232-CPS Color PostScript Printer
Océ Graphics USA Inc. 239
GatorBox
Cayman Systems, Inc. 229
GatorCard E/II
Cayman Systems, Inc. 230
GatorShare
Cayman Systems, Inc. 230
GEI ROMemulator
Grammar Engine, Inc. 139
Gene Construction Kit
Textco 100
Generalized Tethered Object Simulation System
David D. Lang Associates 60
Generic CADD Level 1
Generic Software, Inc. 12
GENLOCK Converter
Julian Systems, Inc. 208
GEOdisc US Atlas
Geovision, Inc. 34
Geolog 1.2
HyperActive, Inc. 35
GeoQuery
Odesta Corporation 35
GeoView
Computer Systemics 35
GerberIn
Douglas Electronics, Inc. 92
GoldWorks II
Gold Hill Computers, Inc. 165

GPIB-SE
National Instruments 115
GQL
Andyne Computing Limited 196
GrafStack
Micro/Research 116
Gray Scale Display Adapter
Sigma Designs, Inc. 222
GridMaker
Folkstone Design, Inc. 12
GRX-300 and **GRX-400 Pen Plotters**
Roland Digital Graphics 240
Haber/Thomson
Allotype Typographics 186
Hammer Disk 600
FWB, Inc. 251
Hammer Hard Disks
FWB, Inc. 251
Hammer Tape 150/300
FWB, Inc. 251
HEATCOOL
J. J. JORDAN, ARCHITECT-ENGINEER 13
Heatloss
Yeoman Technical Software 30
Homer
Kulda Corporation 44
Hoops Graphics System
Ithaca Software 139
Housebuilder
Alternative Enterprises 13
HP 7600 Series Electrostatic Plotters
Hewlett-Packard Co.
San Diego Division 240
HP Color Graphics Plotters
Hewlett-Packard Co.
San Diego Division 240
HP DeskWriter Printer
Hewlett-Packard Co.
San Diego Division 241
HP DraftPro and **DraftMaster Pen Plotters**
Hewlett-Packard Co.
San Diego Division 241
HP PaintJet Printer
Hewlett-Packard Co.
San Diego Division 241
HP ScanJet Plus
Hewlett-Packard Co.
San Diego Division 248
Hurdler Centronics Parallel Interface (CPI)
Creative Solutions, Inc. 242
Hurdler II
Creative Solutions, Inc. 208
Hurdler II Serial Boards
Creative Solutions, Inc. 209
Hurdler SE/30 Prototyping Card
Creative Solutions, Inc. 209
Hydro Mac
Applications Design Group 30
Hyper/DB-Library
Sybase 139
HyperMonitor
Arbor Intelligent Systems, Inc. 75
HyperSpace
Mira Imaging Inc. 124
HyperTools
Trendware Corporation 140
HyperVideo
Julian Systems, Inc. 182
HyperX
Millennium Software 165
Hyper•Estimator
Turtle Creek Software 49
Hyper•Remodeler
Turtle Creek Software 45
I-CAT
Automated Reasoning Corp. 75
Iconix PowerTools/Structured Design
Iconix Software Engineering, Inc. 129
IDD Symbol Library, Architecture, Volume I: Residential Construction
Innovative Data Design, Inc. 13
IDDK: DFD-Edit and **ERA-Edit**
The University of Wollongong, Dept. of Computing Services 129
IDEAcomm Mac
IDEAssociates, Inc. 230
IGOR
WaveMetrics 178
Image Analyst
Automatix, Inc. 125
In Deed-The Graphic Land Area Analysis Tool
SWS Software 36
IN-CAD
Infinite Graphics, Inc. 54
Inertia
Modern Computer Aided Engineering, Inc. 60
Informix-4GL
Informix Software, Inc. 140
Informix-4GL Interactive Debugger
Informix Software, Inc. 140
Informix-4GL Rapid Development System
Informix Software, Inc. 141
Informix-ESQL/C
Informix Software, Inc. 141
Instant-Expert
Human Intellect Systems 168
Instant-Expert Plus
Human Intellect Systems 169
Instrument Archive
Desktop Engineering Ltd. 76
Interleaf Publisher
Interleaf, Inc. 187
IsSpice/mac
INTUSOFT 88
Job Cost II
Advanced Data Systems, Inc. 76
KaleidaGraph
Synergy Software 179
KETIV/AutoCAD Standard Template (KAST)
KETIV Technologies, Inc. 14
L-View
Sigma Designs, Inc. 222
Lab Master II
Scientific Solutions, Inc. 116
Lab Partner - design of experiments
Sof-Ware Tools 116
LABTECH NOTEBOOK
Laboratory Technologies Corp. 117
LabView
National Instruments 117
LANDCADD Construction Details
LANDCADD, Inc. 14
LANDCADD Irrigation Design
LANDCADD, Inc. 14
LANDCADD Site Planning and **Landscape Design**
LANDCADD, Inc. 15
LANDesign
Compuneering Inc. 36
LapCAD3
LapCad Engineering 61
LAPPIS
Landware 15
LaserCAMM
Scale Models Unlimited 15
LaserPaint Color II
LaserWare Inc. 173
LaserStor for Macintosh
Storage Dimensions 252
LayerMap
Valle Anderson Associates 16
LCFIL
BV Engineering 88
Level 5-Mac
Level Five Research 169
LFR-Lasergraphics Film Recorder and **CPS-Color Printer System**
Lasergraphics, Inc. 242
LightningScan
Thunderware, Inc. 248
Lightspeed StudioLink
Crosfield Lightspeed Inc. 187
LinAir, Lifting Surface Analysis Program
Desktop Aeronautics 61

LINCAGES
Minnesota Technology Transfer (MINTT) Inc. 61
LOCIPRO
BV Engineering 88
LogicWorks
Capilano Computing 82
LPLC
Capilano Computing 82
LSI Pentagon CAD
Lionshead Software, Inc. 16
LSI Surveyor
Lionshead Software, Inc. 36
LSP
BV Engineering 89
MAC YACC
Abraxas Software 142
Mac Genius Full and Dual Page Monitors
Micro Display Systems, Inc. 222
Mac MasterLink
Performance Software, Inc. 231
Mac Prolog
Quintus Computer Systems 141
Mac Rascol Print
Lasergraphics, Inc. 242
MAC-ART LIBRARY
COMPUCRAFT 199
Mac3D
Challenger Software 173
Mac86 and **Mac286**
Orange Micro, Inc. 209
Mac488B and **MacSCSI488**
IOtech Inc. 117
MacABEL
Data I/O Corporation 82
MacAC
San Juan Software Company 83
MacAdam
Cigraph S.r.l 37
MacADIOS 488n and **MacADIOS 488s**
GW Instruments, Inc. 118
MacADIOS
GW Instruments, Inc. 118
MacADIOS II
GW Instruments, Inc. 118
MacADIOS II Jr.
GW Instruments, Inc. 119
MacADIOS Manager II
GW Instruments, Inc. 119
MacADIOS SCSI
GW Instruments, Inc. 119
MacAnalyst
Excel Software 130
MacApp
APDA/Apple Computer, Inc. 142
MacArchitrion
Gimeor, Inc. 16
MacATAC
Ohio Valley Research Associates Inc. 120
MacBRAVO!
Schlumberger CAD/CAM 55
MacBubbles
StarSys, Inc. 130
MacC/MacC Toolkit
Consulair Corporation 142
MacCAD Symbol Libraries
CompServCo 17
MacChoro II With Map Animation
Image Mapping Systems 37
MacCider
BSM Computers 252
MacConcept
Klex Software Inc. 55
MacConnect
Racal Interlan 231
MacDesigner
Excel Software 130
MacDiaDac
CGRS Microtech, Inc. 210
MacDisk EM330
Priam Corporation 252
MacDraft
Innovative Data Design, Inc. 17
MacDraw II
Claris Corp. 174
MacDSP Acquisition Daughter Cards
Spectral Innovations, Inc. 120
MacDSP Analysis Software
Spectral Innovations, Inc. 120
MacDSP Array Processor Libraries
Spectral Innovations, Inc. 143
MacDSP Coprocessor Card
Spectral Innovations, Inc. 210
MacDSPXKC Coprocessor Card
Spectral Innovations, Inc. 210
MacElastic and **MacPoisson**
Cooke Publications 106
MacExpansion Chassis
Spectra Micro Development 121
MacExpress
ALSoft, Inc. 143
MacFilter
Momentum Data Systems 83
MacFlow
Mainstay 131
MacForth Plus
Creative Solutions, Inc. 143
MacFortran
Absoft Corporation 144
MacFortran for MPW
Absoft Corporation 144
MacFortran/020-A/UX
Absoft Corporation 144
MacFortran/020-MultiFinder
Absoft Corporation 145
MacFortran/88
Absoft Corporation 145
MacGRIDZO
RockWare, Inc. 37
Mach2 Forth/Assembly Development System
Palo Alto Shipping Co. 145
MacinStor Erasable
Storage Dimensions 252
MacinStor HCV
Storage Dimensions 253
MacInstruments
GW Instruments, Inc. 121
MacInteriors
Microspot 18
Macintizer ADB
GTCO Corp. 218
Macintosh Allegro Common LISP
APDA/Apple Computer, Inc. 146
Macintosh Developer Technical Sample Code
APDA/Apple Computer, Inc. 146
MacIRMA
DCA 231
MacIRMA API
DCA 232
MacIRMA Graphics
DCA 232
MacKeymeleon II
Avenue Software, Inc. 146
MacLab
World Precision Instruments, Inc. 121
MacLaser
Rivera & Associates, Inc. 70
MacMASTER
Promontory Systems, Inc. 218
MacMohr
RockWare, Inc. 179
MacMUMPS
MGlobal 147
MacNail
Turtle Creek Software 45
MACONTROL-IDAC/1000
Small Business Computers of New England, Inc. 121
MacPacq
BioPAC Systems 122
MacPaint
Claris Corp. 174
MacPerspective
Knick Drafting, Inc. 18

MacPLC Comm-Stacks
Kleinhans Systems, Inc. 77
MacPlot Color Thermal Printer Drivers
Microspot 243
MacPlot Pen Plotter Drivers
Microspot 243
MacPlots II—Drafting Version
Engineered Software 243
MacProject II
Claris Corp. 191
MacRoad
Creative Engineering 18
MacSap
Softing S.V.P. 30
MacsBug
APDA/Apple Computer, Inc. 147
MacSchedule
Mainstay 192
MacScheme
Lightship Software, Inc. 166
MacScheme+Toolsmith
Lightship Software, Inc. 166
MacScope
Ansan Industries, Ltd. 122
MacSection
RockWare, Inc. 38
MacSerial488
IOtech Inc. 243
MacShapes
Compuneering Inc. 31
MacSnap
Dove Computer Corporation 211
MacSpeech Lab I
GW Instruments, Inc. 122
MacSpeech Lab II
GW Instruments, Inc. 123
MacSpin 2.0
D2 Software, Inc. 125
MacStreamer
NovaStor Corporation 253
MacStronomy
Etlon Software 95
MacSurf
Graphic Magic Ltd. 55
MacTAPE
Blackhole Technology Inc. 253
MacTRAC
MicroSpeed, Inc. 219
MacVision
Koala Technologies Corporation 219
MacWorkStation
APDA/Apple Computer, Inc. 147
MacWorkStation Dialog Builder
APDA/Apple Computer, Inc. 148
MacWorkStation Event Handler
APDA/Apple Computer, Inc. 148
MacΣqn
Software for Recognition Technologies 187
Manufacturing/Job Cost II
Advanced Data Systems, Inc. 77
MapGrafix Mapping System
ComGrafix, Inc. 38
MapMaker
Select Micro Systems, Inc. 38
MAPO
Cigraph S.r.l 188
MapStar
ComGrafix, Inc. 39
Marathon 020 and **030 Accelerator Cards**
Dove Computer Corporation 211
Marathon Serial Parallel
Dove Computer Corporation 211
Master Outline Spec
Yeoman Technical Software 19
Masterspec AIA
EPPS/Architectonix 19
Masterspec Diskette Libraries
Concept Group, Inc. 19
MathCAD
MathSoft, Inc. 107
Mathematica
Wolfram Research Inc. 107
Mathematician's Toolkit
True BASIC, Inc. 148
MathLab
E&M Software Co. 107
MathType
Design Science, Inc. 188
MathWriter
Cooke Publications 188
MATLAB
The Math Works Inc. 108
Matrix Workshop
Puma Software, Inc. 108
MCADA
Mechanical Software Inc. 62
McCAD Auto-Router
Vamp, Inc. 92
McCAD CLASSIC SPICE
Vamp, Inc. 89
McCAD EDS-1 and **McCAD EDS-2**
Vamp, Inc. 93
McCAD G-View
Vamp, Inc. 93
McCAD Gerber Translator
Vamp, Inc. 93
McCAD PCB-1
Vamp, Inc. 94
McCAD PCB-ST
Vamp, Inc. 94
McCAD Schematics
Vamp, Inc. 83
McCAD Schematics-D.S.
Vamp, Inc. 84
McCLint
MMC AD Systems 148
McCPrint
MMC AD Systems 149
McLogic
Eclipse Software, Inc. 84
Memorybank
Northern Telecom, Inc. 254
Mesa Graphics Plotter Utility
Mesa Graphics 244
MetaDesign
Meta Software Corporation 131
Metal Minder
TWH Corporation 78
MGMStation
Micro CAD/CAM Systems, An Aura Systems Co. 20
MGMStation CAD/CAM
Micro CAD/CAM Systems, An Aura Systems Co. 78
MGMStation IGES/DXF
Micro CAD/CAM Systems, An Aura Systems Co. 56
MGMStation—CAD
Micro CAD/CAM Systems, An Aura Systems Co. 56
MGMStation—GEOMETRY
Micro CAD/CAM Systems, An Aura Systems Co. 62
Micro Dynamics MARS
Micro Dynamics, Ltd. 200
Micro Planner
Micro Planning International 192
Micro Planner X-Pert
Micro Planning International 192
Micro-Cap II
Spectrum Software 84
MicroChem
Chemlab Incorporated 100
MicroExplorer
Texas Instruments 166
Microplate Manager
Bio-Rad Laboratories, Inc. 100
MicroPlex Development Environment
Micro/Research 131
MicroStation Mac
Intergraph Corporation 20
Microtech 68020 and **68882 Accelerators**
Microtech International, Inc. 212

Microtech 68030 Design Board
Microtech International, Inc. 212
Microtech Hard Disk Drives
Microtech International, Inc. 254
Microtech R45
Microtech International, Inc. 254
Microtech T60 and T150
Microtech International, Inc. 255
Microtek Scanners
Microtek Lab, Inc. 248
MicroXASM
Orion Avionics 149
Milo
Paracomp, Inc. 109
MindWrite
DeltaPoint Inc. 200
MiniCad+
Graphsoft, Inc. 20
MiniReporter
Valle Anderson Associates 21
MM2+
C Graph Software, Inc. 101
MNDO +
C Graph Software, Inc. 101
ModaCAD Data Management
ModaCAD, Inc. 204
ModaCAD Design Module
ModaCAD, Inc. 204
ModaCAD Textile Design
ModaCAD, Inc. 204
ModelShop
Paracomp, Inc. 21
MOLDPLUS
Peak Plastic Performance Center, Inc. 56
Moment of Inertia
Heizer Software 31
Monitor
Monico Computer, Inc. 101
Monte Carlo Simulations (Advanced Version) 2.0
Actuarial Micro Software
c/o The ACS Group 109
Moorsim
SeaSoft Systems 62
MORE II
Symantec Corporation 182
MPW Assembler 3.0: Macintosh Programmer's Workshop Assembler
APDA/Apple Computer, Inc. 149
MPW C 3.0: Macintosh Programmer's Workshop C
APDA/Apple Computer, Inc. 150
MPW Linda C environment
Chorus Supercomputer, Inc. 150
MPW Pascal: Macintosh Programmer's Workshop Pascal
APDA/Apple Computer, Inc. 150
MPW: Macintosh Programmer's Workshop Development Environment
APDA/Apple Computer, Inc. 151
MSC/pal 2
The MacNeal-Schwendler Corporation 63
MultiFrame
Graphic Magic Ltd. 31
NASCRAC Fracture Mechanics Computer Code
Failure Analysis Association, Inc. 63
NB LabDriver
National Instruments 123
NB Series Data Acquisition Boards
National Instruments 123
NC-AUTO-CODE
Kramer Consulting, Inc. 71
NCSA Scientific Visualization Software Suite
National Center for Supercomputing Applications 180
NetMap
Advanced Electronic Support Products, Inc. 232
NetSerial
Shiva Corporation 232
NEXPERT Hyper Bridge
Neuron Data 169
NEXPERT Object
Neuron Data 170
NEXPERT Runtime Library (MPW)
Neuron Data 170
NEXPERT*SQL
Neuron Data 167
NEXTRA
Neuron Data 167
Nibble Mac Utility Pack
MindCraft 151
NITRO
Tripos Associates, Inc. 102
NKR BASIC Compiler
NKR Research Inc. 151
NKR BASIC Interpreter
NKR Research Inc. 152
NKR FORTRAN Compiler
NKR Research Inc. 152
NKR GW Converter
NKR Research Inc. 152
Normal Depth
McNeely Associates PA 21
Novastor NST2.3G
NovaStor Corporation 255
NSChart
Siltronix Inc. 153
NTSC Converter
Julian Systems, Inc. 183
Nu-THOR
Causal Systems Inc. 212
Nudge Macro
Chamberlain Custom Macros 22
Nutmeg 30/2
Nutmeg Systems, Inc. 223
NuTools: Numerical Methods 1.2
Nicus 153
NuVision
Perceptics Corporation 125
Nuvotech Network Bridges
Nuvotech 233
Objectworks for Smalltalk-80
ParcPlace Systems 153
Omnis 5
Blyth Software, Inc. 196
Open Plan
Welcom Software Technology 193
OPTDES
Four Peaks Optimal Software 109
OVATION CAD/CAM
Innovative Design Systems Corp. 57
OverLAYS A.M.S.
The Firstside Studios 49
PAD (Pattern-Aided Design)
ModaCAD, Inc. 205
PageMaker
Aldus Corporation 189
PageView
Sigma Designs, Inc. 223
PANDA-Program for Analysis and Design of Airfoils
Desktop Aeronautics 63
Parameter Manager Plus with pmTALK
GenRad, Inc. 110
PCMODEL
Serena Software 102
PCPLOT
BV Engineering 189
PCXI 3M
K.R.B., Inc. 57
PDP
BV Engineering 189
Personal Vision
Orange Micro, Inc. 183
Personal Writer 10SL and 15SL
Personal Writer, Inc. 219
Perspective For Architects
First Logistics, Inc. 49
PhoneNET Connector and PhoneNET Repeater
Farallon Computing 233
PhoneNET StarController
Farallon Computing 234
PHOTOLINK
Photonics Corporation 234

PhotoMac
Avalon Development Group 183
PICT Detective
Palomar Software 154
PictureBook
Loop Software 200
Piper/Stiff 1.01
RockWare, Inc. 102
Planit
Planit West 22
Plasmid Artist
GeneSystems Computer Software 103
PlotMaker
GRAPHISOFT 22
polyMath
E&M Software Co. 110
Power Math
Central Products, Inc. 110
PowerDraw
Engineered Software 23
PowerDraw Formatted Details
Intuitec Software, Inc. 23
PowerDraw Landscape Libraries
Engineered Software 23
PowerDraw Residential Construction Symbols Library
Engineered Software 24
PowerMath II
Central Products Corp. 110
PowerPDL
Iconix Software Engineering, Inc. 132
Powerpoint
Microsoft Corp. 184
PowerTools
Iconix Software Engineering, Inc. 132
Preditor
EVATAC Software 154
PreSpice/mac
INTUSOFT 89
Printer Optimizer
Applied Creative Technology, Inc. 244
Pro-Board
Spectra Micro Development 213
Process Control Chart Tool Kit
Sof-Ware Tools 111
Production Control
Turner Data Systems, Inc. 78
Production Scheduler
Bunder Computer Services 79
Professional Extender GrafPak
Invention Software Corporation 180
Professional Manager
Automate Computer Software 50
Professional Programmer's Extender
Invention Software Corporation 154
Professional Series Drafting Symbols
Williams AG Products 24
Professional Solutions Management Templates
Creighton Nolte and Associates 50
Programmer's Extender Volumes 1 and 2
Invention Software Corporation 155
PROGRESS
Progress Software Corporation 197
Project Billing
Satori Software 193
Prolog II
Avenue Software, Inc. 167
Prolog II+ Compiler
Avenue Software, Inc. 167
Proposal Manager•254/255
Wordscapes 50
Prototyper
SmethersBarnes 132
ProType Math
Bedford Computer Corporation 190
ProType Plus
Bedford Computer Corporation 190
PSpice
MicroSim 90
Quadputer
Microway, Inc. 213
Qualstar 1/2-Inch 9-Track Tape Drive
Qualstar Corporation 255
QUED/M
Paragon Concepts, Inc. 155
QuickLog 2.0
ESE Software, Ltd. 39
QuickView Z21 and Z21 IQ
E-Machines, Inc. 223
Rack II
Julian Systems, Inc. 216
RackMac 1200 Industrial Macintosh
GreenSpring Computers, Inc. 216
RackMac 1240 Industrial Display
GreenSpring Computers, Inc. 224
Radius Accelerator Cards
Radius, Inc. 213
Radius Color Display System
Radius, Inc. 224
Radius Full Page Display
Radius, Inc. 224
Radius Gray Scale Display System
Radius, Inc. 225
Radius Two Page Display
Radius, Inc. 225
RDD-100 System Designer
Ascent Logic Corporation 156
Reactions
E&M Software Co. 103
Reference Manager
Research Information Systems, Inc. 197
Refine
Reasoning Systems 133
RELAY Mac
Microcom Software Division 234
REO-650
Pinnacle Micro, Inc. 256
ResEdit
APDA/Apple Computer, Inc. 156
Resrouting
McNeely Associates PA 24
RETWALLS
J. J. JORDAN, ARCHITECT-ENGINEER 25
RGB Decoder
Julian Systems, Inc. 184
Rodime Internal and External Hard Drives
Rodime Systems 256
Roland DPX-2000 and DPX-3300 Plotters
Roland Digital Graphics 244
Roland DXY Series Pen Plotters
Roland Digital Graphics 245
Rosy
RockWare, Inc. 180
SADE: Symbolic Application Debugging Environment
APDA, Apple Computer, Inc. 156
SALMsim
SeaSoft Systems 64
SAMBAS
microneering 64
SAND-Simulation of Aircraft Nonlinear Dynamics
Desktop Aeronautics 64
SANGRE and SangPlot
GeoComp 39
Scan Analysis
Specom Research 126
Scheme Express
Lightship Software, Inc. 168
Scientific Graphics Toolkit
True BASIC, Inc. 157
Section Properties
Peter O'Driscoll, Inc. 65
Seismic Processing Workshop
Parallel Geosciences 40
Semisim
SeaSoft Systems 65
SFX Video Option
RasterOps Corporation 225
Shaft Alignment for Rotating Machinery
Turvac Alignment Engineering Services 57

Share
Information Presentation Technologies, Inc. 236
SHERWALL
J. J. JORDAN, ARCHITECT-ENGINEER 25
Shipsim
SeaSoft Systems 65
Si3033
SiCLONE Sales and Engineering Corporation 214
Silverrun Design Tools
XA Systems Corporation 133
SilverView
Sigma Designs, Inc. 226
SimpleSpan Utilities I
Arch Software, Inc. 32
SIMSCRIPT II.5
CACI Products Company 157
Skin Tite Manufacturing
Soft Software 79
SmartScrap and **The Clipper II**
Solutions International 201
SNAP!
Forthought, Inc. 25
Sniffer Network Analyzer
Network General Corp. 234
Softgage
International Geometric Tolerancing Institute, Inc 71
SoftPC
Insignia Solutions, Inc. 235
Solar System Calculator
Heizer Software 96
Sorting & Searching Library
True BASIC, Inc. 157
Spark Video Display Boards
Spark International Inc. 226
SPECTEXT
CSI Data Services 26
SPMsim
SeaSoft Systems 66
Spot Elevation Macro
Chamberlain Custom Macros 40
SPP
BV Engineering 90
SpringBoard
GreenSpring Computers, Inc. 214
Stack Cleaner
TRENDWARE Corporation 157
STAP
BV Engineering 90
Statistica
StatSoft, Inc. 111
Statistical Macro Package
Heizer Software 112
Statmoor
SeaSoft Systems 66
Stats Tool Kit
Sof-Ware Tools 112
StatView II
Abacus Concepts, Inc. 112
StatView SE+Graphics
Abacus Concepts, Inc. 113
Steam Function Macro Set
Heizer Software 66
STELLA Software for Business
High Performance Systems, Inc. 181
Stepping Out II: The Software Big Screen
Berkeley Systems 226
Stereo 4.0
RockWare, Inc. 40
StrataVISION 3d
Strata Inc. 174
Structure
Allotype Typographics 103
Sun Clock
MLT Software, Inc. 32
SUNPAS
Solarsoft 32
Super 3D
Silicon Beach Software, Inc. 175
SuperANOVA
Abacus Concepts, Inc. 113
SuperCard
Silicon Beach Software, Inc. 158
SuperExpert
Softsync, Inc. 170
SuperGlue II
Solutions International 201
SuperPaint
Silicon Beach Software, Inc. 175
SupportBoard
GreenSpring Computers, Inc. 214
SurfBoard
Jets Cybernetics 215
Swivel 3D
Paracomp, Inc. 175
SYSTAT
SYSTAT, Inc. 113
Systemizer Plus
Applied Creative Technology, Inc. 235
TCL-Image
Perceptics Corporation 126
TechFonts
Paragon Concepts, Inc. 190
Tektronix Color Printers
Tektronix, Inc. 245
TellStar
Spectrum Holobyte 96
TextTerm+Graphics
Mesa Graphics 257
TeXtures
Blue Sky Research 191
TFCalc
Software Spectra, Inc. 96
TGRAF-07/MAC
GRAFPOINT 257
The Architect's Office
CDG Architects 46
The Benchmark Survey System
The Computersmith, Inc. 33
The Contractor Solution!
Vertical Solutions 48
The Curator
Solutions International 198
The DNA Inspector IIe
Textco 98
The Gene Communicator
Textco 99
The Gibbs System; ncCAD/ncCAM
Gibbs and Associates 70
The Industrial Mac—CAD/CAM/CAE Workstation
JMES 216
The Macadvantage UCSD Pascal
Pecan Software Systems, Inc. 142
The Manufacturing Controller
QUBE Software, Inc. 77
The Personal Server Network
Information Presentation Technologies, Inc. 233
The Programmer's Online Companion
Addison-Wesley Publishing Co. 155
The Scientific Desk
C. Abaci, Inc. 111
The Subcontractor Solution!
Vertical Solutions 51
The Worx
Julian Systems, Inc. 185
THINK C
Symantec Corporation 158
THINK Pascal
Symantec Corporation 158
Think 'n Time
Mainstay 193
THREADS
microneering 67
Threshold Construction Forms
Wilhelm Publishing, Inc. 45
ThunderScan for Macintosh
Thunderware, Inc. 249
TIB
Truvel Corp. 249
Timbuktu
Farallon Computing 235
Time Billing 1.5
Exceiver Corp. 51
Time Is Money–Architects & Engineers
Collier Software 51

TimeWand
Videx, Inc. 249
Title Worx
Julian Systems, Inc. 184
TML Pascal II and TML Source Code Library II
TML Systems, Inc. 159
Tolculator
International Geometric Tolerancing Institute, Inc 67
topCAD
GRAPHISOFT 26
TopDown
Kaetron 194
TOUCH OSI Macintosh Developer's Kit
Touch Communications, Inc. 159
Towsim
SeaSoft Systems 67
tPlex PDL
Micro/Research 159
TQM Gantt
Full Scale Development Corporation 194
TrafficWatch
Farallon Computing 236
Trapeze
DeltaPoint Inc. 201
TREES-pls
AVYX, INC. 79
Trendware XCAL
Trendware Corporation 160
True BASIC
True BASIC, Inc. 160
TruScan Scanners
Truvel Corp. 250
TT200
Agfa Matrix Division 245
TurboCASE
StructSoft, Inc. 133
TWM-pls
AVYX, INC. 80
Ultimage
GTFS Inc. 126
UNITize
Rainbow Bridge Software, Inc. 114
Universal Calculator
Flight Engineering 68
USGS Maps on CAD
Geographic Infomation Systems 40
V-COGO Macintosh
Engineering Desktop Solutions 41
V-FONTS Macintosh
Engineering Desktop Solutions 26
V.I.P. (Visual Interactive Programming)
Mainstay 161
V.P.M.S.
Anderson Electronics, Inc. 80
VALE
Earthware 41
Vector
Micro Concepts Inc. 58
VersaCAD Drafter
Versacad Corporation 27
VersaCAD/Macintosh Edition
Versacad Corporation 27
Versadapter
Applied Creative Technology, Inc. 246
VersaTerm and **VersaTerm Pro**
Synergy Software 257
Video Digitizer
Workstation Technologies Inc. 220
Videodisc Authoring Toolkit
Video Image Presentation Systems 161
Voice Navigator and Voice Navigator XA
Articulate Systems, Inc. 202
VP-10 Graphic Element Processor
KMW Systems Corp. 246
WavEdit
World Precision Instruments, Inc. 124
WE DSP32 Development Tools
Spectral Innovations, Inc. 162
WormStat
Small Business Computers of New England, Inc. 114
X-Fonts
Autograf Utilities 27
XFER
BV Engineering 91
XPsort
Stackhouse Software 202
XVT for the Macintosh.
Graphic Software Systems, Inc. 162
ZBasic 4.01
Zedcor, Inc. 104
ZBasic 5.0
Zedcor, Inc. 162
Zebra
Truvel Corp. 250
ZING
Enabling Technologies, Inc. 176

Company/Product Index

(M)agreeable software, inc.
B-Tree HELPER 136
1stDesk Systems, Inc.
1stBBS 227
1stTEAM 194
3Com Corporation
3+Share 227
Abacus Concepts, Inc.
StatView II 112
StatView SE+Graphics 113
SuperANOVA 113
Abaton Technology Corp.
Abaton Scan 300/S and 300/GS 246
Abraxas Software
MAC YACC 142
Absoft Corporation
MacFortran 144
MacFortran for MPW 144
MacFortran/020-A/UX 144
MacFortran/020-MultiFinder 145
MacFortran/88 145
Accuware Business Solutions Ltd.
Construction Cost Project Manager 44
ACIUS, Inc.
4th Dimension 2.0 195
Actinet Systems, Inc.
ACTINET ARCTalk Interface Cards 228
Actuarial Micro Software c/o The ACS Group
Monte Carlo Simulations (Advanced Version) 2.0 109
Addison-Wesley Publishing Co.
The Programmer's Online Companion 155
Adobe Systems, Inc.
Adobe Illustrator 88 171
Adobe Streamline 171
Advanced Data Systems, Inc.
Job Cost II 76
Manufacturing/Job Cost II 77
Advanced Electronic Support Products, Inc.
NetMap 232
Advanced Logical Software
Anatool 128
Advanced System Design, Inc.
ASD Professional CAD Symbol Library 5
AEC Management Systems, Inc.
AEC Information Manager 191
Agfa Matrix Division
Agfa Slidemakers and Film Recorders 237
TT200 245
Aircraft Designs, Inc.
Composite Wing Optimization 58
Aldus Corporation
PageMaker 189
Allotype Typographics
Haber/Thomson 186
Structure 103
ALSoft, Inc.
MacExpress 143
Alsys, Inc.
Alsys Ada Compiler for the Macintosh II 135
Alternative Enterprises
Housebuilder 13
Altsys Corporation
Fontastic Plus 185
Fontographer 186
Amiable Technologies, Inc.
FlexiCAD 1.2 12
Anderson Electronics, Inc.
V.P.M.S. 80
Andyne Computing Limited
GQL 196
Ansan Industries, Ltd.
Event Monitor System 74
MacScope 122
APDA/Apple Computer, Inc.
MacApp 142
Macintosh Allegro Common LISP 146
Macintosh Developer Technical Sample Code 146
MacsBug 147
MacWorkStation 147
MacWorkStation Dialog Builder 148
MacWorkStation Event Handler 148
MPW Assembler 3.0: Macintosh Programmer's Workshop Assembler 149
MPW C 3.0: Macintosh Programmer's Workshop C 150
MPW Pascal: Macintosh Programmer's Workshop Pascal 150
MPW: Macintosh Programmer's Workshop Development Environment 151
ResEdit 156
SADE: Symbolic Application Debugging Environment 156
Aperture Technologies, Inc.
Aperture 3
Applications Design Group
Hydro Mac 30
Applied Creative Technology, Inc.
Buffer Plus 238
Printer Optimizer 244
Systemizer Plus 235
Versadapter 246
Applied Software Technology, Inc.
AutoKIT 6
Applied Statistics, Inc.
Applied Stats 73
Arbor Intelligent Systems, Inc.
HyperMonitor 75
Arch Software, Inc.
SimpleSpan Utilities I 32
Architectronica
Building Code Analyst 8
Artel Software Inc.
Atelier Interiors 28
Articulate Systems, Inc.
Voice Navigator and Voice Navigator XA 202
Ascent Logic Corporation
RDD-100 System Designer 156
Ashlar Inc.
Ashlar Vellum 53
Autodesk, Inc.
AutoCAD 5
Autograf Utilities
X-Fonts 27
Automate Computer Software
Professional Manager 50
Automated Reasoning Corp.
I-CAT 75
Automatix, Inc.
AI-90 FACTORYMAC 73
Autovision 90 74
Image Analyst 125
AutoSimulations, Inc.
AutoMod^{2e} 176
Avalon Development Group
PhotoMac 183
Avenue Software, Inc.
Contact 256
MacKeymeleon II 146
Prolog II 167
Prolog II+ Compiler 167

AVL Looms
Design & Weave 203
AVYX, INC.
FOREST-pls 75
TREES-pls 79
TWM-pls 80
Barneyscan Corporation
Barneyscan 247
Bedford Computer Corporation
ProType Math 190
ProType Plus 190
Berkeley Systems
Stepping Out II:
The Software Big Screen 226
Berol USA
Berol RapiDesign/Drawing Symbols
Libraries 7
Bio-Rad Laboratories, Inc.
Microplate Manager 100
BioPAC Systems
MacPacq 122
Blackhole Technology Inc.
MacTAPE 253
Blue Sky Research
TeXtures 191
Blyth Software, Inc.
Omnis 5 196
Bowers Development Corporation
AppMaker,
The Application Generator 135
BrainPower, Inc.
ArchiText 197
Data Scan 247
Bridgeport Machines, Inc.
EZ-CAM IV 68
EZ-EDM 68
EZ-MILL 69
EZ-SURF PLUS 69
EZ-TURN 69
Bruning Computer Graphics
Bruning Zeta Pen Plotters 238
Bruning Zeta Thermal Printers 238
Brøderbund Software
Drawing Table 172
BSM Computers
MacCider 252
Building Pro Software
Bid Master 42
Bunder Computer Services
Production Scheduler 79
BV Engineering
ACNAP 85
ACTFIL 85
DCNAP 86
LCFIL 88
LOCIPRO 88
LSP 89
PCPLOT 189
PDP 189
SPP 90
STAP 90
XFER 91
C Graph Software, Inc.
MM2+ 101
MNDO + 101
C. Abaci, Inc.
The Scientific Desk 111
CACI Products Company
SIMSCRIPT II.5 157
CalComp, Inc.
23120A Template Systems 217
DrawingBoard 2300A Digitizers 218
Cambridge Scientific Computing, Inc.
Chem3D 97
ChemDraw 98
Capilano Computing
DesignWorks 81
LogicWorks 82
LPLC 82
Causal Systems Inc.
Nu-THOR 212
Cayman Systems, Inc.
GatorBox 229
GatorCard E/II 230
GatorShare 230
CDG Architects
The Architect's Office 46
Central Products Corp.
PowerMath II 110
Power Math 110
CGRS Microtech, Inc.
MacDiaDac 210
Challenger Software
Mac3D 173
Chamberlain Custom Macros
Nudge Macro 22
Spot Elevation Macro 40
Chemlab Incorporated
MicroChem 100
Chorus Supercomputer, Inc.
ComputeServer 207
MPW Linda C environment 150
Cigraph S.r.l
MacAdam 37
MAPO 188
Claris Corp.
Claris CAD 53
MacDraw II 174
MacPaint 174
MacProject II 191
Clear Lake Research
CLR ANOVA 105
Collier Software
Time Is Money – Architects
& Engineers 51
ComGrafix, Inc.
MapGrafix Mapping System 38
MapStar 39
CompServCo
MacCAD Symbol Libraries 17
COMPU-ARCH
ADS-MGMStation—ELECTRONICS 81
ADS-MGMStation—
Symbol Libraries 2
COMPUCRAFT
MAC-ART LIBRARY 199
Compuneering Inc.
BEAM MAC and BEAM MAC II 28
FRAME MAC 29
LANDesign 36
MacShapes 31
COMPUTER ASSOCIATES
INTERNATIONAL, INC.
CA-Cricket Draw 172
CA-Cricket Graph 177
CA-Cricket Presents 181
Computer Detailing Corporation
Beams and Columns 6
Computer Methods Corporation
AsyncServer 228
Computer Systemics
GeoView 35
Concept Group, Inc.
Masterspec Diskette Libraries 19
Consulair Corporation
Consulair 68000 Development
System 137
Consulair 68020/68881 C
Development System 137
MacC/MacC Toolkit 142
Control Systems, Inc.
ARTIST Mac10 Graphic Controller 220
Cooke Publications
MacElastic and MacPoisson 106
MathWriter 188

CPSA
DataFlash 115
FlashCard II 208
Creative Engineering
MacRoad 18
Creative Solutions, Inc.
Hurdler Centronics Parallel Interface (CPI) 242
Hurdler II 208
Hurdler II Serial Boards 209
Hurdler SE/30 Prototyping Card 209
MacForth Plus 143
Creighton Nolte and Associates
Professional Solutions Management Templates 50
Crosfield Lightspeed Inc.
Lightspeed StudioLink 187
Crystal Software
Crystal 177
CSI Data Services
SPECTEXT 26
D2 Software, Inc.
MacSpin 2.0 125
Data I/O Corporation
MacABEL 82
David D. Lang Associates
Generalized Tethered Object Simulation System 60
Daystar Software, Inc.
DS-Concrete 10
DS-Steel 10
DS-Wood 10
DCA
MacIRMA 231
MacIRMA API 232
MacIRMA Graphics 232
DCA Engineering Software, Inc.
Auto-Architect 5
DCA Civil Engineering Module 9
DEFT, Inc.
Deft/Mac 128
DeltaPoint Inc.
MindWrite 200
Trapeze 201
Deneba Software
Canvas 2.0 172
Design Science, Inc.
MathType 188
Desktop Aeronautics
LinAir, Lifting Surface Analysis Program 61
PANDA-Program for Analysis and Design of Airfoils 63
SAND-Simulation of Aircraft Nonlinear Dynamics 64
Desktop Ai
dBx/dBPort 138
Desktop Engineering Ltd.
Instrument Archive 76
Diaquest, Inc.
Diaquest DQ-MAC Macintosh Videographic Animation Controller 181
Digital Access Corporation
A-115 Asynchronous Line Driver 227
Douglas Electronics, Inc.
Douglas CAD/CAM Professional System 91
Douglas CAD/CAM System Basic, Print & Plot 91
Douglas Drill Tape Creator 92
Douglas Gerber File Creator 92
GerberIn 92
Dove Computer Corporation
FastNet Adapters 229
MacSnap 211
Marathon 020 and 030 Accelerator Cards 211
Marathon Serial Parallel 211
Dynaware Corporation
DynaPerspective 11
E&M Software Co.
Astronomy 95
Equilibrium 99
MathLab 107
polyMath 110
Reactions 103
E-Machines, Inc.
E-Machines Color Monitors 221
QuickView Z21 and Z21 IQ 223
E. T. Vermurlen & Associates Architecture, Inc.
Architosh 4
E.I. DuPont De Nemours & Co. (Inc.)
FastTrax Engineering Drawing Management System 48
Earthware
VALE 41
Eclipse Software, Inc.
McLogic 84
Elan Computer Group, Inc.
EROFF 185
Enabling Technologies, Inc.
ZING 176
Engineered Software
MacPlots II—Drafting Version 243
PowerDraw 23
PowerDraw Landscape Libraries 23
PowerDraw Residential Construction Symbols Library 24
Engineering Desktop Solutions
Deed Plotter 34
V-COGO Macintosh 41
V-FONTS Macintosh 26
Engineerium
dv/dt 87
EPCON
Engineer's Aide I: Process Engineering 11
Engineer's Aide II: Mechanical 60
Engineer's CAD 54
EPPS/Architectonix
Masterspec AIA 19
ESE Software, Ltd.
QuickLog 2.0 39
Etlon Software
MacStronomy 95
EVATAC Software
Preditor 154
Exceiver Corp.
Construction Contractor Management 43
Time Billing 1.5 51
Excel Software
MacAnalyst 130
MacDesigner 130
ExperTelligence, Inc.
ExperCommon Lisp 164
ExperFacts 168
ExperLisp 164
ExperOPS5-Plus 164
ExperProlog II 165
F-Chart Software
FEHT 87
Failure Analysis Association, Inc.
NASCRAC Fracture Mechanics Computer Code 63
Farallon Computing
PhoneNET Connector and PhoneNET Repeater 233
PhoneNET StarController 234
Timbuktu 235
TrafficWatch 236
First Logistics, Inc.
Perspective For Architects 49
Flight Engineering
Universal Calculator 68
Folkstone Design, Inc.
GridMaker 12
Forbes and Rouse
dbVIEW 207
Forthought, Inc.
SNAP! 25
Four Peaks Optimal Software
OPTDES 109
Franz, Inc.
Allegro Common LISP (A/UX) 163
FREEMYERS DESIGN
AD/ART/PLUS "Architectural Graphics" 1

Full Scale Development Corporation
TQM Gantt 194
Future Vision Computer Systems LTD.
ADD3D 2
FWB, Inc.
Hammer Disk 600 251
Hammer Hard Disks 251
Hammer Tape 150/300 251
Generic Software, Inc.
Generic CADD Level 1 12
GeneSystems Computer Software
Plasmid Artist 103
GenRad, Inc.
Parameter Manager Plus with pmTALK 110
GeoComp
SANGRE and SangPlot 39
Geographic Infomation Systems
USGS Maps on CAD 40
Geovision, Inc.
GEOdisc US Atlas 34
Gibbs and Associates
The Gibbs System; ncCAD/ncCAM 70
Gimeor, Inc.
Architrion II/Series 5 4
MacArchitrion 16
Gimpel Software
FlexeLint 138
Gold Hill Computers, Inc.
GoldWorks II 165
Gould Inc., Design & Test Systems Division
CLAS 4000 Logic Analysis System 86
GRAFPOINT
TGRAF-07/MAC 257
Grammar Engine, Inc.
GEI ROMemulator 139
Graphic Applications, Inc.
Embroidery Expert 203
Embroidery Plus 203
Graphic Magic Ltd.
MacSurf 55
MultiFrame 31
Graphic Software Systems, Inc.
XVT for the Macintosh. 162
GRAPHISOFT
ArchiCAD 4
topCAD 26
PlotMaker 22
Graphsoft, Inc.
Azimuth 33
Blueprint 7
MiniCad+ 20
GreenSpring Computers, Inc.
RackMac 1200 Industrial Macintosh 216
RackMac 1240 Industrial Display 224
SpringBoard 214
SupportBoard 214
GTCO Corp.
DIGI-PAD with ADB Option 217
Macintizer ADB 218
GTFS Inc.
Ultimage 126
Guenzi Surveys
COGOMASTER II 33
GW Instruments, Inc.
MacADIOS 488n and MacADIOS 488s 118
MacADIOS 118
MacADIOS II 118
MacADIOS II Jr. 119
MacADIOS Manager II 119
MacADIOS SCSI 119
MacInstruments 121
MacSpeech Lab I 122
MacSpeech Lab II 123
Heizer Software
3-D Pipe Clearance 1
Beam Analysis 28
Best Answer 176
Concrete Estimator 43
Construction Calculators 43
Construction Cost Estimator—Residential 43
Construction Progress Billing 44
Moment of Inertia 31
Solar System Calculator 96
Statistical Macro Package 112
Steam Function Macro Set 66
Hewlett-Packard Co., San Diego Division
HP DraftPro and DraftMaster Pen Plotters 241
HP 7600 Series Electrostatic Plotters 240
HP Color Graphics Plotters 240
HP DeskWriter Printer 241
HP PaintJet Printer 241
HP ScanJet Plus 248
High Performance Systems, Inc.
STELLA Software for Business 181
Houston Instrument Division of Ametek
DMP-60 Series Pen Plotter 239
Human Intellect Systems
Instant-Expert 168
Instant-Expert Plus 169
HyperActive, Inc.
254/255 FreeForm 46
Geolog 1.2 35
ICOM Simulations, Inc.
Formulator 186
Iconix Software Engineering, Inc.
AdaFlow 127
Iconix PowerTools/Structured Design 129
PowerPDL 132
PowerTools 132
IDEAssociates, Inc.
IDEAcomm Mac 230
Image Mapping Systems
MacChoro II With Map Animation 37
Imagenesis
ChromaScan 247
Imagine That, Inc.
Extend 87
Infinite Graphics, Inc.
IN-CAD 54
Information Presentation Technologies, Inc.
Share 236
The Personal Server Network 233
Informix Software, Inc.
C-ISAM 136
Informix-4GL 140
Informix-4GL Interactive Debugger 140
Informix-4GL Rapid Development System 141
Informix-ESQL/C 141
Innovative Data Design, Inc.
Dreams 9
IDD Symbol Library, Architecture, Volume I: Residential Construction 13
MacDraft 17
Innovative Design Systems Corp.
OVATION CAD/CAM 57
Insignia Solutions, Inc.
SoftPC 235
Intergraph Corporation
MicroStation Mac 20
Interleaf, Inc.
Interleaf Publisher 187
International Geometric Tolerancing Institute, Inc
Tolculator 67
Softgage 71
Intuitec Software, Inc.
FrameMac Section Tables 29
PowerDraw Formatted Details 23
INTUSOFT
IsSpice/mac 88
PreSpice/mac 89
Invention Software Corporation
Extender GrafPak 178
Professional Extender GrafPak 180
Professional Programmer's Extender 154
Programmer's Extender Volumes 1 and 2 155

IOtech Inc.
Mac488B and MacSCSI488 117
MacSerial488 243
Ithaca Software
Hoops Graphics System 139
J. J. JORDAN, ARCHITECT-ENGINEER
BEAMJOIS 6
BIGBEAMS 7
DIAFRAMS 9
HEATCOOL 13
RETWALLS 25
SHERWALL 25
J.A.G. Enterprises
Entrepreneur 48
Jets Cybernetics
SurfBoard 215
JMES
The Industrial Mac—CAD/CAM/CAE Workstation 216
Julian Systems, Inc.
Edit Worx 182
GENLOCK Converter 208
HyperVideo 182
NTSC Converter 183
Rack II 216
RGB Decoder 184
The Worx 185
Title Worx 184
K.R.B., Inc.
PCXI 3M 57
Kaetron
TopDown 194
Kandu Software Corp.
CADMOVER 8
Keithley Instruments, Inc.
556 Measurement and Control System 114
KETIV Technologies, Inc.
Arch-T2 3
KETIV/AutoCAD Standard Template (KAST) 14
Kleinhans Systems, Inc.
MacPLC Comm-Stacks 77
Klex Software Inc.
MacConcept 55
KMW Systems Corp.
VP-10 Graphic Element Processor 246
Knick Drafting, Inc.
MacPerspective 18
Koala Technologies Corporation
MacVision 219
Kramer Consulting, Inc.
NC-AUTO-CODE 71
Kulda Corporation
Homer 44
Laboratory Technologies Corp.
LABTECH NOTEBOOK 117
LANDCADD, Inc.
LANDCADD Construction Details 14
LANDCADD Irrigation Design 14
LANDCADD Site Planning and Landscape Design 15
Landware
LAPPIS 15
LapCad Engineering
LapCAD3 61
Lasergraphics, Inc.
LFR-Lasergraphics Film Recorder and CPS-Color Printer System 242
Mac Rascol Print 242
LaserWare Inc.
LaserPaint Color II 173
Level Five Research
Level 5-Mac 169
Lightship Software, Inc.
MacScheme 166
MacScheme+Toolsmith 166
Scheme Express 168
Lionshead Software, Inc.
LSI Pentagon CAD 16
LSI Surveyor 36
Loop Software
PictureBook 200
Mainstay
MacFlow 131
MacSchedule 192
Think 'n Time 193
V.I.P. (Visual Interactive Programming) 161
Mark V Systems
Adagen 127
Market Engineering, Corporation
Crystal Ball 177
Marvelin Corporation
Business Filevision 198
Massachusetts Micro Data Systems, Inc.
CD-ROM Subsystems 250
MathSoft, Inc.
MathCAD 107
MAXSolutions
Concept to Completion 42
McNeely Associates PA
Normal Depth 21
Resrouting 24
Mechanical Software Inc.
MCADA 62
Mega Drive Systems, Inc.
Disk Pack 251
Meridian Software Systems, Inc.
AdaVantage Mac Professional Developer Kit 134
Mesa Graphics
Mesa Graphics Plotter Utility 244
TextTerm+Graphics 257
Meta Software Corporation
Design/CPN 178
Design/IDEF 74
Design/OA 129
MetaDesign 131
Metacomet Software
Accu-Weather Forecaster 115
Metropolis Software, Inc.
DB/Write 199
MGlobal
MacMUMPS 147
Micro CAD/CAM Systems, An Aura Systems Co.
MGMStation 20
MGMStation CAD/CAM 78
MGMStation IGES/DXF 56
MGMStation—CAD 56
MGMStation—GEOMETRY 62
Micro Concepts Inc.
Vector 58
Micro Display Systems, Inc.
Mac Genius Full and Dual Page Monitors 222
Micro Dynamics, Ltd.
Micro Dynamics MARS 200
Micro Planning International
Micro Planner 192
Micro Planner X-Pert 192
Micro-BESST
AISC Code Check 3
Micro/Research
GrafStack 116
MicroPlex Development Environment 131
tPlex PDL 159
Microcom Software Division
RELAY Mac 234
microneering
SAMBAS 64
THREADS 67
MicroSim
PSpice 90
Microsoft Corp.
Powerpoint 184
MicroSpeed, Inc.
MacTRAC 219
Microspot
MacInteriors 18
MacPlot Color Thermal Printer Drivers 243
MacPlot Pen Plotter Drivers 243

Microtech International, Inc.
Microtech 68020 and 68882 Accelerators 212
Microtech 68030 Design Board 212
Microtech Hard Disk Drives 254
Microtech R45 254
Microtech T60 and T150 255
Microtek Lab, Inc.
Microtek Scanners 248
Microway, Inc.
Quadputer 213
Millennium Software
HyperX 165
MindCraft
Nibble Mac Utility Pack 151
Minnesota Technology Transfer (MINTT) Inc.
LINCAGES 61
Mira Imaging Inc.
HyperSpace 124
Mitek Systems, Inc.
650T Tempest Macintosh IIx 215
MLT Software, Inc.
Sun Clock 32
MMC AD Systems
C Programmer's Toolbox/MPW 136
McCLint 148
McCPrint 149
ModaCAD, Inc.
ModaCAD Data Management 204
ModaCAD Design Module 204
ModaCAD Textile Design 204
PAD (Pattern-Aided Design) 205
Modern Computer Aided Engineering, Inc.
Inertia 60
Momentum Data Systems
MacFilter 83
Monico Computer, Inc.
Monitor 101
National Center for Supercomputing Applications
NCSA Scientific Visualization Software Suite 180
National Instruments
GPIB-SE 115
LabView 117
NB LabDriver 123
NB Series Data Acquisition Boards 123
Nedrud Data Systems
DragonWave 86
Network General Corp.
Sniffer Network Analyzer 234
Neuron Data
NEXPERT Hyper Bridge 169
NEXPERT Object 170
NEXPERT Runtime Library (MPW) 170
NEXPERT*SQL 167
NEXTRA 167
Nicus
NuTools: Numerical Methods 1.2 153
NKR Research Inc.
NKR BASIC Compiler 151
NKR BASIC Interpreter 152
NKR FORTRAN Compiler 152
NKR GW Converter 152
Northern Telecom, Inc.
Memorybank 254
Northstar Engineering Design
Engineering Symbols Library 11
NovaStor Corporation
MacStreamer 253
Novastor NST2.3G 255
Nutmeg Systems, Inc.
Nutmeg 30/2 223
Nuvotech
Nuvotech Network Bridges 233
Océ Graphics USA Inc.
18 Series Pen Plotters 237
G5232-CPS Color PostScript Printer 239
Odesta Corporation
Data Desk 105
Double Helix 138
GeoQuery 35
Ohio Valley Research Associates Inc.
BlueMax DataMixer 228
MacATAC 120
Orange Micro, Inc.
Mac86 and Mac286 209
Personal Vision 183
Orion Avionics
MicroXASM 149
Output Network/GeoPacific, Inc.
CAD to MAC 8, 172
Palo Alto Shipping Co.
Mach2 Forth/Assembly Development System 145
Palomar Software
PICT Detective 154
Paracomp, Inc.
Milo 109
ModelShop 21
Swivel 3D 175
Paragon Concepts, Inc.
QUED/M 155
TechFonts 190
Parallel Geosciences
Seismic Processing Workshop 40
ParcPlace Systems
Objectworks for Smalltalk-80 153
Peak Plastic Performance Center, Inc.
MOLDPLUS 56
Pecan Software Systems, Inc.
The Macadvantage UCSD Pascal 142
Perceptics Corporation
NuVision 125
TCL-Image 126
Performance Software, Inc.
Mac MasterLink 231
Peridom, Inc.
Cognate 163
Cognate Developer's Kit 163
Personal Writer, Inc.
Personal Writer 10SL and 15SL 219
Peter O'Driscoll, Inc.
Section Properties 65
Photonics Corporation
PHOTOLINK 234
Pinnacle Micro, Inc.
REO-650 256
Planit West
Planit 22
Polhemus Incorporated
3Space Digitizer, Tracker, and Isotrak 217
Priam Corporation
MacDisk EM330 252
Professional CADD Services
FileGLU 199
Progress Software Corporation
PROGRESS 197
Promontory Systems, Inc.
MacMASTER 218
Puma Software, Inc.
Matrix Workshop 108
Qualstar Corporation
Qualstar 1/2-Inch 9-Track Tape Drive 255
QUBE Software, Inc.
The Manufacturing Controller 77
Quintus Computer Systems
Mac Prolog 141
R.O.F.
Foam-Line 2000 CAD/CAM Cutting System 70
Racal Interlan
MacConnect 231
Radius, Inc.
Radius Accelerator Cards 213
Radius Color Display System 224
Radius Full Page Display 224
Radius Gray Scale Display System 225
Radius Two Page Display 225

Raima Corporation
Db_VISTA III Database Development System 195
Rainbow Bridge Software, Inc.
UNITize 114
Rainin Instrument Co., Inc.
Dynamax HPLC Method Manager 99
RasterOps Corporation
ColorBoard Video and Graphics Boards 220
FrameGrabber 324N and 324NC 218
SFX Video Option 225
Reasoning Systems
Refine 133
Research Information Systems, Inc.
Reference Manager 197
Rivera & Associates, Inc.
MacLaser 70
RockWare, Inc.
DIGITIZE 34
MacGRIDZO 37
MacMohr 179
MacSection 38
Piper/Stiff 1.01 102
Rosy 180
Stereo 4.0 40
Rodime Systems
Rodime Internal and External Hard Drives 256
Roland Digital Graphics
DPX-3300 239
GRX-300 and GRX-400 Pen Plotters 240
Roland DPX-2000 and DPX-3300 Plotters 244
Roland DXY Series Pen Plotters 245
Samsara Ltd.
Clerk of the Works: Accounting Software for Architects 47
San Juan Software Company
MacAC 83
Satori Software
Project Billing 193
Scale Models Unlimited
LaserCAMM 15
Schlumberger CAD/CAM
MacBRAVO! 55
Scientific Solutions, Inc.
Lab Master II 116
SeaSoft Systems
Discsim 59
Moorsim 62
SALMsim 64
Semisim 65
Shipsim 65
SPMsim 66
Statmoor 66
Towsim 67
Select Micro Systems, Inc.
Exstatix 106
MapMaker 38
Serena Software
PCMODEL 102
Shiva Corporation
NetSerial 232
SiCLONE Sales and Engineering Corporation
Si3033 214
Sigma Designs, Inc.
ColorMAX Trinitron 221
Gray Scale Display Adapter 222
L-View 222
PageView 223
SilverView 226
Silicon Beach Software, Inc.
Digital Darkroom 124
Super 3D 175
SuperCard 158
SuperPaint 175
Siltronix Inc.
NSChart 153
Sixty Eight Thousand Inc.
Dash 30 Workstation 216
SLNB Architects, Inc.
AEC Fonts, Library Modules, and Setup Sheets 2
Small Business Computers of New England, Inc.
MACONTROL-IDAC/1000 121
WormStat 114
SmethersBarnes
Prototyper 132
Sof-Ware Tools
Biomedical Research Chart Tool Kit 104
Engineering Tool Kit 105
Lab Partner - design of experiments 116
Process Control Chart Tool Kit 111
Stats Tool Kit 112
Soft Software
Skin Tite Manufacturing 79
Softing S.V.P.
MacSap 30
Softouch Software, Inc.
Constructimator II 47
Construction Project Management System II 47
SoftShell International, Ltd.
ChemConnection 97
ChemIntosh Desk Accessory 98
DrawStructures for Chemists 99
Softsync, Inc.
SuperExpert 170
Software Constructors, Inc.
Accounting 4 Construction 42
Software for Recognition Technologies
MacΣqn 187
Software Maintenance and Development Systems
Aide-De-Camp Software Management System 128
Software Spectra, Inc.
TFCalc 96
Solarsoft
DAYLITE 29
SUNPAS 32
Solutions International
BACKFAX 228
SmartScrap and The Clipper II 201
SuperGlue II 201
The Curator 198
Spark International Inc.
Spark Video Display Boards 226
Specom Research
Scan Analysis 126
Spectra Micro Development
MacExpansion Chassis 121
Pro-Board 213
Spectral Innovations, Inc.
MacDSP Acquisition Daughter Cards 120
MacDSP Analysis Software 120
MacDSP Array Processor Libraries 143
MacDSP Coprocessor Card 210
MacDSPXKC Coprocessor Card 210
WE DSP32 Development Tools 162
Spectrum Computing, Inc.
Chameleon 104
Spectrum Holobyte
TellStar 96
Spectrum Software
Micro-Cap II 84
Spencer Organization
APL.68000 for the Apple Macintosh 135
Stackhouse Software
XPsort 202
StarSys, Inc.
MacBubbles 130
Statistica 111
StereoGraphics Corporation
CrystalEyes 221
Storage Dimensions
LaserStor for Macintosh 252
MacinStor Erasable 252
MacinStor HCV 253
Strata Inc.
StrataVISION 3d 174

StructSoft, Inc.
TurboCASE 133
Structural Research & Analysis
COSMOS/M 59
Swanson Analysis
ANSYS-PC/LINEAR 4.3 58
SWS Software
In Deed-The Graphic Land Area Analysis Tool 36
Sybase
DB-Library 137
Hyper/DB-Library 139
Symantec Corporation
MORE II 182
THINK C 158
THINK Pascal 158
Synergy Software
KaleidaGraph 179
VersaTerm and VersaTerm Pro 257
SYSTAT, Inc.
FASTAT. Fast Statistics for the Mac. 106
SYSTAT 113
T/Maker Company
ClickArt Series of Images 198
Tektronix, Inc.
CAChe worksystem 97
Tektronix Color Printers 245
Texas Instruments
MicroExplorer 166
Textco
Gene Construction Kit 100
The DNA Inspector IIe 98
The Gene Communicator 99
The Computersmith, Inc.
The Benchmark Survey System 33
The Firstside Studios
OverLAYS A.M.S. 49
The Gardner Partnership, Architects
ArchAccount 46
The MacNeal-Schwendler Corporation
MSC/pal 2 63
The Math Works Inc.
MATLAB 108
The Metal Works Industrial Furnaces, Inc.
Data Record 'n Plot 59
The University of Wollongong, Dept. of Computing Services
IDDK: DFD-Edit and ERA-Edit 129
Think Composites
Composites Design Software 54
Thunderware, Inc.
LightningScan 248
ThunderScan for Macintosh 249
Tight Line Software
Construction Form Maker 44
TML Systems, Inc.
TML Pascal II and TML Source Code Library II 159
Touch Communications, Inc.
TOUCH OSI Macintosh Developer's Kit 159
Trendware Corporation
HyperTools 140
Stack Cleaner 157
Trendware XCAL 160
Tripos Associates, Inc.
NITRO 102
True BASIC, Inc.
3-D Graphics Library 134
Advanced String Library 134
Mathematician's Toolkit 148
Scientific Graphics Toolkit 157
Sorting & Searching Library 157
True BASIC 160
Truvel Corp.
TIB 249
TruScan Scanners 250
Zebra 250
Turner Data Systems, Inc.
Production Control 78
Turtle Creek Software
Hyper•Estimator 49
Hyper•Remodeler 45
MacNail 45
Turvac Alignment Engineering Services
Shaft Alignment for Rotating Machinery 57
TWH Corporation
Metal Minder 78
Valle Anderson Associates
LayerMap 16
MiniReporter 21
Vamp, Inc.
McCAD Auto-Router 92
McCAD CLASSIC SPICE 89
McCAD EDS-1 and McCAD EDS-2 93
McCAD G-View 93
McCAD Gerber Translator 93
McCAD PCB-1 94
McCAD PCB-ST 94
McCAD Schematics 83
McCAD Schematics-D.S. 84
Versacad Corporation
VersaCAD Drafter 27
VersaCAD/Macintosh Edition 27
Vertical Solutions
The Contractor Solution! 48
The Subcontractor Solution! 51
Video Image Presentation Systems
Videodisc Authoring Toolkit 161
Videx, Inc.
TimeWand 249
WaveMetrics
IGOR 178
Welcom Software Technology
Open Plan 193
Wilhelm Publishing, Inc.
Threshold Construction Forms 45
Williams AG Products
Professional Series Drafting Symbols 24
Wolfram Research Inc.
Mathematica 107
Wordscapes
Proposal Manager•254/255 50
Workstation Technologies Inc.
Video Digitizer 220
World Precision Instruments, Inc.
MacLab 121
WavEdit 124
XA Systems Corporation
Silverrun Design Tools 133
Yeoman Technical Software
Heatloss 30
Master Outline Spec 19
Zedcor, Inc.
ZBasic 4.01 104
ZBasic 5.0 162

Apple Computer, Inc.
20525 Mariani Avenue
Cupertino, California 95014
(408) 996-1010
TLX 171-576
M6286/A

$8.95