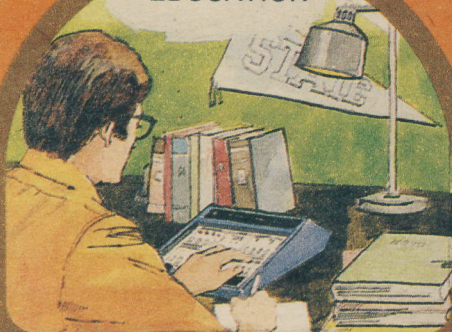


Heathkit®

QUALITY ELECTRONICS YOU CAN BUILD YOURSELF • FALL 1979

EDUCATION



NEW

Exciting new kits shown for the first time in this Catalog:

- ★ Economy hand-held Portable Digital Multimeter — see page 93
- ★ Amateur Radio Antenna Remote Coax Switch — see page 21
- ★ 12-Volt Digital Thermometer for RV's, boats, cars — see page 62
- ★ Mathematics Self-instruction Programs — see page 72
- ★ Computer Concepts for Small Business — see page 44

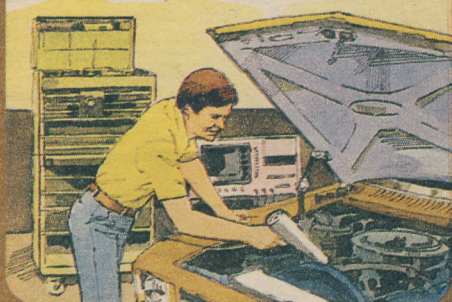
SAVE 5% ON STEREO SYSTEMS

A great way to save money on your custom Heathkit Stereo Component System. See pages 4-13 for the complete array of quality amps, speakers, receivers, turntables and accessories. And check page 7 for complete details on the system discount.

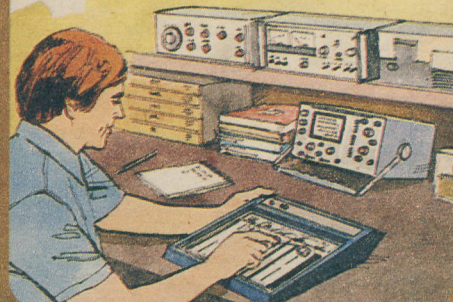
COMPUTERS



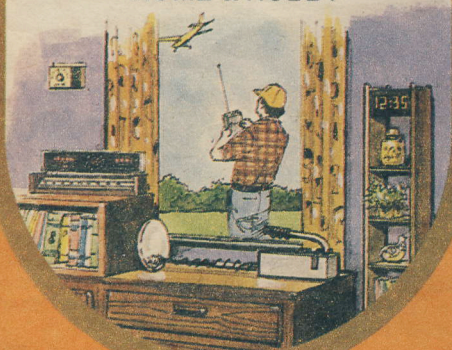
AUTOMOTIVE



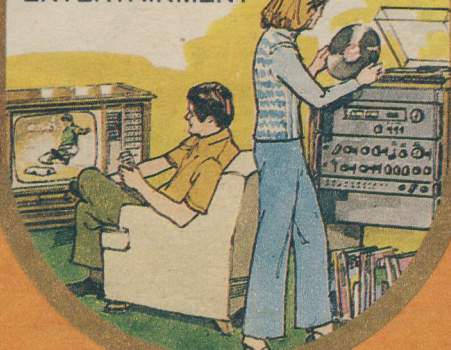
INSTRUMENTS



HOME & HOBBY



ENTERTAINMENT



AMATEUR RADIO



HEATHKIT MAIL ORDER CATALOG 846

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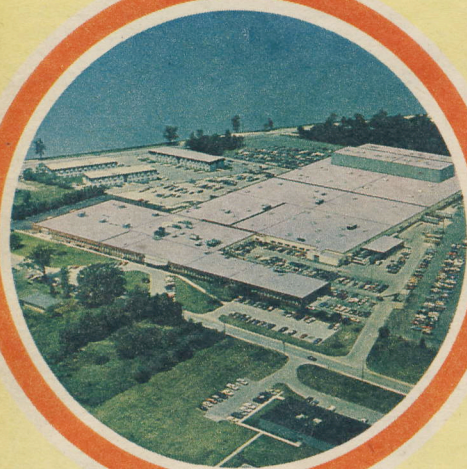
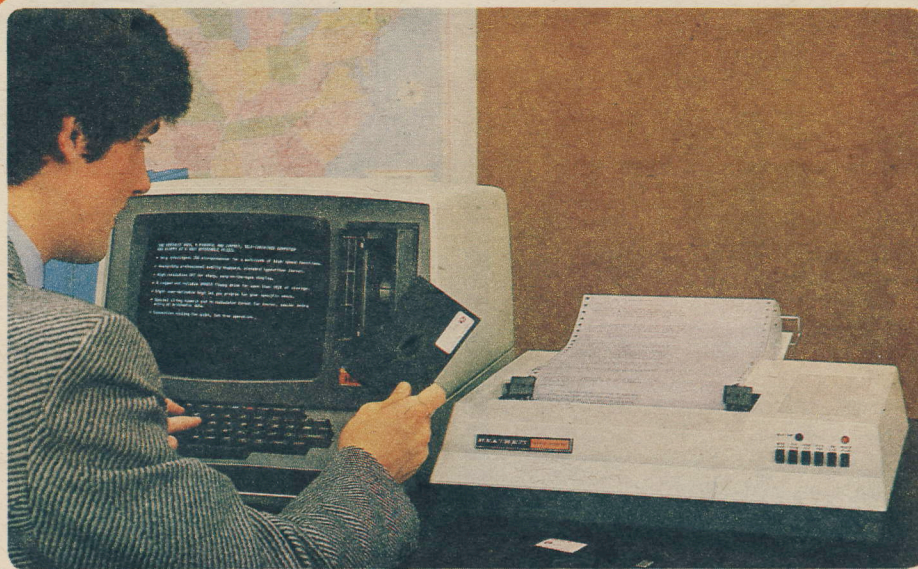
HANDY INDEX ON BACK COVER

© 1979 Heath Company

Right now there are more exciting things you Practical programs that can save you money.

Heath offers one of the most complete lines of computer products in easy-to-build kits or completely assembled.

- Three Computer Systems
- Video Terminals
- Printers
- Floppy Disk Systems
- Software
- Memory and Interfacing



Heath
Company
Benton Harbor, Michigan

**You get 50 years
of experience
in every Heath
electronic kit.**

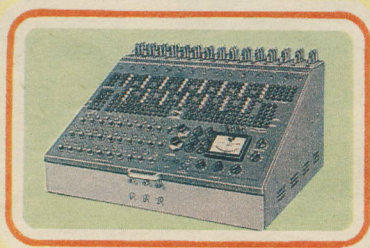
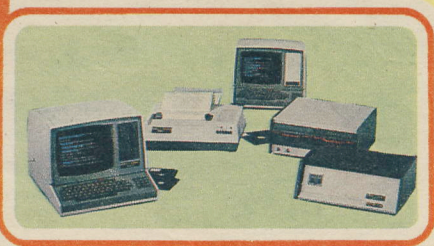
In the past 53 years Heath has grown from a small mail order business with a single product to a multimillion dollar company employing more than a thousand people and offering nearly 400 electronic kits.

For 53 years Heath Company has been at the forefront of developments in consumer electronics, most recently in computers. Our first personal computer was introduced in 1957. By today's standards it doesn't look like much. But in its day it was an important breakthrough. Since that day, Heath Company has continued to develop one of the most complete and innovative lines of personal computers available anywhere.

Today Heath Company is the one-stop source for all computerites with new computer systems you can build yourself. There's no better way to learn about computers than to build one yourself the easy Heathkit way.

Heathkit. For 53 years we've made sense to a lot of people.

30



1957 Heathkit Analog Computer

A Guide to Heathkit

What is a computer?

A computer is an extension of your brain. Like your brain, it is composed of numerous microcircuits over which information travels in the form of electrical impulses. Your brain holds more information, about ten thousand times more, than a typical computer, but a computer can manipulate information faster, about ten billion times faster, than your brain. So when it comes to simple manipulation of information

— storing, selecting, sorting, compiling — a computer is more efficient than your brain.

What can a computer do for you?

On this question rests your decision to buy a computer. It is the uses you can make of a computer that justify its purchase. When a businessman decides that a computer can help him run his business more efficiently, it's time to invest in a computer. When a family decides that the practical and recreational uses of a computer can save money and enrich their lives, it's time to consider buying a computer.

Availability of software is the key to what a computer can do for you. Software is the programmed instructions that are fed into a computer to tell it what to do. A computer without software is like a car without gas. It can't go anywhere.

Today a proliferation of new software is being introduced by program writers all over the world. And the availability of new programs for business, schools and homes continues to grow rapidly.

The time to purchase a computer has never been better.

How to select a computer

If computers can be classified, it would be according to memory power. Memory power is the amount of space a computer has to store and process information. There are two types of memory.

ROM. Read Only Memory contains the instructions or fixed programs. It instructs the computer on what to do with the data.

can do with a computer than ever before.

Fun programs for you and your family



Save 5% when you purchase a complete system

Simply choose the H8 or H11A and one major peripheral plus any I/O devices and accessories you need for a complete custom computer system. Then you can deduct 5% from the total price (excluding shipping and handling charges). It's the ideal way to get the exact computer system you need!

Personal Computers

RAM. Random Access Memory carries out the instructions. It does the actual sorting, adding, compiling. Data coming into the computer from mass storage enters RAM.

ROM is the brains of the computer, **RAM** is the muscle.

There are other considerations in selecting a computer. Do you want built-in peripherals or the flexibility to configure your own system? Do you want the ability to expand your memory power as your skills grow? How good is the computer's operating software? How compatible is it with existing applications software? Will the manufacturer stand behind it?

These are questions you should ask when considering a computer. You can be sure of the answers when you consider Heathkit.

Three very different computers for very different people

Heath designs computers for people, and because people want very different things from computers, Heath has designed three different computers.

For convenience — the All-In-One H89. If you want a complete, balanced computer system in one convenient package, the H89 All-In-One Computer is your choice. It includes computer, terminal, floppy, 16K RAM, keyboard and keypad. Just add software and you're ready to run. (See page 32)

For flexibility — the H8. If you're an enthusiast who enjoys the ins and outs of a computer, the H8 is your choice. It has seven plug-in board positions for memory and I/O's, so you have the flexibility to configure exactly the system you wish. (See page 34)

For power — the 16-bit H11A. If you're an advanced computerite ready to step up to the big power needed to run your complex programs, the H11A is your choice. It features 16-bit power plus seven plug-in board positions for memory and I/O. (See page 37)

Some more reasons to select Heath

The components of Heathkit systems — computer, peripherals, interface and memory boards, and software — are designed to work together and to look like



they belong together. All interfacing is Standard EIA RS-232. You can count on a balanced, harmonious computer system.

You get the convenience of one-stop shopping. The complete selection of Heathkit terminals, printers, computer accessories and software is available between the covers of the Heathkit Catalog.

Heath offers complete service support. From the factory or from 55 service centers around the country, technical assistance is just a phone call away.

HUG

Owners of Heathkit Computers can become members of a special group that shares an extensive program library. The **Heath Users' Group (HUG)** keeps you informed of new computer programs written by other members and available to you, and keeps you up to date on new developments in Heathkit Computer Products. (See page 43 for more details on HUG)

Kit or assembled

Heathkit Computers come in kit or assembled form. What better way to learn about computers than to build one yourself? Heath makes it easy with accurate, easy-to-follow assembly manuals that take you step-by-step from unpacking to final plug-in. You'll understand your computer inside out. You'll be able to perform much of the service yourself. And you'll take pride in knowing you built it yourself.

On the pages that follow you'll find details on the complete line of Heathkit Computer Products.



Introducing the Heathkit All-In-One Computer

New personal computer brings everything together in one compact unit

- Floppy disk storage
- Smart video terminal
- Two Z80 microprocessors
- 16K RAM expandable to 48K
- Professional keyboard
- Numeric keypad

Now in one compact, desk-top computer, you can have all the power and built-in peripherals needed for any personal computing task. The new 8-bit All-In-One Computer makes it easy to computerize your home or business. It's loaded with convenience features that make it easy to program and operate.

Smart Video Terminal

The All-In-One Computer has one of the most sophisticated terminals ever designed. Both terminal and computer have their own Z80 microprocessors, so terminal never shares processor power with computer, as do most desk-top computers. That makes this terminal capable of a multitude of high-speed functions.

Heavy-duty professional keyboard

All terminal functions can be controlled by keyboard or software. Eight user-definable keys let you program your own special functions. Baud rates of up to 9,600 are keyboard selectable.

Direct cursor addressing lets you insert and delete characters and lines anywhere on the screen and gives you line graphics capability from keyboard or computer.

Sharp screen image

12-inch diagonal cathode ray tube produces clear, easy-to-read characters. The format of 25 lines by 80 characters includes upper and lower case letters, formed by a 5 by 7 dot matrix. Lower case letters with descenders use a 5 by 9 dot matrix.

Built-in Floppy Disk System

The floppy system makes this a true All-In-One Computer and gives you limitless storage capacity for programs and data. Each 5¼-inch diskette has more than 102K bytes of storage area, enough to hold entire files.

The WANGCO 82 single-drive system gives you high-speed access to any piece of information. Programs can be loaded in seconds from the keyboard. Data can be accessed and updated instantly. This is the same H17-1 drive described on page 36.

Expand to meet your needs

The All-In-One Computer comes with 16K RAM and is expandable to 48K. Memory diagnostics are built in for fast, easy memory checks.

Accessory interfaces let you communicate with printers, cassettes or time-share systems. All communication is EIA RS-232 Standard.

Rugged construction

Convenient lift-off top gives you easy access to insides. Rugged structural foam cabinet withstands toughest working environment.

Order today

H88 All-In-One Computer, without floppy disk system. Includes audio cassette interface (H88-5). Kit H88, Shpg. wt. 59 lbs. **1195.00**

H89 All-In-One Computer with floppy disk system. Includes audio cassette interface (H88-5). Kit H89, Shpg. wt. 86 lbs. **1595.00**

WH89 Completely assembled H89 All-In-One Computer with floppy disk system. Does not include audio cassette interface. WH89, Shpg. wt. 50 lbs. **2295.00**

SPECIFICATIONS: Processor: Z-80. Clock: 2.048 MHz. Memory: 16K bytes user RAM (expandable to 48K). Character Type: 5 x 7 dot matrix (upper case); 5 x 9 dot matrix (lower case with descenders). Keyboard: 80 keys. Cursor: Blinking, nondestructive underline. Cursor Controls: Up, down, left, right, home, CR, LF, back space, and tab. Cursor Addressing: Relative and direct. Tab: Standard 8-column tab. Refresh Rate: 60 Hz at 60 Hz/50 Hz at 50 Hz line frequency. Edit Functions: Insert and delete character or line. Erase Functions: Erase page, erase to end of line, and erase to end of page. Power Requirement: 120/240 volts, 50/100 Hz at 90 watts max. Size: 13" H x 17" W x 20" D. (33 x 43.2 x 50.8 cm).

Two independent Z80 microprocessors enable terminal and computer to act independently, processing more data faster. The computer's CPU is completely wired and tested.

Accessory interfaces include two-port serial I/O and audio cassette for hook ups to printers, time-share systems and cassette storage. H88 and H89 come with cassette interface.

To add memory simply plug IC's into sockets. Expandable to 48K. No soldering is necessary.

High-resolution CRT with P4 phosphor produces sharp, easy-on-the-eyes images. Screen displays 1,920 characters at one time.

Built-in mini-floppy system features rugged WANGCO 82 Disk Drive. Standard 40 track diskettes hold 102K bytes.

Professional electronic keyboard in typewriter format has stepped rows for easier reach and concave keys for surer touch. Each key stroke is affirmed by an audible click.

Numeric keypad in calculator format permits faster, easier entry of arithmetic programs. Shifted functions give you cursor control for insertion and deletion of lines and characters.

Never before has so much been built into one computer for such a low price:

Only \$1595.00 for H89



It speaks the language of today's most popular software

The All-In-One Computer runs programs written in MICROSOFT™ BASIC and ASSEMBLER Languages. That includes scores of practical programs for home and business.

Cassette Systems Software for the All-In-One Computer includes Extended Benton Harbor BASIC, Assembly Language (HASL-8), Text Editor (TED-8), and Console Debugger (BUG-8). **H88-18**, Shpg. wt. 13 lbs. **20.00**

Systems Software for All-In-One Floppy Disk. For complete description, see H8-17 on page 42. **H89-17**, Shpg. wt. 14 lbs. **100.00**

MICROSOFT™ BASIC for All-In-One. For complete description, see H8-21 on page 42. **H8-21**, Shpg. wt. 3 lbs. **100.00**

How much can you save by building it yourself?

Equipment	Heathkit	Pet	TRS-80	Apple
Computer with 16K RAM	\$1195	\$995	\$988	\$1195
Single-drive floppy	450	895	799	595
16K memory	150	295	200	110
Serial I/O	85	N/A	200	400
Terminal or monitor	standard	standard	standard	400
Combination discount	-100	N/A	N/A	N/A
Total	\$1780	\$2185	\$2187	\$2700

Estimated prices based on manufacturer's literature.



All-In-One Computer without floppy disk system. Order Model H88

Accessories

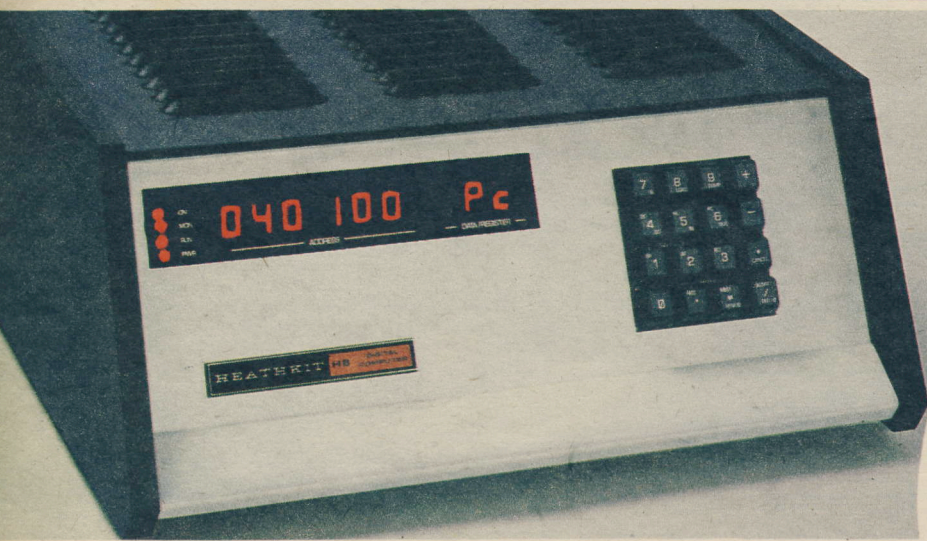
16K Memory Chip Set lets you expand RAM. **H88-2**, 1 lb. **150.00**

Two-port Serial I/O lets you communicate with H-14 Line Printer or any serial peripheral. **H88-3**, Shpg. wt. 2 lbs. **85.00**

Floppy Disk System, drive and interface for H88 Computer. 102K bytes. **H88-4**, Shpg. wt. 22 lbs. **450.00**

Audio Cassette Interface. Communicate with mass storage cassette recorder/player. Included in H88 and H89. **H88-5**, 2 lbs. **95.00**

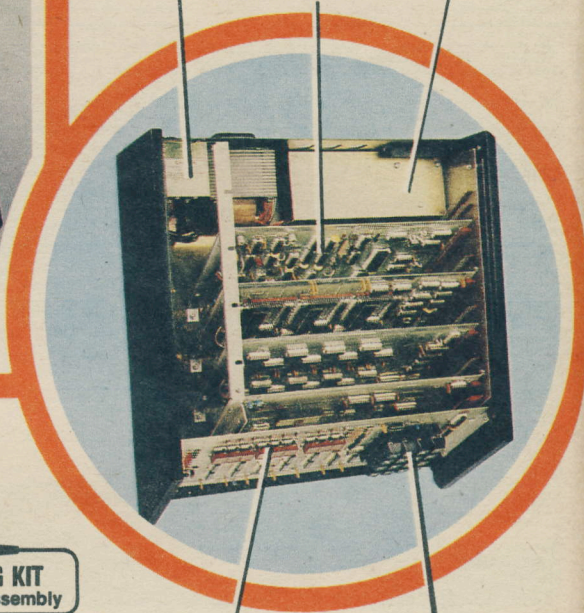
Heathkit H8 Personal Computer with "plug-in" flexibility



Heavy-duty power supply, rugged steel chassis and securely mounted and braced circuit boards.

The unique Heath-designed 50-pin bus is implemented on a heavy-duty printed circuit board.

Modular circuit boards slide into the H8 main-frame for easy memory and I/O expansion and easy access for servicing.



8080A-based, with front panel keyboard, digital readout and 7 plug-in board positions

SAVE \$90

Was \$379.00

Now

\$289.00 Kit

Requires at least one H8-1 Memory Board to operate

- Built-in extended ROM monitor controls front panel program
- Heavy-duty power supply handles to 65K memory
- Exclusive Heath 50 line fully-buffered bus has 7 plug-in board positions for memory and I/O's
- Built-in speaker provides audible feedback for keyboard entry
- Convection cooled power supply — no fan needed

6 EVENING KIT
Fast, Easy Assembly



Front panel keyboard provides direct access to registers and memory while programs are running; one-button load and dump; a single instruction key for "stepping" through programs; and input/output keys for communicating directly with any port.

The H8's "intelligent" front panel provides the most informative display of any personal computer. The memory display shows memory location and contents. The register display shows CPU-register contents. The I/O port display shows I/O port data and location.

The computer that grows as you grow. The Heathkit H8 Computer gives you the flexibility to configure your computer just the way you want it. 7 plug-in board positions let you put together any combination of memory and I/O's. The low initial cost, along with add-on flexibility won't strain your budget either. It's the ideal choice for both the novice and the advanced computerite.

The H8, with the addition of 4K of memory, makes an ideal computer trainer. Its 16-key front panel keyboard provides octal data entry and gives you direct access to registers and memory, one-button program load and dump, and input/output keys for direct communication with any port. Its 9-digit octal readout provides far more information than conventional computers — memory, registers and I/O port displays are updated even while programs are running for direct monitoring of program activity.

With the addition of more memory, peripherals and interfaces, the H8 can become even more powerful and versatile, allowing you to write highly sophisticated and practical programs. And because the H8 is based on the world-famous 8080A CPU, the amount of existing software (programs) from both Heath and other sources makes it one of the most immediately practical computers you can own.

Optional floppy disk system gives you vast storage capacity and instant access to data and programs. You'll be able to load programs and update files instantly. See the following pages for complete descriptions of H8 peripherals, accessories, and H17 Floppy Disk System.

The H8's optional software is supplied in 1200 baud audio cassette form to get you up and running fast. Benton Harbor BASIC, HASL-8 2-pass absolute assembler, TED-8 line-oriented text editor, and BUG-8 terminal console debug program let you begin communicating with the H8 right away. See next page for a run-down of this powerful software plus new Microsoft™ BASIC.

Other features of the H8 include: exclusive Heath-designed 50-pin fully buffered bus; built-in convection cooled power supply; built-in speaker for audible feedback and special effects; front panel status lights and more. The CPU board is fully wired and tested for easy system setup and kit assembly. It features the 8080A chip, clock, systems controller, ROM monitor and full bus buffering. Seven vectored interrupts are available for quick response to I/O requests.

The H8 is housed in a heavy-duty metal cabinet with modern, high-impact structural foam side panels 6½" H x 16¼" W x 17" D. Switch-selected 120/240 VAC, 50/60 Hz. Requires at least one H8-1 memory board to operate.

Kit H8, Shpg. wt. 31 lbs. Was \$379.00 Now 289.00

Factory Assembled and Tested H8.

WH8, Shpg. wt. 30 lbs. 349.00

NOTE: To specify a complete computer system using the H8, you will need both memory and interface accessory cards. The type and number of memory and interface accessories that you need for the H8 will be determined by your particular applications. The memory and I/O accessories are offered separately so you have complete freedom to assemble the system that meets your specific computing needs.

Save on selected memory and interfacing for the H8

16K Wired Memory Board for H8:

Lets you expand your H8 to the full capacity of the 8080A CPU. Features low power consumption for cool operation, DIP switch for address setting without 450 nS access time. Fully assembled and tested.

WH8-16, Shpg. wt. 2 lbs.395.00

8K Memory Board:

8Kx8 card supplied with 4K memory. Plugs directly into H8 bus. Features maximum storage capacity of 8192 8-bit words. Access time, less than 450 nS. With on-board regulators, heat sinks and full buffering. Expandable to 8K with H8-3.

Kit H8-1, Shpg. wt. 2 lbs.Was \$125.00, Now 95.00

Chip Set for H8-1:

Kit of eight static memory IC's (4K). Expands H8-1 to full 8K storage. With sockets.

Kit H8-3, Shpg. wt. 1 lb.Was \$85.00, Now 65.00

Assembled and Tested 8K Memory Board:

Combination of H8-1 plus H8-3. Access time is better than 450 nS.

WH8-8, Shpg. wt. 2 lbs.Was \$250.00, Now 175.00

Parallel Interface:

Connects H8 computer to any parallel device such as a paper tape reader/punch. Three parallel ports. Compatible with all Heath software.

Kit H8-2, Shpg. wt. 3 lbs.150.00

Four Port Serial Interface:

Required to interface H8 computer to H14 line printer. Has four serial I/O ports, all supporting standard RS-232-C interface including MODEM controls. One port is switch programmable. Includes one DH8-41 cable for connection to H14.

Kit H8-4, Shpg. wt. 2 lbs.150.00

Factory Assembled and Tested Version of Above.

WH8-4, Shpg. wt. 3 lbs.250.00

Adapter Cable for use with H8-4:

Provides EIA industry-standard electrical and mechanical interface between H8-4 and other peripherals. Factory assembled and tested.

WH8-41, Shpg. wt. 1 lb.15.00

Serial I/O and Cassette Interface:

Connects the H8 to serial devices such as the H9 video terminal (page 40) or the H36 DEC writer II (page 41). Data rate from 110-9600.

Kit H8-5, Shpg. wt. 3 lbs.Was \$125.00, Now 95.00

Factory assembled and tested version of above.

WH8-5, Shpg. wt. 2 lbs.Was \$150.00, Now 120.00

Adapter Cable for use with H8-5:

Provides EIA industry-standard electrical and mechanical interface between H8-5 and other peripherals. For use with H8 computer. Factory assembled and tested.

WH8-51, Shpg. wt. 1 lb.15.00

Circuit Design Breadboard Card:

Lets you custom design your own analog or digital circuits. Make additional interfacing or create your own memory boards. Uses solderless breadboard area. 5 VDC power supply for logic circuits is provided on the board.

Kit H8-7, Shpg. wt. 2 lbs.90.00

These Circuit Boards plug right into the H8 for fast, easy convenient hookup

WH8-8
8K Memory
Board

H8-2
Parallel
Interface
Board

H8-4 Four-
Port Serial
Interface
Board

H8-5 Serial
I/O and
Cassette
Interface
Board

H8-7
Breadboard
Card

WH8-16
16K Memory
Board

Save up to \$109.00 on complete systems

HKS81 Hobbyist System

includes:

H8 Computer
H8-5 Serial I/O and Cassette
Interface
H8-1 8K Memory Board
H8-3 4K Chip Set
H9 CRT Terminal
ECP-3801 Audio Cassette Recorder
H8-18 Cassette Software

Purchased separately: \$1103.00

Purchased together: \$995.00

You save \$108.00

HKS81, Shpg. wt. 94 lbs. ...\$995.00

HKS82 Advanced System

includes:

H8 Computer
H8-4 Four Port Serial I/O
WH8-16 16K Memory
H17 Floppy Disk
H19 CRT Terminal
H8-17 HDOS Software

Purchased separately: \$2104.00

Purchased together: \$1995.00

You save \$109.00

HKS82, Shpg. wt. 143 lbs. ...\$1995.00

Examine manuals before you buy.

Here's your chance to look before you buy, and with no risk! Manual set includes complete assembly and operations manuals for the H8, H8-1, H8-2, H8-3, H8-5, H19 and latest software. Deduct price of manual set when you buy H8.

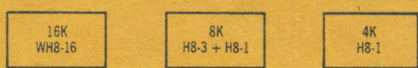
HM800, Shpg. wt. 11 lbs.25.00

NOTE: Individual product manuals are included with each kit.

H8 Bus

with 7 plug-in board positions (excluding CPU and control panel)

Memory



Mass Storage

Interface

Peripherals

Floppy Disk Storage for instant data access with the H8

Add floppy disk storage to your H8 Computer and get instant access to programs and data. Enjoy the full capability of your H8 Computer.



Shown with optional second drive

Vast storage. Instant access. Easy loading. You get it all with the H17 Floppy Disk

The H17 floppy disk system gives you the storage and programming capacity you need to load programs instantly. You can store hundreds of programs on a single disk and have immediate access to any one of them anytime you need it. And you can update your data instantly. Floppy disk storage is far more versatile and reliable than paper tape or cassette storage systems; it truly makes the H8 a "total versatility" computer system.

Designed exclusively for use with the H8, the H17 has been "systems" engineered to deliver a fully assembled package including: a disk drive, and interface disk/controller circuit board, and built in power supply. The controller circuit board plugs directly into the H8's mainframe and with the addition of the optional second drive you'll have optimum dual-drive versatility. Because the H17 is designed especially for the H8 Computer, you get a harmonious system that interfaces properly and runs smoothly.

The storage media for the H17 is the standard, hard-sectored 40-track diskette. Measuring just 5.25" in diameter, each disk offers access to better than 102K bytes of available program and data storage area. Disks are easy to handle and easy to load.

The drive system used in the H17 is the famous WANGCO Model 82, a performance-proven drive providing accurate high-speed data access. Specifications of this drive include a conservative 30 ms maximum track-step time and typical random sector access times of less than 250 ms. These figures are considerably better than most equivalent competitive drives.

The WANGCO 82 drive system is supplied fully assembled and tested. It's backed by extremely reliable mechanical and electrical operation. To use the H17 effectively with the H8 computer requires at least 16K of RAM for the H8 and H8-17 operating systems software, sold separately below. The H17 includes a single blank diskette.

Add the H17 Floppy Disk System to your H8 Computer and enjoy the full capability of your computer. Take advantage of all the practical and fun programs available to you.

Kit H17, Shpg. wt. 28 lbs. Was \$575.00, Now 495.00

WH17, Factory assembled and tested. Shpg. wt. 25 lbs. 550.00

Optional Second Drive. Adds dual-drive versatility to H17 for a total of over 204K bytes of available program and data storage area.

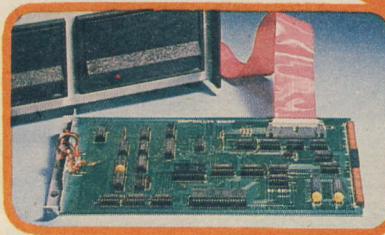
H17-1, Shpg. wt. 5 lbs. 295.00

Package of 5 Blank Diskettes.

H17-2, Shpg. wt. 1 lb. each 25.00

H17 SPECIFICATIONS: Storage Media: 5.25" hard-sectored 40-track diskette. **Drive Type:** WANGCO Model 82. **Track Seek Time:** 30 ms maximum. **Random Sector Access Time:** Less than 250 milliseconds. **Power Requirement:** 120/240 VAC, 50/60 Hz. 75 watts. **Dimensions:** 6.25" H x 13.5" W x 13.5" D.

Kit with
single drive
\$495⁰⁰



Rugged fully assembled WANGCO model 82 disk drive offers total reliability for years of trouble-free service.

The H17 includes the Interface/Disk Controller Circuit Board — an extra cost option with most other units.

Operating Software for H17 Floppy gets you up and running fast

Get your floppy system up and running fast with specially designed systems software. It's loaded with convenience features.

The Operating Systems Software for the H17 Floppy Disk System includes a diskette containing the standard H8 software. Includes extended Benton Harbor BASIC; a 2-pass absolute assembler; a text editor to prepare source code for BASIC and other languages; a console debugger for easy debugging of user machine language programs; and a full set of disk utility programs for convenient file manipulation.

Special features of this operating software include Dynamic File Allocation which automatically keeps free space available to permit unlimited file size and prevent squeezing of disks. Special facilities support running and backup of single-drive configurations to permit copying and transferring between disks even with a single-drive system.

Device independence permits direct communication between any program and any device. A file utility program allows two kinds of wild cards for fast, easy bulk manipulation of files. The software is supplied on a standard diskette.

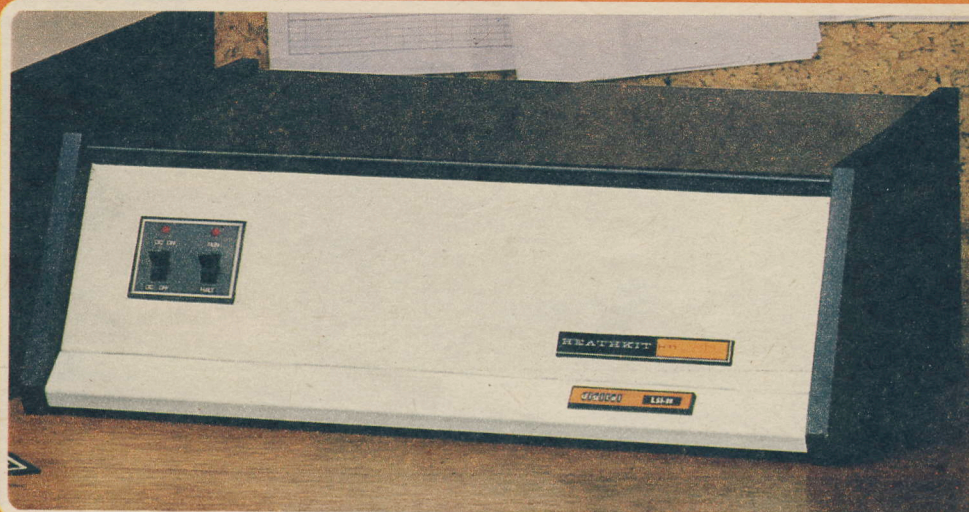
H8-17 Operating Software helps you get the most from your H17 Floppy Disk System and from your H8 Computer.

H8-17, Shpg. wt. 14 lbs. 100.00



Most powerful Heathkit Computer for the advanced computerite

- 16-bit power
- DEC® KD11-HA CPU
- Plug-in flexibility
- DEC PDP-11/03 Compatible
- Up to 60K bytes memory



H11A Computer runs your most complex programs efficiently

\$1095⁰⁰
Kit

The H11A gives you all the power speed and flexibility you'll ever need in a microcomputer. It uses the same powerful microprocessor and runs all software designed for the DEC® PDP-11/03. You can choose from scores of practical programs to run your home more efficiently, to reduce the clerical costs of your business and to process all types of data. If you've been around computers awhile and the complexity of your programs requires extra power, the H11A Computer is designed for you.

New Half-size LSI-11/2

The H11A features the new, smaller KD11-HA microcomputer (LSI-11/2). That makes the H11A identical to the DEC PDP-11/03, but at a fraction of the cost. The smaller-size CPU leaves more space for computing power or I/O's.

7 plug-in slots

The H11A gives you the flexibility to configure exactly the system you require. Seven plug-in slots let you add any combination of I/O's and a maximum of 60K bytes memory. The basic H11A Computer is supplied with handsome cabinet, heavy duty power supply, backplane that includes bus and fully assembled CPU board. To the mainframe you add your selection of optional memory and I/O's accessories (see page 38). Complete systems software is optionally available in paper tape or floppy disk form (see page 43).

Learn by building

What better way to know your computer than by building it yourself. Like all Heath electronic kits, the H11A comes with easy-to-follow assembly manual and a nationwide network of service centers to help you should a problem arise. And when you build it yourself, you can also perform more of the service steps yourself to keep it in top operating form.

Value priced

Compare the price of the H11A with comparable 16-bit computers. The combination of advanced design and quality components make it one of the best 16-bit values anywhere.

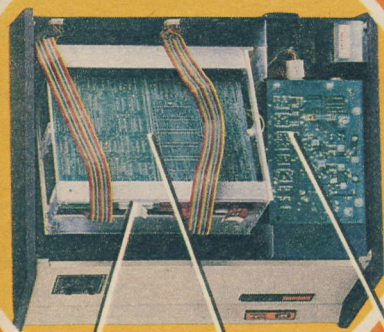
Kit H11A, Shpg. wt. 43 lbs. **1095.00**

WH11A, Factory Assembled and Tested version of above.

Shpg. wt. 43 lbs. **1895.00**

**DEC, DIGITAL and PDP are registered trademarks
of Digital Equipment Corporation.**

SPECIFICATIONS: Central Processing Unit: Uses DEC KD11-HA CPU. Word Length: 16 bits. Instruction Set: PDP-1103. Memory: Directly addresses 32 K. I/O Addressed: 28 K to 32 K. RAM/ROM: 0 to 28 K. Backplane: Eight 2-wide module slots. Power Supply: Overcurrent and overvoltage protected, switching regulator. Internal fan for cooling. Inputs: 120/240 VAC, 60/50 Hz, at 200 watts maximum. Outputs: +5 VDC at 15 amperes maximum and +12 VDC at 3 amperes maximum. Cabinet Dimensions (overall): 6½" H x 19" W x 17" D. (16.5 x 48.3 x 43.2 cm).



Rugged steel chassis and extra-thick backplane with heavy, solid connectors for added strength and years of reliable performance.

Compact power supply uses less power and generates less heat than conventional supplies. Over-voltage and overcurrent/short circuit protection, along with automatic power-up and power-down sequencing, give you long life operation of your system.

Card cage with backplane accommodates up to seven accessory cards in addition to LSI-11/2. The card cage swings up for easy access even while the H11A is operating. Accessory boards slide directly into card guides with all connectors supplied.

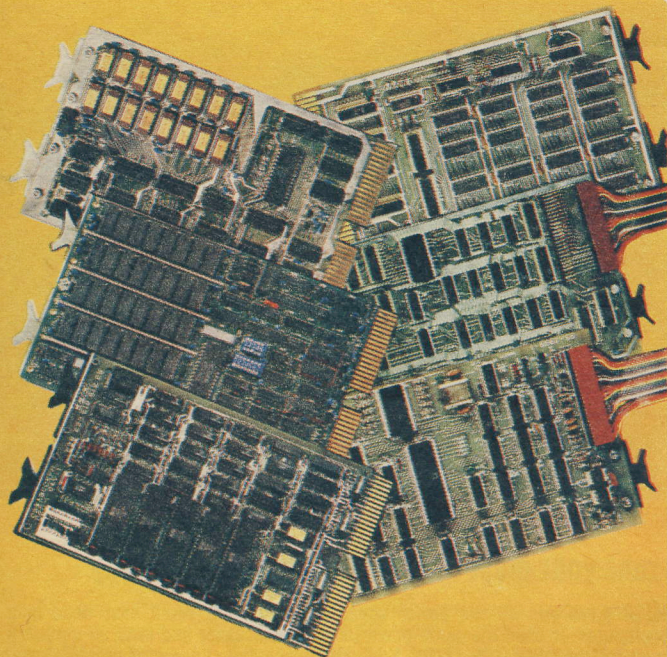
Fully Assembled and Tested KD11-HA Circuit Board

The "heart" of the new H11A is the 16-bit microcomputer module, the KD11-HA. It's only half the size of the LSI-11 (KD-11F), but gives you more flexibility when you configure your system.

There is no on-board memory so you can match your RAM/ROM requirements to your particular needs. And full compatibility with the LSI-11 family means you can "mix or match" by combining components from both LSI-11 and LSI-11/2 families.

Features of the KD11-HA include: PDP-11/34 instruction set, raw computer speed of 380 nS microcycle time, resident firmware debugging (ODT) and ASCII console routines, and single and double operand instructions. The LSI-11/2 gives you the power and flexibility you need for virtually ANY system configuration you want!

H11A accessories, memory boards and interfaces



Top to Bottom
16K Memory Board
32K Memory Board
KD11HA Microcomputer Board

Top to Bottom
4K Memory Board
Parallel Interface Board
Serial Interface Board

Look over the manuals before you buy. Complete manuals for H11A Computer, H11-1 4K Memory Board, H11-2 Parallel Interface, H11-5 Serial Interface, and H19 Terminal. Also software documentation. \$25 is deducted on H11A purchase.

HM-1100 Manual Set, Shpg. wt. 12 lbs. \$25.00

Big Savings on 4K Memory Expansion Module. Plugs into H11A or H11 backplane, adds 4K x 16-bit word capacity to memory. Uses high-reliability 1K x 4 static MOS RAM chips. Access time is less than 500 nS. Has decode circuitry for operation on 4K address boundaries. Handle for easy removal and insertion.

Kit H11-1, Shpg. wt. 2 lbs. Was \$225.00, Now 125.00

WH11-1, Assembled and Tested version of above.

Shpg. wt. 2 lbs. Was \$275.00, Now 150.00

Parallel Interface. General-purpose parallel interface featuring 16 diode-clamped latched data input lines, 16 latched output lines, 16-bit word or 8-bit byte data transfers. Has LSI-11 bus interface and control logic for interrupt processing and vectored addressing; control status registers compatible with PDP-11 software routines. Maximum data transfer rate, 90K words per second under program control. Maximum drive capability, 25-ft. cable. Also compatible with TTL or DTL logic devices. The H11-2 is required to use H11A or H11 with the H10 Paper Tape Reader/Punch.

Kit H11-2, Shpg. wt. 2 lbs. \$95.00

WH11-2, Assembled and Tested version of above. Shpg. wt. 1 lb. 150.00

Serial Interface: Universal asynchronous receiver/transmitter serial interface module for use between LSI-11 bus and serial devices such as the Heathkit H9 video terminal (page 40) or H36 DEC Writer II (page 41). Has optically isolated 20 mA current loop or EIA interfaces, selectable baud rates of 50 to 9600. Plugs into H11 backplane, fully compatible with PDP 11/03 and other LSI-11 backplane machines. With all mating connectors.

Kit H11-5, Shpg. wt. 2 lbs. 105.00

WH11-5, Assembled and Tested version of above. Shpg. wt. 1 lb. 150.00

Adapter Cable for H11-5. Provides EIA industry standard electrical and mechanical interface between H11-5 and other computer peripherals. For use with H11 or H11A computers. Fully assembled and tested.

WH11-51, 1 lb. 15.00

16K Memory Module. Provides 16K words dynamic MOS random access memory on a 5x8 1/2" board. Has on-board refresh, 570 nS cycle time and 250 nS access time. Fully assembled and tested. Max. memory capacity of H11A is 30K words.

WHA11-16, Shpg. wt. 2 lbs. 480.00

32K Memory Module. Provides 32K words dynamic MOS random access memory. Specifications same as WHA11-16. Fully assembled and tested. Max. memory capacity of H11A is 30K words.

WHA11-32, Shpg. wt. 2 lbs. 995.00

H11-6 Extended Arithmetic Chip: Adds powerful arithmetic instructions to the LSI-11, including fixed point multiply, divide and extended shifts plus full floating point add, subtract, multiply and divide. Helps minimize arithmetic sub-routines, speeds up program execution and development. Saves memory space too. 40-pin dual-inline package IC plugs into socket on H11A or H11 board.

H11-6, Shpg. wt. 1 lb. 159.00

Join DECUS, get more from your computer

H11A and WH11A Owners are eligible for membership in the Digital Equipment Computer User's Society (DECUS). This organization provides useful symposia, newsletters, program library and other useful information to help you get the most from your LSI-11 computer.

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HEATH COMPANY ("HEATH") for itself and on behalf of the licensors listed below (referred to individually or together as "LICENSOR") grants to CUSTOMER a non-transferable and non-exclusive sublicense to use the software programs (referred to individually or together as "SOFTWARE") listed under the respective LICENSOR under the terms and conditions stated in this Sublicense Grant.

This form **MUST** accompany your **SOFTWARE** order for:

Digital Equipment Corporation

- | | |
|---|--|
| <input type="checkbox"/> PTSP-11 Paper Tape System | <input type="checkbox"/> HT-11 Operating System with BASIC |
| <input type="checkbox"/> FOCAL/PTS Language Processor | <input type="checkbox"/> HT-11-1 FORTRAN |
| <input type="checkbox"/> BASIC/PTS Language Processor | |

Retail Sciences, Inc. (RSI) — for use ONLY with Heath Model H8

- | | |
|--|--|
| <input type="checkbox"/> H8-32 General Ledger | <input type="checkbox"/> H8-33 Payroll |
| <input type="checkbox"/> H8-30 Accounts Receivable | <input type="checkbox"/> H8-34 Inventory |
| <input type="checkbox"/> H8-31 Accounts Payable | |

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(Fill in blank)

(If CPU is purchased with this order, HEATH will fill in the blank.)

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HEATH COMPANY

By _____

CUSTOMER

By _____

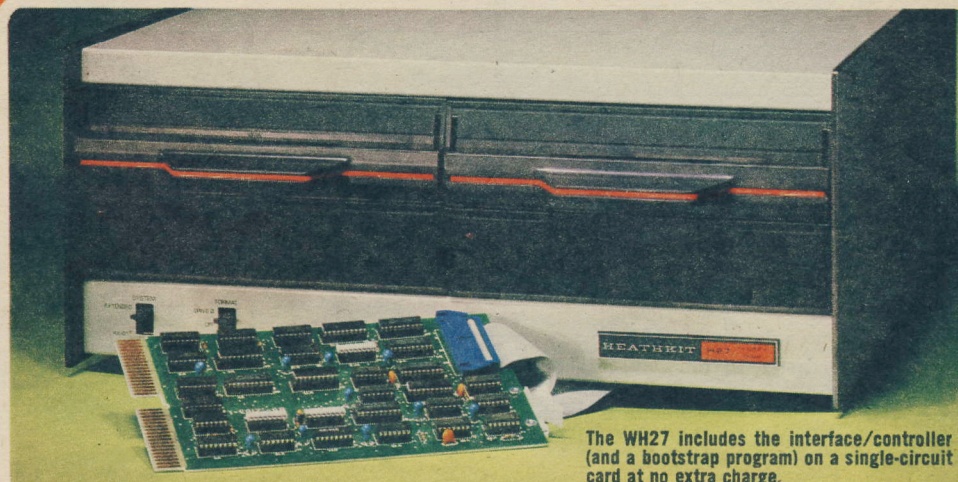
Customer's Signature

Dual-Drive Floppy Disk Storage for H11A Computer

Get fast access to programs and data with DEC compatible floppy and 512K total capacity

\$1895⁰⁰
Kit

Designed especially for the H11A Computer, the H27 Floppy System gives you dual-drive convenience: one drive for your operating system disk, one drive for your program disk. You get instant access to programs and data, and vast storage capacity — so your computer can serve you better.



Now enjoy instant access to programs and data

- Z80 Microprocessor-based Controller
- Full Compatibility with DEC RX01® (PDP-11/03)
- Head Step Time of 6 mS
- Dual-drive for a total capacity of 512K bytes

You get full compatibility with DEC® RXV11® (PDP-11/03 hardware and software) to give you the capability of using the hundreds of applications programs written by users of the DEC PDP-11/03, the world's most popular microcomputer. Performance-proven hardware and software base provides outstanding computing power. Dual-drive versatility with a total of 512K bytes of program and data storage space gives you enough room for most all general-purpose application needs. And the Z80 micro-controller in the WH27 provides average access time of 252 mS. You'll have virtually immediate access to all your files and programs. The H27, while maintaining full compatibility with the RX01 system, also gives you some special features you won't find on other RX01 systems:

1. A built-in self-test diagnostic on power-up that protects existing programs on your disks.
2. A mechanical interlock that prevents accidental media damage. (If floppy is not seated properly, the door will not close and the H27 will not operate.)
3. A write-protect function that protects important files and programs from being written over inadvertently.
4. A reformatting procedure that gives you the capability of writing in IBM 3740 standard format.

A single board interface/bootstrap uses one backplane slot leaving more space for memory and I/O devices. 8" H x 18" W x 20" D. For 100-135 or 200-270 V, 60 Hz AC.

The Operating System Software for the H27 (HT-11) described below requires at least 16K words of memory to use its full capabilities.

Kit H27, Shpg. wt. 93 lbs. **1895.00**
WH27 Dual-Drive Floppy Disk. Fully assembled and tested.
Shpg. wt. 69 lbs. Motor Freight. **2595.00**
H27-2, Pkg. of 5 Blank Disks. IBM 3740 format. Shpg. wt. 2 lbs. **25.00**

Operating Systems Software for the H27 gets your floppy system operating quickly and efficiently

The HT-11 Systems Software lets you immediately enjoy the full benefits of a rapid access floppy disk system.

The HT-11 Operating system is a single-user, single task system for interactive program development and on-line applications for the H11 or H11A computers. Features of the HT-11 include: easy operation with NO system generation procedure; contiguous file structure for easy file manipulation; device-independent I/O programming; real-time interrupt capabilities to handle synchronous, asynchronous and event-driven I/O; low-overhead monitor with memory swapping functions for most efficient use of memory space. HT-11 Programs include:

EDIT — a text editor to create/modify files for programs and documentation.

EXPAND, ASMBLE and CREP — utilities for macro-expansion, assembly language processing and cross-reference listings. Supports several pseudo-operators in addition to the entire PDP-11 instruction set. Also offers the convenience of linkable object modules with global symbols.

LINKER — converts object modules produced by the assembler or the FORTRAN compiler into a run time format. Services include relocation of code; linking of global references and creation of a runnable program file for use by the rest of the system. Allows any number of overlays in any number of memory areas, subject only to memory size. Also picks called modules automatically from system or user created libraries.

LIBRARIAN — creates and maintains libraries of subroutines for use by the linker.

PIP — the Peripheral Interchange Program is the file maintenance and transfer utility of the HT-11. It has commands for moving, copying and renaming files, plus other commonly used file operations.

ODT — On-line Debugging Technique aids in debugging user programs by providing commands to display and alter the state of a running program.

BASIC INTERPRETER — high-level conversational programming language. Offers access to the HT-11 I/O system and file structure through the BASIC language. Extensions to standard BASIC in this program include: variable-length strings, sequential files, "virtual memory" arrays, chaining and overlay capability, "desk calculator" mode for once-only calculations or to aid in debugging.

MISCELLANEOUS PROGRAMS — Dump program prints the contents of HT-11 files in any of several useful formats; SRCOM compares two files and prints a summary of their differences.

Minimum requirements for operation of the HT-11 include a Heathkit H11 or H11A computer with at least 16K words of main memory, a console terminal and interface, and a Heathkit floppy disk drive, controller and interface.

*HT-11 Operating System with BASIC. Shpg. wt. 12 lbs. **350.00**

FORTRAN for HT-11 System. Binary software features complete ANSI standard 1966 FORTRAN IV with extensions for increased speed. Some of the extensions include: relaxation of statement ordering, use of expressions nearly anywhere, direct access I/O, TYPE, ACCEPT and PRINT I/O statements, ENCODE and DECODE statements, END and ERR parameters, random number generator, IMPLICIT statement, more.

*HT-11-1, Shpg. wt. 9 lbs. **250.00**

*NOTE: The HT-11 Disk Operating System and HT-11-1 FORTRAN are compatible only with the Heath H27 or WH27 Floppy Disk Systems. To obtain this software, the Customer Software Sublicense Grant must be signed and you must include the make, model and serial number of your CPU in the blank provided on page 38.

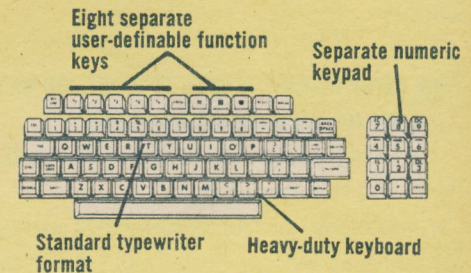
Introducing the Smart Video Terminal with professional keyboard and super-sharp display

NEW

\$675⁰⁰
Kit

- Z80 microprocessor-based for fast, efficient data handling
- Full professional keyboard in familiar typewriter format
- Extremely wide bandwidth monitor for easy-to-read images
- Prints the complete ASCII set including upper and lower case characters, plus special graphic symbols

Look at these professional features



(upper case), 5x9 dot matrix (lower case with descenders). **Keyboard:** 80 keys (60 alphanumeric, 12 function) plus a 12-key numeric pad. **Cursor:** Blinking, non-destructive underline. **Cursor Controls:** Up, down, left, right, home, CR, LF and tab. **Cursor Addressing:** relative and direct. **Tab:** standard 8-column tab. **Refresh Rate:** 60 Hz. **Erase Functions:** erase page, erase to end of line, erase to end of page. **Scroll:** auto or line/page freeze. **Bell:** audible alarm on receipt of control G. **Video:** normal and reverse using an escape sequence. **Interface:** EIA RS-232C at 110 to 19,200 baud. **Communications Mode:** full or half duplex. **Parity:** even, odd, stick or none. **Operating Temperature:** 0-40°C ambient. **Power Requirements:** 120/240 VAC, 60/50 Hz, 45 watts. **Dimensions:** 13" H x 17" W x 20" D. **Net Weight:** 45 lbs.

Powerful new Heathkit H19 microprocessor-based "Smart" Video Terminal

The H19 Video Terminal is a top-of-the-line general-purpose peripheral designed for use with the Heathkit H8 and H11A computers or with any EIA RS-232 Standard interface. Its powerful Z80 microprocessor makes it ideal for a variety of high-speed data handling tasks.

The familiar typewriter format enables you to start right in programming from the keyboard. The terminal's 32 separate functions can be controlled from keyboard or computer. A special 12-key numeric pad in calculator format lets you make fast, easy entry of arithmetic programs.

Baud rates of up to 19,200 are keyboard selectable for easy changes. Eight user-definable keys let you program your own special functions. The H19 prints the entire ASCII character set, including upper and lower case letters. The print format is 24 lines by 80 characters (with software controlled 25th line). Addressable blinking cursor lets you make correc-

tions or edit anywhere on the screen. Reverse video lets you emphasize any portion of the screen by reversing white on black.

The big 12" diagonal CRT has outstanding resolution for a bright, clear readout. The terminal also displays 33 different graphic characters that can be arranged for a variety of graphic displays and effects.

Compact structural foam cabinet withstands the rigors of daily use. A removable top gives you quick access to circuitry for easy servicing. Convection cooled power supply assures quiet, fan-free operation.

Kit H19, Shpg. wt. 54 lbs. 675.00

Factory Assembled and Tested Version of above.

WH19, Shpg. wt. 40 lbs. 995.00

H19 SPECIFICATIONS: CRT: 12" Diagonal, P4 phosphor. Display Size: 6½" high x 8½" wide. Character Size: 0.2" high x 0.1" wide (approx.). Character Set: 128 characters (95 ASCII and 33 graphic). Character Type: 5x7 dot matrix

H9 CRT Video Terminal and Keyboard

For use with the Heathkit H8 or H11A computers. Has long-form display of twelve 80-character lines, short form display of forty-eight 20-character lines in four columns. Has auto-scrolling, plot and erase modes, automatic line carryover, cursor and built-in speaker. The serial interface provides EIA-RS-232C levels, 20 mA current loop and TTL levels. Parallel interfacing includes TTL levels, 8 bits input, 8 bits output and 4 handshaking lines. With fully assembled PC control board. 12½" H x 15½" W x 20¾" D. For 120/240 VAC, 60/50 Hz.

Kit H9, Shpg. wt. 50 lbs. Was \$550, Now only 479.00

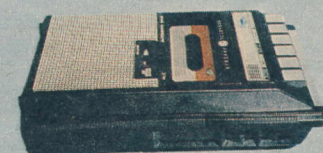
Adapter Cable for H9. Provides EIA industry standard electrical and mechanical interface between H9 and other devices. WH9-1, Shpg. wt. 1 lb. 15.00



Bright 12" CRT displays twelve 80-character lines
\$479⁰⁰

SAVE \$71⁰⁰
Was \$550.00

Assembled Cassette Recorder/Player

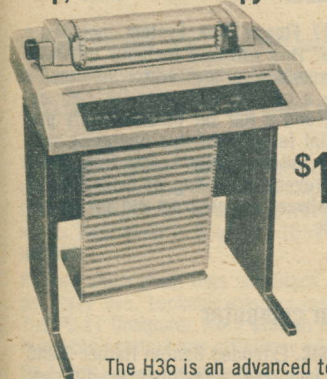


Ideal for data storage
\$60⁰⁰

Has volume and tone controls, pushbuttons for record, play, rewind, fast forward, stop and eject, built-in 3 digit counter with reset button. Factory wired, not a kit. ECP-3801, Shpg. wt. 4 lbs. 60.00
Heath recommended high output, low noise, premium grade audio recording tape. Pack of three 30-minute blank cassettes. ECP-3802, Shpg. wt. 1 lb. per pack 6.00

Printers: from low-cost matrix to letter quality font

Popular LA36 DEC Writer II Provides Sharp, Clear "Hard Copy" Printout



Sensational
Low Mail
Order Price!

\$1495⁰⁰

Fully
Assembled!
Prepaid
Shipment!

The H36 is an advanced technology teleprinter offering fast, reliable operation at one of the best price/performance ratios in the industry. It features a 7x7 dot matrix print head for crisp, clear character formation; switch selectable 10, 15 and 30 cps printing speeds; variable width forms handling from 3" to 14 7/8" wide; adjustable left and right hand tractors half or full duplex operation; ANSI-standard multi-key rollover and a typewriter-like keyboard. It prints 10 characters per inch horizontal spacing and 6 lines per inch vertical spacing. Compatible with all Heathkit Computers, as well as most others. With connecting cable and integral stand. Overall size, 33 1/4" H x 27 1/2" W x 24" D.

The H36 (LA36 DEC WRITER II) is shipped Motor Freight, prepaid to your nearest terminal in the Continental U.S.
H36 DEC Writer II, For 120 VAC, 60 Hz **1495.00**

H36-1 Fan-fold Paper for H36. Standard 14 7/8" x 11" white and green, single-part, lined paper. 3200 sheets per carton. H36-1, Shpg. wt. 47 lbs. **30.00**

H36-2 EIA Interface. Provides EIA RS232-C Interface for LA36, 9-ft. cable with 25-pin data-set type connector. H36-2, Shpg. wt. 1 lb. **65.00**

H36-3 Acoustic Coupler. Provides hookup to phone lines for time-sharing. Kit H36-3, 10 lbs. **250.00**
H36-4, Ribbon Accessory, Shpg. wt. 7 lbs. **15.00**

DEC is a registered trademark of Digital Equipment Corporation.

Compact, Versatile DEC Desktop Computer Teleprinter

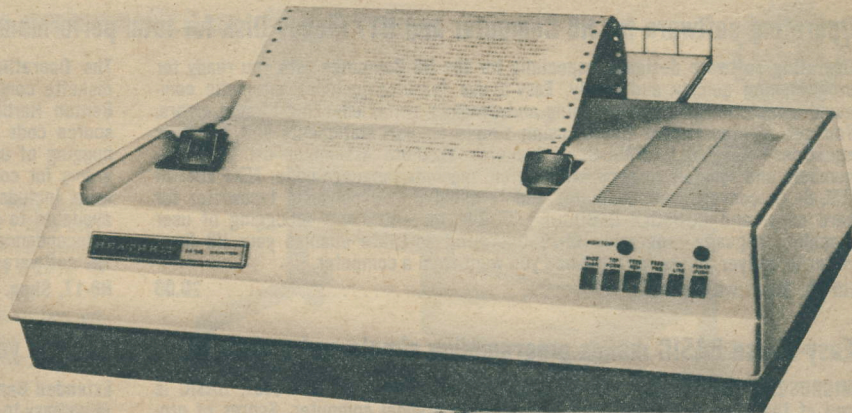


NEW

Comes complete with
cable, ribbon, and
roll paper holder.

Desktop teleprinter prints the full 128 character ASCII set with switch selectable 110 and 300 baud rates. Offers true 30 cps print speed, adjustable character widths, adjustable line spacing, clear printing thru a 9x7 dot matrix head. Designed like a standard typewriter for operator ease and convenience, the LA34 features standard sculptured keyboard, cartridge ribbon change, friction feed and more. Includes EIA RS232C standard interface, cable, ribbon and roll paper holder. 7" H x 22" W x 15 1/2" D. For 120 VAC, 60 Hz.

WH34 DEC Writer IV, Fully Assembled and Tested. Shpg. wt. 30 lbs. **1295.00**
WHA-34-1, 3 ribbon cartridges. Wt. 7 lbs. **30.00**
WHA-34-2, Tractor feed accessory. Wt. 9 lbs. **120.00**



H14 Line Printer gives you "hard copy" output of your programs as you execute them

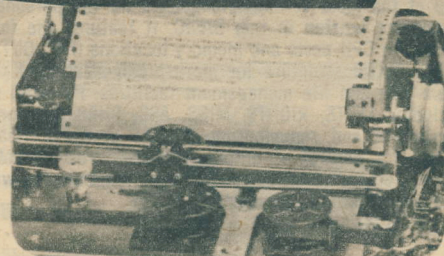
One of the lowest-cost line printers available — designed for use with the H8 and H11A computers — can also be used with most any other computer through a standard serial interface

The H14 is a versatile, low-cost microprocessor-controlled line printer designed to give you a "hard-copy" permanent printout of your computer programming. These copies provide added convenience in reading, editing, debugging and modifying your programs. It also provides handy printed copies of lists or other programming data you need for your hobby or business computer applications.

The H14 prints the standard 96-character ASCII set (upper and lower case) on a 5x7 dot matrix print head. The impact printer uses readily available 0.5" wide nylon inked ribbon on 2" diameter spools. Maximum instantaneous print speed is 165 characters per second with a selectable line length of 80, 96 or 132 characters. Line spacing is 6 lines per inch with 8 lines per inch software selectable. Baud rates are selectable from 110-4800. The adjustable width sprocket feed allows the use of edge-punched fanfold paper forms from 2.5" to 9.5" wide with a maximum thickness of 0.006".

The H14 connects to the H8 or H11A computer by the use of a standard (RS-232C) serial interface or 20 mA current loop. Handshaking is provided by a busy control signal. A 25-pin male EIA connector is provided for easy and convenient hookup. A convenient paper rack to keep printer output handy and organized is included.

The Heath H14 Line Printer is designed for use with the H8 and H11A, but it's ideal for use with any computer system where hard copy output is required and where the need is intermittent, rather than continuous, such as in small businesses or teaching applications. The low cost of the H14 belies the performance and versatility inherent in its microprocessor-based design. Top quality components and modern styling, along with ease of operation, make the H14 an outstanding value.



A rugged, two-part cabinet houses the H14. The ABS molded top can be easily removed to gain access to the mechanical and electronic components. Data is collected in a chrome-wire paper rack. Non-skid feet keep the H14 in place.

The H14 is designed for years of reliable trouble-free service. It is supplied in kit form or fully assembled and factory tested. 18 1/2" W x 4 1/2" H x 14 1/2" D. For 100-135, 200-270 VAC, 50-60 Hz. Requires H8-17, H8-18 or HC8-14 software for H8; HT-11 or H11-18 software for H11 or H11A.

Kit H14, Shpg. wt. 33 lbs. **625.00**

WH14, Assembled version of above.

Shpg. wt. 27 lbs. **895.00**

H14-1, 3200 sheets 9 1/2" x 11" Fan-Fold Paper for use with H14. 31 lbs. **30.00**

H14 SPECIFICATIONS: Printing Speed: Initial time per full line is approximately 1.75 seconds on 60 Hz power line and 2.1 seconds on 50 Hz power line. Print head temperature is monitored after each line and then limited by slowing the printing. The maximum throughput is determined by print density and ambient temperature. The maximum instantaneous printing rate is 165 c.p.s. Characters: 5 x 7 dot matrix, 96 character ASCII. Upper and lower case. Impact prints 0.11" high characters. Format: 6 or 8 lines per inch vertical. 10 characters/inch (80 columns). 12 characters/inch (96 columns). 16.5 characters/inch (132 columns). 10 and 16.5 characters/inch are both hardware and software selectable. 12 characters/inch are software selectable only. Forms Handling: Sprocket feed with adjustable widths, 2.5"/sec slew rate. Edge-punched fanfolded forms, 2.5" to 9.5" wide, maximum thickness 0.006". Form depth selectable from 0.021" to 1365". Ribbon System: Standard typewriter ribbon with automatic ribbon reversing mechanism. Panel Indicators: Power on/off light (LED). Printhead temperature monitor (LED). Operator Controls: Power on/off. On line/off line. Reverse feed. Forward feed. Top of form. Wide characters. Internal Controls: 50/60 Hz operation. 110/220 volt operation. Self test mode. Baud rate selection (110, 150, 300, 600, 1200, 2400 and 4800).

H8 Software for business and pleasure

Operating software for H8 Computer and H17 Floppy Disk for total performance from your computer system

Operating software designed especially for the H8 Computer gets you ready for programming quickly and easily. Easy-to-use features include: automatic command completion to simplify typing and dynamic syntax checking to spot errors. You get: Benton Harbor BASIC, using simple English statements and algebraic equations; ASSEMBLY (HASL-8), a two-pass absolute assembler using letters, numbers and symbols to generate efficient machine language code; TEXT EDITOR (TED-8) to convert your computer and terminal into a powerful typewriter for hard copy; and CONSOLE DEBUGGER (BUG-8) for entry and debugging of user machine language programs. H8-18 Operating Software enables your H8 Computer to deliver all the performance you want from a computer.

H8-18, Shpg. wt. 11 lbs.20.00

The Operating Systems Software for the H17 Floppy Disk System includes a diskette containing the standard H8 software. This software includes extended Benton Harbor BASIC; a 2-pass absolute assembler; a text editor to prepare source code for BASIC and other languages; a console debugger for easy debugging of user machine language programs; and a full set of disk utility programs for convenient file manipulation. Special features of this operating software include Dynamic File Allocation which automatically keeps free space available to permit unlimited file size and prevent squeezing of disks. Device independence permits direct communication between any program and any device. The software is supplied on a standard diskette.

H8-17, Shpg. wt. 14 lbs.100.00

Easy-to-use BASIC makes programming simple and understandable, enables you to make more use of your computer

MICROSOFT™ BASIC: the most popular computer language. Microsoft BASIC is one of the most versatile languages for the personal computer. Scores of programs are written in this BASIC. It features the following capabilities: Direct access to CPU ports and memory locations (INP, OUT, PEEK, POKE); IF — THEN — ELSE control structure for more highly-structured programming; Powerful program edit and file management facilities; Powerful string processing functions including LEFTS, RIGHTS, MIDS, ASC, CHR\$ and concatenation; Automatic line numbering and renumbering; Double precision floating point number; PRINT USING for control of output formats; Error control via ON ERROR command; Variety of mathematical and logical functions as well. Requires H8-17 (above) and a minimum of 32K memory.

H8-21, Shpg. wt. 3 lbs.100.00

Extended Benton Harbor BASIC: super-fast BASIC. Extended Benton Harbor BASIC is an easy-to-learn, easy-to-use conversational language. It features two different types of data: numeric data with over six digits of accuracy and Boolean values which permit logical operations. It also features free format programs, enhanced expression and conditional statement facilities. It provides even faster operation and includes character strings, additional convenience commands and math functions, dynamic storage allocation, access to real time clock, keyboard interrupt processing, expanded error messages and recovery ability, LED display control and key pad support. Requires a minimum of 12K memory to run this BASIC. 16K is preferred for full use. Supports WH-14 line printer and WH8-4 Interface Board. Supplied in 1200 baud audio cassette format.

H8-14, Shpg. wt. 2 lbs.20.00

New business accounting software reduces your clerical costs and gives you immediate access to your records

This total business accounting system, designed for the H8 Computer and H17 Floppy Disk System, can save you money in lots of ways. It can significantly reduce your clerical costs, save filing space and provide faster, more efficient data retrieval. Each package can run independent of the others and each is supplied to you on standard H17 diskettes. To run these packages you require MICROSOFT™ BASIC (described above) a dual-drive H17 Floppy Disk System (see page 36), and an H19 Video Terminal (see page 40).

The business accounting software described here will be available for delivery late 1979.

The GENERAL LEDGER package is the heart of the total accounting system. It keeps a detailed record of all financial transactions and generates the balance sheet and income statement to provide timely information on the financial status of your company. Produces departmental and summary income statements showing current and year-to-date amounts, percentages by category and, optionally, comparative data with last year's ledger. Accepts data from all other software systems described below. 150 accounts. 450 transactions.

H8-32, Shpg. wt. 5 lbs.350.00

The ACCOUNTS RECEIVABLE package is a complete invoice and monthly statement generating package that keeps track of the current and aged accounts receivable. The current status of any account is instantly available. Permits sales or dun messages to be printed on statements, facilitates posting of payments and justifies

amounts due. Debits and Credits can be passed automatically to the General Ledger software above. 250 customers, 750 transactions.

H8-30, Shpg. wt. 5 lbs.350.00

The ACCOUNTS PAYABLE package keeps track of current and aged accounts payable and incorporates a check writing feature. Maintains complete vendor file with information on purchase order and discount items as well as active account status. Vouchers regular monthly notes and payments, summarizes year-to-date purchases, prepares checks, compiles management reports. Passes debits and credits automatically to General Ledger. 220 vendors, 450 transactions.

H8-31, Shpg. wt. 5 lbs.350.00

The PAYROLL package prepares the payroll for hourly, salaried and commissioned employees while accumulating the necessary information for tax reporting. Generates the monthly, quarterly and annual returns to be filed with local, state and federal governments, prepares employee's W2 plus withholding for up to 50 states and 20 cities. Can automatically write payroll checks. 225 employees.

H8-33, Shpg. wt. 5 lbs.350.00

The INVENTORY system package helps you achieve effective inventory control. Provides a data base for complete inventory records to be kept on-line, permits custom structuring of files and reports, lists inventory balance and breakdown of events leading to balance, displays inventory status of any item, provides stock counting.

H8-34, Shpg. wt. 5 lbs.350.00

Have fun with exciting H8 computer games

BIORHYTHM

Plot your body's biorhythm. An accurate biorhythm chart helps you see the patterns to your physical, emotional and intellectual condition. You can predict days of high-performance and low-performance, know when to take on the world and when to stay in bed. Runs under extended BASIC and requires 16K RAM.

PA-82, Shpg. wt. 1 lb.10.00

SPACE WAR

This is perhaps the most popular computer game available. It allows you to guide,

control and command the Starship Enterprise in its travels through the galaxy, fighting Klingons and solving problems. A truly challenging computer game. Requires 24K RAM.

PA-83, 1 lb.10.00

GAME SET #1

This software package lets you play 8 popular computer games. These games include Craps, Orbit, Tic Tac Toe, Nim, Hexapawn, Hangman, Hamrabi, and Derby. 8K RAM or more is required. These games will provide hours of entertainment for you and your family.

PA-84, 1 lb.10.00

NOTE: Above applications software is in 1200 baud audio cassette form.

Accessories for more efficient use of your computer

New computer work station organizes your system for maximum efficiency

- A comfortable, more efficient place to work
- Easy access to all system components
- Attractive addition to any office decor

\$295⁰⁰

The new Computer Work Station organizes your computer system for easy access and reduced space. Walnut formica top is 60" x 30" and places I/O's at a comfortable height for seated operators. Lower shelving holds horizontal components. First shelf is 8 1/4" H x 15 1/4" W x 20" D. Second shelf is 7" H x 15 1/4" W x 20" D.

Rugged black steel legs and black sheet metal shelving is designed to last under daily use. Lockable casters make it easy to roll desk from place to place. The PD-11 Computer Work Station is a handsome addition to any office. It maximizes the comfort and efficiency of your operator.

PD-11, Shpg. wt. 95 lbs. Motor Freight FOB El Segundo, CA **295.00**



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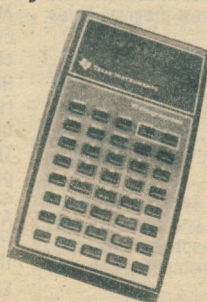
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8080 Software Gourmet Guide and Cookbook. Interesting new ideas you can cook up on your 8080. EDP-228	10.95
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Getting Acquainted with Microcomputers. Basic guide to microcomputers and what they can do for you. EDP-275	8.95
FORTRAN IV. High level programming. EDP-279	5.95

See page 53 for book-ordering information.

Multi-function calculator for computer hobbyist

Designed especially for the computer hobbyist, this Texas Instruments Programmer/Calculator features fast conversions between octal, decimal, and hexadecimal number systems; logic operations (AND, OR EXCLUSIVE OR, SHIFT); versatile 3-key independent memory and 15 levels of parentheses for complex problems; convenient constant mode to simplify repetitive calculations; 8-digit LED display; rechargeable battery and AC adapter/charger. It's lightweight and ideal for any computer application. Fully assembled and factory tested. 5 1/2" H x 3" W x 1 1/4" D.

PC-11, Shpg. wt. 2 lbs. **59.95**



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- Connects computers via phone line
- Up to 30 cps

CAT



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Novation features selectable original and answer modes. LED display of unit status, and special acoustic self-testing. Compact. Powerful. Plugs directly into wall sockets. Data exchange occurs at any speed up to 30 characters per second, via standard EIA RS-232C. The ideal computer communications link. Many practical and fun applications. Fully assembled.

WH13, Shpg. wt. 3 lbs. **195.00**

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The Heath Users' Group puts you in contact with other Heath computer owners and keeps you up to date on Heath products. There's an informative magazine, a complete program library and exchange, new product information and hardware/software ideas. Membership in HUG is a useful way to get the maximum benefit from your Heathkit Computer System. Here's what you get:

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- Access to the software library which now contains over 400 user-submitted H8 programs including special utility routines, computer aided instruction, financial packages, Amateur Radio applications programs and games. These programs are described in the software catalog which is a part of the initial HUG membership package.

Membership application information and details are included with your Heath computer, or by writing HUG Membership, Hilltop Rd., St. Joseph, Michigan 49085. H11 owners are also eligible for membership in DECUS, see page 38 for details.

One of the biggest advantages you have in owning a Heathkit Computer System is membership in HUG — a worldwide organization.