Christmas 1984

Heathkit®

Helping you make things better

HS-151 Personal Computer Desktop System features Heathkit quality and IBM compatibility

Kit price as
low as

$1599⁰⁰

- A kit computer with enhanced features that takes advantage of IBM software and hardware
- Standard 128K memory capacity expandable to 320K on the motherboard and to 640K via expansion slot
- Available with one or two 5.25 inch floppy disk drives or optional Winchester hard disk drive
- MS-DOS operating system included at no extra charge

Heath/Zenith proudly offers a new and exciting personal computer...the HS-151 Desktop Personal Computer...with the enhanced features that you are looking for. A quality personal computer, the HS-151 PC provides Heathkit excellence in design and workmanship along with access to the wealth of available IBM software and hardware.

Using the advanced 16-bit 8088 microprocessor, the HS-151 PC gains a great deal of high speed computing power along with the ability to run sophisticated and high quality 16-bit software. In addition, the 8088 supports the MS*-DOS operating system. This allows you to select software from the full range of applications software developed for the IBM Personal Computer and run it on the Desktop PC.

A standard 128 kilobytes (KB) of RAM user memory, with internal parity checking, is available on all models of the HS-151. For larger programs where additional memory is needed or desired, 64 KB increments can be added to the main memory board for up to 320 KB of RAM. A very useful debugger is permanently stored in ROM along with a pre-set auto-boot routine which can be disabled.

Optional single or dual 5.25-inch floppy disk drives supply the HS-151 PC with high-capacity auxiliary storage. These double-density drives are IBM formatted and each stores up to 360 KB of data. An optional hard disk drive provides an extensive 10.6 megabytes (MB) of added storage.

Four open IBM compatible slots are provided for your future expansion. Use one of these slots to expand memory up to 640 kilobytes, or use one for a Winchester controller card, or both. By being able to accept most peripheral boards designed for the IBM-PC, the HS-151 PC provides unlimited off-the-shelf flexibility in hardware configurations. With more hardware choices available, you can choose from a wider variety of software programs and peripherals.

HS-161 Portable Personal Computer with Heathkit capability and IBM compatibility to go

Kit priced
at

$1699⁰⁰

- Designed for a computer user to be more productive wherever or whenever the need arises
- Takes advantage of off-the-shelf IBM compatible hardware and software
- Combines compatibility, unique capabilities and features with improved performance and ease of use

For those who need a computer to go, Heath/Zenith introduces the HS-161 Portable Personal Computer. It does everything a personal computer can do, perhaps a bit more, and it can do it on the go. Designed-in are Heathkit quality and performance with the added plus of IBM compatibility. Move it from the office, to meetings, to the hotel room, and to your home. Use the computer at your convenience and be able to take advantage of virtually all IBM programs and hardware without changing any computer hardware. With the HS-161 PC, you get problem-solving power, portability and flexibility...a powerful combination.

Extensive memory and storage capacity are two advantages of the new HS-161 Portable. A standard 128 kilobytes (KB) of RAM is available on all models which can be expanded on the main board to 320 KB. For auxiliary storage, the portable computer is available with one or two high-capacity 5.25-inch floppy disk drives. Each drive stores data in the standard IBM format on double-sided, double-density disks for a total capacity of 360 KB. When not in use or during transit, the disk drive section can be lowered into the computer.

For future expansion, four open slots are available for almost any off-the-shelf IBM compatible accessory boards. This allows you access to hundreds of software and hardware alternatives to meet your ever-changing computer needs.

A 9-inch amber phosphor video display monitor is built into the HS-161 PC with full business graphics capability. The amber monitor is most preferred by users for easy-on-the-eyes viewing during long periods of use. A "gray scale" feature allows color intensities to be programmed for easier viewing of color programs on a monochrome screen. As an option, an RGB color monitor can be used with the portable for a more exciting graphics display.

A detached 84-key keyboard connects to the main unit by a coiled cable. This allows

Two video outputs on the rear panel of the Desktop PC provide connections for either a color or monochrome video display monitor. Connect an RGB monitor to the standard nine-pin D connector and enjoy the benefits of a full color presentation. In the character mode, see a colorful 80 character by 25 line display in a selectable one of eight background colors and 1 of 16 foreground colors. In the graphics mode, each pixel of a 320 x 200 area can be painted in one of four colors selected from 1 of 2 color palettes. For easier viewing of word processing and accounting programs, a standard phono type connector allows the use of monochrome video display monitors. On a monochrome monitor, color displays are represented by a corresponding gray level.

A detached low-profile keyboard adds to the HS-151 Personal Computer's ease of use. The user-friendly keyboard is clearly labeled and has color-coded keypads that permit rapid key identification. It is laid out in the standard typewriter format. Ten programmable function keys, and separate plus and minus keys increase the HS-151 PC's accurate data entry capability. A calculator-style keypad, with entry key, allows rapid entry of large groups of numbers. LED indicators on the keyboard give instant operating status notice at a glance. An audible click is sounded at each keypress to signal successful key entry. This lightweight keyboard connects to the main unit by a coiled cord that expands up to six feet and plastic legs swing out for two levels of keyboard adjustment.

Two communication ports provide the HS-151 PC with the flexibility to expand. Available are an IBM compatible serial port and a parallel port that can be used with peripherals such as a matrix or letter quality printer or a modem. The serial I/O port is a standard EIA HS-232 DTE connector capable of baud rates between 110 and 9600 operating in asynchronous full or half duplex. The parallel interface is a Centronics compatible printer port using a 25 pin D connector.

Three separate testing procedures allow you to check your Desktop PC's hardware accuracy and adds to your data entry protection. These three levels of diagnostics include: power-on checks with their results indicated on eight internal LEDs; a ROM-based user-implemented screen diagnostic; and an extensive disk-based set of diagnostics. The diagnostic floppy disk is included only with the HS-151 PC and provides an easy and broad range of diagnostic tests.

Many editing capabilities are provided with the HS-151 Desktop PC to aid you in your program writing. With the HS-151, you can insert and delete characters and lines; erase a line; erase to the beginning of a line, to the end of line, or to the end of the page. Control the cursor with up, down, left, right, and home controls. Scroll through your programs with options such as jump or smooth scroll, or a scroll that's ROM or software selected.

Filled with important extras, the HS-151 PC lets you enjoy using a computer. Enjoy such features as a ready-to-use computer three to four seconds after applying power, easy hardware configuration with a menu- and diagram- driven program, booting from any drive, smooth scroll search, flickerless video and much more.

In the office or in the home, the HS-151 Desktop Personal Computer is ready to provide even more ways to help you be more productive and creative. One way is with the MS-DOS operating system that's included with the computer. It'll start you on the way to using software packages like those found on pages 78-81.

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the user to locate the keyboard at a convenient working position. The keyboard is laid out like a standard typewriter. Keypads are clearly marked and color coded for easy identification. Ten programmable function keys can be user defined for special software applications. Separate plus and minus keys and an L-shaped return key increase the Portable's ease of operation. LED indicators, for caps lock and numeric lock, give instant notice of operating status. When moved, the keyboard safely locks into the front of the computer.

Utilize the two input/output ports of the HS-161 and expand the usefulness of this portable computer. A parallel port and an IBM compatible serial port are available on the rear panel for use with dot matrix or letter quality printers, modems and other computer-expanding peripherals.

Protect your data entries by using three separate testing procedures to check the HS-161 Portable's hardware accuracy. One test is automatically conducted when the portable computer is powered up. Eight internal LEDs indicate the results of this test. Access the ROM or monitor diagnostic which is displayed on the CRT. Or, use the diagnostic disk that's included with the computer.

Your access to a wealth of software, is another plus feature of the HS-161 Portable Computer. Included with the HS-161 PC is the powerful MS-DOS operating system (page 81) that allows you to use all the applications software developed for the IBM-PC. Many software packages can be found on pages 78-81.

HS-151 and HS-161 SPECIFICATIONS: Processor: Intel 16-bit 8088. **Clock:** 4.77 MHz. **On-Board Memory:** 128 KB standard expandable to 320 KB on main board, up to 640 KB total memory via expansion slot. **VIDEO DISPLAY: CRT (HS-161 only):** Non-glare 9-inch diagonal, amber phosphor. **Display Format:** 25 lines of 80 characters. **Display Size:** 5.0" high x 7.0" wide. **Character Size:** 0.165" high x 0.075" wide. **Character Type:** 8 x 8 dot matrix. **Dot Resolution:** 640 horizontal x 200 vertical. **Colors:** Characters: 1 of 8 background colors with 1 of 16 foreground colors. Graphics: Each pixel can be 1 of 4 colors selected from 1 of 2 color palettes. **Gray Scale:** Eight levels on a monochrome display. **Video Outputs:** RGB with intensity control and composite monochrome. **Cursor:** Blinking underline or reverse video or off. **Cursor Controls:** Up, down, left, right, home. **Cursor Addressing:** Relative and direct. **Tab:** 8 columns. **Refresh Rate:** 60 Hz, 50 Hz. **Edit Functions:** Insert and delete characters or lines. **Erase Functions:** Erase line, erase to beginning of line, erase to end of line, erase to end of page. **Bell:** Audible alarm in receipt of ASCII BEL command. **BUS STRUCTURE: Type:** IBM compatible. **Slots:** 8, 4 available for expansion. **KEYBOARD: Type:** 84 keys, 57 alphanumeric and 10 special function plus 17 keypad keys including separate numeric keypad. **Key Click:** Yes. **DISK SYSTEM: Drives:** single or dual 5.25-inch double-sided double-density 48 TPI floppy disk drive. **Capacity:** IBM formatted for 360 KB each. **Winchester Drive:** Optional internal 5.25-inch rigid disk drive and single 5.25-inch floppy disk drive. **Capacity:** 12.76 MB unformatted, 10.68 MB formatted. **INPUT/OUTPUT: Serial I/O:** One DTE RS-232C port. Baud Rate: 110-9600. **Operation:** Asynchronous full or half duplex. **Parallel I/O:** Centronics compatible. **Power Supply:** 120/240, 50/60 Hz, 300 watts (maximum). **Dimensions:** HS-151: 16" W x 6¼" H x 16½" D (40.6 x 15.9 x 42 cm). HS-161: 19½" W x 8⅜" H x 19⅛" D (20.9 x 49.5 x 48.6 cm). **Weight:** HS-151: Approximately 42 lbs. with keyboard and two disk drives. HS-161: 39 lbs.

More accessory boards and software for the HS-151 Personal and HS-161 Portable Computers can be found on pages 98 and 99.

MS is a registered trademark of Microsoft, Inc.

VISA MasterCard **Special quantity and system discounts are available on assembled computer products. See page 78.**

COMPUTERS/77

Software for your HS-151 Personal or HS-161 Portable Computer

Heathkit offers a number of powerful and versatile software programs on these and the following two pages. Even more software plus accessories are on pages 98 and 99.

Super Savings Available on Assembled Z-151 Personal, Z-161 Portable and Z-100 Desktop Computer Systems

Take advantage of tremendous savings on computer systems that you design around factory assembled Z-151 Personal Computer, Z-161 Portable PC or Z-100 Desktop Computers. Discounts are now available on these powerful and flexible top-of-the-line computers when combined with printers, modems, or other accessories or peripherals featured in this catalog. Configure a complete computer system that will satisfy all of your needs, immediately out of the box.

In addition with the discount on any of these computer systems we're also offering discounts on software that'll run on your selected computer system. Choose from BASIC, Pascal, COBOL, LOTUS 1-2-3, Peachtext 5000, Multiplan, Wordstar and other software in this catalog.

For more information about these big discounts call TOLL-FREE: 800-253-7057; or write Heath Company, Benton Harbor, MI 49022.

Easy Word processing for all your written material

Word from Microsoft* is a versatile software word processing package that can produce letters, memos, reports, brochures, pamphlets, and even book-length manuscripts for office, school or personal use. Word lets you type and correct documents easily and efficiently. With a few keystrokes, turn a rough draft into a final copy with a polished appearance. Word offers a great deal of flexibility in maintaining documents and provides user-friendly conveniences to make your writing projects a lot easier to do.

Use Word for creating all written material on an HS-151 Personal or HS-161 Portable Computer using one 5.25" disk drive, 128K of memory and MS*-DOS.

MS-5063-9, Shpg. wt. 3 lbs. **375.00**

NEW Powerful and flexible WordStar*

Turn out letters and memos like you'd expect from an expensive dedicated word processing system. See page 93 for more details. This version of WordStar requires an HS-151 Personal or HS-161 Portable Computer with 128K of RAM, one 5.25" disk drive and MS-DOS.

MP-5063-10, Shpg. wt. 3 lbs. **399.00**

NEW WordStar Professional Options Package

Add on several companion programs to the world's best selling word processing program, WordStar. The Options Package includes: CorrectStar,* an automatic proofreader with an expandable 65,000 word base; StarIndex,* for creating a table of contents and an index plus lists of figures and tables; and MailMerge,* lets you address labels and produce personalized mailings. To run this Package, an HS-151 PC or an HS-161 Portable PC requires 192K of RAM and one 5.15" disk drive plus the MS-DOS operating system.

MP-5063-12, Shpg. wt. 3 lbs. .... **PLEASE CALL FOR PRICE**

NEW Complete WordStar Professional* Package

A four program word processing package to handle all your text management and printing needs. The Professional Package includes WordStar, CorrectStar, StarIndex and MailMerge. This Package requires an HS-151 PC or an HS-161 Portable PC equipped with 192K of RAM, one 5.25" disk drive and the MS-DOS operating system.

MP-5063-13, Shpg. wt. 3 lbs. .... **PLEASE CALL FOR PRICE**

Analyze data faster and easier with Multiplan*

For both business and personal use, Multiplan is a powerful modeling and planning tool that helps you analyze data. Do sales analysis, make sales decisions and put together a budget with this personal productivity tool. An electronic spreadsheet, Multiplan offers a worksheet 255 rows long and 63 columns wide for words, numbers and formulas. Use English commands and formulas.

Use Multiplan on an HS-151 Personal or HS-161 Portable Computer equipped with 128K of RAM and one 5.25" disk drive while using MS-DOS.

MS-5063-7, Shpg. wt. 3 lbs. **250.00**

*Microsoft, MS and Multiplan are trademarks of Microsoft Corp. WordStar, CorrectStar, StarIndex, MailMerge and WordStar Professional are trademarks of Microsoft, Inc. Peachtext 5000 is a trademark of Peachtree Software, Inc. Lotus and Lotus 1-2-3 are trademarks of Lotus Development Corp. Ashton-Tate and dBase II are trademarks of Ashton-Tate. Heathkit Electronic Centers are units of Veritechnology Electronics Corp.

SuperCalc³ with graphics and data management

Besides being a powerful electronic spreadsheet for budgeting, estimating and forecasting, SuperCalc³ features a fully integrated graphics function and a data-management capability, all on a single disk. Also makes excellent use of color.

To run SuperCalc³ on an HS-151 Personal or HS-161 Portable Computer, two 5.25" disk drives and 128K of RAM are required plus MS-DOS.

SC-5063-3, Shpg. wt. 4 lbs. **395.00**

NEW dBase II* management system for Ashton-Tate

A powerful, yet easy-to-use data base management system, dBase II puts all your data at your fingertips. See page 86 for details. This version requires an HS-151 Personal or HS-161 Portable PC with 128K of RAM, one 5.25" disk drive and the MS-DOS operating system.

AT-5065-1, Shpg. wt. 4 lbs. **495.00**

PeachText 5000* helps to improve your efficiency

PeachText 5000 is a combination word processor, spelling checker, on-line thesaurus, mailing list program and a spreadsheet. And, all programs are integrated using a central menu. Create and manipulate a variety of documents using sophisticated edit and print capabilities. Set the cursor at a word, access the thesaurus and select from a list of alternate suggestions. Over 4,400 indexed words and 26,000 synonyms are available. After completing your document, check it for spelling errors with the expandable 21,000 word dictionary.

Turn your computer into an electronic spreadsheet for fast data analysis that can be merged with your documents. The spreadsheet is simple and straightforward and can contain up to 254 rows by 64 columns of text, numbers and formulas. The List Manager is a data base program that handles name and address lists and simple inventories. It can be used with the word processor to create form letters to multiple addresses, even down to the salutation.

To use this version of PeachText 5000, an HS-151 or HS-161 requires 128K of RAM, two 5.25" disk drives and the MS-DOS operating system.

RS-463-75, Shpg. wt. 3 lbs. **395.00**

Handle many tasks faster and easier with LOTUS 1-2-3*

● **An attractive package of spreadsheet, graphics and data base functions**

In one simple and powerful program, LOTUS 1-2-3 has combined a comprehensive spreadsheet, a very capable data base and outstanding graphics. It is fast and is menu-driven with an extended series of help screens. 1-2-3 provides a huge worksheet of 256 columns by 2,048 rows ... over half a million cells. The data base features 2,048 records with up to 256 fields in each record. They can be sorted, highlighted, reorganized, extracted and displayed in a separate table. Graphing capabilities include line, bar, pie, stacked bar and x-y charts using data from the worksheet. While 1-2-3 is complex, it is not difficult to use and on-line HELP makes this integrated software all the more easier.

To use LOTUS 1-2-3 on the HS-151 Personal or the HS-161 Portable Computers, they must be equipped with 192K of RAM, two 5.25" disk drives and MS-DOS.

LOTUS 1-2-3 is available at Heathkit Electronic Centers* nationwide. This product is not available via mail order.

LS-5063-1, Shpg. wt. 3 lbs. **495.00**

Open the door to computerized accounting with the BPI family of accounting programs

● **All packages can work together as a system or be used individually**
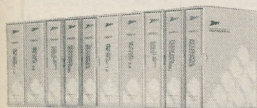
Run these programs on a Personal or Portable Computer equipped with two 5.25″ disk drives, a minimum of 192 KB RAM, a compatible monitor and a printer that can print a minimum of 80 columns. Needs MS*-DOS and GW* BASIC.

General Accounting is more than a general ledger

● **Has all the features you'll need to run a business in one program**
● **Allows fast entry of cash register tapes**
● **Produces flexible and professional financial reports**

The General Accounting system offers flexibility, fast data entry, informative reports, accuracy and practice data with which to learn the system. Tailor this system to your company's needs with detailed accounts receivable and payable ledgers. Produce single or multiple income statements for up to as many as ten departments or stores. Set up a payroll ledger and print out checks automatically. To reduce the number of data entries, single transactions are made on all appropriate ledgers. Even enter regular monthly entries by a single command. Reports generated are: a balance sheet, a trial balance, income statements, four different ledgers, journals and schedules. End of month procedures clear the data disk of current transactions and close accounts for the current period. Operates independently or in conjunction with additional BPI accounting systems.

BP-5063-1, Shpg. wt. 3 lbs. **595.00**

Self-Training Series for BPI General Accounting

● **Learn how to operate the General Accounting system**

This self-training series consists of two disks and a guide to help both the first-time or inexperienced user and the experienced user become fully acquainted with this accounting system. The training disks contain eight lessons on the system's basics. The lessons cover use of the keyboard and the General Accounting commands and features. A companion guide lists all the commands and gives a brief description of each one. The guide also contains completed worksheets for a sample company. For reference purposes, the guide includes examples of trial balances, balance sheets, income statements, and standard entries to help you along. A quick reference card is also included for your convenience.

BP-5063-71, Shpg. wt. 1 lb. **69.00**

Accounts Receivable offers choice of account detailing

● **User can choose either balance forwarding or open item accounts**
● **Specify two levels of finance charges and still waive finance charges for specific customers**

This Accounts Receivable program details each item on the receivable ledger with amounts and dates. This allows you to print an alphabetical listing of all accounts, cross-indexed to their account numbers, or analyze the account at any time. The system automatically produces an aged accounts receivable report for early account collection and business planning. This program automatically checks for valid account numbers and balancing entries. On a floppy diskette, you can enter up to 1000 customer accounts with each account holding up to 360 transactions per billing period. And, any number of customers can be designated to receive up to 100 repetitive charges in a period. This package can also be used in conjunction with the BPI General Accounting and Inventory Control programs.

BP-5063-2, Shpg. wt. 3 lbs. **595.00**

Accounts Payable computerizes vendor control

● **Eliminates time spent on figuring payments and when they are due.**
● **Prints at any time, over twenty analyses and listings detailing vendor, voucher and check information**

Accounts Payable Allows you to choose between two different accounting methods, cash or accrual. When using the accrual method, you can maintain two open fiscal periods. This accounting program offers three check printing options, including: payment of individual vouchers, individual vendors, or all open vouchers due on a date that you select. You can maintain vendor files dealing with specific information such as name and address, regular due date, discount percentage, discount due date and general ledger account distribution. It is even possible to assign general ledger account prompts to appear on the screen as data for dis-

tributing invoice amounts to accounts. This accounting program can also be used with BPI General Accounting, Job Cost Accounting or Inventory Control.

BP-5063-3, Shpg. wt. 5 lbs. **595.00**

Payroll program simplifies your company's payday

● **Use several options to tailor a payroll system to your company**
● **Maintains employer-sponsored IRA's, tips and tips deemed to be wages**

Payroll offers a choice of three principal methods by which you can pay your employees: salary, by the hour, or by commission. When using pay by commission, this accounting program allows you to figure base pay plus percentage of sales, base pay plus piece rate, it allows pay drawn against commission, and allows you to calculate and manually enter commissions. You can specify up to nine deductions including FICA, federal income tax and state income tax, plus six optional deductions. Pay employees each week, every two weeks, twice a month, or once a month. Then print paychecks and a check register listing all check numbers and amounts for the current pay period. Also print out W-2 forms at the end of the year. Operates independently or with BPI General Accounting and Job Cost Accounting.

BP-5063-4, Shpg. wt. 3 lbs. **595.00**

Inventory Control for versatile inventory management

● **A versatile accounting package offering capabilities not found even with much larger computerized packages**
● **Made to track back orders and to cost your existing inventory**

With Inventory Control, you can choose one of three accounting methods to cost your inventory: first-in, first-out; last-in, first-out; or average. Establish up to ten departments in your company, each with its own sales, cost of sales, inventory overage and inventory shrinkage accounts. Enter purchase orders as quickly and easily as you make journal entries and produce single or consolidated income and expense statements. Inventory Control automatically creates back orders and tracks low balance inventory items. List your inventory by twelve different methods, such as item number, department number, description or vendor to name just a few. One thousand accounts are available in the Inventory Control System. Automatically transfer current general ledger activity to the BPI General Accounting or BPI Accounts Receivable programs with a single command.

BP-5063-5, Shpg. wt. 3 lbs. **795.00**

Job Costing for quick and accurate job estimates

● **Keep track of job costs and print out up-to-date reports**

With Job Costing, you can report job income by the completed job or by percentage of completion. Keep more accurate track of costs for each job and print out a status report that compares actual to estimated costs and quantities on a percentage of completion basis. Also, be able to obtain job profit and loss reports in print that provide a monthly statement of job income and expenses. With this system, you establish coded names for jobs and also parts of jobs. Then you estimate their cost by entering quantities, rates and dollar amounts. Print out a job estimate that shows a rate per unit measure, the number of units, and the estimated dollar amount to do the job. Keep on top of jobs and all current activity. Use Job Costing with the BPI General Accounting, Payroll and Accounts Payable systems.

BP-5063-6, Shpg. wt. 3 lbs. **795.00**

Personal Accounting manages your own finances

● **Record daily transactions, balance accounts, and print reports**

Personal Accounting enables you to take advantage of computerized accounting for your own personal finances. Set up accounts to handle your assets, liabilities, net worth, income and expenses. With Personal Accounting, you can plan a budget for income and expenses. Use this program to figure your checkbook balance when the monthly statement arrives. Other uses include keeping track of checks and deposits in up to ten separate accounts. Likewise, record your credit card charges in up to ten separate credit card accounts. Even use this program to tally other financial incomes like interest from savings accounts. Available are printed reports on checks written and deposits made for each checking account plus a list of outstanding checks and deposits in transit. Print out an amortization schedule on which the system calculates the interest and principal portions of each payment on a loan or mortgage.

BP-5063-8, Shpg. wt. 3 lbs. **195.00**

*MS and GW are trademarks of Microsoft Corporation

Discover the fun of kitbuilding at your Heathkit Electronic Center.

More software for the new HS-151 Personal and HS-161 Portable Computers

NEW

On these two pages you'll find more 16-bit business software, programming languages and other software for the Heathkit Personal and Portable Computers. Still more software, educational and for the home, can be found on page 99.

General Ledger maintains a financial picture

A simple, easy-to-operate system from Peachtree* Software that lets you maintain a complete financial picture of your business. It can be used independently or in connection with Accounts Receivable and Accounts Payable Peachtree accounting packages. Keep up-to-date with many comprehensive reports that are accurate and timely descriptions of your company's current financial condition. Comparative data includes financial status of company a year ago to date. Number of accounts are limited only to available disk space.

General Ledger will run in an HS-151 Personal or HS-161 Portable Computer with 192K of RAM, two 5.25" disk drives, under MS*-DOS and GW*-BASIC.

RS-5065-1, Shpg. wt. 3 lbs. **499.00**

Prepare billings with Accounts Receivable package

Peachtree Accounts Receivable package helps you prepare bills for and obtain timely collections from customers. Used independently or together with General Ledger, this accounting package can reduce lost or delayed income because of bookkeeping errors or paperwork delays. This complete invoicing system will provide invoices, statements and aging reports. It will also maintain customer account information, sales taxes and accounting detail for posting to the General Ledger. Number of accounts and transactions only limited by disk space.

Accounts Receivable will run in an HS-151 Personal or HS-161 Portable Computer with 192K of RAM, two 5.25" disk drives, under MS-DOS and GW-BASIC.

RS-5065-2, Shpg. wt. 3 lbs. **499.00**

Accounts Payable business application package

Peachtree's Accounts Payable package maintains a complete file for each of your vendors. It will show which of your invoices to pay by the due date, by the specified discount date or according to certain cash requirements. Save money by claiming all the discounts available. At the same time, keep your vendors accounts always up to date. Even print out checks with this accounting package and keep a check register. Accounts Payable can be used independently or together with the General Ledger program on this page.

The Accounts Payable package will run in both the HS-151 Personal and HS-161 Portable Computers with 192K of RAM and two 5.25" disk drives, while using the MS-DOS operating system and GW-BASIC.

RS-5065-3, Shpg. wt. 3 lbs. **499.00**

Inventory Control covers all aspects of inventory

Speed and simplify the demanding task of effective inventory control with the Peachtree Inventory Management System. Inventory Control permits the entry of four types of transactions: sales, returns, receipts and adjustments. Improve your inventory control, reduce your management costs and decrease customer response time with this straightforward method of updating your inventory records. Comprehensive reports include: price lists, reorders, current period status, physical inventory, departmental summaries and more. Can be used independently or in conjunction with Accounts Receivable and Sales Invoicing.

To run this accounting package, an HS-151 Personal and HS-161 Portable Computer needs 192K of RAM and two 5.25" disk drives, and use the MS-DOS operating system along with the GW-BASIC programming language.

RS-5065-5, Shpg. wt. 3 lbs. **499.00**

Sales Invoicing bridges accounting packages

The Peachtree Sales Invoicing System is capable of accessing and updating both the Accounts Receivable and Inventory Control. In one process update customer accounts with sale or return information, update inventory with returned or sold stocked items, and then retain this information for printing invoices or credit memos. Other features include credit checking during invoice entry, automatic sales tax calculation and a check of inventory against quantity ordered.

Sales Invoicing will run under MS-DOS and GW-BASIC in an HS-151 Personal or HS-161 Portable Computer with 192K of RAM and two 5.25" disk drives. Accounts Receivable and Inventory Control packages are also required.

RS-5065-6, Shpg. wt. 3 lbs. **399.00**

Powerful Condor* Relational Data Base Management

Powerful and simple enough for all business applications, rDBMS* enables you to design and create data bases for keeping records on any subject you choose. Quickly search, sort, merge, analyze, index and print out up to 32,767 records per data base. Create a new data base in minutes. Use up to 1023 bytes for each record. Condor is so easy to use that you can achieve meaningful results within a few hours. Condor uses the relational data base concept which allows unrelated information to become dynamically related.

This version of Condor's data base package requires an HS-151 or HS-161 Computer with 128K of RAM, two 5.25" disk drives and MS-DOS.

CD-5063-1, Shpg. wt. 5 lbs. **650.00**

Fast and easy-to-use Condor File Management System

The Condor FMS package offers basic rDBMS capability. Features include: processing of up to 32,767 records per data base, up to 1023 bytes per record, create new data bases within minutes, calculation of statistics for field values, and help menus and command files that you create. Quickly search, sort, merge, analyze and print out records with ease.

This version of Condor FMS requires an HS-151 or HS-161 Computer which has 128K of RAM, two 5.25" disk drives and uses the MS-DOS operating system.

CD-5063-2, Shpg. wt. 3 lbs. **299.00**

Valuable Pecon Peachtree to Condor Interface System

A valuable business tool, this utility program allows the transfer of data from master and transaction files in Peachtree accounting programs to data bases that can be processed using the Condor system. Each program in the system displays instructions and messages that enable even the inexperienced user to use it with minimum instruction time and reference to the manual. Now all the power of a data base manager can be applied to your accounting records.

Running the Pecon Interface System on an HS-151 Personal or HS-161 Portable Computer requires 192K of RAM, two 5.25" disk drives, the MS-DOS operating system, a minimum of one Peachtree accounting package, and either the Condor rDBMS or FMS software as found on this page.

CB-5063-9, Shpg. wt. 3 lbs. **99.00**

Microsoft Standalone Sort for sorting and merging

MS-Sort is a stand alone utility that accepts data files from many different programming languages and arranges the records in these files in any order you assign. MS-Sort can be used for many tasks including: selecting and sorting records for reports; sequencing transactions to be merged into a master file; grouping and arranging items to be displayed on-screen; and converting a data file type to another, including one language to another.

Simple, easy-to-learn, yet powerful within its scope, MS-Sort is a programming language that manipulates files on the record level. It is fast, changing files by rejecting or reordering whole records. This simple language also allows fast program development to save you time.

And MS-Sort is adaptable. When numerous reports are needed based on selections of data sorted in different orders, MS-Sort can be quickly changed and executed without any compile or link steps. MS-Sort programs can even prompt for and accept any changeable statements while loading from a disk.

MS-Sort recognizes Microsoft BASIC, COBOL, Pascal or FORTRAN data types and file organizations including: sequential, random, relative, line sequential and indexed. Consequently, no matter which of the above programming languages are used or the file type the data files are constructed, or what types of data the files contain, MS-Sort can read and sort their records. For greater user convenience, MS-Sort can even process files created by programs written in different languages in the same MS-Sort program.

MS-Sort requires an HS-151 Personal Computer or an HS-161 Portable PC using the MS-DOS operating system. Although MS-Sort can be run using one 5.25" disk drive, two are recommended so that a greater number of sort tasks can be accomplished. MS-Sort resides in approximately 37K of memory. After loading, it takes advantage of all unused memory remaining and provides you with a total working memory equal to the space available for a modular program minus 37K. Since MS-Sort is capable of handling files up to 4 billion bytes, it's speed and power in an application is limited only by memory and disk space.

MS-5063-12, Shpg. wt. 1 lb. **199.00**

*MS and GW are trademarks of Microsoft Corp. Peachtree is a trademark of Peachtree Software Inc. Condor and rDBMS are trademarks of Condor Computer Corp.

3Com EtherSeries brings you computer networking

This series of Ethernet products provides you with the opportunity to network HS-151 Personal and HS-161 Portable Computers. Increase your capabilities and resources with a shared hard disk drive, electronic mail and shared printers.

EtherLink circuit board provides basis of system

EtherLink is a basic prerequisite for connecting up to 300 HS-151 Personal and/or HS-161 Portable Computers into a common network that can share all the other products in the EtherSeries. It is a printed circuit board that easily installs into any unused computer expansion slot. A Thin Ethernet coaxial cable is then used to connect all computers in your network. Included with the EtherLink Card is user software. This software runs on floppy disk-equipped computers and allows them access to the disk or printer of a Winchester-equipped computer.

Computers connected to the network must have: at least one 5.25" disk drive, at least 128K of RAM (192K if EtherMail is used), MS*-DOS Version 2, and an EtherLink card. One of the network computers must be equipped with a Winchester hard disk drive for use as a File Server. Each end of a network must have a Terminator attached (see accessories below).

TC-5063-1, Shpg. wt. 4 lbs. **795.00**

Share both hardware and software with EtherShare

Make use of greater data storage. Share information and programs. EtherShare provides these advantages and more to all users connected to the same Ethernet Network. EtherShare allows a network to use the resources of a hard disk drive subject to network control and security.

EtherShare consists of server software for the Winchester-equipped computer, now called the network server, in a network using Ethernet products. It allows other computers in the network to use allotted portions of the hard disk. And, it also allows the server to act as a normal user computer.

The server computer must include: MS-DOS Version 2, a fixed hard disk drive, at least 256K bytes of memory, an EtherLink card, and a 5.25" disk drive for installing the software and for backing up copies of hard disk data.

TC-5063-2, Shpg. wt. 3 lbs. **599.00**

EtherMail adds electronic mail service to network

Compose, forward and reply to messages and send them to anyone else on the network with the EtherMail package. In addition, you can read, file and print out any messages sent to you. You can also send messages to a single individual or to an entire group by way of a distribution list.

The first part of EtherMail is the server software. It allows the computer with the hard disk drive to act as a post office where messages are held until requested by the recipient. The second part, user software, is used for composing, reading, sending and receiving messages. Server software requires 320K of RAM, the MS-DOS Version 2 operating system and EtherShare. User requires 192K of RAM.

TC-5063-3, Shpg. wt. 3 lbs. **749.00**

EtherPrint allows network users to share printers

Cut your printer costs by allowing many users access to a single printer. Or, offer network users a choice of a line printer or a letter-quality printer that's connected to your server computer. Program, data and text files are stored and then printed out when the printer is available in the order they are received.

EtherPrint software requires at least 128K of RAM, two disk drives, MS-DOS Version 2 and the EtherShare software that has been previously installed.

TC-5063-4, Shpg. wt. 3 lbs. **499.00**

Thin Ethernet Cables and Accessories:

TC-5063-5, 25 foot Thin Ethernet coaxial cable, 1 lb. **20.00**
TC-5063-6, 100 foot Thin Ethernet coaxial cable, 6 lbs. **50.00**
TC-5063-7, Ethernet Terminator Kit, Two Terminators, 1 lb. **25.00**
TC-5063-8, Ethernet (BNC/BNC) Barrel Connector, Shpg. wt. 1 lb. **6.00**

CPS for Personal Computer communications capability

Turn your Personal or Portable Computer into an enhanced communications device with this Computerized Phone System (CPS) software. Communicate at up to 9600 baud with other computers. To run this CPS software, an HS-151 or HS-161 requires 128K of RAM, one 5.25" disk drive, MS-DOS and a modem.

CB-5063-7, Shpg. wt. 2 lbs. **49.00**

Integrated GrafTalk* produces business graphs

GrafTalk is a versatile and flexible package with a wide range of features. Further information is available on page 84. Requires an HS-151 Computer or HS-161 PC with 128K of RAM and two 5.25" disk drives under the MS-DOS operating system.

RG-5065-1, Shpg. wt. 3 lbs. **499.00**

Microstat* offers extensive statistical tests

Microstat is an interactive statistics package for data manipulation and statistical testing. Developed for real-life applications. Further information is available on page 87. For HS-151/161 Computers with 128K of RAM, two 5.25" disk drives and using MS-DOS.

ES-5063-1, Shpg. wt. 3 lbs. . . . . **PLEASE CALL FOR PRICE**

HS-151 and HS-161 Personal Computer Diagnostic Disk

Reduce service costs and minimize hardware downtime with the programs contained on this 5.25" floppy disk. Designed to operate with a minimum of operator interaction. Alarm sounds when a fault is found. Requires a computer with 128K of RAM and one disk drive. Included with HS-151 and HS-161 Computers.

CB-5063-13, Shpg. wt. 3 lbs. **79.00**

Use the advanced MS-DOS Version 2 operating system

This enhanced operating system has many new features including: subdirectories, input/output redirection and pipes and filters. Included with HS-151 and HS-161 Computer and requires 128K of RAM and one 5.25" disk drive.

OS-63-50, Shpg. wt. 5 lbs. **150.00**

MS-*DOS Version 2.0 Programmer's Package

This package is designed for programmers and system developers who wish to modify features of MS-DOS or develop programs which will run under the MS-DOS environment. These programmer's tools include a Basic Screen Editor, Macro Assembler, cross-reference utility, three versions of source BIOS plus other useful programs including a number of filters.

CB-5063-16, Shpg. wt. 3 lbs. **199.00**

GW-BASIC 2.0 is now expanded and more powerful than previous versions

New features include directory support, I/O redirection, enhanced graphics capability and more. New options for graphics, as well as some completely new commands allow you to rotate a figure in single degree increments. And now you can paint in patterns. Also select a part of a screen as a view port and have graphics only in that part. Music capabilities expand to more options for music trapping and PLAY strings. Larger record numbers are now allowed. And a timer variable has been added plus other enhancements. HS-151/161 Computers require one 5.25" disk drive and the MS-DOS operating system.

MS-5063-13, Shpg. wt. 3 lbs. **100.00**

More programming languages for use with the HS-151 Personal Computer and HS-161 Portable PC

FORTRAN: Conforms to the ANSI X3.1978 standard (including most of the features of FORTRAN-77 except the COMPLEX data type). Requires 192K of RAM, one 5.25" disk drive (two are recommended) and the MS-DOS operating system.

MS-5063-2, Shpg. wt. 5 lbs. **195.00**

COBOL: Certified with the Federal Compiler Testing Center to be at the low intermediate level of compliance with the ANSI X3.1978 standard. Large programs are managed effectively because data and procedures can be hierarchially structured for efficient, clean, top-down design. It requires 128K of RAM, one 5.25" disk drive (two are recommended) and MS-DOS.

MS-5063-3, Shpg. wt. 5 lbs. **395.00**

Pascal: Use this version of Pascal at the ISO standard level for transporting programs to and from other computers. Program capabilities allow you to manipulate data at the machine level for faster program execution. Requires 192K of RAM, one 5.25" disk drive and the MS-DOS operating system.
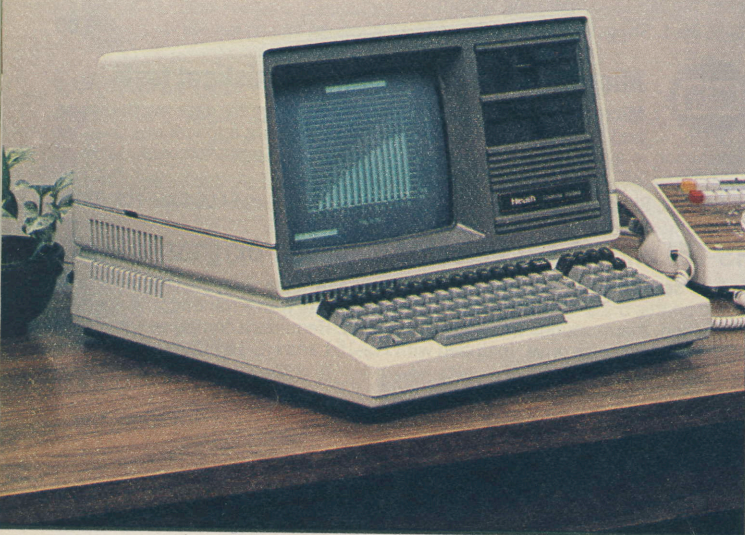
MS-5063-5, Shpg. wt. 5 lbs. **295.00**

*MS and GW are trademarks of Microsoft Corp. GrafTalk is a trademark of Redding Group Services. Microstat is a trademark of Ecosoft Corp.

Z-219-1 Color Video RAM Sets and get 8 levels of intensity or 8-color capability with the addition of an optional color monitor.

A built-in 12-inch monochrome video display provides an easy-to-read screen in your choice of non-glare green, amber or white. Besides bit-mapped graphics, the monitor also displays 25 lines of 80 characters each in both upper and lower case.

Three communication ports, one parallel and two serial, provide flexibility and convenient expansion capability without using a single expansion slot. The parallel port, with its 25-pin D connector, allows use of industry standard printers. The two serial RS-232C connectors, one DTE and one DCE, can be used with printers, modems, speech synthesizers, terminals and plotters.

High capacity disk drive storage is another advantage of the H-100. Choose from models with one or two 5.25-inch double-sided double-density disk drives that store up to 320K bytes of data. Dual disk drives mean more on-line storage and faster operational speed. For still greater storage capacity, connect the HS-207 8-Inch Disk System (p. 89) for up to 2.5 megabytes of external data storage. For the storage capacity necessary for large accounting, inventory or technical jobs, an internal 11 megabyte Winchester hard disk drive (below) could be your solution.

An easy-to-operate sculptured typewriter-style keyboard allows you to work faster and more accurately than ever before. Plus 13 user-programmable special function keys and an 18-key keypad add to the users convenience. Even a software-controlled help key is available whenever needed.

Included with all kit and factory-assembled H-100s is the MS-DOS operating system. LOTUS* 1-2-3 is included with fully assembled Z-100s.

Heathkit **Kit HSA-1121-21,** Monochrome graphics, non-glare amber CRT, 128 KB RAM, one 320 KB 5.25" drive, MS-DOS, 109 lbs. . . . **2149.00**

Heathkit **Kit HSA-1121-22,** Monochrome graphics, non-glare amber CRT, 128 KB RAM, two 320 KB 5.25" drives for a total of 640 KB storage, MS-DOS, 114 lbs. **2449.00**

Heathkit **Kit HSG-1121-21,** Monochrome graphics, non-glare green CRT, 128 KB RAM, one 320 KB 5.25" drive, MS-DOS, 109 lbs. . . . **2149.00**

Heathkit **Kit HSG-1121-22,** Monochrome graphics, non-glare green CRT, 128 KB RAM, two 320 KB 5.25" drives, MS-DOS, 114 lbs. . . **2449.00**

Heathkit **Kit HSW-1121-21,** Monochrome graphics, non-glare white CRT, 128 KB RAM, one 320 KB 5.25" drive, MS-DOS, 109 lbs. . . . **2149.00**

Heathkit **Kit HSW-1121-22,** Monochrome graphics, non-glare white CRT, 128 KB RAM, two 320 KB 5.25" drives, MS-DOS, 114 lbs. . . **2449.00**

Zenith data systems **ZFG-121-32,** Assembled All-In-One H-100, 12" green CRT, 192 KB RAM, two 320 KB 5.25" drives, 68 lbs. Mrt. Frt. **3729.00**

$AVER Save 50% on any or all of the items listed below when you purchase an H-100

Get a big 50% discount on any or all of the following items when you buy them within 90 days of your H-100 purchase.

Any three individual Heath/Zenith software packages. This also applies to the powerful Peach Text 5000 and LOTUS 1-2-3™ business packages described on page 86.

Two Z-219-1 Color Chip Sets: Adds color video to your H-100. Regularly $145.00 each . . . . **Discount price 72.50 each**

One Set of TM-100 Technical Manuals: Details the inner workings of your kit H-100 Computer. Regularly $110.00 . . . . **Discount price 55.00**

For even greater flexibility, the H-100 Low-Profile Computer comes standard with two serial ports, one parallel port and 4 open S-100 expansion slots. Two RS-232C ports as well as a Centronics standard parallel port are provided for use with a matrix or letter quality printer, a modem or plotter without using an expansion slot. The standard IEEE-696 S-100 slots can be used when required for extra memory or peripheral devices to meet your changing needs. See page 98.

Enhanced graphics capability helps you create and display highly detailed drawings and graphs in either monochrome or high-resolution color. You control each individual pixel (dot) out of 144,000 pixels. Or, display 25 lines of 80 characters. Add two Z-219-1 Color Video RAM Sets and get 8 levels of intensity. Connect a color monitor and each pixel can be assigned one of 8 colors.

Included with all kit and assembled H-100 Computers is the powerful MS-DOS operating system. Also included with assembled models is the popular LOTUS 1-2-3 business package. H-100 Computers also operate under the CP/M operating system for access to an even wider range of applications software.

Heathkit **Kit HS-1101-21,** Low Profile, monochrome graphics, 128 RAM, one 320 KB 5.25" drive, MS-DOS, 78 lbs. **1999.00**

Heathkit **Kit HS-1101-22,** Low-Profile, monochrome graphics, 128 KB RAM, two 320 KB 5.25" drives, MS-DOS, 83 lbs. **2299.00**

Zenith data systems **ZF-101-31,** Assembled Low-Profile, monochrome graphics, 192 KB RAM, one 320 KB 5.25" drive, 54 lbs. **3029.00**

Zenith data systems **ZF-111-22,** Assembled Low-Profile, color graphics, 128 KB RAM, two 320 KB 5.25" drives, 54 lbs. **3499.00**

Z-205-1, 128 KB to 192 KB RAM Upgrade Kit, Shpg. wt. 1 lb. **100.00**

NEW! Z-216, 8087 Numeric Co-Proceessor, 2 lbs. **379.00**

Z-205, 256 KB RAM Upgrade Circuit Board, Shpg. wt. 2 lbs. **799.00**

Z-219-1, Color Video RAM Chip Set, Shpg. wt. 1 lb. **145.00**

ZA-100-4, S-100 Extender Board, Shpg. wt. 1 lb. **79.00**

HDC-100, Dust Cover for Low-Profile Computer, Shpg. wt. 1 lb. **16.00**

HDC-120, Dust Cover for All-In-One Computer, Shpg. wt. 1 lb. **16.00**

TM-100, H/Z-100 Technical Manuals, Shpg. wt. 22 lbs. **110.00**

Second 5.25" drives for computers with one drive, visit your nearest Heathkit Electronic Center (list on p. 57) or call 800-253-7057 from 8 AM to 4:30 PM ET.

H-100 SPECIFICATIONS: PROCESSORS: 16-bit: Intel 8088, 8-bit: Intel 8085. Clock: 5 MHz. **DATA STORAGE:** Disk Controller: Standard Z-207 controller, supporting both 5.25" and 8" drives simultaneously. One soft-sectored, double-sided, double-density, 48 TPI 320KB 5.25" floppy disk drive standard in kits; Two drives standard in assembled units. **Disk Storage Expansion:** 11 megabyte 5.25 Winchester disk drive, which installs in second internal drive slot of H/Z-100, optional; up to 2.5 on-line megabytes of external 8" floppy disk storage (Z-207-41, 42, p. 89) is also available. **EXPANSION:** Five IEEE-696 (S-100) standard card slots available for expansion. Disk controller occupies one S-100 slot. **DISPLAY:** Display Format: 24 lines x 80 characters, plus 25th line for user information. 225 lines of 640 dots in graphics mode. **Character Set:** 128-character ASCII set, upper and lower case. **Character Type:** 8 x 9 dot character block (0.2" H x 0.1" W), definable to other values using software. **Colors:** Red, green, blue, white, black, cyan, magenta, and yellow. Color memory RAM standard in Z-110, optional in all kits and Z-120. **Cursor:** Blinking, underline or reverse. **Cursor Addressing:** Relative and direct. **Tab:** Eight columns, software addressable. **Video:** Normal or reverse video by character. **Video Output:** Z-110, RGB; H/Z-120, monochrome standard. **KEYBOARD: General:** Sculptured, typewriter-style keyboard with 95 keys. **Numeric Keypad:** 18 keys (including cursor-control keys). **Special Function Keys:** 13. **INPUT/OUTPUT PORTS: Serial I/O:** Two EIA RS-232C serial interface ports, at 110 to 38,400 baud. Accessible from rear of unit. **Modes:** Asynchronous full- or half-duplex; synchronous. **Parallel I/O:** Centronics-compatible printer port with a 25-pin D connector.

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drives. Add an increased data packing technique to high speed access and you have a Winchester drive that can transfer data at 5 megabytes per second. All of which results in an H-100 Computer with increased efficiency in applications requiring a great many disk operations.

ZW-111-32, Assembled and tested Low-Profile Computer with internal 11 MB Winchester disk drive, one 320 KB 5.25-inch disk drive, 192 KB of RAM, color graphics capability, MS-DOS and LOTUS 1-2-3, 55 lbs. **5499.00**

ZWG-121-32, Assembled and tested All-In-One Computer with internal 11 MB Winchester disk drive, one 320 KB 5.25-inch disk drive, 192 KB of RAM, non-glare green CRT, MS-DOS and LOTUS 1-2-3, 68 lbs. Mtr. Frt. **5599.00**

NEW! HS-217, Winchester Upgrade Kit: Kit contains the controller and data separator boards, and an assembled and tested Winchester disk drive. The hard disk controller board installs in one of the H-100's S-100 expansion slots and the Winchester drive fits in one of the 5.25" disk drive locations. Kit includes all

mounting hardware, complete documentation, and step-by-step installation instructions. Upgrade kit is for use with H-100 Computers only. For Z-100 Computer use, contact your nearest Heathkit Electronics Center.

HS-217, For models with full height drives, 33 lbs. **1799.00**

HS-217A, For models with half height drives, 30 lbs. **1799.00**

Heathkit **Zenith data systems** Heathkit computer products and assembled Zenith Data Systems computer products are designed and built for home and business use, and meet all FCC Class B requirements.

*H-100 is a trademark of Heath Company. LOTUS is a trademark of Lotus Development Corp. CP/M is a registered trademark of Digital Research Inc. Z-DOS is a trademark of Zenith Data Systems Corp. MS is a trademark of Microsoft Corp.

Special quantity and system discounts are available on assembled computer products. See page 78.

A wide variety of software for your H/Z-100

In support of your H/Z-100 Desktop Computer, Heathkit offers a wide range of quality software from operating systems, to programming languages, to utility and applications software. On the following pages you'll find 16-bit software and on pages 92 to 95 you'll find many 8-bit packages that'll run on the Desktop Computer. For even more software options see page 92 and the H/Z-100 Software Directory.

GrafTalk* for easy and exciting graphics

NEW

- An interactive business graphics package that enables the user to completely control graphic presentations

Produce dramatic bar, pie, line and symbol charts almost instantly with this sophisticated and powerful software. An interactive program, GrafTalk immediately responds to English-like commands so that even a novice can produce complete and meaningful graphs. Includes screen editor and menu mode.
To run GrafTalk, an H/Z-100 Desktop Computer requires two 5.25" disk drives and the MS*-DOS operating system. A printer is needed for screen copies.
RG-463-1, Shpg. wt. 5 lbs. **449.00**

CPS*-86 Computerized Phone System

NEW

- A 16-bit software system that simplifies and enhances the use of your H/Z-100 as a data communications device

With this software and a modem, use your H/Z-100 Computer to access the many information services, computerized bulletin boards and other time sharing systems currently available to the public. Even communicate with other computers using this or some other CPS software. Includes many useful features.
This CPS package needs an H/Z-100 Computer equipped with 128K of RAM and one 5.25" disk drive while using MS-DOS (Vers. 1.25 or higher).
CB-463-7, Shpg. wt. 3 lbs. **40.00**
8-bit CPS computer phone system software for the H/Z-100 Computer: Requires 128K of RAM, one 5.25" disk drive and CP/M* (Version 2.2 or later).
CB-253-7, Shpg. wt. 1 lb. **40.00**

MP/M-86 provides multi-user capability

NEW

- A compact and powerful multi-user, multi-tasking operating system for use with the H/Z-100 Desktop Computer

Designed for microcomputers using the 8086/8088 microprocessor, MP/M-86 offers multi-user support while allowing users to run different programs simultaneously. It manages up to a megabyte of memory and supports a wide range of peripheral devices. The MP/M-86 file system allows larger files than CP/M, supports password protection, and reads all files generated by CP/M systems. Features include: real-time capability, record and file locking, date and time stamps, and extensive error-handling and reporting.
OS-63-5, Shpg. wt. 6 lbs. **649.00**

16-bit MS-DOS Version 2 and 8-bit CP/M

NEW

- Two operating systems that offer disk file handling efficiency and versatile peripheral support

MS-DOS Version 2 provides a number of significant improvements over previous versions of the MS-DOS operating system. Among the enhancements that increase its speed and functionality are new support programs, command line I/O redirection and a hierarchial file system.
OS-61-8, Version 2, Shpg. wt. 5 lbs. **150.00**

CP/M operating system offers flexibility and a logical structure. It supports many different disk drive systems and peripherals, and includes fast and easy-to-use software development tools. See EC-1120 CP/M Course on page 103.
OS-53-2, Version 2.2, Shpg. wt. 5 lbs. **150.00**

UCSD p-System,* a universal operating system

NEW

- Lets you use a variety of hardware and languages plus a full library of p-System application programs that are already available

With the UCSD p-System, you get a powerful screen-oriented text editor, two printing utilities, a File and a Library Manager, disk recovery tools and three configuration utilities. It also includes a Pascal and an 8086 Assembler. An H/Z-100 needs 128K of RAM and one 5.25" disk drive for this system.
OS-61-3, Shpg. wt. 14 lbs. **399.00**

Efficient and powerful CP/M-86* operating system

- Manages the full 768 kilobytes of the H/Z-100 Computer's memory

Designed for the 8086/8088 microprocessor, CP/M-86 is an efficient and powerful operating system that supports small to complex applications programs. Its file structure is compatible with that of 8-bit CP/M (OS-53-2 on this page).
CP/M-86 manages up to 768K of memory which allows software programs to take full advantage of the 8088's address space, the 16-bit microprocessor that's used in the H/Z-100 Desktop Computer. All 5.25-inch, 8-inch and Winchester disk drives used with the H/Z-100 are supported under this disk operating system. And all necessary utility programs for creating and editing text and data files are included with full documentation manual.
OS-63-2, Version 1.2, Shpg. wt. 3 lbs. **250.00**

Z-Chart* graphs help make better business decisions

- Design and display bar, pie, side bar, line, multiple pie, trend line and three-dimensional bar charts
- Create graphs with data entered from other business programs
- Create a slide presentation of graphs with multiple screen displays

Communicate and analyze your company's data faster and easier with the Z-Chart business graphics program. Clear up business reports muddled with hard to find data and replace them with clear, concise graphic representations. See trends and relationships that might otherwise go unnoticed. Z-Chart was designed to help you in these areas by enabling you to create effective and easy-to-read business charts with your H/Z-100 Desktop Computer.
Running Z-Chart requires an H/Z-100 Computer with 128K of RAM, at least one 5.25" disk drive, the MS-DOS operating system and Z-BASIC.
CB-463-11, Shpg. wt. 3 lbs. **150.00**

Check your H/Z-100 with disk-based tests

NEW

- Tests run with a minimum of user commands for easy operation and provides audio alarm with visual error messages

Greatly reduce service costs and hardware down time with the tests contained in the H/Z-100 Series Disk-Based Diagnostics program. Emphasis is placed on ease of operation, consistency of screen messages, and clarity of information displayed for the user. Resolve faults to the subassembly, microprocessor or support ICs, and to individual ROMs or RAMs. Once a fault is detected all information required to correct the error is given on-screen. Save the fault information by transferring it to a printer for future reference. A real time clock dates printouts for easier tracking. All tests can be run continuously.
Checking out an H/Z-100 Computer using this diagnostic program requires a computer with 128K of RAM and one 5.25" disk drive.
CB-463-13, Shpg. wt. 4 lbs. **79.00**

Pascal/MT+ programming language for CP/M

- A full implementation of the standard Pascal programming language

This 8-bit software system is useful for both data processing applications and for real-time control applications. With its added enhancements, Pascal/MT+ becomes more suitable for commercial programming by increasing its power to develop high-quality, efficiently maintainable software. The Pascal/MT+ system includes a compiler, linker and programming tools.

DR-253-5, Shpg. wt. 5 lbs. 349.00

Zenith Local Area Network connects H/Z-100s

- ZLAN packages enable shared computing among many H/Z-100s

Create a fast and efficient communication network between H/Z-100 Computers equipped with 5.25″ disk drives and one or more H/Z-100s with a Winchester drive. In this network, each computer functions as if it had all the capacity of its own hard disk without conflict and almost transparently to one another. ZLAN simplifies the use of commonly shared information and data by eliminating the need to keep multiples of disk copies. It also provides for batch processing.

To establish a ZLAN network you'll need at least two H/Z-100 Desktop Computers and a ZSS-100-22 Two-Computer ZLAN System package. One of the Computers must be equipped with a version 2.5 Monitor ROM, a Winchester hard disk drive, and a 256K Memory Upgrade Board (Z-205 on page 83). The other H/Z-100 Computer must be equipped with at least one 5.25-inch disk drive. The ZLAN System package that enables these computers to become a network consists of two Interface Cards, one for each computer, plus Server and Node software. The Interface Cards are assembled and tested, and install easily. The Server software is installed into the H/Z-100 with the Winchester drive and permits access by other computers to information and data residing on the hard disk. Node software (using MS-DOS 1.25) is installed into the floppy disk H/Z-100 and enables users to call up files or send files to the Server hard disk drive. Coaxial cables, available in two lengths, connect the computers.

Up to 255 H/Z-100 Desktop Computers can benefit from ZLAN. Each H/Z-100 connected into the network must have the ZSS-100-23 Add-On System package installed. It consists of an Interface Card and Node software.

ZSS-100-22, Two-Computer ZLAN System that includes Server and Node software plus two Interface Cards, Shpg. wt. 10 lbs. 1499.00

ZSS-100-23, ZLAN Add-On System for expanding a ZLAN network and includes Node software and one Interface Card, Shpg. wt. 8 lbs. 599.00

HCA-60, 25 foot cable, Shpg. wt. 1 lb. 20.00

HCA-61, 100 foot cable, Shpg. wt. 4 lbs. 40.00

Multiplan* a sophisticated electronic spreadsheet

- Powerful modeling and presentation capabilities for business uses
- Easy to learn and to use with on-line references and plain commands

Make better, faster business decisions and explore alternatives faster with Multiplan. Its 255 row by 63 column worksheet provides a giant financial ledger sheet which can be set up with titles and numbers. Make number, word or formula entries and change the screen display around by widening or shrinking columns to suit your needs. Use upper or lower case for titles and left or right justify them, or align text left and numbers right, as you see fit. Easily move and insert text and data anywhere on the worksheet and then, just as easily, remove it. Use any arithmetic operation plus: Boolean algebra, trigonometric functions, scientific notation, rounding off, and dollar and percent formats.

Multiplan's real power lies in its ability to automatically perform calculations. Because this program remembers the relationship between entries, "what if" questions can be easily answered to test out plans and prepare forecasts. When you make a change on the worksheet you immediately see the results of that change throughout the sheet and any related worksheets.

Running Multiplan on an H/Z-100 Computer requires one 5.25″ disk drive and the MS-DOS operating system. Multiplan only accesses 64K of RAM for data.

MS-463-7, Shpg. wt. 6 lbs. 250.00

Microsoft* BASIC-80, an excellent 8-bit interpreter

- Features a full set of built-in and a group of special functions

An extensive application of 8-bit BASIC, Microsoft BASIC-80 has many enhancements including sequential and random file manipulation. Plus, this programming language has direct access to CPU ports and memory locations. Commands

and statements include an IF-THEN-ELSE control structure which allows execution of conditional statements. String and numeric variables can be used while a full range of logical and mathematical operators are available for additional user convenience. Extensive editing and output capabilities are also available with this interpreter. BASIC comes with a simply organized Reference Manual for easy referrals and includes a handy reference card.

To run BASIC-80, an H/Z-100 Computer requires one 5.25″ disk drive and the CP/M operating system (Version 2.2).

MS-253-1, Version 5.22, Shpg. wt. 3 lbs. 175.00

Languages and compilers for all programming situations

For home, hobby, mathematical or business related needs, you'll find a programming language or compiler below to fit your specific requirements. They meet the skill level and the needs of both the experienced and the entry level user. Easy-to-read manuals with instructions in use and operation are included.

Z-BASIC, a 16-bit color interpreter for the H/Z-100

A high-level and easy-to-use language, Z-BASIC has many more commands and features than previous versions of BASIC. It is designed both for users with little programming experience and very experienced computer programmers. It accomplishes many functions with only a few ordinary English statements which are easy to learn and easy to use. An H/Z-100 Computer must have one 5.25″ disk drive and use the MS-DOS operating system to run the Z-BASIC language with all its programming advantages.

MS-463-1, Shpg. wt. 5 lbs. 175.00

FORTRAN for scientists, mathematicians and engineers

FORTRAN-86 Compiler accepts programs written according to the ANSI X3.1978 standard (including most of the features of FORTRAN-77 except the COMPLEX data type). Rigorous syntax rules permit the user to fully define the characteristics of the solution to a problem in a series of precise statements. Therefore, a general understanding of FORTRAN is recommended. To run the FORTRAN Compiler, an H/Z-100 requires one 5.25″ disk drive (two are recommended), 192K of RAM and the MS-DOS operating system.

MS-463-2, Shpg. wt. 4 lbs. 195.00

Powerful COBOL business programming language

Certified to be in compliance with the ANSI X3.23-1974 standard, this COBOL-86 Compiler has many standard features plus extensions designed to make it more useful for your business data processing tasks. Built-in utilities also extend the versatility of this programming language. An H/Z-100 Computer requires one 5.25″ disk drive (two are recommended) and the MS-DOS operating system to run this programming language.

MS-463-3, Shpg. wt. 3 lbs. 395.00

Z-BASIC Compiler increases program execution speed

Use the Z-BASIC Compiler with the Z-BASIC Interpreter above to provide yourself with an extremely powerful BASIC programming environment. With this complementary Interpreter, you can quickly run and debug your programs. Then compile your programs with the Z-BASIC Compiler to increase their execution speed and reduce the amount of memory space required to store the programs. This Compiler requires an H/Z-100 Computer with one 5.25″ disk drive and the MS-DOS operating system to run properly.

MS-463-4, Shpg. wt. 3 lbs. 250.00

High-level Pascal Compiler programming language

This highly extended version of the Pascal language makes system programming and applications programming a lot easier for you. Some of the valuable extensions found in the Pascal Compiler include structured constants, super arrays, variable length strings, string reads, separate compilation and more. The hardware required to run this Compiler on an H/Z-100 is one 5.25″ disk drive (although two are recommended for user convenience) and 192K of RAM. Software requirements include the MS-DOS operating system.

MS-463-5, Shpg. wt. 4 lbs. 295.00

*Multiplan and Microsoft are trademarks of Microsoft, Inc.

More versatile and powerful software to take advantage of the H/Z-100's capability

Software that includes: accounting and integrated accounting packages, word processing with spelling editor, data base management, computer-assisted instruction, a sorter, terminal emulators, an electronic spreadsheet and more on page 99.

PeachText 5000* integrated software package

• A powerful applications package with menu-driven features

A complete system that includes the PeachText* Word Processor, Spelling Proofreader, Random House Electronic Thesaurus,* PeachCalc,* and a List Manager. All modules are fully integrated using a central menu.

For an H/Z-100 Computer to run PeachText 5000, 128K of RAM, two 5.25" disk drives and the MS*-DOS operating system are needed.

RS-463-75, Shpg. wt. 3 lbs. **395.00**
$AVER! Verifiable H-100 Computer owners…save $120 ...... **ONLY 275.00**

LOTUS 1-2-3* combines popular decision-making tools

• Menu-driven with an extended series of help screens

Three important electronic aids to decision making are combined in one fast, easy-to-use business package. And, they perform interactively and instantly at the press of a key. LOTUS 1-2-3 provides you with information management, spreadsheet analysis, and a business graphics program all in one.

An H/Z-100 Computer needs two 5.25" disk drives, 192K of RAM and the MS-DOS operating system to run this integrated software package.

LS-463-1, Shpg. wt. 4 lbs. **495.00**

WordStar* 3.3 offers performance and flexibility

• User-friendly features like simple commands and instant response

Upgraded WordStar 3.3 is a powerful word processing system that adds a number of new capabilities to its many well-known word processing advantages. Increased support is given to the H/Z-100 Computer's function and numeric keypad keys.

To use WordStar, an H/Z-100 requires one 5.25" disk drive and MS-DOS.

MP-463-10, Version 3.3, Shpg. wt. 4 lbs. **399.00**

MailMerge* combines files with WordStar documents

• Allows you to turn form letters into personalized letters

Combine files containing names and addresses with WordStar letter text files. Requires WordStar 3.3 and the MS-DOS operating system when used with the H/Z-100 Computer. Includes many versatile printing features.

MP-463-11, Version 3.3, Shpg. wt. 3 lbs. **249.00**

SpellStar* checks WordStar files for spelling errors

• Original dictionary consists of approximately 20,000 words

SpellStar 3.3 rapidly checks WordStar files and labels or adds words to dictionary as desired. Create specialized dictionaries. Requires MS-DOS operating system and WordStar 3.3 for use in an H/Z-100 Computer.

MP-463-6, Version 3.3, Shpg. wt. 5 lbs. **149.00**

NEW WordStar Professional* for language processing

• WordStar plus three programs for efficient word processing

WordStar Professional provides everything you need to handle all your text management and printing needs. Included are SpellStar,* an automatic proofreader; StarIndex,* for generating an index and table of contents; and MailMerge for customizing all your mailings. This package requires an H/Z-100 with two 5.25" disk drives and 192K of RAM using the MS-DOS operating system.

MP-463-13, Shpg. wt. 5 lbs. **695.00**

NEW Sorting and merging with Microsoft Sort program

• A stand alone utility used with many programming languages

Full full details on this simple and powerful utility, see page 80. It requires an H/Z-100 Computer 128K of RAM under MS-DOS 2.0. Two 5.25" disk drives.

MS-5063-12, Shpg. wt. 1 lb. **199.00**

SuperSort* for powerful, yet easy-to-use sorting

Make your work go faster by being able to sort and merge up to 32 files into a single file at a rate of 560 records per minute. Perform all functions on data files compatible with BASIC, FORTRAN, COBOL and Assembler applications programs. Use fixed or variable length records and fields.

To use SuperSort on an H/Z-DOS Computer, one 5.25" disk drive (two are recommended) and at least 128K of RAM are needed along with MS-DOS.

MP-463-1, Shpg. wt. 3. lbs. **199.00**

SuperCalc* for solving everyday financial problems

• An indispensable tool for budgeting, estimating and financial forecasting

A powerful 16-bit electronic spreadsheet, SuperCalc provides a simple and straightforward tool for solving financial problems. It contains a worksheet 254 rows by 63 columns large where numbers and text can be easily entered. Use with an H/Z-100 Computer equipped with a 5.25" drive and MS-DOS.

SC-463-1, Shpg. wt. 4 lbs. **195.00**

NEW dBASE II* management system from Ashton-Tate

• Relational data base management system

Quickly and easily create a full information system that does exactly what you need and lets you expand in the future. Simple English-like commands let you add, delete, edit, display, print and handle your information. Features 64,000 records per file, 1000 characters per record and 32 fields per record.

To run this data base system on an H/Z-100 Computer, one 5.25" disk drive and 128K of RAM are needed with the MS-DOS operating system.

AT-5065-1, Shpg. wt. 4 lbs. **495.00**

Condor* Relational Data Base Management

• Design and create data files with this powerful filing system

Quickly and economically search, sort, merge, analyze, index and print out your data base records. Process up to 32,767 records per data base with up to 1023 bytes in a record. Create your own help menus. Produce sophisticated reports.

An H/Z-100 Computer requires two 5.25" disk drives, a minimum of 128K RAM and the MS-DOS operating system to run this data base system.

CD-463-1, Shpg. wt. 4 lbs. **650.00**

Fast and easy File Management System from Condor

• Easily and quickly design and create data bases using many options

Sort, merge files, analyze and print out information using plain and simple English commands. Process up to 32,767 records per data base with this fast, easy-to-use and powerful data base management system.

To use this File Management System, an H/Z-100 Computer requires two 5.25" disk drives and a minimum of 128K of RAM while using MS-DOS.

CD-463-2, Shpg. wt. 4 lbs. **299.00**

Pecon Peachtree* to Condor Interface System

Transfer data from master and transaction files in Peachtree accounting files to data bases processed under either Condor file management systems.

An H/Z-100 Computer with 192K of RAM and two 5.25" disk drives operating under MS-DOS are needed to run this software. Also required are either Condor packages and a minimum of one Peachtree accounting package.

CB-463-9, Shpg. wt. 3 lbs. **99.00**

Five Peachtree accounting packages

Maintain a complete financial picture of your business. On an H/Z-100 Computer, you'll need two 5.25" disk drives, 192K of RAM, the MS-DOS operating system and the Z-BASIC programming language.

General Ledger System keeps your financial records

- Provides a complete and updated financial picture of your business
- Use alone or in connection with other Peachtree accounting packages

Financial transaction record: The General Ledger System allows you to record the financial transactions of your company during a specified accounting period. Included are accurate and timely statements describing your company's current financial status as well as comparative data of a year ago to date. Can be used with Accounts Receivable, Accounts Payable, and Sales Invoicing programs.
RS-463-1, Shpg. wt. 5 lbs. **399.00**

Accounts Receivable System helps in your collections

- Prepares bills and helps obtain timely collections from customers
- Minimizes lost or delayed revenues through bookkeeping errors

A complete invoicing system, the Accounts Receivable package maintains a record for each of your customers including: name, address, phone number, current balance, sales tax, credit limit, and other pertinent information. It is easy to operate and produces comprehensive, up-to-date reports.
RS-463-2, Shpg. wt. 4 lbs. **399.00**

Accounts Payable System helps control your cash flow

- A simple, easy-to-operate system that provides complete vendor records

Payable information: Accounts Payable package maintains current and aged accounts. It keeps a complete file for each of your vendors, determines whether invoices should be paid by the due date or by the specified discount date, and automatically prints checks and a check register. Security measures are provided to protect the privacy of your data. Can also be used with General Ledger.
RS-463-3, Shpg. wt. 4 lbs. **399.00**

Inventory Control for all aspects of inventory operations

- Speeds and simplifies the demanding task of inventory management

Improve your inventory control, reduce your dollar investment in inventory management, and decrease the response time to your customers with this effective and straightforward program. Keep your inventory records current and print out comprehensive reports that completely cover the inventory operation. Use independently or in conjunction with Accounts Receivable and Sales Invoicing.
RS-463-5, Shpg. wt. 4 lbs. **499.00**

Sales Invoicing System bridges accounts packages

- Accesses and updates Accounts Receivable and Inventory Control

Systems bridge: Actually a subsystem of the Accounts Receivable and Inventory Management systems. Provides the capability to access and update the data files of both systems. Update customer accounts with sale or return information. Update inventory with the stocked items returned or sold.
RS-463-6, Shpg. wt. 4 lbs. **299.00**

Write courses and tests using ZDS* Teacher program

- Design and create an entire course of study including tests
- Create your courses without any previous programming experience

One-half of a two-part educational programming package, ZDS Teacher can be used for any instructional purpose that requires written text. You select the topic, decide how the course is to be structured, write the text, and create test and quiz questions. Then the second package, ZDS Student, is used to take the individualized course and exam questions.
To use ZDS Teacher, an H/Z-100 Computer needs a minimum of 128K of RAM and one 5.25" disk drive while using the MS-DOS operating system.
TA-463-1, Shpg. wt. 3 lbs. **299.00**

Use ZDS Student program to take courses and exams

- Run customized instructional courses and exams created by your instructor developed with the ZDS Teacher program

The second part of an educational package that includes the ZDS Teacher program. Take courses or programs written by your instructor. On-disk instructions show how to use the program. Run the program on an H/Z-100 Computer with one 5.25" disk drive and using the MS*-DOS operating system.
TA-463-2, Shpg. wt. 2 lbs. **100.00**

ZSTEM* allows H/Z-100 to emulate VT100 terminal

NEW

- An asynchronous terminal emulator that allows any H/Z-100 Computer to operate in a DEC mainframe environment

Add the capability of the popular DEC VT100 and VT102 terminals to the power and performance of your H/Z-100 Computer. ZSTEM uses XMODEM and XON/XOFF protocols with baud rates between 45.5 and 19,200. This software offers programmable softkeys, local printing, and VT100 graphics and keyboard layout.
ZSTEM requires an H/Z-100 Computer equipped with 128K of RAM and one 5.25" disk drive while using the MS-DOS operating system.
KE-463-1, Shpg. wt. 3 lbs. .... **PLEASE CALL FOR PRICE**

H/Z-100 Remote Batch Terminal Emulator

- For distributed processing, remote job entry, and more

Batch processing: Add terminal capability to your microcomputer with this versatile software package. It allows the H/Z-100 Computer to emulate several IBM mainframe terminals including the 2770, 2780, 3780, 2968, and the 3741. Capabilities include baud rate of 2000, 2400 and 4800; Bell 201A3, 201C, 208A and B compatible; EIA RS-232C communications; and more.
What you need: 128K of RAM, one 5.25" disk drive and MS-DOS.
WI-463-1, Shpg. wt. 4 lbs. **899.00**

3270 Emulator emulates IBM 3270 display station

- Runs on either leased line or dial-up configurations

Dual operation: With the 3270 Emulator program, your H/Z-100 Computer can do microprocessing as well as teleprocessing that results in a substantial savings for you. The emulator is also compatible with a variety of IBM or similar host computers using display attributes such as structured fields. Special key labels are provided to show you the relationship between emulator keys and the IBM display station keys. A unique 25th line displays the status of certain system functions.
Hardware and software requirements: On an H/Z-100 Computer, one 5.25" disk drive and 128K of RAM are needed. MS-DOS is also required.
PO-463-1, Shpg. wt. 2 lbs. **650.00**

Microstat* performs statistical tests and procedures

- Developed for real life applications using large data sets
- Computational algorithms selected for speed and accuracy

Human engineered: Microstat is designed to be flexible and fail-safe in operation and use. All algorithms have been selected with great care to ensure your complete confidence in analysis results. A wide range of statistical tests and a complete set of programs for data manipulations are offered. Most tests use data files for easy changing, sorting, merging and printing. Many tests have a number of variations of the basic test like two different regressions, three time series tests, etc. Microstat programs handle between 2500 and 5000 numeric values per data file depending on available memory. All analysis programs offer screen and printer output, and in most programs, you can get both types of output without rerunning the analysis. Versatile statistical analysis for you.

This package includes programs such as sort, rank-order, lag transformation, descriptive statistics, frequency distributions, scatterplot, correlation matrix, probability distributions, factorials, permutations, combinations, hypothesis tests, nonparametric statistics, crosstabs and more.
Hardware and software requirements: To run Microstat on an H/Z-100 Computer, a minimum of 128K of RAM and two 5.25" disk drives are required. The MS-DOS operating system is also required. Z-BASIC is also needed.
ES-463-1, Version 2.3, Shpg. wt. 2 lbs. **249.00**

ZDS is a trademark of Zenith Data Systems Corp. Microstat is a registered trademark of Ecosoft Corporation. ZSTEM is a trademark of KEA Systems Limited. MS is a trademark of Microsoft Corp.

NEW
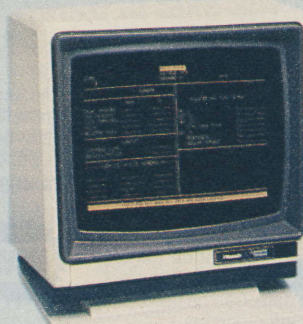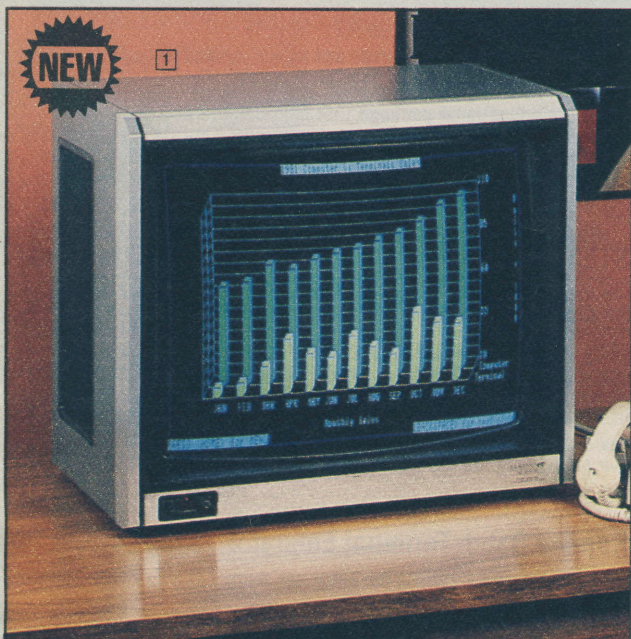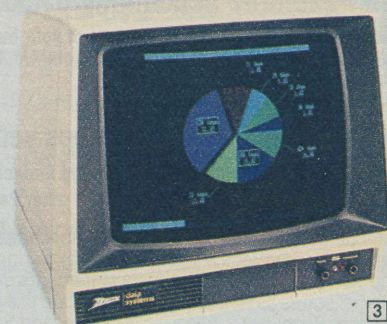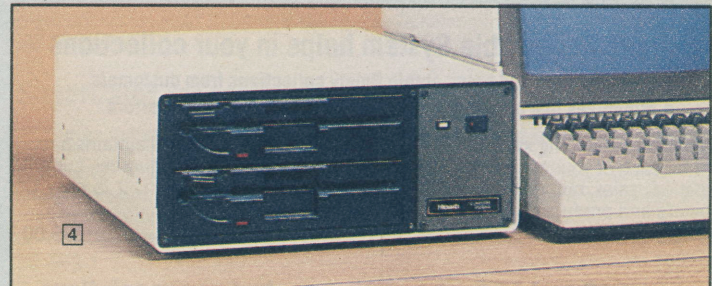
NEW # Beautiful computer workcenter furniture for your home or private office
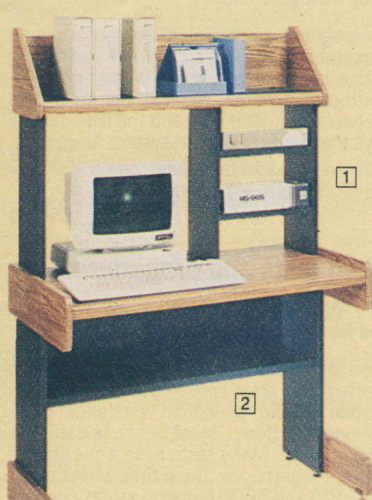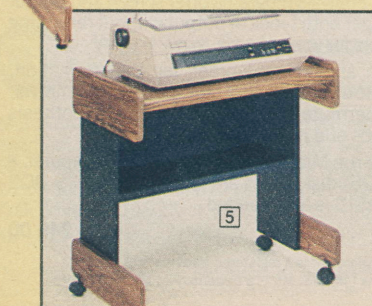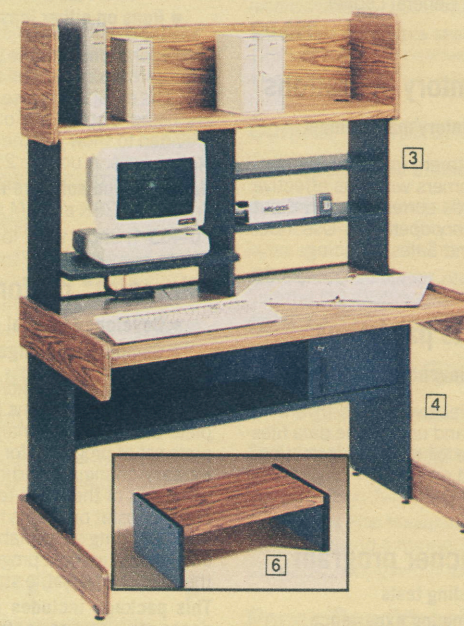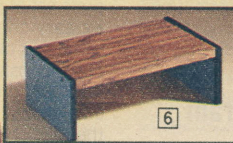
These smart looking modular furniture pieces enable you to create a workcenter that fits your needs and your computer system. Cantilever design provides ample leg room and strength for heavy loads. Wood grain and black finish.

2 Computer System Desk
Computer Desk offers a 35¾" W by 21" D work area, a back opening for printer paper, storage shelf, floor levelers and stands 28" high.
PF-125, Shpg. wt. 51 lbs. **119.95**

3 Hutch for Large Desk
Add-on Hutch is 33" H x 45½" W x 11¾" D and securely fastens onto Large Desk. Its adjustable monitor shelf holds up to a 13" monitor. Has 11½" deep bookshelf and two adjustable shelves.
PF-131, Shpg. wt. 46 lbs. **99.95**

4 Large Computer Desk
Spacious Desk measures 28" H x 45½" W x 29" D and features a lockable cabinet. Has storage shelf.
PF-130, Mtr. Frt. 85 lbs. **169.95**

5 Roll-Around Printer Stand
Versatile Stand has storage shelf and back opening for printer paper. Measures 28" H x 28¼" W x 19" D and has dual-wheel casters.
PF-120, Shpg. wt. 35 lbs. **79.95**

6 Add-On Monitor Platform
Use with either Computer Desk or Printer Stand to hold 13" monitor. 6¼" H x 19" W x 11¾" D.
PF-132, Shpg. wt. 6 lbs. **17.95**

1 Hutch for Computer Desk
Companion hutch to PF-125 Desk stands 28" high and 35¾" wide. It has a 9" deep full-length bookshelf with an electrical plug opening. An adjustable 20¾" wide by 10¾" deep monitor shelf can be positioned to the left or right of the desk. Has two adjustable storage shelves.
PF-126, Shpg. wt. 33 lbs. **79.95**

Economically-priced video monitors with high-resolution monochrome and full color displays

① CV-2562 25-inch Diagonal Color Video Monitor

- High-resolution display of up to 450 lines on large 25-inch screen
- Direct RGB inputs plus direct TV and VCR video and audio inputs

The new CV-2562 is a versatile monitor that can be used with your personal computer or enjoyed with your component television system, video cassette recorder/disc player, or video game. Advanced circuitry, developed for use with computer monitors provides improved picture performance with a maximum horizontal picture resolution capacity of up to 450 lines using either RGB or Composite Video inputs. A three-in-one tri-focus system of red, green and blue color guns improves picture sharpness and enhances details.

A unique green-only switch eliminates all other colors so that monochrome text material can be easily displayed. This is especially helpful when using the CV-2562 to view computer accounting programs or other text intensive programs that require a lot of reading. Flip the switch back to color and enjoy true color reproduction from other video sources.

Other quality features include: automatic light sensor; automatic monitoring and control of picture, color, tint and black level; audio amplifier with 2″ x 6″ speaker; and 120 VAC 60 Hz. Monitor measures 22¾″ H x 25½″ W x 20¼″ D.

CV-2562, Assembled and tested, Shpg. wt. 108 lbs. Mtr. Frt. **729.95**
ZVM-134-1, Cable for H/Z-100 Computers, Shpg. wt. 2 lbs. **20.00**
ZVM-134-21, Cable for HS-151 and IBM-PC Computers, 1 lb. **20.00**

② HVM-122A 12″ Amber Monochrome Video Monitor

- Compatible with most of today's popular personal computer systems
- Excellent character definition and intensity at an economical price
- Specially equipped for displaying either 40 or 80 characters per line

A sharp display is always seen on the HVM-122A. A wide 15 MHz bandwidth and a fast 30 nanosecond rise time combine to produce a noticeably improved character definition. An special DC-coupling circuitry enables the video display to retain its brightness even when the screen is full of information.

An easy-to-read 25 lines containing 80 characters each are displayed on the 12-inch diagonal non-glare screen. A special 40-80 character switch accommodates computers whose video formats have a 40-column display output.

Adjustment controls are conveniently located behind a fold-down front panel door. These controls include: power, black level, contrast, horizontal and vertical hold, and vertical height. Get super video from computers such as: the H/Z-100 Desktop and new Personal Computers, the IBM-PC (with color board) and PCjr, Apple II and III, Compaq, Texas Instruments 99/4, and the Atari 800 and 1200.

Kit HVM-122A, Shpg. wt. 22 lbs. . . . . **Was $109.95 NOW ONLY 89.95**
ZVM-122A, Assembled with non-glare amber CRT, Shpg. wt. 18 lbs. **139.95**
ZVM-123A, Assembled with non-glare green CRT, Shpg. wt. 18 lbs. **139.95**
ZVM-124, Assembled monitor for use with IBM-PC and PC compatible computer systems, amber CRT, needs monochrome printer adapter card, 18 lbs. . . . **199.00**
ZVM-123-2, Tilt Base, Shpg. wt. 2 lbs. **15.00**
ZVM-121-1, Cable for IBM-PC, Shpg. wt. 1 lb. **5.00**
ZVM-121-2, Cable for Atari 800 and 1200, Shpg. wt. 1 lb. **15.00**

③ Compact 13″ Assembled Color Video Monitors

- Three models with true color reproduction for use with personal computers, VCRs, video discs, video games and modular TV tuners
- All have unique "green screen only" switch for easier text display

ZVM-131: Medium-resolution monitor; composite video and RGB input; audio capability; 25 line display with 40 characters per line; composite video "loop-thru" feature; and easy-to-reach front access controls.
ZVM-131, Shpg. wt. 38 lbs. **379.00**
ZVM-133: A high-resolution RGB-only color monitor featuring an 80-column display. Permits the display of as many as 640 pixels horizontally and supports the IBM brown. Includes IBM-PC/HS-151 Personal computer cable.
ZVM-133, Shpg. wt. 39 lbs. **559.00**
ZVM-136: Has all the features of the ZVM-133 RGB-only monitor with the added advantage of a long-persistence phosphor CRT.
ZVM-136, Shpg. wt. 39 lbs. **799.00**

Cables for use with ZVM-131/136/133 Color Video Displays:
ZVM-135-1, For the H/Z-100 Desktop Computer, 1 lb.
ZVM-135-2, For the IBM Personal Computer, 1 lb.
ZVM-135-3, For the Apple III Computer, 1 lb.
ZVM-135-4, For Texas Instruments and Atari Computers, 1 lb.
ZVM-135-5, For IBM-PC jr with audio, 1 lb.

$25 EACH

④ HS-207 8-Inch Disk System with 2.5 MB storage

- Expands the storage capabilities of the H/Z-100 Desktop Computer with optional one or two 8-inch drives
- Compact low-profile unit uses slim half-height drives

Add additional data storage capacity to the H/Z-100 Computer with either one or two 8-inch disk drives in the HS-207 Disk System. Each drive uses soft-sectoring to store up to 1.26 MB on both sides of an 8-inch double-sided double-density disk for a total of 2.52 MB of unformatted data storage. Disks are formatted in the industry-standard IBM 3740 style.

Factory configured to operate with the H/Z-100 Computer, the HS-207 System is ready to go by just connecting the flat 50-conductor command and information cable to a computer and plugging it in. Requires 125 VAC.

Heathkit **Kit HS-207-41,** Eight-Inch Floppy Disk System with one disk drive, 1.25 MB of data storage. Shpg. wt. 57 lbs. **999.00**
Heathkit **Kit HS-207-42,** Eight-Inch Floppy Disk System with two 8″ disk drives, 2.5 MB of data storage. Shpg. wt. 69 lbs. **1599.00**
Zenith data systems **Z-207-41,** Assembled and tested single drive Eight-Inch Floppy Disk System with 1.25MB data storage, Shpg. wt. 53 lbs. **1599.00**
Zenith data systems **Z-207-42,** Assembled and tested Eight-Inch Floppy Disk System with two disk drives and 2.5MB storage, Shpg. wt. 60 lbs. **2299.00**
Z-207-6, Assembled and tested second Half-Height Eight-Inch Disk Drive, 1.25MB double-sided, double-density storage, Shpg. wt. 8 lbs. **699.00**
HDC-207, Dust Cover for the HS/Z-207, Shpg. wt. 1 lb. **16.00**

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① Versatile H-89 All-In-One Computer features a professional keyboard and video terminal

The H-89 All-In-One Computer is an outstanding single-component system that's ready to work for you. Use it to increase your office's efficiency with business applications and word processing. Create your own programs with versatile operating systems and languages. And, manage your home easier with financial programs and information services. See page 98 for more accessories.

All New Low Price of

$799⁹⁵

for kit H-89

FEATURES A SAVINGS OF UP TO $100

- Dual 8-bit microprocessors for faster computing
- 48K byte RAM memory that expands to 64K bytes
- Internal 5.25″ disk drive stores up to 100K bytes
- High-quality, professional typewriter keyboard
- Uses both H-DOS and CP/M operating systems

Separate microprocessors: The H-89 uses two Z-80 microprocessors, one for video and keyboard functions and the other for just powerful computing. With the terminal using its own microprocessor, the computer can concentrate on high-speed processing for more versatility than other 8-bit desktop computers.

Expandable memory: At 48 kilobytes of RAM, the H-89's memory is large enough to run most 8-bit software. And for larger programs, memory can be increased up to 64 kilobytes. To add the extra 16 kilobytes of RAM, you simply install the wired WH-88-16 RAM Expansion Kit (p. 91).

Increased data storage: For most of your data storage needs, the H-89 comes with an internal 5.25-inch floppy disk drive (H-17-1 on page 91) and an H-88-1 hard-sectored disk controller board (p. 91). This standard equipment allows you to store up to 100K bytes of data on a single floppy diskette. When you need more storage space, the H-89 answers with many add-on storage capacities in a number of different ways. You can increase the amount of disk storage by connecting an H-77/Z-87 external floppy disk system (p. 91) with its one or two disk drives to your H-89. This now brings the total storage capacity up to 300K bytes (100K bytes per drive). Storage capacity can be further increased by replacing the H-88-1 controller board with a Z-89-37 soft-sectored disk controller board (p. 91). With the Z-89-37 board installed in your H-89, total storage (with H-77/Z-87 connected to the H-89) becomes 480 kilobytes. Still more storage is gained by replacing the internal disk drive with a double-sided double-density disk drive (H-17-5 on page 91) and replacing the H-77/Z-87 with an H-37 external floppy disk system. This arrangement increases storage capacity to a massive 1.92 megabytes. See page 91 for more information on storage capacities.

Professional keyboard: With its standard typewriter keyboard, the H-89 allows touch-typists to immediately take advantage of word processing. Typists easily move from their electric typewriters to the keyboard of the H-89 without losing time in retraining. And, the rugged, highly-reliable keyboard is built to take the constant use found in the office environment. For programmers, the keyboard can display the entire ASCII character set, both upper and lower case, along with 33 graphic symbols. A 12-key keypad beside the keyboard allows accountants to rapidly enter numbers while using bookkeeping and other spreadsheet programs.

Quality video terminal: All information is shown on a 12-inch high-quality video display tube (or CRT) that provides highly detailed characters. The optional white or green CRT displays 24 rows of 80 characters each as well as a software-controlled 25th line. The display is always bright even when the maximum 2000 characters fill the screen. On the screen, upper-case characters are formed by a 5 x 7 dot matrix while lower-case characters use a 5 x 9 dot matrix.

Add on the peripherals: For your convenience and the H-89's versatility, three EIA standard RS-232C serial interface ports are part of the H-89. These three standard serial ports let you connect peripherals that make the H-89 more useful to you. Connect a printer such as the H-125, located on page 97, for printed copies. Or connect a modem (page 97) and use the H-89 to talk to other computers or access information services with their wealth of interesting, useful and profitable information, and services. See page 98 for increased capability.

H-89 software: Choose from either H-DOS or CP/M (both on p. 92) as your disk operating system, or use both. Each operating system features sophisticated system control and both support all Heath/Zenith disk systems. Software that can be used with either H-DOS or CP/M can be found on pages 92 through 95 and page 99. This includes: programming languages, financial modeling and planning software, utilities, word processing software, learning software and games. By joining HUG (p. 89) you can gain access to its library of over 700 software programs for your H-89 which are constantly being updated.

User oriented manuals: A step-by-step assembly manual shows you exactly how to assemble your own H-89 computer. Each step is clearly written and well illustrated to ensure a properly built and working kit.

Heathkit **Kit HS-89-2,** All-In-One Computer with anti-glare green CRT, Shpg. wt. 96 lbs. . . . . **Was $ 949.95, NOW ONLY 799.95**

Heathkit **Kit HS-89-3,** All-In-One Computer with standard white CRT, Shpg. wt. 96 lbs. . . . . **Was $899.95, NOW ONLY 799.95**

Zenith data systems **Z-90-90,** Assembled and tested H-89 with Z-89-37 Controller Board, 64K RAM, less disk drive, Shpg. wt. 53 lbs. **1599.00**

Zenith data systems **Z-90-92,** Assembled and tested H-89 with Z-89-37 Controller Board, 64K RAM, 48 TPI disk drive, Shpg. wt. 55 lbs. . . . **1899.00**

H-89A SPECIFICATIONS: CPU AND MEMORY: Processor: Z80. **Clock:** 2.048 MHz. **Memory:** 8K bytes used by system for ROM and RAM; 48K bytes user RAM (expandable to 64K). **VIDEO TERMINAL: CRT:** 12-inch Diagonal. **Display Size:** 6½" H x 8½" W (16.5 x 21.6 cm). **Character Size:** Approximately ⅕" H x 1⁄10" W (0.5 x 0.3 cm). **Character Type:** Upper case and lower case without descenders, 5 x 7 dot matrix; Lower case with descenders, 5 x 9 dot matrix; Graphics, 8 x 10 dot matrix. **Keyboard:** 84 keys (60 alphanumeric keys and 12 function/control keys) – plus a 12-key numeric/control pad. **Cursor:** Blinking, non-destructive underline or block. **Cursor Controls:** Up, down, left, right, home, CR, LF, back space and tab. **Cursor Addressing:** Relative and direct. **Tab:** Standard eight-column tab. **Refresh Rate:** 60 Hz at 60 Hz line frequency, 50 Hz at 50 Hz line frequency. **Edit Functions:** Insert and delete character or line. **Erase Functions:** Erase line or page, from beginning of line or page, to end of line or page. **Bell:** Audible alarm on receipt of ASCII BEL. **Video:** Normal and reverse, by character. **FLOPPY DISK (H-88-4): Tracks:** 40. **Sectors:** 10. **Formatted Bytes Per Sector:** 256. **Spindle Motor Speed:** 300 RPM ± 1%. **Data Transfer Rate:** 128 kHz. **Motor Start Time:** 1 second. **ACCESSORIES: Interfacing;** Three EIA standard RS-232C Serial Interface ports are provided. **GENERAL: Operating Temperature Range;** 50-95 degrees F (10-35 degrees C). **Power Requirements:** 120/240 VAC, 50/60 Hz, 90 watts. **Dimensions:** 13" H x 17" W x 20" D (33 x 43.2 x 50.8 cm). **Weight:** 46 lbs. (20.7 kg).

2 Add more data storage capacity to the H-89

Increased data storage: As your need for more disk storage space increases, the H/Z-89 and Z-90 Computers easily expand to supply the storage capacity you need. There are several different ways to accomplish this storage increase. You can use the standard internal H-88-1 hard-sectored disk controller board of the H-89 and externally add more single-sided 5.25-inch floppy disk drives to your computer. Or, replace the standard controller board with a Z-89-37 soft-sectored disk controller board and use either single-sided or high-capacity double-sided 5.25-inch floppy disk drives (all featured below).

HS-77 and Z-87: Increase the amount of data your H-89 Computer can store on disk by adding on a kit HS-77 or Z-87 Floppy Disk System with optional single or dual 5.25-inch disk drives. Each single-sided drive (H-17-1, below) of either system is capable of storing 100K bytes on a diskette for an added 200K bytes of storage capacity. That brings the total storage capacity of 300K bytes, counting the 100K byte capacity of the computer's internal disk drive.

Different versions: The kit HS-77 is available in one or two drive versions as desired. Start with only a one-drive model, HS-77-1, and add a second drive later when your needs demand more data storage. If you need 200K bytes of extra data storage that a two-drive system can deliver, order an HS-77-2. An assembled two-drive system for an H-89 Computer is available by ordering a Z-87-89. A two-drive system for a Z-90 Computer is obtained by ordering a Z-87-90. Refer to the chart below for shipping weights and prices.

Z-89-37 controller board: Replace the standard hard-sectored controller board in an H-89 with the Z-89-37 soft-sectored disk controller board and increase data storage capability by 1.6 times. The Z-89-11 enables the single-sided disk drive to store up to 160K bytes of data. Used with an HS-77 or Z-87 Floppy Disk, this soft-sectored controller increases their storage capacity up to 320K bytes. With the 160K byte storage of the internal H-89 drive, you can have a system that has a total storage capacity of 480K bytes.

HS-37 Floppy Disk System: With a Z-89-37 controller board and a two-drive HS-37 Disk System, up to 1.28 megabytes of additional data storage is provided. The high-capacity double-sided 96 TPI H-17-5 disk drive used in the HS-37 makes this amount of storage possible with its large 640K byte per drive storage capability. By replacing the internal single-sided drive with an H-17-5 drive, a huge 1.92 megabytes of total disk storage space becomes available.

Two versions: The kit HS-37 Disk System is also available with one (HS-37-1) and two (HS-37-2) double-sided floppy disk drives. Get a one-drive system now and add another drive later. An assembled two-drive system, ZC-37, is available for ready-to-use increased storage capacity.

Separate components: Besides the Floppy Disk Systems themselves, each component of these systems is available separately so that you can build a storage system that fits your needs. Get the storage you need now and then add on more data storage handling capability later. All disk storage accessories are listed at the bottom of the page.

Compatible: Both the H-88-1 and the Z-89-37 controller boards can be used in an H-89 or Z-90 Computer at the same time. This provides even more storage possibilities to choose from. The H-88-1 can only be used with single-sided disk drives, but the Z-89-11 can be used with both single- and double-sided drives.

Quality components: All controller boards and disk drives are factory assembled and tested to ensure worry-free system operation. All operate on 120 VAC.

How to order external 5.25" disk storage for H/Z-89s, Z-90s

Storage Capacity Using Controller Boards:		Order Model		Includes Cabinet Power Supply And:	Shpg. Wt.	Price
H-88-1	Z-89-37	Kit	Assem.			
100K bytes	160K bytes	HS-77-1	—	One H-17-1 (Single-Sided)	34 lbs.	459.00
200K bytes	320K bytes	HS-77-2	—	Two H-17-1 (Single-Sided)	47 lbs.	659.00
		—	Z-87-89 for H/Z-89		30 lbs.	659.00
		—	Z-87-90 for Z-90		30 lbs.	659.00
—	640K bytes	HS-37-1	—	One H-17-5 (Double-Sided)	34 lbs.	699.00
—	1.28 megabytes	HS-37-2	—	Two H-17-5 (Double-Sided)	47 lbs.	1199.00
—	1.28 megabytes	—	ZC-37	Two H-17-5 (Double-Sided)	28 lbs.	1199.00

Need help?
Call TOLL FREE: **800-253-7057**

For ordering assistance or information, call toll-free between 8:00 A.M. and 4:30 P.M. ET, Monday through Friday. In Alaska, Hawaii and Michigan, call 616-982-3411.

SAVE ON SOFTWARE!

Purchase an H-89 Computer and receive **FREE** your choice of either H-DOS or CP/M (hard- or soft-sectored) operating systems. And, save 50% on any H-89 software package when you order an H-89 Computer.

Optional Disk Drive Accessories

H-88-1, Hard-Sectored Disk Controller Board for H/Z-89 Computers: Assembled and tested, use only with H-17-1 single-sided disk drives, 3 lbs. **150.00**

Z-89-37, Soft-Sectored Disk Controller Board for H/Z-89 Computers: For use with single- and double-sided drives, assembled and tested, 4 lbs. **299.00**

H-17-1, Single-Sided Floppy Disk Drive for HS-77/Z-87 Disk Systems: Assembled and tested 48 TPI drive for use with H-88-1 Controller Board, stores 100K bytes with H-88-1 and 160K bytes with Z-89-37, Shpg. wt. 5 lbs. **295.00**

H-17-5, Double-Sided Floppy Disk Drive for HS-37 Disk System: Assembled and tested 96 TPI drive requires Z-89-37 Controller Board, stores up to 640K bytes on a compatible disk, Shpg. wt. 5 lbs. **550.00**

HCA-5-77, Dust Cover: Protects HS-77/Z-87 and HS-37 Disk Systems from dust and contaminants, Shpg. wt. 1 lb. **14.00**

Accessories for H/Z-89 and Z-90 Computers

WH-88-16, Assembled 64K RAM Expansion Kit: Assembled circuit board expands RAM capacity of H/Z-89 Computers to 64K, requires 48K RAM, 1 lb. . . **115.00**

HA-88-3, 3-Port Serial Interface: For older H-89s, Shpg. wt. 2 lbs. **150.00**

H-88-9, High-Capacity Drive Installation Kit: Hardware required to install H-17-4 drives into older H-89 Computers, Shpg. wt. 4 lbs. **50.00**

H-88-5, Cassette Interface: (Not used with CP/M), Shpg. wt. 2 lbs. **49.00**

Kit H-88-10, Wire Wrapping Board with Bus Connectors: For making custom computer circuits, uses HCA-7, Shpg. wt. 1 lb. **30.00**

Kit HCA-7, Wire Wrapping Socket Kit: Includes 36 3-level wire wrapping sockets ranging from 14-pin to 40-pin, used with H-88-10, 1 lb. **29.95**

HCA-5-89, Dust Cover: Protects H/Z-89 and Z-90 Computers and H/Z-19 Terminals from dust and contaminants, Shpg. wt. 1 lb. **14.00**

VISA MasterCard **Discover the fun of kitbuilding at your Heathkit Electronic Center.**

A full line of software for your H/Z-89 or Z-90 Computer

For use in the office or in the home, Heath has software solutions for your everyday needs that are ready to run on your Heathkit/Zenith Computer. Many of these software programs are menu-driven and use easy-to-understand common English commands for easier and faster program usage.

You'll find a wide variety of software programs on this and the following pages. They include: operating systems, programming languages, utility and applications programs. For an even greater selection of software programs, there's the Heath User's Group (HUG) on page 89 with its software library of over 700 programs which is constantly expanding.

All these software packages come with easy-to-understand instructions manuals and are fully indexed to make it easy to locate specific information. Many include glossaries of terms and appendices filled with useful information. All software is subjected to stringent tests to ensure quality and user satisfaction. All software is stored on high-quality disk media for longer worry-free operation.

Several of the software packages on this and the following pages are compatible with and ready for use in the H/Z-100 Desktop Computer. Also see page 99.

World popular CP/M*-80 operating system provides a common hardware interface

- Most popular operating system available for microcomputers
- More applications software available than any other system

Industry standard: The CP/M operating system provides a common interface to a large variety of computer hardware. And, it provides a general environment for program development, editing, operation, and storage which frees the user from having to understand the details of underlying hardware. This has brought about a vast production of software programs...more languages, utilities and applications software programs than any other disk operating system.

Comprehensive file management: CP/M can accommodate files up to 8 megabytes and can access them both sequentially and randomly. In the CP/M operating system, files are named for easier location and are allocated dynamically. Programs can be stored in both source and machine executable form.

Disk management: The Basic Input/Output System (BIOS) of CP/M provides the operations to access up to two disk drives, 5.25-inch and/or 8-inch, or a Winchester hard-disk system. The Basic Disk Operating System (BDOS) controls one or more disk drives containing independent file directories. BDOS implements disk allocation strategies which provide fully dynamic file construction while minimizing head movement across the disk during the access of a file. A Console Command Processor controls the input and output of programs.

Utilities: CP/M includes standard programs like: an 8080 assembler, an editor, a debugger, a hardware configuration utility, a file copy program, a system and disk status utility, plus others. Special programs include, a disk duplication and verification utility, disk formatting utility and many more.

Hardware requirements: To run this version of CP/M on an H/Z-89 or Z-90 Computer, at least 48K of RAM is needed. Although one disk drive is also needed, two drives are highly recommended. In turn, CP/M supports the H/WH-17, H/Z-37, H/Z-47, Z-67 and the H-77/Z-87 Floppy Disk Systems.

HOS-8917-2, CP/M-80 on hard-sectored 5.25" disk, Shpg. wt. 5 lbs. . . **150.00**

HOS-8937-2, CP/M-80 on soft-sectored 5.25" disk, Shpg. wt. 5 lbs. . . . **150.00**

*CP/M is a registered trademark of Digital Research Corp.

Heath Disk Operating System is user-oriented and simple to operate with built-in error reporting

- Offers many of the functions of large commercial computers
- Designed for the efficient use of memory and disk space
- Recognizes and reports many command and reference errors

Simplified system: H-DOS* provides a complete environment for program construction, storage, and editing. It also provides assembly and checkout facilities. The H-DOS system has a high degree of flexibility and is structured to function with many commands executed on an internal basis. This relieves the user from having to consciously command each step of a program sequence. Increased system discipline, and the ability of H-DOS to recognize and report all command and reference errors saves operators time, reduces mistakes and helps prevent inadvertent loss of valuable data. An easy-to-use Benton Harbor BASIC programming language is included along with ASM Assembly Language, a two-pass 8080 assembler. Also included are several utilities.

Hardware requirements: An H/Z-89 or Z-90 Computer using H-DOS must have a minimum of 48K RAM and one disk drive. However, two disk drives are recommended. H-DOS supports all Heathkit/Zenith disk systems except the Z-67.

HOS-817-1, H-DOS on hard-sectored 5.25-inch disk. Shpg. wt. 5 lbs. . . . **150.00**

UCSD P-System for program flexibility, clear readability, and reliable execution

The UCSD P-System, Version IV, is an operating system designed around a high-level programming language with a complete environment for easy program development and execution in small computers. With its built-in Pascal Compiler, large tasks can be divided into manageable smaller, easier tasks.

Hardware requirements: An H/Z-89 or Z-90 Computer requires a minimum of 48K RAM, but, 64K is highly recommended. Two soft-sectored 96 TPI disk drives are also needed to run the P-System and the Pascal Compiler.

HOS-8937-3, UCSD P-System on soft-sectored 5.25" disk, 7 lbs. **495.00**

*H-DOS is a trademark of Heath Company.

SOFTSTUFF
Quality software tools to fit your budget

H-DOS — CP/M File Converter: Easily transfer H-DOS text files to CP/M-80 disks and vice versa, to effectively double the information handling capability of your H/Z-89 Computer. Requires 48K RAM, two disk drives, and H-DOS and CP/M.

SF-8512, On hard-sectored 5.25" disk, Shpg. wt. 1 lb. **30.00**

Typing Tutor: Learn to touch type faster and more efficiently using the H/Z-89 typewriter-style keyboard. H/Z-89 requires 48K RAM and one 5.25" disk drive.

SF-9018, On hard-sectored 5.25" disk, Shpg. wt. 2 lbs. **40.00**

PIE Full-Screen Text Editor: Access files and make changes anywhere on-screen. Special user-defined function keys are used to perform operations. Requires an H/Z-89 with 48K RAM, one 5.25" disk drive, and H-DOS or CP/M.

SF-9200, On hard-sectored 5.25" disk, Shpg. wt. 2 lbs. **50.00**

H-DOS and CP/M CPS: To run this Computerized Phone System (CPS) software, an H/Z-89 requires 48K RAM, one drive, H-DOS or CP/M, and a modem.

SF-9503, On hard-sectored 5.25" disk, Shpg. wt. 2 lbs. **40.00**

CP/M Z-90 CPS: Z-90 needs 48K RAM, one soft-sectored drive, CP/M and modem to run this computerized phone system software.

SFS-9103, On soft-sectored 5.25" disk, Shpg. wt. 4 lbs. **40.00**

Software Directory for the H/Z-100 Desktop Computer

- Lists more than 475 programs for the H/Z-100
- Products grouped by subheadings for easier locating

H/Z-100 software locator: The Software Directory, second edition, is designed to help H/Z-100 Computer users locate software products that meet their specific needs. It lists more than 475 programs that have been reported as available and operable on the H-100 and Z-100 microcomputers.

Contents: This edition is divided into 21 chapters from accounting to word processing. Within chapters, products are categorized into subsections for easier location of specific product types. All products are listed alphabetically within each subsection.

Each listing contains a description of the software product as provided by the vendor. The description contains: the amount of memory required; language required, if any; the disk format; documentation; and a brief summary of the program. Along with the description is the vendor's name, address and phone number for those interested in a specific program.

The last two sections of the Software Directory contain a Heath/Zenith product index of all non-Zenith and non-Heath software, and a Vendor index.

CB-463-15, Shpg. wt. 3 lbs. **25.00**

SuperCalc* — one of the most versatile and comprehensive electronic spreadsheets available

Decision-making tool: Quickly and easily calculate "what if" and "now what" questions on a spreadsheet covering 63 columns and 254 rows. Worksheet uses self-explanatory error messages and a help function key that lists choices. Other attractive features include powerful editing capabilities and cell protection.

Hardware and software requirements: This version of SuperCalc needs an H/Z-89 or Z-90 Computer with 48K of RAM, one disk drive, and the CP/M* operating system. For printouts, a printer is also needed.

HSC-817-1, on hard-sectored 5.25" disk, Shpg. wt. 2 lbs. **195.00**
HSC-837-1, on soft-sectored 5.25" disk, Shpg. wt. 2 lbs. **195.00**

Powerful WordStar* word processing system features versatility, convenience and multi-level help messages

Dynamic system: WordStar is a screen-oriented word processor that lets you create and format text in any form you desire. Powerful editing commands let you insert, delete and move text within a file as well as copy or read text from other files. Choose either a ragged or justified right margin, or mix them together. You control the page length, top and bottom margins, heading/footing/page number locations and other pagination directives. Most of these formatting functions take place immediately so that you see on the screen what will actually be printed.

Advanced output capabilities: Additional enhancements can be added to your file as it is printed out. Some of these options are: boldface, double strike, underline, strikeout, subscripts, superscripts, variable character pitch and variable line height. WordStar also supports simultaneous printing and editing.

Hardware and software requirements: To run WordStar on an H/Z-89 or Z-90 Computer, 64K RAM and two disk drives are needed. CP/M-80 is the required operating system. A letter quality printer is recommended for documents. To run this soft-sectored version of WordStar on an H/Z-100 Computer two disk drives are needed along with the CP/M operating system for the H/Z-100.

HMP-817-2, Vers. 3.3 on hard-sectored 5.25" disk, Shpg. wt. 2 lbs. . . . **395.00**
HMP-837-2, Vers. 3.3 on soft-sectored 5.25" disk, Shpg. wt. 4 lbs. **395.00**

Use MailMerge* to add mailing list and file merging capabilities to WordStar word processing

Powerful file merging: With MailMerge, you can combine a file containing names and addresses with a file in WordStar containing a letter text. Automatically, data can be inserted where variables are specified, even in mid-paragraph.

Hardware and software requirements: The MailMerge program can be run on an H/Z-89 or Z-90 Computer having 64K RAM and two disk drives. The CP/M operating system and WordStar software are needed. To use MailMerge on an H/Z-100 Computer, two disk drives and the CP/M operating system for the H/Z-100 are required along with WordStar.

HMP-817-3, Vers. 3.3 on hard-sectored 5.25" disk, Shpg. wt. 4 lbs. **135.00**
HMP-837-3, Vers. 3.3 on soft-sectored 5.25" disk, Shpg. wt. 4 lbs. **135.00**

Easy-to-use Magic Wand* places excellent power and outstanding versatility at your fingertips

Comprehensive range of functions: Magic Wand combines the most-asked-for features in a word processor with a very easy-to-handle price. In creating and editing documents, you can move the cursor around the screen with single keystroke commands. To replace characters, you can simply type over them. You can also delete text by characters, words, lines or blocks with checks in line and block deletions to prevent an accidental erasing. Other editing features include single and multiple search and replacements, block moves and copying, and two ways to insert text. Even examine the disk directory while editing.

Smooth print control: You can set your print requirements with commands from the keyboard when it's time to print your document or embed them while you are writing it. You control the margins, page length, paragraph indention, text alignment (left or right justified, or ragged), hyphenation and line spacing (single-, double-, and 1½ spaced). On capable printers, you can underscore words or sentences, use boldface or overstrikes, and add superscripts and subscripts.

Additional features: With Magic Wand, you can define up to 128 variables of up to 55 characters each that can be used for repetitive jobs. And merge with Magic Spell to automatically proofread your documents.

Hardware and software requirements: To run Magic Wand, an H/Z-89 or Z-90 computer requires 48K of RAM, one disk drive and the CP/M operating system. A letter quality printer is also recommended for printed documents. An H/Z-100 Computer needs one disk drive and the H/Z-100 CP/M operating system.

HRS-817-9, on hard-sectored 5.25" disk, Shpg. wt. 3 lbs. **295.00**
HRS-837-9, on soft-sectored 5.25" disk, Shpg. wt. 4 lbs. **295.00**

Magic Spell automatic proofreader checks spelling in documents written with Magic Wand

Automated proofreading: Magic Spell is designed to help you isolate spelling and typographical errors in Magic Wand documents. Its spelling system looks through documents of any size and compares each word to an internal 20,000 word standard usage dictionary. Amazingly fast, a typical floppy system using double-density disks can check a 10,000 word document in less than a minute.

Extensive capabilities: To its standard 20,000 word dictionary, you can add any number of additional words or you can build your own dictionaries. You can add, subtract or customize them to meet your needs.

Easy to use: One of Magic Spell's distinct advantages is that you can request all its features from a simple menu. This spelling checker also contains many reference displays that can be displayed on the screen at any time you desire.

Hardware and software requirements: An H/Z-89 or Z-90 Computer requires 48K bytes of RAM, one double-density disk drive, CP/M-80, and Magic Wand. On an H/Z-100 Computer, one disk drive and CP/M are needed along with Magic Wand.

HIS-837-1, on soft-sectored 5.25" disk, Shpg. wt. 4 lbs. **295.00**

*SuperCalc is a trademark of Sorcim Corp. CP/M is a registered trademark of Digital Research, Inc. WordStar and MailMerge are trademarks of Micropro International Corp. Magic Wand is a trademark of Peachtree Software, Inc.

Programming languages, emulators and other software for the H-89 All-In-One Computer

Flexible C BASIC Version 2.0 programming language

- Includes a psuedo-code and a run-time interpreter with extremely versatile disk file accessing facilities

Structure: C BASIC consists of three programs. The first is a pseudo-compiler that converts your source code into a series of coded operations and then places them in an intermediate disk file. The second, a run-time monitor, directly carries out the operations included in the intermediate file. The third and final program, called XREF.COM, produces a cross-reference listing of all variables used in a C BASIC source program. Files can be directed to a printer.

Hardware and software requirements: To run C BASIC, an H/Z-89 or Z-90 Computer needs 48K of RAM, one floppy disk drive and the CP/M* operating system. An H/Z-100 requires one disk drive and CP/M.

HCM-817-1, Vers. 5.2 on hard-sectored 5.25" disk, Shpg. wt. 2 lbs. **115.00**
HCM-837-1, Vers. 5.2 on soft-sectored 5.25" disk, Shpg. wt. 1 lb. **115.00**

Microsoft* BASIC Interpreter provides many features

- Includes many enhancements that make it more powerful and versatile than most other versions of the BASIC language

Complete programming system: An extensive implementation of BASIC, this general purpose programming language has become one of the standards for microcomputers. This is because it provides ease of use plus features that make a microcomputer perform like a minicomputer or large mainframe.

Interpreter's features: The IF-THEN-ELSE control structure allows for highly structured programming including editing during programming and random or sequential filing capabilities. You get access to CPU ports and memory locations.

What you need: To use this language, an H/Z-89 or Z-90 requires 48K or RAM, one disk drive, and the H-DOS* or the CP/M operating system.

HMS-817-1, Vers. 5.2 on hard-sectored 5.25" disk for CP/M-80, 5 lbs. . **175.00**
HMS-837-1, Vers. 5.2 on soft-sectored 5.25" disk for CP/M-80, 4 lbs. . **175.00**
H-8-21, Vers. 4.8 on hard-sectored 5.25" disk for H-DOS, 3 lbs. **150.00**

Fortran for scientific and engineering programs

- Provides more power to meet your heavier programming requirements

Powerful compiler: The many extended features of this system make it comparable to FORTRAN compilers used on large mainframes and minicomputers. It includes all the features of ANSI FORTRAN X3.9-1966, except COMPLEX data type. This means you can take advantage of the many utility and applications programs already written in the FORTRAN language.

What you need: To run FORTRAN, an H/Z-89 or Z-90 Computer needs 48K of RAM, two disk drives, and either H-DOS or CP/M-80.

HMS-817-2, Vers. 3.4 on hard-sectored 5.25" disk for CP/M-80, 5 lbs. . **195.00**
HMS-837-2, Vers. 3.4 on soft-sectored 5.25" disk for CP/M-80, also runs under CP/M-85 in the H/Z-100 Computer, Shpg. wt. 4 lbs. **195.00**
H-8-20, Vers. 3.4 on hard-sectored 5.25" disk for H-DOS, 4 lbs. **175.00**

Microsoft BASIC compiler speeds program execution

- Compile your programs with this MBASIC Compiler, Version 5.2, and eliminate time-consuming interpretation

Increased execution speed: Compiled programs are fast because the BASIC Compiler produces highly optimized machine code which is directly executed. During the compiling of a program, expressions are recorded to minimize temporary storage and, whenever possible, to transform floating point division into multiplication. Constant multiplications are optimumly distributed.

Hardware and software requirements: To run this compiler, and H/Z-89 or Z-90 Computer needs 48K RAM, two disk drives, and either H-DOS or CP/M-80.

HMS-817-41, On hard-sectored 5.25" disk for H-DOS, 4 lbs. **250.00**
HMS-817-4, On hard-sectored 5.25" disk for CP/M-80, 4 lbs. **250.00**
HMS-837-4, On soft-sectored 5.25" disk for CP/M-80, 4 lbs. **250.00**

Powerful and versatile MACRO-80 Assembly Language

- Provides most "big computer" assembler features without sacrificing speed or memory space

Features: MACRO-80 supports a complete, Intel-standard macro facility which accepts Intel 8080 and Zilog 80 mnemonics. Nesting of macros is limited only by the amount of memory and conditionals, up to 255 levels, can be nested.

Utilities include: LINK-80, a linking loader for connecting modules together; LIB-80, a library manager for creating and modifying libraries which are linked to compiled programs; and CREF-80, a cross reference facility used to generate special listings that can be used as diagnostic tools.

What you need: An H/Z-89 or Z-90 Computer needs 48K or RAM, one disk drive (two drives are recommended) and either the H-DOS or CP/M operating system.

HMS-817-51, On hard-sectored 5.25" disk for H-DOS, 2 lbs. **65.00**
HMS-817-52, On hard-sectored 5.25" disk for CP/M-80, 2 lbs. **65.00**
HMS-837-52, On soft-sectored 5.25" disk for CP/M-80. Also runs under CP/M-85 in the H/Z-100 Computer, Shpg. wt. 3 lbs. **65.00**

COBOL Compiler for business-oriented computing

- An ideal programming language for business data processing tasks

A powerful business programming language, COBOL is designed for business applications including: inventory, personnel, payroll, order entry, accounting and forecasting. It supplies the tools to meet the rising challenge of information processing. These tools consist of a powerful use of disk files, easy-to-use syntax, long variable names and readable programs.

To run the COBOL Compiler, an H/Z-89 or Z-90 needs a minimum of 48K RAM and two disk drives. Also required is either H-DOS or CP/M-80.

HMS-817-31, On hard-sectored 5.25" disk for H-DOS, 4 lbs. **395.00**
HMS-817-3, On hard-sectored 5.25" disk for CP/M-80, 5 lbs. **395.00**
HMS-837-3, On soft-sectored 5.25" disk for CP/M-80. Also runs under CP/M-85 in the H/Z-100 Computer, Shpg. wt. 4 lbs. **395.00**

Emulator software for H/Z-89s and Z-90s

Remote Batch Terminal Emulator: Adds IBM 3780, 2780, 3741 and 2770 terminal emulation functions to H/Z-89 and Z-90 Computers. Requires 48K RAM, one 5.25" disk drive, a Z-89-11 board and CP/M.

HWI-8917-1, On hard-sectored 5.25" disk, 4 lbs. **895.00**
HWI-8917-2, HWI-8917-1 and Z-89-11 I/O, 12 lbs. **945.00**
3270 Emulator: Adds popular IBM 3270 display station emulation to H/Z-89 and Z-90 Computers. Requires 64K RAM, one 5.25" disk drive, a Z-89-11 board and the CP/M operating system.

HPO-8917-1, On hard-sectored 5.25" disk. Shpg. wt. 2 lbs. **650.00**
HPO-8937-1, On soft-sectored 5.25" disk, Shpg. wt. 2 lbs. **650.00**
HPO-8917-2, HPO-8917-1 and Z-89-11 I/O, 3 lbs. **699.00**
HPO-8937-2, HPO-8937-1 and Z-89-11 I/O, 3 lbs. **699.00**

Z-89-11 Multi-Mode Interface for H/Z-89s and Z-90s

Input/Output Board: Use with the above software programs and an H/Z-89 or Z-90 to emulate various IBM data terminals. Has a Centronics-style output port for use with parallel printers. Needs CP/M.

Z-89-11, Assembled, Shpg. wt. 1 lb. **99.95**

ZDS Teacher program to write courses and tests

- Features creating, updating and printing course material as well as quizzes and tests for the courses you develop

A built-in full screen editor aids you in creating and developing individualized courses including quizzes and tests. On-screen messages assist programming. An H/Z-89 or Z-90 Computer requires 48K RAM, one 5.25" disk drive and CP/M (2.2 or higher).

HTA-817-1, On hard-sectored 5.25" disk, Shpg. wt. 2 lbs. **295.00**
HTA-837-1, On soft-sectored 5.25" disk, Shpg. wt. 2 lbs. **295.00**

ZDS Student program for computer-assisted study

- Enables a student to independently view, study and be tested on customized courses written with the ZDS Teacher program

Helpful on-screen messages keep students concentration on material. ZDS Student has no authoring capabilities and must be used with ZDS Teacher software. It runs on an H/Z-89 or Z-90 Computer with 48K RAM and one 5.25" disk drive using CP/M 2.2 or higher.

HTA-817-2, On hard-sectored 5.25" disk, Shpg. wt. 1 lb. **40.00**
HTA-837-2, On soft-sectored 5.25" disk, Shpg. wt. 1 lb. **40.00**

SuperSort* for sorting almost any kind of record

- **SuperSort can be used with WordStar,* Magic Wand* or by itself to sort, merge and select information from your data files**

Performance and flexibility: SuperSort can sort and merge 32 input files (up to 512 kilobytes) into a single master file in one simple and efficient operation at an unmatched speed of 560 records a minute. This sorter accepts a wide variety of records in which data can be justified; or include floating decimals, exponential notation, or upper and lower case letters. Data can also be in several formats: binary, EBCDIC, BDC, ASCII and others. With SuperSort, you can sort fixed and variable length records and fields. Sorting is even possible with a different number of fields in each record. Specify up to 32 different criteria.

Software compatibility: SuperSort works with BASIC, Assembly Language, Microsoft FORTRAN and Microsoft COBOL programs as well as with text editors. It may also be linked to Magic Wand, WordStar and other MicroPro* programs.

Hardware and software requirements: An H/Z-89 requires 48K bytes of RAM and one disk drive to run SuperSort. The CP/M operating system is also needed. An H/Z-100 Computer requires one disk drive and the CP/M operating system.

HMP-817-1, On hard-sectored 5.25" disk, Shpg. wt. 4 lbs. **195.00**
HMP-837-1, On soft-sectored 5.25" disk, Shpg. wt. 4 lbs. **195.00**

MAC* Assembler for easier Assembly Language writing

- **MAC features an SID-compatible symbol table file for debugging use**

Designed for the sophisticated Assembly Language programmer, MAC supplies many features that make your program writing easier. Some of these are additional conditional assembly operators, title and page pseudo-operands, full Intel-compatible macro definitions, repeating macro calls and disk macro libraries. And MAC has the ability to generate an SID-compatible symbol table file.

MAC is fully compatible with CP/M's Assembly Language and comes with a manual that provides a text book study of macro assemblers. An accompanying disk contains a variety of macro libraries for performing useful tasks.

To run this Assembler, an H/Z-89 needs 48K or RAM and one disk drive plus CP/M. An H/Z-100 needs one disk drive and the CP/M operating system.

HDR-837-1, On soft-sectored 5.25" disk, Shpg. wt. 2 lbs. **85.00**

Print a file and work on another with DESPOOL*

- **A multi-tasking printer utility that provides simultaneous printing of one file while working on another file**

Improve your computer's efficiency with DESPOOL by allowing the use of two programs at the same time. Taking up little memory space, DESPOOL can be loaded and stored in your computer until needed. An H/Z-89 needs a minimum of 48K of RAM and one disk drive to run this program. The CP/M operating system is also needed. An H/Z-100 Computer needs one disk drive and CP/M.

HDR-817-3, On hard-sectored 5.25" disk, Shpg. wt. 2 lbs. **50.00**
HDR-837-3, On soft-sectored 5.25" disk, Shpg. wt. 4 lbs. **50.00**

SID/ZSID* is an upgraded version of DDT Debugger

- **Debugging utility includes both 8080-compatible SID and Z-80-compatible ZSID at a substantial savings over separate prices**

While maintaining all CP/M's DDT features, SID/ZSID allows the use of names at the source level. It can draw histograms, maintain pass counts and provide tracebacks of execution paths to selected breakpoints plus many more advanced features. SID/ZSID requires an H/Z-89 with 48K RAM, one disk drive and CP/M. The MAC Assembler is recommended for the full use of SID/ZSID's capabilities. An H/Z-100 Computer requires one disk drive and the CP/M operating system.

HDR-817-2, On hard-sectored 5.25" disk, Shpg. wt. 2 lbs. **125.00**
HDR-837-2, On soft-sectored 5.25" disk, Shpg. wt. 4 lbs. **125.00**

Condor* Relational Disk Base Management

- **Easy data base creation and maintenance for simplified information processing without professional computer programmer assistance**
- **Effortless data entry and updating using self-designed screen formats with complete menu selections you tailor to your requirements**
- **Extensive analysis and information report writing capabilities**

Condor's Relational Data Base Management System is a series of programs designed for simple and fast information storage, sorting and filing. rDBMS* allows you to design and create files of information, data bases, for keeping records of any subject you desire. With this System you can quickly search, sort, merge, analyze, index and print out any records. Condor's rDBMS is a powerful data management system that can process up to 32,767 records per file.

Written in Assembly Language, rDBMS operates much faster than other data base managers. While fast, it is also one of the most powerful relational data base management systems available. With this System's outstanding capabilities you can create new data bases within minutes, calculate statistics for field values within a data base and efficiently post transactions to a master file.

Besides being powerful, rDBMS is so easy to use that a new user can achieve results within several hours. A number of built-in operator aids such as help screens, command files and user-defined messages make your program use a lot easier. You can further simplify the use of this relational data base management system by creating your own different help menus.

With rDBMS you can perform addition, subtraction, multiplication, division and other arithmetic operations on numeric entries, Julian calendar dates and dollar amounts. Specify up to 32 logical conditions including AND, OR and NOT Boolean operations. And, extensive error checking helps prevent clerical errors.

To effectively run this version of Condor rDBMS, an H/Z-89 or Z-90 Computer is needed and must be equipped with a full 64K of RAM plus two high-capacity soft-sectored 5.25" 96 TPI disk drives. The CP/M operating system is also required.

HCD-8937-1, On soft-sectored 5.25" disk, Shpg. wt. 4 lbs. **650.00**

*CP/M, MAC, DESPOOL and SID/ZSID are trademarks of Digital Research, Inc. Microsoft is a trademark of Microsoft, Inc. H-DOS is a trademark of Heath Company. SuperSort, WordStar and MicroPro are trademarks of MicroPro Internation Corp. Magic Wand is a trademark of Peachtree Software, Inc. Condor and rDBMS are trademarks of Condor Computer Corp.

High-quality supplies and accessories for all Heath/Zenith computers

Pre-wired, 10-foot RS-232 cables (connects pins 1-8, 20)

HCA-10, Male-to-Male Cable, Shpg. wt. 1 lb. **20.00**
HCA-11, Male-to-Female Cable, Shpg. wt. 1 lb. **20.00**
HCA-12, Female-to-Female Cable, Shpg. wt. 1 lb. **20.00**

Pre-wired, 10-foot special application cables

HCA-14, Parallel Cable for H/Z-89 with Z-89-11 Input/Output Board,
Shpg. wt. 1 lb. **25.00**
HCA-19, Bisynchronous Modem Cable for use with Z-89-11, 1 lb. **20.00**

Pre-wired, 10-foot Personal and Portable IBM cables

HCA-51, Male-to-Female Cable, Shpg. wt. 1 lb. **30.00**
HCA-52, Female-to-Female Cable, Shpg. wt. 1 lb. **30.00**
HCA-53, Parallel Cable, Shpg. wt. 2 lbs. **30.00**

Protection for your floppy disks and computer system

HCA-16, Surge Suppressor protects computer equipment, 1 lb. **65.00**
HCA-18, Storage Cabinet for 8" floppy disks, Shpg. wt. 5 lbs. **30.00**

High-quality, highly-reliable 5.25" and 8" floppy disks

HCS-70, 5.25" hard-sectored, single-sided floppy disks with a capacity of up to 100K bytes. Used with H-17-1 48 TPI drives and H-88-1 Controller Board. Shpg. wt. 1 lb. . . . . **Package of ten, 40.00**

HCS-66, 5.25" soft-sectored, single-sided, double-density floppy disks. For use in H/Z-89 Computers equipped with 48 TPI H-17-1 or H-17-5 disk drives and Z-89-37 Controller Board for up to 160K byte storage capacity on a single disk. Shpg. wt. 1 lb. . . . . **Package of ten, 45.00**

HCS-71, 5.25" soft-sectored, double-sided, double-density floppy disks. These 48 TPI disks are used with H-17-5 drives and Z-89-37 Controller Board to store up to 320K bytes of data on a single disk. 1 lb. . . . . **Package of ten, 50.00**

HCS-68, 5.25" soft-sectored, double-sided, double-density floppy disks. These 96 TPI disks are used with H-17-5 drives and Z-89-37 Controller Board for storing up to 640K bytes of data. Shpg. wt. 1 lb. . . . . **Package of ten, 55.00**

HCS-69, 8" soft-sectored, single-sided, single-density floppy disks. IBM 3740 formatted, 250K bytes storage, Shpg. wt. 2 lbs. . . . . **Package of ten, 55.00**

HCS-64, 8" soft-sectored, single-sided, double-density floppy disks. up to 500K bytes of data storage. Shpg. wt. 2 lbs. . . . . **Package of ten, 60.00**

HCS-65, 8" soft-sectored, double-sided, double-density floppy disks. One megabyte of data storage on a single disk. 2 lbs. . . . . **Package of ten, 70.00**

Your one-stop shopping center for Heath/Zenith and IBM-PC accessories and peripherals

For over 40 years Heath has built a reputation for providing you with quality products. And we've backed them up with technical consulting help by telephone from the factory...plus local assistance at 64 Heathkit Electronic Centers across the country. We're now extending the same philosophy to a special group of selected accessories and periphals for the IBM-PC, Heath/Zenith HZ-151 PC, HZ-161 Portable, H-100 Desktop and H-89 All-In-One Computers.

We've looked at hundreds of "compatible" items and selected those shown here on pages 97 through 99 as "best of breed." Functional checks and product tests have been performed on each item and our support team stands ready to provide information to you regarding installation and/or connection of any of these products to your IBM-PC or appropriate Heath/Zenith computer.

We'll even install any of the boards on page 98 that you buy at a Heathkit Electronic Center **FREE OF CHARGE** when you bring in your computer.

Even though covered by manufacturers' warranty, we're so confident you'll be satisfied with these products that we're offering a 90-day money-back guarantee. Either you're happy with the product or return it and we'll cheerfully refund your money.
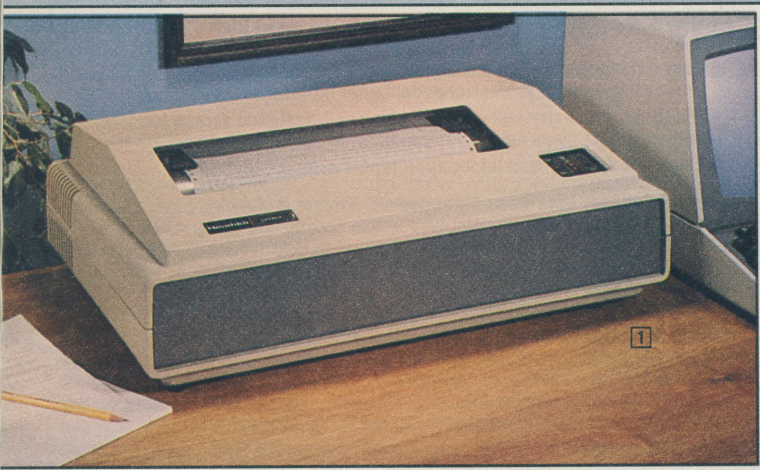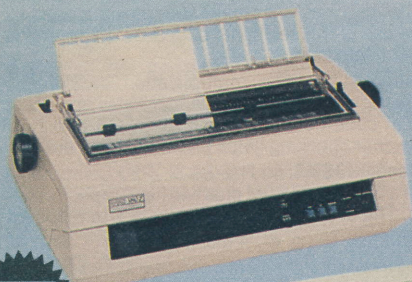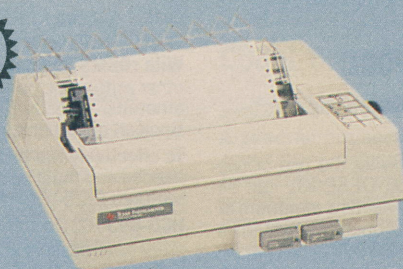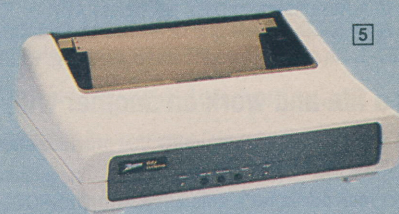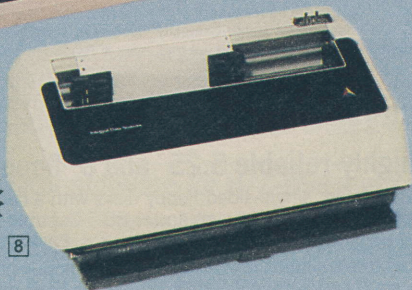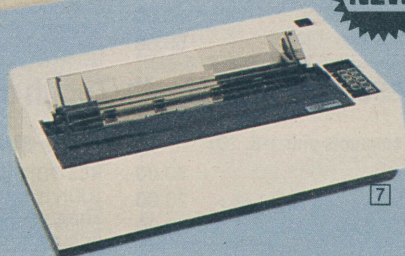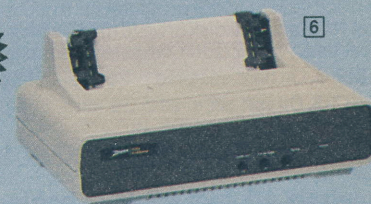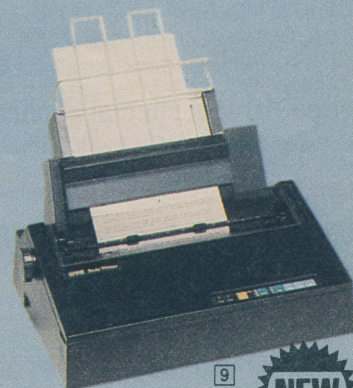
1 High-Speed H-125 Dot Matrix Line Printer

$899.00 Kit

- Prints at over 150 characters per second
- Compatible with most computers and terminals
- Capable of printing 33 graphics characters

Packed with valuable features, the H-125 offers speed and quality for both personal and business printing uses. It can print the full 96-character ASCII set (including upper and lower case letters, descenders and underlining) at a rate of over 150 characters per second. The H-125 offers variable pitches of 10, 12, 13.2 and 16.5 cpi. Vertical spacing can be set, either at six or eight lines per inch.

The H-125 communicates through either an RS-232 Serial Interface or a 20 mA current loop. Communication speeds are adjustable from 110 to 9600 baud. A specially-designed cabinet completely encloses the printing mechanism of the H-125 for quieter operation. The H-125 measures 8¼" H x 26½" W x 18½" D and operates on 120/250 VAC, 50/60 Hz.

Kit H-125, Shpg. wt. 85 lbs. 899.00
HDC-125, Protective Dust Cover, Shpg. wt. 1 lb. 16.00
HCA-9, Printer Stand with wire paper tray, Shpg. wt. 21 lbs. 99.00

2 New Digital X-Y Plotter for superior graphics

$349.95 Kit

- Compact and lightweight Plotter is fast, highly accurate and very reliable
- Operates on simple commands from a computer

Draw high-resolution graphics with excellent line quality using the new IR-5208 kit version of the popular Sweet-P Plotter. It draws virtually every graphic format you'll ever need including pie charts, bar graphs, straight and curved line graphs, illustrations, and alphanumeric labeling on plain bond paper or overhead transparency material. Line segments are accurate to four-thousandths (0.004) of an inch at a maximum speed of six inches per second.

Hook up to the Plotter to the parallel port of a computer for colorful graphs and engineering graphics. Support Packs, listed below, include a parallel interface cable for use with the entire line of Heath/Zenith Computers as well as the IBM-PC and its compatibles. A software support package is also included with the cable. It is an easy-to-use tutorial that prompts you through each step to help you get the most out of the Plotter. Four pens (red, green, blue and black) are included in the Support Pack. The Plotter is compact (14" W x 8½" D x 3" H) and lightweight (7.2 lbs.) enough to be carried in a standard briefcase.

Kit IR-5208, Shpg. wt. 10 lbs. 349.95
IRA-5208-1, Support Pack for H/Z-100, HS-151, HS-161, IBM-PC and IBM-PC compatible computers, Shpg. wt. 1 lb. 19.95
IRA-5208-2, Support Pack for the H/Z-89 Computer with CP/M* software on hard-sectored 5.25" disk, requires Z-89-11 Interface Board (p. 94) and CP/M 2.2.04, Shpg. wt. 1 lb. 19.95
IRA-5208-3, Replacement Pen Set includes 4 black pens, 1 lb. 9.95
ET-500, Assembled Plotter, 12 lbs. .... **Was 795.00, NOW ONLY 499.95**

3 Sophisticated DTC 380Z Daisy Wheel Printer

Ideally suited for professional, commercial and personal uses, the 380Z can be connected to a computer or terminal through either its standard EIA RS-232 or parallel Centronics interface. Prints out between 10 to 32 characters per second.

PP-260, Assembled and tested, Shpg. wt. 43 lbs. 1295.00
PPA-260-1, Tractor Feeder, Shpg. wt. 6 lbs. 149.95
PPA-260-2, Cut-Sheet Feeder, Shpg. wt. 10 lbs. 574.95
PPA-260-4, RS-232 Cable, Shpg. wt. 2 lbs. 49.95
PPA-260-5, Parallel Cable, Shpg. wt. 2 lbs. 49.95

4 High-quality Primage I Daisy Wheel Printer

Delivering speed and quality, the Primage I Printer prints out letter-quality documents at 45 characters per second. It uses a 100-character daisy wheel allowing use of special accents and characters without changing wheels. With its serial and parallel ports, the Primage I can be plugged into virtually any computer printer port. And, this printer fully emulates Diablo 630 commands. An optional sheet feeder easily installs for automatic printing of up to 200 sheets of normal stationery. Replaceable cartridges make ribbon changing a "clean hands" operation. Requires either HCA-10 or HCA-53 cable (p. 95).

PP-250, Assembled and tested, Shpg. wt. 63 lbs. 1699.00
PPA-250-1, Cut-Sheet Feeder, Shpg. wt. 18 lbs. 299.95
PPA-250-2, Tractor Feeder, Shpg. wt. 6 lbs. 275.00

5 Advanced MPI-150 Impact Matrix Printer

Print up to 6120 individually addressable dots per square inch for exceptional graphics and special character resolution. Requires AP-PAK on page 101.
MPI-150, Assembled and tested, Shpg. wt. 35 lbs. 995.00

6 Easy-to-use MPI-99 Impact Matrix Printer

Bi-directional printer features: print speed of 100 cps, serial RS-232C or parallel Centronics interfacing and more. Needs AP-PAK on page 101.
MPI-99, Assembled and tested, Shpg. wt. 11 lbs. 599.00

7 TI 855 Dual Mode Printer offers flexibility

Dual function dot matrix printer offers data processing capability and letter quality printing. Outstanding features include: 35 cps for documents, 150 cps for drafts, bi-directional printing, selectable type fonts, 256 character buffer and more. Requires HCA-22 or HCA-24 cables on page 101.
WH-64, Assembled and tested, Shpg. wt. 18 lbs. 995.00

8 Dot Matrix Printer with full color capability

Handle virtually any printing requirement with this DataProducts dot matrix printer that offers document printing approaching daisy wheel quality. Uses 4-color output for graphs or graphics in a choice of two colored ribbons. Features include: logic seeking bi-directional printing; 150 cps in proportional mode and 200 cps in draft mode; 10, 12, or 16.8 cpi; 6 or 8 lines per inch spacing; serial EIA RS-232C or parallel Centronics-type interfacing; automatic, multiple line buffering of 1500 bytes; and more.

PP-210, Assembled and tested, Shpg. wt. 44 lbs. 1795.00
PPA-210-4, Parallel Cable, Shpg. wt. 2 lbs. 59.95
HCA-11, RS-232 Cable, Shpg. wt. 1 lb. 20.00

9 Superior DTC Style Writer Daisy Wheel Printer

A letter quality printer, the Style Writer communicates through its standard parallel Centronics interface at speeds up to 130 wpm. Requires HCA-53 (p. 95).
PP-270, Assembled and tested, Shpg. wt. 24 lbs. 599.00
PPA-270-1, Tractor Feeder, Shpg. wt. 6 lbs. 149.95
PPA-270-2, Cut-Sheet Feeder, Shpg. wt. 11 lbs. 249.95
PPA-270-3, 32K Buffer Extender, Shpg. wt. 1 lbs. 49.00

10 ID-4803 properly erases EPROMS for reuse

Compact and easy to use, the ID-4803 EPROM Eraser will erase all your ultra-violet erasable integrated circuits for you to use again and again. Interlock system prevents accidental eye exposure to ultraviolet rays. Includes lamp on indicator and locking non-removable tray. Easy one-evening kit.
Kit ID-4803, Shpg. wt. 4 lbs. 49.95

11 Hayes Automatic 300 baud Smartmodem makes

Automatically dial, answer, send, receive, and disconnect calls. Use with rotary or TOUCH-TONE phone systems. Has RS-232 connector and includes 120 VAC adapter and phone cable. Requires HCA-11 (p. 95) and CPS software.
WH-43, Assembled and tested, Shpg. wt. 3 lbs. 279.00

12 Convenient acoustic modem transfers data

The LEX-11 operates at 300 baud in half or full duplex. Includes AC adapter. Requires an HCA-11 cable (p. 95) and CPS software.
WH-23, Assembled and tested, Shpg. wt. 3 lbs. 139.00

13 US Robotics 1200 Baud Auto-Answer Modem

Features full and half duplex operation, direct connection to RJ11C standard phone jack, auto and manual answer and originate modes. Includes cable.
PP-300-F, Shpg. wt. 3 lbs. 449.00

14 Compact, versatile and easy to use modem

Novation J-CAT 300 Baud Modem is compatible with Bell 103 modems, and can automatically select answer and originate mode. Includes cables.
PP-310, Assembled and tested, Shpg. wt. 2 lbs. 129.95
Accessories to peripherals on this page are found on page 101.

*CP/M is a registered trademark of Digital Research. Inc.

Use your Visa or MasterCard credit cards to purchase your kit!

Accessories and software for all Heathkit/Zenith Computers and the IBM-PC

NEW

[1] **Expand the capabilities of your Heath/Zenith or IBM-PC Computer** with these "best-of-breed" plug-in accessory boards. All are Heath checked for quality and high reliability.

Add-on SixPakPlus multi-function card from AST

Expands user memory of an HS-151 Personal or HS-161 Portable Computer to a system total of 640K. Comes with 64K of memory and more. Also used in IBM-PC.
PC-120, Shpg. wt. 2 lbs. **299.00**
PCA-120-1, Game Port Option, Shpg. wt. 1 lb. **50.00**

Novation Access 1-2-3 Modem plug-in card

A fully integrated 300 or 1200 baud communications system for your HS-151 Personal or HS-161 Portable Computer and IBM-PC. Includes Crosstalk-XVI.
PC-130, Shpg. wt. 4 lbs. **399.00**

NEW: Besides offering top-performing accessories and software at its one-stop shopping center, Heath also has compatible circuit boards that increase the power and performance of H/Z-100, HS-151, HS-161, H/Z-89 and IBM-PC Computers. Look to Heath to fill all your computer hardware and software needs.

[1]

DG Magic RAM 64K Card increases memory capacity

Four-bank memory card includes Z-205-1 64K RAM Chip Set. Remaining sockets allow memory expansion with additional Z-205-1 Chip Sets (see below) or 256K memory chips. For use with HS-151, HS-161 and IBM-PC Computers.
PCS-140, Shpg. wt. 2 lbs. **199.00**

Add joystick capability with DG Analog Game Port

Plug-in Analog Game Port allows the addition and use of joysticks and graphic pads (such as WICO and KOALAPAD) and other analog devices. Supported by GW*-BASIC. For use with the HS-151, HS-161 and IBM-PC Computers
PC-110, Shpg. wt. 2 lbs. **49.95**
PCS-110, PC-110 with clock/calendar chip, battery, software, 1 lb. **99.95**

Powerful DG Super 89 enhanced processor board

Replaces central processor board in H/Z-89 and Z-90 Computers and features: 128K RAM, fully compatible with all Heath/Zenith products, full CP/M* and H-DOS* compatibility, 256K expandable memory, two serial ports, on-board real-time clock, 4 MHz operation, 5 I/O board slots, expanded boot ROM, software and more. Fully assembled and tested.
PC-310, Shpg. wt. 3 lbs. **799.00**

$AVER! Get a big 50% discount on extra 64K of RAM

Purchase extra Z-205-1 64K RAM Chip Sets within 90 days of a PC-120, PCS-140 or PC-310 board purchase and receive half off the regular price.
Z-205-1, Shpg. wt. 2 lbs. ..... **Regularly $100.00 Discount price 50.00**

MAGNOLIA MICROSYSTEMS CP/M-Plus and RAM Board

Get the power of CP/M-Plus and add an additional 128K of RAM to your 48K populated H/Z-89 or Z-90 Computer for a total memory capacity of 176K. And, your computer still retains full compatibility with existing operating systems.
PC-300, Shpg. wt. 10 lbs. **495.00**

US Robotics Auto-Dial Modem Card for H/Z-100s

An integrated serial telecommunications device, this modem features: a 0 to 300 and 1200 baud rate, Bell 212A/103 compatibility, auto and manual dial and answer modes. Plugs into an H/Z-100 expansion slot and to standard RJ11C phone jack. Phone cable included. Uses Hayes-type programming commands.
PC-200, Shpg. wt. 2 lbs. **449.00**
PA-100-1, US Robotics TELPAK Software, uses MS*-DOS, 2 lbs. **99.00**

Programmable Sound/Speech/Time (P-SST) Card

From Software Wizardry, a plug-in circuit board for the H/Z-100 Computer that features: a real-time clock/calendar with battery backup, three channel sound synthesizer, two general purpose parallel I/O ports, a phoneme speech synthesizer with adjustable voice pitch, and an audio amplifier with adjustable volume control plus an output connector for an external speaker.
PC-220, Shpg. wt. 3 lbs. **395.00**

[2] Smart RS-232 Interface Cable from IQ Technologies

An intelligent interface cable, Smart Cable looks at the RS-232 signals from the computer and the peripheral and uses its own logic circuitry to match up all data, handshake, and control lines automatically. It derives power from the lines.
PP-100, Shpg. wt. 1 lb. **89.95**

[3] WICO Computer Command Analog Joystick

Arcade quality joystick adds to the fun of playing games on your HS-151 Personal or HS-161 Portable Computer. Features: selectable self-centering or non-centering mode, arcade size handle, external trim controls and more. Used with the PC-110 Analog Game Board. Can also be used with the IBM-PC.
PP-401, Shpg. wt. 2 lbs. **39.95**

[4] Emergency Power System protects your computer

This completely self-contained 200 watt emergency power system automatically
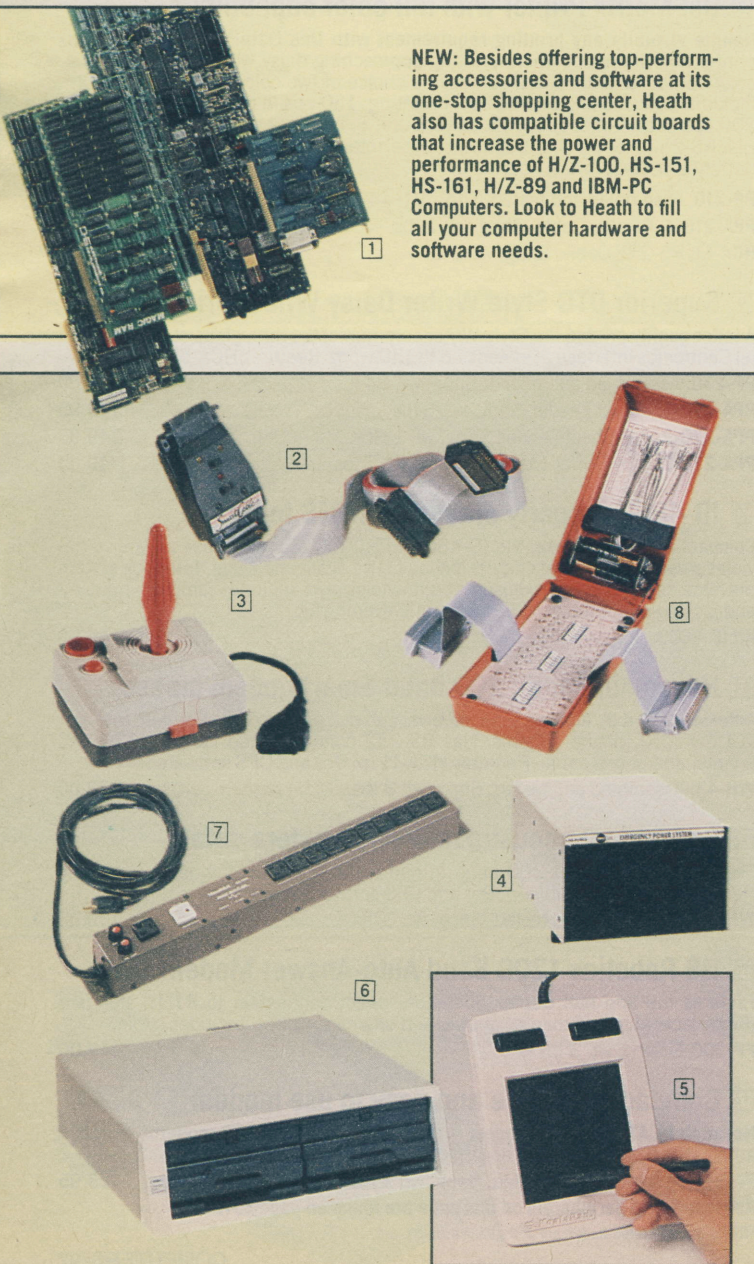
protects your small computer from black-outs without any installation. Plug the power system into an AC outlet and all your computer equipment into the PP-110. With a 200-watt load, you'll have 5 minutes to safely shut down your equipment. With lesser loads, more time is available. Built-in AC line filters clamp transients and surges for clean on-line power. Ten millisecond switchover time.

PP-110, Shpg. wt. 38 lbs. **349.00**

⑤ KOALAPAD Touch Tablet and software

Control your HS-151 Personal or HS-161 Portable Computer by simply moving your finger across the 4" x 4" surface of the KOALAPAD. Uses some features of GW-BASIC Vers. 2.0. Requires PC-110 Analog Game Card. Also used in IBM-PC.

PP-400, Shpg. wt. 3 lbs. **99.95**

⑥ Ten megabyte disk storage from IOMEGA

The Bernoulli Box from IOMEGA Corp. may well put the Winchester drive on the back shelf. Offering the hard disk capacity and speed of a Winchester plus the economy and convenience of flexible disks, the Bernoulli Box is the answer to more reliable, versatile and economical data storage. Each 8½" by 11" removable cartridge houses a flexible disk that stores ten megabytes of data. And, it doesn't require special handling as do familiar 5.25" and 8" disks.

Available in two versions, single and dual drive units, the Bernoulli Box combines a number of technological breakthroughs that result in a storage system of amazing simplicity. Data and mechanical reliability is unmatched and the cost per megabyte of storage is dramatically low. The Bernoulli Box complements the HS-151 Personal Computer and the HS-161 PC as well as the IBM-PC. Exceeds the capacity of hard disk drives and has a faster access time. And, it features full support of the MS-DOS operating system. Includes interface card, software, cable and one cartridge per drive.

PP-500-1, Single drive 10M storage, Shpg. wt. 53 lbs. **2695.00**
PP-500-2, Dual drive 20M storage, Shpg. wt. 63 lbs. **3695.00**
PPA-500-1, Blank 8" cartridge, Shpg. wt. 3 lbs. **79.00**
PPA-500-2, Tri-Pak Blank 8" Cartridges, Shpg. wt. 5 lbs. **199.00**
PPA-500-3, Head Cleaner Kit, Shpg. wt. 3 lbs. **79.00**

⑦ Smart Outlet Box powers up all your peripherals

Plug the AC line cord of your computer into the special current-sensing socket of the outlet box and your peripherals into the remaining ten switched outlets. The moment you turn your computer on, current flow in the socket is sensed which automatically supplies power to the other sockets. Internal MOV device protects your computer from line surges and voltage transients. Remaining outlet socket is unswitched for powering clocks or other constant AC devices. See page 24 for current handling and other information.

GD-1295, Shpg. wt. 4 lbs. **49.95**

⑧ Breakout Box RS-232 Terminal Interface Tester

Isolate problems within a computer system with this pocket sized, self-contained tester. LEDs signal line condition. Includes jumper pins and test points.

WH-15, Shpg. wt. 1 lb. **159.00**

Home and children's educational software programs

Here are some software selections from familiar names to help you in the home and with your child's education. Various software packages are available for different Heath/Zenith computer systems.

Home computer programs from *The Software Toolworks*

MYCALC SPREADSHEET: An easy-to-use calculating tool you can use to compute your budget, record and project your investment returns and can even be used to figure your taxes. Use formulas, labels, variable column width, logical operations, references across worksheets, sort and print. Display formats include scientific, financial and bar graph. Program options are listed on the command line while 23 on-line help screens keep you going.

PA-250-1, For use on HS-151, HS-161 and H/Z-100 Computers, 1 lb. . . . **59.95**
PA-250-3, On H/Z-89 Computers using CP/M, soft-sectored, 1 lb. **59.95**
PA-250-5, On H/Z-89 Computers using CP/M, hard-sectored, 1 lb. **59.95**

MYCHESS: A world class championship chess game. Nine skill levels let you tailor this chess game to any opponent. An opening play can be any one of the 850 moves. This program can save games in progress for playing later. It will even print game listings during or after a game. MYCHESS features full color graphics.

PA-251-1, On HS-151, HS-161 and H/Z-100 Computers, 1 lb. **34.95**
PA-251-3, On H/Z-90 Computers using CP/M, soft-sectored, 1 lb. **34.95**
PA-251-4, On H/Z-89 Computers using H-DOS, 1 lb. **34.95**
PA-251-5, On H/Z-89 Computers using CP/M, hard-sectored, 1 lb. **34.95**

COMPUTER CHEF: An automated recipe file that eliminates cook book page flipping and portion figuring for different numbers of servings. Plus, you can list the food items on hand and COMPUTER CHEF will suggest recipes. This works great for planning your week's menu from supermarket ad specials. COMPUTER CHEF contains over 70 kitchen-tested recipes from salad to desert. And, you can enter your own recipes for an even greater selection. When you need more or fewer servings than the recipe calls for, COMPUTER CHEF automatically scales the recipe to your needs.

PA-252-1, For HS-151, HS-161 and H/Z-100 Computers, 1 lb. **29.95**
PA-252-3, On H/Z-89 Computers using CP/M, soft-sectored, 1 lb. **29.95**
PA-252-5, On H/Z-89 Computers using CP/M, hard-sectored, 1 lb. **29.95**

BEST OF WOK TALK: Oriental cuisine made easier by computer. From the Chinese culinary newspaper, Wok Talk, are assembled over 100 recipes from all over China. Select recipes by ingredients, type of cuisine, or key words. This program automatically scales your recipes for the ingredients on hand or the number of people to be served. List recipes on a printer as you need them.

PA-253-1, For HS-151, HS-161, H/Z-100 Computers, 1 lb. **29.95**
PA-253-3, On H/Z-89 Computers using CP/M, soft-sectored, 1 lb. **29.95**
PA-253-5, On H/Z-89 Computers using CP/M, hard-sectored, 1 lb. **29.95**

WHAT'S FOR DINNER: This software package contains over 200 delicious recipes already formatted for use with COMPUTER CHEF (not included). A collection of over 100 main and side dishes plus over 100 dessert items. It has everything from quick and easy dinners for two to entertaining a crowd in style.

PA-254-1, For HS-151, HS-161 and H/Z-100 Computers, 1 lb. **19.95**
PA-254-3, On H/Z-89 Computers using CP/M, soft-sectored, 1 lb. **19.95**
PA-254-5, On H/Z-89 Computers using CP/M, hard-sectored, 1 lb. **19.95**

Computer learning fun from *SPINNAKER*

SPINNAKER FACEMAKER: An educational program for children ages 4-12 that helps them become comfortable with computer fundamentals and having fun at the same time. FACEMAKER is three games in one. First the child completes a face by choosing eyes, nose, etc and then makes the face smile, wink, frown or wiggle its ears. The third game asks the child to repeat the sequence of faces on the screen, helping to improve the child's memory and concentration.

PA-200-1, For use on HS-151 and HS-161 Computers, 1 lb. **29.95**

DELTA DRAWING: For all ages 4 to adult, this educational program provides an easy and friendly introduction to computer learning through drawing and coloring. This learning program helps build an understanding of programming concepts and procedural thinking, and encourages children to exercise their creativity.

PA-201-1, For use on HS-151 and HS-161 Computers, 1 lb. **49.95**

FRACTION FEVER: Makes learning fractions an exciting challenge for ages 7 to adult. Combine the fast action of a pogo stick arcade game with learning about fractions. Develop an understanding of relationships between different fractions and visual representations of fractions.

PA-202-1, For use on HS-151 and HS-161 Computers, 1 lb. **29.95**

KIDS ON KEYS: This educational program introduces children from ages 3 to 9 to the computer keyboard. Three exciting games teach them the location of letters and numbers while they have fun with the computer. There are four levels of difficulty, plus special bonus rounds. And in each game, your child will enjoy sound effects and is rewarded with points and colorful graphics.

PA-203-1, For use on HS-151 and HS-161 Computers, 1 lb. **29.95**

KINDERCOMP: A collection of six fun learning games that encourages young children ages 3 to 8 to start learning on the computer. Kids create colorful pictures and interesting sounds while they familiarize themselves with a computer keyboard. KINDERCOMP challenges children to find letters and numbers and rewards them with spectacular pictures and sounds.

PA-204-1, For use in HS-151 and HS-161 Computers, 1 lb. **29.95**

STORY MACHINE: For ages 5 to 9, STORY MACHINE helps children learn to write sentences, paragraphs and simple stories. This program also helps to develop a positive attitude towards writing. Children create stories from supplied lists of nouns, verbs, prepositions and other parts fo speech. Then watch your child's excitement as the story comes to life.

PA-206-1, For use on HS-151 and HS-161 Computers, 1 lb. **29.95**

VISA MasterCard **Discover the fun of kit building at your Heathkit Electronic Center.**

NEW

Versatile and compatible terminals that provide quality and economy

[1] Smart H-29 Terminal features performance

- Built-in flexibility provides room to grow as your needs increase
- Complete communications compatibility with terminals and computers

One of the most user-friendly terminals available, the H-29 allows a user to configure parameters from on-screen selections. Even a user-setable 24-hour clock is accessible for keeping track of standard or elapsed time. A keyboard HELP key is also provided for prompts or help messages used with some software. And, a special screen saver automatically shuts off the display after 15 minutes of nonuse for those forgetful moments.

The H-29 Terminal is compatible with many ANSI protocol terminals including the popular Heathkit H-19 Terminal. For greater versatility in education and business, the H-29 emulates the Lear-Siegler ADM-3A and the Hazeltime 1500A Display Terminals. And, it is compatible with the DEC VT52 Terminal and has many attributes of the DEC VT100 Terminal, all at a lower price then either.

Information is clearly displayed in 25 lines of 80 characters each on a nonglare green CRT in normal or reverse video. Select a block or underline and a blinking or nonblinking cursor. The detached keyboard of the H-29 has 91 keys and includes a separate numeric keypad. All keys are a nonglare type to provide nonslip finger contact and reduce eye-fatiguing glare.

Along with a 128-character ASCII set, the H-29's keyboard can generate codes for an alternate character set of 33 special symbols in an 8 x 10 dot matrix. Besides lower and upper case letters, other characters include: superscript and subscript letters, Greek symbols, H/Z-19 graphics, VT-100 graphic and other symbols.

Designed as an input/output device for a computer system, the H-29 Terminal can be hooked either directly or through telephone lines (using a modem) to any computer. It has two RS-232 standard connectors, a DTE type for computers or modems and DCE type for an auxiliary device. All parameters are set through keyboard selections and stored in nonvolatile memory until reset.

Heathkit	**Kit H-29,** Shpg. wt. 41 lbs.	**549.00**
Zenith data systems	**Z-29,** assembled and tested H-29, 38 lbs.	**799.00**
Zenith data systems	**NEW! Z-29-A,** Z-29 with amber CRT, 45 lbs.	**PLEASE CALL**
	Z-29-1, Palm Rest Accessory, Shpg. 1 lb.	**15.00**
	Z-29-2, ROM Source Listing, Shpg. wt. 4 lbs.	**25.00**

H/Z-29 SPECIFICATIONS: DISPLAY: CRT: 12" P31, green, non-glare video screen. **Display Format:** 25 rows of 80 characters. **Display Size:** 6" H x 8½" W. **Character Type:** 8 x 10 character cell. **Character Size:** 0.2" H x 0.1" W (approx.). **Video Attributes:** Normal or reverse character, normal or underline character, normal or half-intensity character, normal or blinking. Can be in any or all combinations. **Refresh Rate:** 60 Hz. or 50 Hz. **CURSOR: Type:** Underline or reverse (solid) video block. **Attributes:** On, off, blinking. **Controls:** Up, Down, Left, Right, Backspace, Tab, Back Tab, Back, Home, Carriage Return and Line Feed. **Addressing:** Direct and relative. **COMMUNICATIONS: Type:** EIA RS-232C. **Baud Rates:** 75 – 19,200 baud. **Mode:** Half or full duplex. **Code:** ASCII. **Format:** Serial asynchronous. **Word Length:** 7-data bits, one parity bit. **Stop Bits:** 2 at 75 and 110 baud rates, 1 at all other baud rates. **Sync:** Auto XON and XOFF. **Parity:** Even, odd, mark or space. **Power Requirements:** 105 – 127 VAC at 60 Hz and 45 watts.

[2] HT-10 Terminal for a low-cost data-entry point

- Instant and user-friendly access to personal and business computers

Information processing terminal with DEC-VT 52 compatibility features integral RS-232 standard port that functions at speeds from 110 to 9600 baud. Also has easy-to-use keyboard, built-in prompts and parallel port for use with printer.

Heathkit	**Kit HT-10,** Terminal includes ZVM-121 video monitor without modem, Shpg. wt. 36 lbs.	**399.00**
Heathkit	**Kit HTX-10,** Terminal less monitor and modem, 10 lbs.	**279.00**
Zenith data systems	**ZT-10,** Assembled and tested Terminal, includes video display monitor without modem, Shpg. wt. 32 lbs.	**499.00**
Zenith data systems	**ZTX-10,** Assembled HT-10 less monitor and modem, 6 lbs.	**399.00**

HT-10 SPECIFICATIONS: Character Set: 95 ASCII, 33 graphics. **Keyboard:** 63 keys (26 alphabet, 10 numeric, 4 cursor/special function, 12 control, 11 punctuation). **Cursor:** Blinking or steady block, or off. **Video:** RS170 compatible. **Printer:** Parallel (Centronics-type).

[3] HT-1011 for access to time sharing services

- Single key access of up to 26 pre-selected information sources

Telecomputing system features internal modem and single key dialing of information services or normal voice calls. Log-on procedure includes account numbers, escape codes and passwords. Includes battery-protected memory system.

Heathkit	**Kit HT-1011,** Includes ZVM-121 video display monitor, RS-232C port and 300 baud modem, Shpg. wt. 44 lbs.	**449.00**
Zenith data systems	**ZT-11-Z,** Assembled and tested HT-1011 with video display, RS-232C port and modem, Shpg. wt. 32 lbs.	**579.00**
Zenith data systems	**ZTX-11-Z,** Assembled and tested HT-1011 with modem RS-232C port less video display monitor, Shpg. wt. 6 lbs.	**479.00**
Zenith data systems	**ZT-1-UZ,** Assembled and tested Terminal with monitor and modem less RS-232C serial port, Shpg. wt. 30 lbs.	**549.00**
Zenith data systems	**ZTX-1-UZ,** Assembled and tested Terminal with modem less monitor and RS-232C serial port, 6 lbs.	**449.00**

Accessories for the HT-10 and HT-1011 Terminals

ZT-1-2, Terminal Carrying Case, Shpg. wt 2 lbs.		**24.99**
ZTA-1-1, Parallel Cable, Shpg. wt. 1 lb.		**25.00**
ZVM-121, Optional Monochrome Video Display, 18 lbs.		**139.95**
ZVM-121-Z, ZVM-121 with H/Z-100 matching cabinet, 18 lbs.		**139.95**
HTX-10-1, Auto-dial/answer 300-baud modem, 1 lb.		**69.95**
ZT-1-3, Universal ROM, one key access upgrade, 1 lb.		**49.95**

④ Z-49 Terminal features increased flexibility

● **14" non-glare CRT displays 25 rows of a selectable 80/132 characters**

The very friendly Z-49 Video Display Terminal is designed to satisfy all your business and personal needs while providing the greatest degree of user convenience. All Terminal functions, even screen brightness, are easily set up by programming selections through the keyboard as plain-English menus are displayed on-screen. These selections are then stored in non-volatile memory.

The Z-49 features an advanced 92-key keyboard that has: automatic key repeat, status indicators, user-defined function keys, and full cursor control keys. Other Terminal features include: a 14" Chromogold II™ (amber) screen; DTE and DCE connectors; H/Z-29, H/Z-19, DEC VT52 and VT100 compatibility; smooth scrolling; normal and alternate character sets; and more.

Z-49, Assembled and tested, Shpg. wt. 37 lbs. **1099.00**
Z-49-G, Z-49 with green CRT, Shpg. wt. 37 lbs. **1099.00**

Z-49 SPECIFICATIONS: DISPLAY: CRT: 14" diagonal, enhanced contrast, video screen. **Display Format:** 25 rows of 80 characters or 25 rows of 132 characters. **Display Size:** 6.75" H x 9.25" W. **Character Type:** 80-column display, 10 x 12 character cell. 132-column display, 8 x 12 character cell. **Video Attributes:** Normal or reverse character, normal or underlined character, half intensity character and background normal or blinking display. **Refresh Rate:** 50 or 60 Hz. **CURSOR: Type:** Underline or reverse (solid) video block. **Attributes:** On, off, blinking. **Addressing:** Direct or relative. **COMMUNICATIONS: Type:** EIA RS-232C. **Baud Rates:** 50 – 19,200 baud. **Mode:** Half or full duplex. **Code:** ASCII. **Format:** Serial asynchronous. **Sync:** Auto XON and XOFF. **Power:** 105 – 127/210 – 254 VAC, 50/60 Hz, 73 watts.

⑤ NEW economical and user-friendly Z-22 Terminal

● **On-screen parameter selection and storage in nonvolatile memory**

Featuring parameter selection like the smart H-29 Terminal, the Z-22 also offers user programming of automatic logons to information services and programmable function keys. Ergonomic features include a low profile detachable keyboard with a 75-key standard QWERTY-type layout and an 18-key auxiliary keypad. The 12-inch monitor with Zenith's special Chromgold II phosphor tilts and rotates.

The easy-on-the-eyes CRT displays 25 rows of 80 characters, 24 rows of regular data plus a 25th status row which is user selectable between terminal status and defined through user selection. The Terminal displays a 96 character set including upper and lower case, numbers and punctuation. Three sets of graphics are also displayed which include 33 graphics characters, 33 Zenith graphic characters and 33 foreign characters. The cursor can be set for blinking or nonblinking character, or blinking or nonblinking underline.

The Z-22 Terminal also features compatibility with the popular Lear Siegler ADM11 and TeleVideo 914 terminals which are found on many of today's systems.

Z-22, Shpg. wt. 25 lbs. . . . . **PLEASE CALL FOR PRICE**

Z-22 SPECIFICATIONS: DISPLAY: CRT: 12" diagonal, Chromogold II. **Display Format:** 25 rows x 80 characters. **Character Size:** 5 x 7 dot matrix with descenders. **Refresh Rate:** 60 Hz or 50 Hz. **CURSOR: Type:** Blinking or nonblinking block character or line. **COMMUNICATIONS: Type:** EIA RS-232C. **Baud Rates:** 300 – 19,200 baud. **Format:** Serial Asynchronous. **Data Transmission Control:** Hardware and software (XON and XOFF) handshaking. **Power:** 120/220 VAC, 50/60 Hz.

Supplies and accessories for your Heath/Zenith computers and peripherals

Pre-wired 10-foot special application cables

HCA-22, WH-64 Parallel Cable, Shpg. wt. 1 lb. **35.00**
HCA-24, WH-64 Serial Cable, Shpg. wt. 1 lb. **35.00**

Quality printer paper at economical prices

HCS-1, Premium 8.5" x 11" one-part fan-fold paper, continuous 2700 sheets, Shpg. wt. 28 lbs. **32.00**
HCS-2, Standard 8.5" x 11" one-part fan-fold paper, continuous 3200 sheets, Shpg. wt. 31 lbs. **32.00**
HCS-3, Standard 14.875" x 11" one-part fan-fold paper, continuous 3200 sheets, Shpg. wt. 47 lbs. **42.00**
HCS-4, Bond form-feed 8.5" x 11" one-part fan-fold paper, continuous 1000 sheets, Shpg. wt. 13 lbs. **25.00**

Convenience accessories for your computer system

PM-100, Locking 5.25" floppy disk storage cabinet, holds 70 disks in charcoal-colored copolymer plastic case. Comes with rigid dividers, index tabs, and built-in handles, Shpg. wt. 3 lbs. **19.95**

Cartridge Fonts for the WH-64 Printer

HCS-30, Prestige Elite Font with 12 cpi pitch, 1 lb. **40.00**
HCS-31, Orator 85 Font with 10 cpi pitch, Shpg. wt. 1 lb. **40.00**
HS-32, Courier Italic Font with 12 cpi pitch, Shpg. wt. 1 lb. **40.00**
HCS-33, Modern PS Font with proportional spacing, Shpg. wt. 1 lb. **40.00**

High-quality, long-life printer ribbons

HCS-50, 3 plug-in cloth ribbons for Primage and Diablo 1640/630, 1 lb. . . . **18.00**
HCS-51, 3 plug-in film ribbons for Primage and Diablo 1640/630, 1 lb. . . . **18.00**
HCS-52, 3 ribbons for H/WH-14 and ASR-33 Printers, Shpg. wt. 1 lb. **8.00**
HCS-54, One ribbon for LA-34 Printer, Shpg. wt. 1 lb. **29.00**
HCS-55, One plug-in ribbon cartridge for MX-80 Printers, 1 lb. **14.00**
HCS-56, 2 plug-in ribbon cartridges for H/Z-25 and H/Z-125, 3 lbs. **20.00**
HCS-57, One plug-in ribbon cartridge for WH-64 Printer, 1 lb. **12.00**

Accessories for the MPI-99 and MPI-150 Printers

MPI-99-1, Replacement ribbon cartridge for MPI-99 Printer, 1 lb. **12.00**
MPI-99-2, Single-sheet feeder for MPI-99, Shpg. wt. 2 lbs. **35.00**
MPI-99-3, Sound cover attachment for MPI-99 Printer, Shpg. wt. 3 lbs. . **35.00**
MPI-150-1, Replacement ribbon cartridge for MPI-150 Printer, 1 lb. **20.00**

MPI-150-2, Serial adapter card for MPI-150 Printer, allows asynchronous serial data transfer up to 9600 baud, Shpg. wt. 1 lb. **110.00**
MPI-150-3, MPI-150 programmable status keypad, Shpg. wt. 2 lbs. **130.00**
MPI-150-4, 64K buffer memory expansion for MPI-150, 1 lb. **259.00**
MPA-1, H/Z-100 AP-PAK, a graphics applications package (including cable) for printing any H/Z-100 Computer character, 1 lb. **75.00**
MPA-3, H/Z-89 AP-PAK, a graphics applications package (including cable) for printing any H/Z-89 character, 1 lb. **75.00**
MPA-4, Z-90 AP-PAK, a graphics applications package with cable that enables printing of all Z-90 Computer characters, 1 lb. **75.00**

Accessories for the DataProducts Color Printer

PPA-210-1, Black ribbon, Shpg. wt. 1 lb. **12.95**
PPA-210-2, Primary color ribbon (red, green, blue and black), 1 lb. **24.95**
PPA-210-3, Process color ribbon (yellow, cyan, magenta, and black), 1 lb. **24.95**

Printwheels for the Primage I daisy wheel printer

PPA-250-4, Courier 10 printwheel with 10 cpi, Shpg. wt. 1 lb. **19.95**
PPA-250-5, Prestige Elite printwheel with 12 cpi, Shpg. wt. 1 lb. **19.95**
PPA-250-6, Versa-Tile PS printwheel and proportional spacing, 1 lb. **19.95**

Ribbons and printwheels for the DTC 380Z Printer

PPA-260-3, Three replacement ribbons, Shpg. wt. 1 lb. **9.95**
PPA-260,6, Brougham printwheel with 10 cpi, Shpg. wt. 1 lb. **26.95**
PPA-260-7, Prestige printwheel with 10/12 cpi, Shpg. wt. 1 lb. **26.95**
PPA-260-8, Anelia printwheel with proportional spacing, 1 lb. **26.95**
PPA-260-9, Script printwheel with 10/12 cpi, Shpg. wt. 1 lb. **26.95**
PPA-260-20, Quadro printwheel with 10 cpi, Shpg. wt. 1 lb. **26.95**

Ribbons and Printwheels for DTC Style Writer Printer

PPA-270-4, Three black replacement ribbons, Shpg. wt. 1 lb. **16.95**
PPA-270-5, Two red replacement ribbons, Shpg. wt. 1 lb. **6.95**
Style Writer uses same printwheels as DTC 380Z Printer.

Accessories for the single-pen ET-500 Plotter

ETA-500-1, 100 sheets of 8½" x 11" plotter paper, 1 lb. **7.50**
ETA-500-2, Four replacement pens (red, green, blue and black), 1 lb. **9.95**
ETA-500-3, Transparency Presentation Package consisting of a set of 50 blank transparencies, two sets of pens and instruction sheet, 4 lbs. **89.95**

Use your Visa or MasterCard credit cards to purchase your kit!
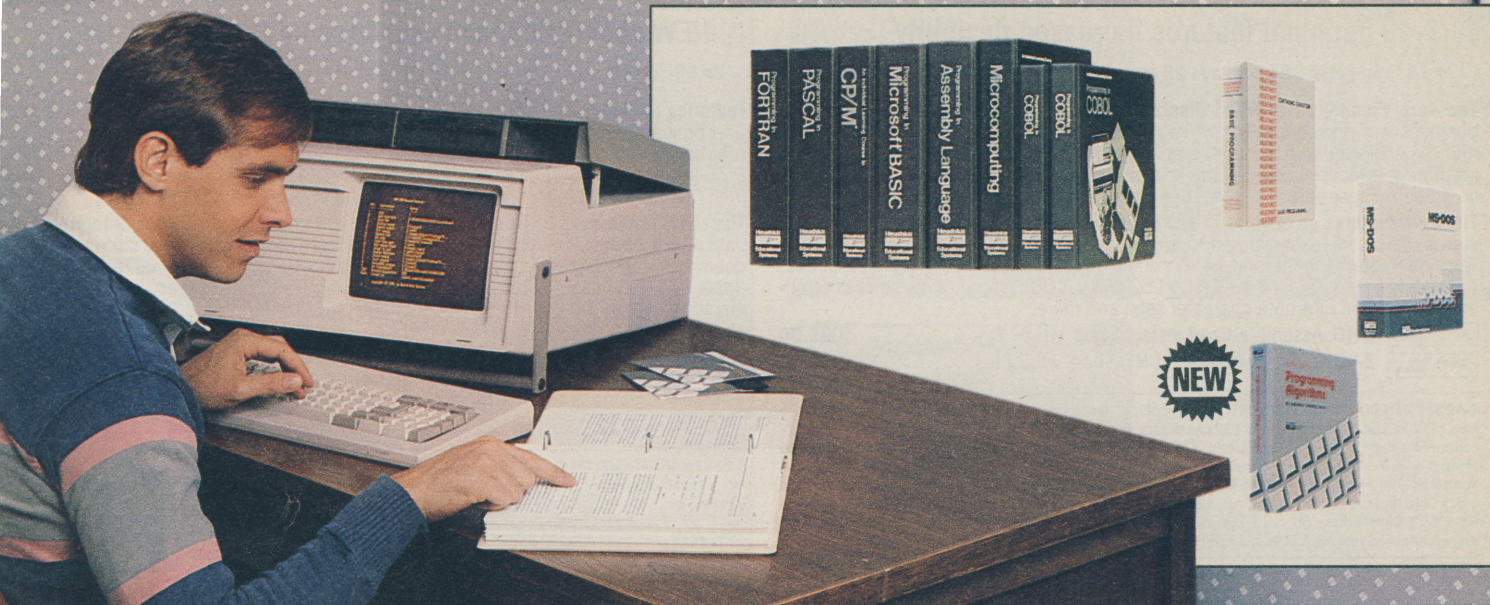
Learn computer programming effectively and thoroughly with these self-study courses

NEW! Macro-86 Programming Algorithms Course

$59⁹⁵
- Gain familiarity with algorithms as programming tools
- Run experiments on an H/Z-100 Desktop or PC Computer

Heath/Zenith Educational Systems introduces the first in a new computer programming series, the Programming Algorithms Course. It is a seven-unit Course that shows you how to solve problems using a computer. As a programmer, you decide on a particular plan (or algorithm) and implement that plan in a programming language. This Course has you using programs that are provided or using programs that you write to demonstrate applications of the ideas presented.

The Programming Algorithms Course demonstrates the importance of the algorithm phase in developing a program. It begins by introducing computer programming as problem solving and then describing algorithms. Control structures, extended examples of translating algorithms into Assembly Language and programming conventions are also discussed. You'll learn how to develop a clear problem definition and how to write algorithms, the tools of a programmer.

In addition to writing algorithms, you'll translate algorithms into MACRO-86/Intel 8088 Assembly Language programs. You'll also use the data structures of arrays, stacks and linked lists in learning to use this programming method. In this Course, the techniques of linear and binary searches are discussed along with the Insertion, Shell and Heap sorting methods.

When you complete this Course, you'll be able to write routines that search text files and routines to Encrypt and Decrypt files using the substitution method when the key is known. You'll be able to compress files and then expand them out again. You will study multiword integer operations including: addition, subtraction, multiplication, division, input and output. In addition, you'll become familiar with the operations necessary for dealing with floating point numbers. And, learn to perform simple floating point operations including: addition, subtraction, multiplication, division, extracting the square root, finding the sine and cosine, and input and output.

Experiments at the end of each unit are written for a computer system using the Intel 8088 microprocessor, such as the: H/Z-100 Desktop Computer, HS-151 Personal Computer, the HS-161 Portable PC and the IBM Personal Computer. The MS*-DOS operating system and the MACRO-*86 Assembler and Linker are used in all experiments. A 5.25" floppy disk supplied with the Course contains experiments, programs and demonstrations for use in the Programming Algorithms Course. A programmers pad is also supplied.

Before you begin this Course, you should be familiar with the instruction set for the 8088 microprocessor and its various addressing modes. You should also know the commands to your operating system that manipulate files and the Macro-86 Assembler and Linker as well as basic programming techniques.

After completing the Course, take and pass the optional final examination with a 70% or better score to earn 4.0 Continuing Education Units. You'll also receive a handsome Certificate of Achievement that's suitable for framing.

EC-1202, Shpg. wt. 6 lbs. 59.95

MS-DOS Course covers fundamentals and organization

$99⁹⁵
- Complete coverage with how to access system routines, to do console input/output and work with disk files

In seven units, this comprehensive Course teaches how MS-DOS is organized and all about how to use it. Directed toward the novice computer user, this study course provides instructions in all the built-in commands and in the typical transient utilities. It also provides an understanding of what Assembly Language is and how to use the system routines and program debugger.

About MS-DOS the EC-1121 Course begins with a disk operating system background and explains how the disk is organized. Then the most often used commands are discussed along with how to enter and edit command lines. Examined next are the CHKDSK, COMP, DSKCOMP, and RDCPM and commands. This is followed by a study of the file editor, EDLIN, with all its features. DEBUG, the program editor, is then explained. The final unit teaches system interfacing through Assembly Language with how to input and output characters and strings, to read and write disk files, and to use directory entries within programs.

A new audio-tutorial full-section narration method is used in the MS-DOS Course. It consists of three audio cassette tapes that introduce each section and guide you through the entire Course. In everyday language, these cassettes provide an overview of the material before you study and a review afterwards.

Fifteen computer exercises, included on a 5.25" floppy disk, give you a chance to use MS-DOS features and commands on an H/Z-100, HS-151, HS-161, or IBM PC personal computers.

Pass the optional final examination with a 70% or better score and earn 3.0 Continuing Education Units. And, receive a Certificate of Achievement.

EC-1121, Shpg. wt. 6 lbs. 99.95

Assembly Language Course in computer programming

$49⁹⁵
- Workbook includes discussion of DOS console I/O

Learn to program in the low-level language your computer understands best, Assembly Language. It uses labels, operands, comments and assembler directives that enable you to create a source code that's both easily read and adapted to your computer system. Symbolic notation and easy-to-carry-out documentation methods make program listings easy to understand.

Learn to write programs that run 10 to 100 times faster than BASIC. Using a mnemonic for every machine operation, Assembly Language programs require less memory space and run faster.

Workbook contains experiments for use on H/Z-89 and H/Z-100 computers.

Take and pass the optional final examination with 70% or better score and earn 6.0 Continuing Education Units plus receive a Certificate of Achievement.

EC-1108, Shpg. wt. 7 lbs. 49.95

*MS is a registered trademark of Microsoft Corporation.

Learn programming in Microsoft* BASIC Course

- **Learn to write and modify programs using popular Microsoft BASIC**
- **Uses audio-tutorial method for more effective learning**

Cover every aspect of programming using Microsoft BASIC, one of the most versatile programming languages for microcomputers. Learn how to get the most from this programming language and improve your programming skills whether you're using an H/Z-89, TRS-80, APPLE or other computer.

A comprehensive text and programming experiments combine to give you complete coverage of MBASIC programming fundamentals. You'll learn about: computer arithmetic, program structures, sequences, branching, and more.

To obtain the full benefit from this Course, you'll need access to a computer that uses the Microsoft BASIC language. Pass the optional final examination with a 70% or better score and earn 5.0 Continuing Education Units plus receive a Certificate of Achievement from Heath/Zenith Educational Systems.

EC-1110, Shpg. wt. 7 lbs. **99.95**

Learn modular Pascal programming with this course

- **Pascal is the ideal language for beginning and experienced users**
- **Pascal is sophisticated, structured, efficient, powerful, easy to use**

Whether you're an experienced user or just a beginner, this programming course can teach you to write programs in the high-level language of Pascal. Our audio-tutorial format shows you how to program in this powerful modular language with quick results. And, programming experiments provide experience.

A clearly written text and five audio cassette tapes combine to form an integrated and effective learning program. You are shown how to identify and write simple Pascal programs. Then you learn to identify and write self-contained procedures. Other areas covered include: the decision making part of programming; how and when to incorporate IF, THEN, ELSE and CASE statements; Boolean variables; and how to use REPEAT, UNTIL, WHILE, DO and FOR loops.

Further coverage consists of: data types and how to declare them; the use of arrays and character strings; procedures; the need of records and sets; the differences between pointers, linked lists, stacks, queues, binary trees and statements; and a description of sequential files and standard Pascal files.

Earn 4.0 Continuing Education Units by taking and passing the optional final exam with a 70% or higher score. Also receive a Certificate of Achievement.

EC-1111, Shpg. wt. 7 lbs. **99.95**

FORTRAN Programming Course for science/math

- **Learn all about FORTRAN, the powerful programming language preferred by scientists, mathematicians and engineers**

A powerful program, FORTRAN simplifies complicated scientific and mathematical problem solving. Learn its fundamentals and how to use its power with the economical and effective Programming in FORTRAN Course.

This 11-Unit Course begins with a special introduction to computers and then introduces FORTRAN programming. Subjects covered in this Course include: program analysis, variables, expressions, input and output, identify and write self-contained procedures, making decisions, loops, data types, and more.

Hands-on experiments provided with this Course enable you to actually write FORTRAN programs. Coding forms are included. To get the most from the experiments, as well as the Course, we recommend that you perform the experiments on a computer such as the H/Z-89, H/Z-100, HS-151 Personal or HS-161 Portable Computer. With these computers, you'll need the appropriate CP/M* or MS-DOS operating system and the Microsoft FORTRAN programming language.

Pass the optional final examination with a 70% or better score and earn 5.0 Continuing Education Units. Plus, receive a Certificate of Achievement.

EC-1101, Shpg. wt. 7 lbs. **99.95**

BASIC Course teaches you to program in one of the most popular microcomputer languages

- **Learn to write and make corrections to powerful computer programs**
- **Includes many valuable hands-on computer programming exercises**

Learn to write BASIC programs that instruct computers to perform certain tasks. In fourteen programmed instruction units, you proceed at your own speed and learn the standard words and commands of BASIC. In this Course you cover: many versions of BASIC, formats, statements, procedures, tools of the language, how to define and plan a program, and how to format and write a program.

The Course also includes a workbook filled with exercises in writing and running BASIC programs. Consequently, access to a computer is recommended. In addition, a handy reference card with Benton Harbor BASIC statements, ASCII numbers and BASIC direct command statements are included.

Take and pass the optional final exam with a 70% or higher score and earn 3.0 Continuing Education Credits. And, receive a Certificate of Achievement.

EC-1100, Shpg. wt. 7 lbs. **44.95**

College Level Examination: Earn valuable college credit for successfully completing this course. For more information see page 61.

ECC-1100, Shpg. wt. 1 lb. **25.00**

Learn how to use CP/M and how to get the most from this industry-standard operating system

Reduced $40

$59⁹⁵

- **Covers all aspects of the CP/M Operating system**
- **Use with many 8080/Z-80/8085 computer systems**
- **Uses proven audio-visual tutorial method**

Learn all about this popular operating system. It begins with the very basics, so elementary that even a first-time computer user, without a previous background in CP/M or Assembly Language, can easily learn about it.

A 500-page text and five audio cassette tapes make learning CP/M very easy. Begin with an introduction of the operating system and how to use basic CP/M commands. Learn: major control functions, diagnosing problems from error messages, built-in commands, transient programs, how to use STAT and CONFIGUR commands, to use PIP, the text editor's capabilities, and about submitting files.

This Course is designed for use with computers having 48K bytes of RAM and able to use the CP/M operating system, such as the H/Z-89 and H/Z-100 Computers. A printer is recommended to obtain the full benefit from this Course.

Pass the optional final exam with a 70% or higher score and earn 2.5 Continuing Education Units, plus receive a personalized Certificate of Achievement.

EC-1120, Shpg. wt. 6 lbs. . . . . **Was $99.95 NOW ONLY 59.95**

COBOL Programming Course teaches you to write and run programs in the business language

- **Introduces the language that handles large, structural data files**
- **For beginners and others interested in commercial data processing**

COBOL is especially useful in applications involving manipulation of large, highly structured data files like those found in accounting functions, inventory control and other business applications. In these areas it's more efficient than BASIC.

This comprehensive Course with nine audio cassette tapes covers the basics of encoding, input characteristics, program hierarchy, identification, environment and more. Both ANS-74 and ANS-68 versions of COBOL are presented.

Six programming exercises are included at the end of the workbook that'll help you get the most from this Course. We recommend that you do these programs on a computer system that has 48K RAM, two disk drives and using an appropriate operating system. The H/Z-89 and H/Z-100 Computers are ideal.

Earn 3.0 Continuing Education Units and receive a Certificate of Achievement by passing the optional final exam with a 70% or better score.

EC-1105, Shpg. wt. 7 lbs. **149.95**

Microcomputing Course teaches you the basics of computers and what they can do for you

- **See how a computer can be used to solve your everyday problems**
- **Learn about microcomputer fundamentals and BASIC programming**

For those who want to know what a computer can do for them, this Microcomputing Course is an ideal place to start. In easy and simple terms, you are shown the different parts of a computer and how to apply its capabilities to your specific needs. Two audio cassette tapes accompany the Course.

Five easy-to-understand units teach fundamentals to those without an extensive electronics or computer background. Learn how to compare computers by understanding how each performs. Learn to evaluate small computer systems by understanding how different system components work together. Learn to choose the right software programs for your needs.

Pass the optional final exam with a 70% or better score and be awarded 1.0 Continuing Education Unit, plus receive a handsome Certificate of Achievement.

EC-1000, Shpg. wt. 5 lbs. **44.95**

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