

# Software and Accessories for the HP 48SX

April 1991



# HP Application and Memory Cards for the HP 48SX

## Use over 300 equations to solve science and engineering problems

*Over 300 science and engineering equations and reference tools extend the capability of the HP 48SX.* This card lets you find the right equation, right away. Use the HP 48SX cursor keys to browse through equation topics such as columns and beams, electricity and fluid flow. Then, with the touch of a key, you'll see a set of related equations. Choose your equation; the HP 48SX displays it, gives you a picture of the physical system (if appropriate), lists the descriptions of each variable in the equation, and then enables you to solve for any variable in the equation using HP's unique HP Solve application.

*Physical Constants Library.* Work with equations that require physical constants, like gravity and speed of light, without having to use cumbersome reference tables. The HP 48SX places constants in equations where you want them.

*Periodic Table of Elements.* Press a key to view the periodic table of atomic weights, numbers, and densities (over 25 properties in all). You may never need to use tables in a book again.

### **HP Solve Equation Library Application Card.**

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**HP 82211A**

In the box: Application card and owner's manual.

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## Load and run HP 41CV programs in your HP 48SX

*Use HP 41CV programs on the breakthrough HP 48SX.* Move up to the power and breakthrough capabilities of the HP 48SX calculator and take your HP 41CV programs along using the HP 41CV Emulator application card. It emulates all HP 41CV commands and most non-graphics commands of the HP 82240A or HP 82240B Infrared Printers.

*Flexible data and program access.* Share data between the HP 48SX and HP 41CV emulation environments. In emulation mode, the HP 48SX keyboard is reassigned to HP 41 functions. A keyboard overlay serves as a guide to HP 41CV commands. Or make your own key assignments; they are active in the emulator's USER mode.

*Familiar display.* The default display shows all four HP 41 stack registers and annunciators. Or configure the HP 48SX display to show only the familiar single line HP 41 display.

### HP 41CV Emulator Application Card.

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#### HP 82210A

In the box: Application card, owner's manual, and keyboard overlay.

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## **Battery-backed RAM Cards**

*Take advantage of additional RAM.* Develop large programs and store more data in your HP 48SX.

*Choose the memory configuration you need.* Add to the main memory of the HP 48SX or use it as an electronic disk.

*Save your information, even when you unplug the RAM card from the HP 48SX.* It's powered by its own long-lasting battery.

### **32-Kbyte Battery-Backed RAM Card for the HP 48SX.**

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#### **HP 82214A**

In the box: 32-Kbyte battery backed RAM card, CR2016 battery, installation card

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### **128-Kbyte Battery-Backed RAM Card for the HP 48SX.**

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#### **HP 82215A**

In the box: 128-Kbyte battery backed RAM card, CR2016 battery, installation card

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# HP Accessories for the HP 48 Family

## Easy HP 48 program development and data transfer using an IBM-compatible computer and the Program Development Link

*Transfer and archive HP 48 data and programs.* Easily transfer files between the PC and HP 48 using the built-in, flexible transfer features. Menu accessed operations include: individual variables, whole applications, and back-up and restore of HP 48 memory.

*Save program development time by turning your PC into an HP 48 program development system.* Use the mouse compatible, menu-driven editor to create and format programs and comments, access HP 48 special characters, and perform standard edit functions. Write complete applications in the editor and transfer them to the HP 48 with a single keystroke.

*Immediate execution window.* Enter HP 48 commands in this window, press enter to execute the commands on the HP 48, and see the resulting stack displayed on your PC.

*On-line reference manual and context-sensitive help.* Click the mouse on any HP 48 command in the editor window and see the corresponding page of the *HP 48 Programmer's Reference Manual*. Hot links speed access to related commands and information. The complete on-line help system for the development link program provides one-key access to help on development link operation.

### Program Development Link for HP 48 to IBM and IBM-compatible computers.

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#### **HP 82208B**

**In the box:** 1.5-meter serial cable, 9-pin to 25-pin adapter, 5 1/4-inch and 3 1/2-inch disk with PC software, *HP 48 Programmer's Reference Manual*, *Getting Started Manual*.

**Requires:** MS-DOS® 3.0 or above, hard disk, 640 Kbytes user memory, and an open PC serial port (9- or 25-pin).

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### Serial Interface Cable for IBM and IBM-compatible PC's.

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#### **HP 82222A**

**Includes:** 1.5-meter serial cable only.

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## **Serial Communications with Apple Macintosh Computers**

*Share your computer's peripherals with your HP 48.* Protect your HP 48 data and programs by storing them to your computer disk drive.

*Access the power of your HP 48 using the large keyboard and display of your computer.* HP 48 commands are easy to enter on your computer keyboard. The Serial Interface software sends commands to the HP 48 and returns results to your computer screen for easy viewing.

*Use your favorite computer text editor with the HP 48.* Write and edit HP 48 programs; enter large matrices and statistical data in a familiar way.

### **Serial Interface Kit for HP 48 to Apple Macintosh Computers.**

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#### **HP 82209A**

**In the box:** 1.5-meter serial cable, 3 1/2-inch disk with computer software, installation instructions.

**Requires:** Open serial port (9-pin Mini-DIN).

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### **Serial Interface Cable for Apple Macintosh computers.**

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#### **82223A**

**In the box:** 1.5-meter serial cable only.

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## Other Accessories

### **HP 48 Replacement Soft Case.**

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#### **HP 82221A**

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### **Overlay Kit for HP 48.**

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#### **HP 82220A**

**Includes:** one alpha, three clear, and three blank overlays.

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### **NEW! Serial Cable Adapter Kit for using the IBM-compatible serial cable with modems and printers**

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#### **HP 82224A**

**Includes:** 9-pin to 25-pin serial modem adapter and 9-pin to 25-pin serial printer adapter.

**Requires:** HP 82222A Serial Interface Cable for IBM and IBM-Compatible PC's.

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## Reference Information for Programmers

*Concise reference information for the HP 48. The HP 48 Programmer's Reference Manual has all the reference information needed to use the powerful programming language in the HP 48. Contents include: an alphabetical Command Dictionary that provides complete syntax and usage information for every programmable command in the HP 48; a Table of Error and Status Messages; a complete Table of Units that gives definitions for all the unit types in the HP 48; a Table of System Flags that defines the usage of all predefined flags in the HP 48; and a Table of Reserved Variables that defines all the reserved variables in the HP 48.*

### ***HP 48 Programmers Reference Manual***

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**00048-90054**

504 pages.

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## HP Infrared Printer and Printing Accessories

*The battery-powered infrared printer is a revolutionary companion for your new calculator. Because it operates with an invisible infrared beam, no cord is necessary to connect it to the calculator. Producing hard copies—in the field or in your office—couldn't be easier. And this improved version offers easier-to-read output and automatic shutoff for extended battery life.*

*Operation of the infrared printer is easy, too. Simply aim your calculator at the printer (from up to 18 inches away), send print instructions, and you get a neat, clean copy of your calculations. You can print a complete record of your work, or select and print only what you need.*

*Just four AA alkaline batteries give the infrared printer go-anywhere portability. Or to extend battery life, plug in the optional AC adapter.*

### HP Infrared Printer.

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#### **HP 82240B**

In the box: infrared printer, four AA alkaline batteries, one roll of printer paper, and owner's manual.

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### AC Adapters for the HP 82240A and HP 82240B Infrared Printers.

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**HP 82241A** - U.S. and Canada 110V, 50-60 Hz

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**HP 82241AB** - Europe 220V, 50 Hz

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**HP 82241AG** - Australia 240V, 50 Hz

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**HP 82241AJ** - Japan 100V, 50 Hz

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**HP 82241AU** - United Kingdom 240V, 50 Hz

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### Thermal Paper for the HP 82240A and HP 82240B Infrared Printers.

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**HP 82175A** - 6 rolls - Black

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# Independently Developed Software and Accessories

*The products included in this section are produced by companies independent of HP. HP has reviewed these products for inclusion in this brochure but they have not been tested by HP and their inclusion here does not constitute an endorsement.*

To purchase products in this section, visit your nearest HP dealer or order directly from the manufacturer.

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## Armstrong Publishing Company

3135 NW Ashwood Drive  
Corvallis, OR 97330  
(503) 757 0282  
FAX (503) 753 6105

### *HP 48 Handbook.*

An additional reference manual for the HP 48 calculator and the HP Solve Equation Library Application Card. Contains all aspects of object manipulation, custom menus, graphics, system operations, and programming structures with examples. Reference tables are included for rapid look-up for built-in commands, units, messages, menu numbers, the character set, object types, and flags. Soft cover, 195 pages, spiral bound.

### *The HP 48 Programmer's ToolKit.*

A collection of software tools designed for programmers that improve program performance by using internal system languages. Features include:

- The Character Set Catalog that displays all three HP 48 character sets and shows I/O translation forms.
- Menu Label Builder is a graphics editor for custom menu labels.
- Flag Catalog displays the states and description of all flags.
- The Data Browser and Title Browser are screen-oriented user interface utilities that may be used to enhance applications.
- The Tool Library includes 74 new commands that provide object manipulation capabilities beyond those built-in to the HP 48.

The HP 48 Programmers ToolKit may be ordered with a disk for either IBM-compatible or Macintosh Computers.

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## **Bolen Leather Products**

903 South Main Street  
Springfield, TN 37172  
(615) 384 5858

### **Hard Leather Case**

To protect the HP 48 outdoors and indoors.

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## **Cusack**

PO Box 222  
1100 13th Street  
Golden, CO 80402  
(303) 279 1279

### **Hard Leather Case**

To protect the HP 48 outdoors and indoors.

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## **D'Zign**

P.O. Box 9790  
Fresno, CA 93794  
(209) 276 3460

## **NEW! HP 48 Surveying Packet**

This is a disk-based surveying software package that can fit in the 32-Kbyte internal memory of the HP 48. Once downloaded to your calculator, the following application areas are available: coordinate geometry, geometric solutions (triangle solutions, circular curves, vertical curves, and vertical intersections), layout programs, leveling routines, and file management routines. In addition to the HP 48 software described above, a PC program for converting coordinate files from the format used by the calculator to formats used by PC surveying and engineering programs is included.

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## EduCalc

27953 Cabot Road  
Laguna Niguel, CA 92677  
(714) 582 2637  
(800) 677 7001 (customer support)  
(800) 535 9650, ext. 9151 (credit card orders)  
FAX (714) 582 1445

### **NEW! HP 48 Application Card Programming Services**

Send your HP 48 application on a RAM card and EduCalc will duplicate it onto an OTP (one time programmable) ROM card. Both 32-Kbyte and 128-Kbyte OTP's are available. Price varies with ROM size and quantity. Production time is approximately two weeks.

### **NEW! Dual-Purpose HP 48 Serial Cable**

The unique connector on this cable utilizes a switch to select the appropriate configuration for connection to either a computer or a printer. This cable eliminates the need for a separate adapter and NULL modem.

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## Grapevine Publication, Inc.

PO Box 2449  
626 NW 4th Street  
Corvallis, OR 97339  
(800) 338 4331  
(503) 754 0583  
FAX (503) 754 6508

### *An Easy Course in Using the HP 48*

The fastest, easiest way to get up to speed on the incredible HP 48! This jargon-free, hands-on course gives you practical lessons on objects, tools, menus, the stack, writing, solving, and plotting equations, using matrices and statistics, programming, using directories and much more. Each lesson shows working examples of the commands and concepts you need to learn. There are plenty of review points that summarize what you've learned—and a quiz at the end of each chapter. Soft cover, 384 pages, lay-flat binding.

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## Grapevine Publication, continued

### *HP 48 Graphics*

A fascinating look at the potential of that big display on the HP 48. This book shows you how to build graphics objects ("grobs") and use them to customize displays with diagrams, pictures, labels, titles, multiple plots, games, and menu icons. The book begins with an in-depth review of the HP 48 EquationWriter, Solve, and Plot applications. Next it describes the location and use of the built-in graphic commands. Then you learn to build grobs and combine them into extensive application programs. There is also a chapter on transferring HP 48 graphics to other computers or printers. Soft cover, 304 pages, lay-flat binding.

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## **IDEC (formerly Zengrange, Inc.)**

541A Wake Robin Avenue  
Corvallis, OR 97333  
(503) 753 9403  
FAX (503) 753 4308

### **Classroom Display for HP 48SX**

This classroom display plugs into either of the two card slots in the HP 48SX. It provides an auxiliary display that can be placed on an overhead projector to project a large image on a screen.

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## **Larken Publications**

4517 NW Queens Avenue  
Corvallis, OR 97330  
(503) 754 0117

### *HP 41/48 Transitions*

The HP 48 calculator is the heir-apparent of the HP 41. The HP 48 combines the flexibility and customizability of the HP 41 with the revolutionary computational capabilities of the HP 28S. This book describes the logical evolution from the HP 41 to the HP 48 and shows that HP 48 actions are natural extensions and enhancements of familiar HP 41 operations. The book also shows how your HP 41 procedures and methods can be adapted to the HP 48, including stack manipulations, storing and retrieving data, programming, and program conversions. Soft cover, 149 pages, spiral bound.

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## Larken Publications, continued

### **NEW! HP 48 Insights, Part I: Principles and Programming**

This is the first part of a two-volume work on the operation and programming of the HP 48 family of calculators. The first half of this book concentrates on the underlying principles of HP 48 operation. Special attention is given to understanding RPN, objects and execution, the HP 48 stack, storing objects, operational methods, customization, and problem solving. The remainder of this book focuses on the tools and techniques of programming. Programming chapters cover programming basics, display operation and graphics, arrays and lists, and program development. All concepts are illustrated with specific examples, including over 100 practical example programs. Soft cover, 381 pages, spiral bound.

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## Preston Brown Labs

2597 Pierce  
Eugene, OR 97405  
(503) 345 3767

## Casino 48 Card

Provides all your favorite casino games with great graphics and animation:

- Beat your HP 48SX at Blackjack.
- Break your HP 48SX at Roulette.
- Make your HP 48SX pay off at Slots.
- Luck out with your HP 48SX at Video Poker.

As an added bonus, you can create your own card games with commands for drawing cards on the screen.

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## **Sparcom Corporation**

897 NW Grant Avenue  
Corvallis, OR 97330  
(503) 757 8416  
FAX (503) 753 7821

### **Personal Information Manager Card**

Now the 48SX you rely on for your technical needs can handle your personal and business information needs too. The Personal Information Manager stores your appointment schedule, account list, phone numbers, and expenses in an easy-access format. Features include: enter and view daily schedule using multi-year calendar, set reminder alarms, enter notes, sort phone directory information by any of nine data fields, store financial or time log data under separate accounts, record business or personal expenses, and print appointment lists, phone lists, notes, financial or time log data, or expense reports.

### **NEW! Electrical Engineering Reference Pac**

A plug-in application card containing an electronic "handbook" of over 3000 entries in core areas for electrical and electronic engineers and students. Areas covered include: selected universal, physical, magnetic, mechanical, and thermal constants; electronic and electrical properties; semiconductor and laser properties; dielectric and magnetic properties; and mechanical and thermal properties. Values, indices, and tables are available at the touch of a button. A hexadecimal, decimal, octal, and binary table of ASCII codes is also included.

### **NEW! Mechanical Engineering Reference Pac**

A plug-in application card containing an electronic "handbook" of over 3000 entries in core areas for mechanical engineers and students. Areas covered include: selected universal, magnetic, mechanical, and thermal constants; mechanical and elastic properties of solids; composition of metals; properties of liquids; properties of gases and vapors; thermal properties; fuel and combustion properties; refrigerants; environmental control properties; moment of inertia formulas; and standard number formulas.

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## **Sparcom Corporation, continued**

### **NEW! General Chemistry Application Pac**

A plug-in application card containing over 150 equations and common reference data used by chemists, chemical engineers, and students. Solve, plot, and analyze equations in the built in library of equations that covers atoms and molecules, solids and liquids, gases, acids and bases, thermo and electrochemistry, precipitation, and kinetics. The built-in periodic table provides access to 14 properties of the elements. The stoichiometry function automatically checks chemical equations for mass and charge balance and computes molecular weights, coefficients, theoretical yields, and limiting reagents. The constants library and reference library provide access to commonly used constants and reference data.

### **Angle View Calculator Stand**

Designed to fit the HP calculators. This stand fits in a briefcase, purse or pocket and has angle adjustments that make the calculator display easier to see and the keys easier to use. Non-skid rubber feet prevent sliding on all surfaces. Molded with rigid plastic for durability.

### **NEW! FD-1000 Portable Disk Drive**

A compact, rugged, battery-operated disk drive that uses standard 3.5" disks in either 720 Kbyte or 1.44 Mbyte densities. Designed for use with disks formatted for MS-DOS® compatible computers. The drive connects to the HP 48 via the serial link and transfers data using the Kermit protocol at 9600 baud. It also has a built-in cache memory to reduce the amount of disk access required. The rechargeable batteries will last approximately 20 hours before needing a recharge. The drive comes with battery recharger and a disk containing a filemanager program for the HP 48 that facilitates use of the disk drive.

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## **Surveyor's Module Inc. (SMI)**

250 West New Street  
Kingsport, TN 37660  
(615) 246 3790  
(800) 234 0123  
FAX (615) 245 8982

### **Basic Coordinate Geometry Surveying Card**

Stores up to 1200 points by point number, easy field book entry, curves, intersection, translate, rotate. Comes with keyboard overlay and manual.

### **Standard Coordinate Geometry Surveying Card**

Contains all features of the Basic Card plus sunshot, elevations, stake program; will give GO and COME, CUT and FILL, predetermined area.

### **Advanced COGO Surveying Card**

Contains all features of the Basic Card plus elevations for topography work and trig leveling stakeout, two point resection, predetermined area, offset from a series of lines, CRIS compass rule (including side shots) and perpendicular offset (determines perpendicular distance of a point from a line). Comes with overlay and manuals.

### **Civil Engineering Card**

Includes vertical curves, horizontal curve layout, earthworks, hydrology programs for designing various open channel ditches, pipe sizes for storm and sanitary sewer.

### **Data Collection**

A complete data collection package containing all of the functions of the advanced COGO card plus: an HP 48SX calculator, training video, tripod mount, environmental case, PC cable, and instrument cable.

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## Travtech

10959 Barbados Way  
San Diego, CA 92126  
(619) 566 7861

### **NEW! ADCM-48 Computer Interface (A to D converter)**

Low cost, portable analog to digital converter and I/O controller. Battery operated unit uses infrared interface for true electrical isolation of HP 48 from input. Provides four 0-5 volt 8-bit analog input channels, four TTL/CMOS compatible digital inputs, and four half-amp outputs. Creative use of ADCM-48 sleep mode and HP 48 alarms provides several months stand-alone operation on one internal 9 volt battery for remote data logging or instrument control. Includes software disk containing programs for common instrument set-ups and low-level control routines.

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## Tripod Data Systems

1854 SW Airport Road  
Corvallis, OR 97333  
(503) 753 9322  
(800) 426 8026  
FAX (503) 757 7439

### **Survey Card**

A plug-in software card for data collection, stakeout, COGO, and curves. Displays curves graphically. This survey card uses full HP 48SX capability—you move around the screen with cursor keys and use menus and softkeys for quick access to surveying functions. With 128K RAM card installed you can collect field data for up to 3000 points, including Northing, Easting, elevation, and 16 character point descriptors. The infrared interface sends data to printers or to another HP 48SX. The Survey Card provides for direct communications with a variety of RS-232 serial port total stations.

### **NEW! Coordinate Geometry Card**

A lower cost alternative to the survey card. This card contains all of the functions of the survey card except: instrument control, raw data input from an instrument, and stakeout routines. Additional software in this card provides triangle solutions and earthwork calculations.

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## **Tripod Data Systems, continued**

### **NEW! Financial Functions Library Card**

This card provides financial computations in the areas of: time value of money including amortization, markup, grouped and ungrouped cash flows, interest rate conversions, and depreciation. Easy access to all functions is provided through menus and prompts for all data.

### **NEW! TDS-480 Environmental Case**

This rugged, durable, environmental case for the HP 48 is dust-proof, shock-resistant, and highly water-resistant. It contains a built-in rechargeable battery pack that replaces the standard alkaline batteries. Case comes complete with a recharger. An optional cloth carrying case is available.



## How to Order

**In the U.S.,** visit your nearest HP retailer to purchase or see a demonstration. To locate the HP retailer nearest you, call (503) 752-7736 between 8:00 am and 3:00 pm Pacific Time Monday through Friday. To order replacement manuals only, call (800) 538-8787.

**Outside the U.S.,** contact your local HP sales office listed in your telephone directory.

**Independently developed software and accessories,** may be purchased from your HP retailer or by contacting the manufacturer directly at the address listed under the manufacturer's name.

**Hewlett-Packard Company**  
Corvallis Division  
1000 NE Circle Blvd  
Corvallis, OR 97330  
USA  
(503) 757 2004

**Hewlett-Packard Corporate Offices**  
3000 Hanover Street  
Palo Alto, CA 94304  
USA

**Hewlett-Packard Ltd.**  
6877 Goreway Drive  
Mississauga, Ontario L4V 1M8  
Canada  
(800) 378 3867

**Hewlett-Packard Asia, Ltd.**  
22/F Bond Centre, West Tower  
89 Queensway,  
Central, Hong Kong  
(852) 848 7777

**Yokogawa-Hewlett-Packard Ltd.**  
3-29-21 Takanod-Higashi  
Suginami-Ku  
Tokyo 168, Japan  
0120-081444

**Hewlett-Packard Australia Ltd.**  
31-41 Joseph Street  
Blackburn, Victoria 3130  
Melbourne, Australia  
(03) 895 2895

**Latin American Region Headquarters**  
Monte Pelvoux No. 111  
Lomas de Chapultepec  
11000 Mexico, D.F. Mexico  
(525) 202 0155

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