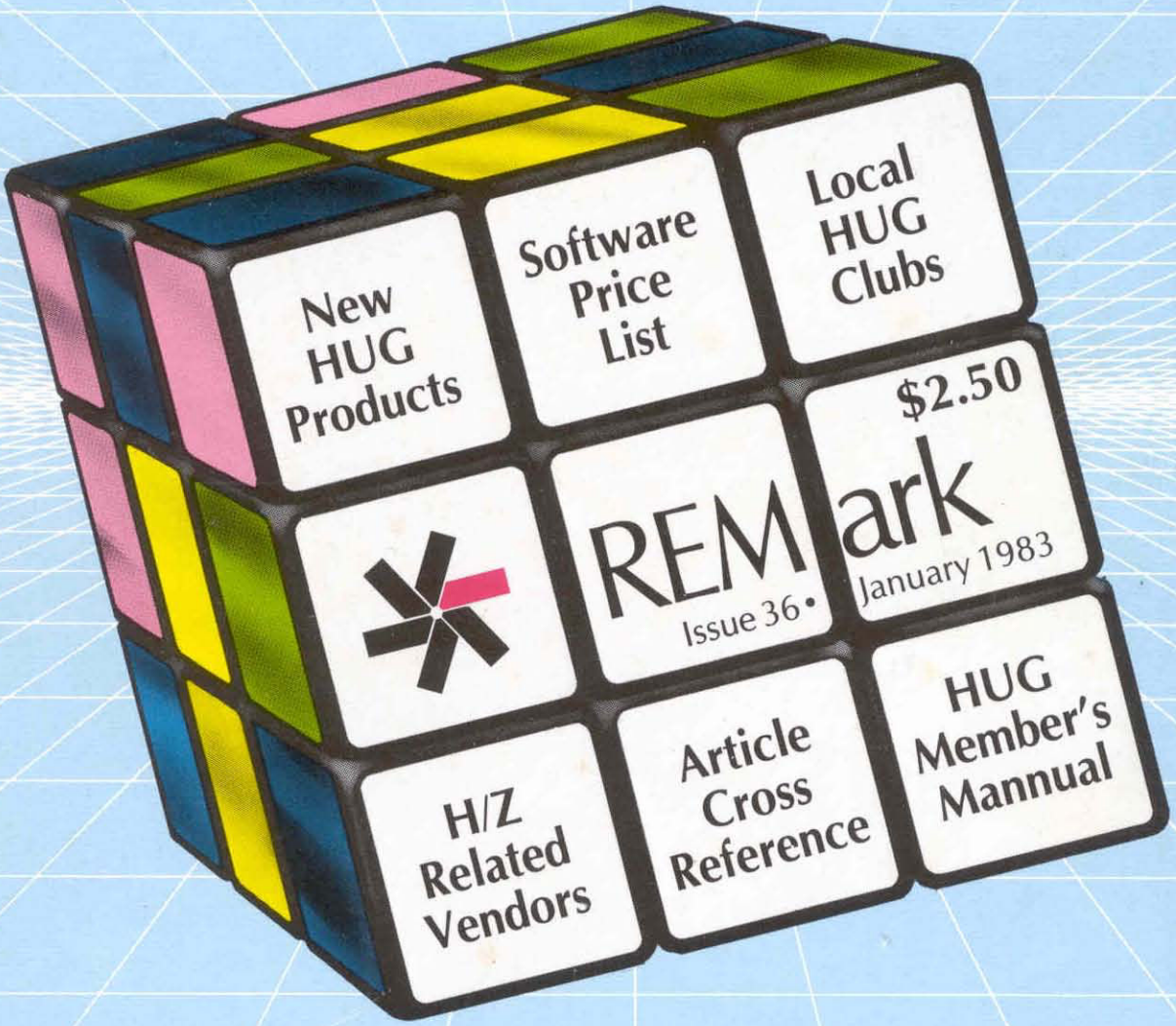
Heath Users' Group



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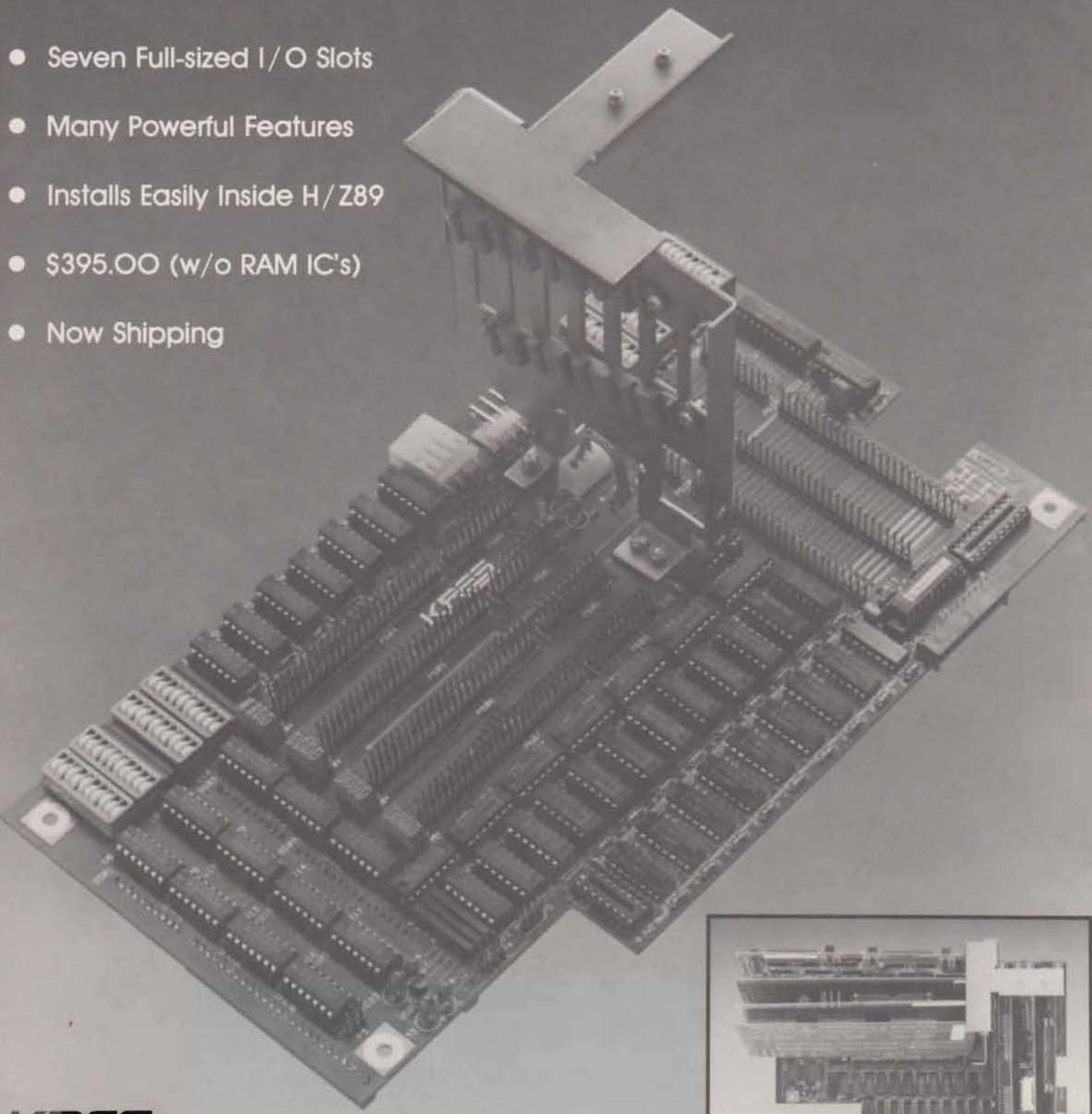

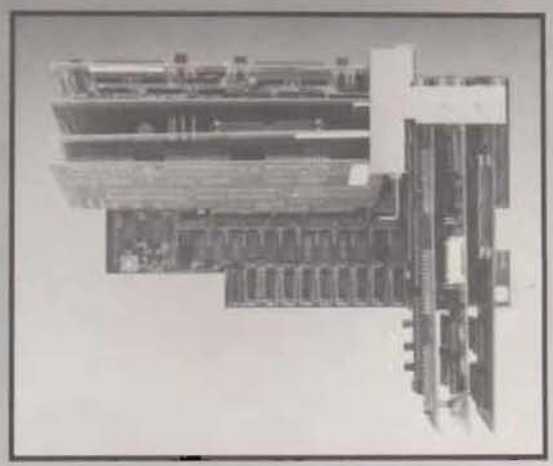

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REMark Editor . . . . . Walt Gillespie
Assistant Editor . . . . . Nancy Strunk

REMark is a HUG membership magazine published 12 times yearly. A subscription cannot be purchased sparately without membership. The following rates apply.

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Initial	$18	$20*	$28*
Renewal	$15	$17*	$22*

*U.S. Funds.

Membership in England, France, Germany, Belgium, Holland, Sweden and Switzerland is acquired through the local distributor at the prevailing rate.

Limited back issues are availble at $2.50 plus 10% handling and shipping. Check HUG Product List for availability of bound volumes of past issues. Requests for magazines mailed to foreign countries should specify mailing method and appropriate added cost.

Send Payment to: Heath Users' Group
Hilltop Road
St. Joseph, MI 49085

Although it is a policy to check material placed in REMark for accuracy, HUG offers no warranty, either expressed or implied, and is not responsible for any losses due to the use of any material in this magazine.

Articles submitted by users and published in REMark, which describe hardware modifications, are not supported by Heathkit Electronic Centers or Heath Technical Consultation.

HUG is provided as a service to its members for the purpose of fostering the exchange of ideas to enhance their usage of Heath equipment. As such, little or no evaluation of the programs or products advertised in REMark, the Software Catalog or other HUG publications is performed by Heath Company, in general and HUG in particular. The prospective user is hereby put on notice that the programs may contain faults the consequence of which Heath Company in general and HUG in particular cannot be held responsible. The prospective user is, by virtue of obtaining and using these programs, assuming full risk for all consequences.

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Issue 36 • January 1983

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ON THE COVER: Artwork by Walt Gillespie, REMark Editor

Walt Gillespie
REMark Editor

Just what is the Heath Users' Group all about?

I suppose this is a question asked by just about every new owner of a Heath or Zenith computer. It's also a question that even old time members and HUG staff members need to ask themselves from time to time. It is easy to get caught-up in the complexity of the day to day world of computers and to lose perspective.

The concept of any "special interest group" (and HUG is a special interest group) is to promote that interest throughout the membership and to those outside the group who might be interested in joining. Like any organization, HUG has some who are more vocal than others, those who are far more advanced in knowledge and technique, some who are more interested in 'hardware' (equipment), or 'software' (programs). Each of these areas can be broken down still further in special interests. No matter how far down you take the microscope on special interest the one thing that still holds true at all levels is the quest for more knowledge. The old timer as well as the new comer are all looking for more knowledge as how to best utilize the computer no matter how special their interest may be on the final application of that knowledge.

Bob Ellerton
HUG Manager

The spreading of as much knowledge about our chosen computer, the sharing of our own personal experiences can help to stimulate others to greater heights. Just think if the concept of micro-computers had been kept to just a few individuals, a whole new industry would never have gotten started or blossomed as it has.

There are many ways to help spread members ideas and this knowledge. With a circulation of over 15,000 per month REMark magazine is one good way. The HUG Library is still another excellent way of spreading your knowledge to others. Through both these channels, detailed descriptions and examples can reach thousands of other computer enthusiasts.

Through REMark magazine we try to provide you with detailed instructions, example programs, interesting applications, plus hardware and software modifications to better utilize your computer system. The majority of these materials are donated by HUG members to be shared with all the other members.

Pat Swayne
Software Engineer

In the HUG Program Library are literally hundreds of programs, again, mostly donated by fellow members. These programs are sold to the general membership at nominal prices to help offset the cost of duplication and HUG national costs. Some programs in the library pay a royalty to the author and still others were developed here at the Heath Users' Group offices. The range of these programs defies the boundries of this publication to explain and thus the HUG Catalog has been published.

Yet another service of HUG, the HUG Software Catalog, serves to explain in detail each program that HUG has released up till December 1982. This indepth explanation of each HUG Library program is supplemented monthly in REMark Magazine with detailed abstracts of new product releases.

Your local Heath Users' Group is yet another way to help spread the knowledge. These clubs are springing up all over the country and around the world, with the members' main goal being that of helping each other. I have found that in helping others to better understand a particular aspect of computers or programming I have in fact helped myself to a better understanding. That's the concept that local HUG's

operate with. If there isn't a local HUG in your area, possibly now is the time to start one; the interest in computers is growing daily. Check with your local schools. Many are giving computer courses under Adult Education Programs. Also check local colleges and even newspapers. Yes, an advertisement placed in a local newspaper or shoppers guide might bring out others who have also been looking and may spark new lasting freindships that will grow over the years. A visit to other computer clubs might have you finding a fellow Heath/Zenith owner who is but one in a group of non-H/Z owners. REMark will publish your name stating that you would like to start a local group, and anyone interested may contact you.

Terry Jensen
Software Developer

It's exactly these steps that I used to try and find others who were interested in the H/Z computers that led to a good and lasting friendship with Al Jacobs of Western Michigan University in Kalamazoo. Our co-founding in 1980 of the Southwest Michigan Heath Users' Group now boasts over 50 members. It's from, and through, these fellow SMHUGgers that my interests and knowledge grew and ultimately led to my position here with HUG National. They're out there, go looking, you'll find them very eager to share their ideas, hopes and most willing to ask for your help also.

In August of 1981, the Heath Users' Group held what looks to become its 'first', of many National HUG Conferences in Chicago. This highly successful gathering of over 1000 HUGgies from mainly around this country, but some also from foreign lands, brought together many different special interests and helped put faces to well known names. As I write these words the ground work is being laid for yet another National HUG Conference which should prove to be both bigger and better, if that's possible. With the HUG membership family growing, the possibilities can stretch the imagination almost to its limit. The physical gathering of members from around the country can provide the opportunity for one-on-one meetings without the hindrance or limitations that the postal or phone systems might place on the exchange of imaginative ideas.

Nancy Strunk
Assistant Editor

The HUG Bulletin Board on the MicroNet System is yet another service provided and maintained by the Heath Users' Group for the exchange of ideas and information between its members. As one of the largest, most used BB's, the Heath Users' Group Bulletin Board provides a low cost means for members to exchange messages, programs and even make direct contact (using the Communications Mode) with other HUG members.

All of these things are what makes up the Heath Users' Group. And, this is only the beginning. The fast growth over the past few years has shown that the owners of both Heath and Zenith computers are not only interested in gaining new knowledge on their systems but in sharing that knowledge with others.

There are many new areas to be explored, new challenges to meet, much, much more to be learned. That's what computers are all about. One important area of computers, at least as far as Heath/Zenith Users are concerned, that needs more indepth exploring is that of CAI (Computer Aided Instruction). We have the tools, which are our computers, the operating systems, the languages and our minds to do the job. Using our computers to teach others how to best use and program their computers can be a very rewarding experience.

We hope that in the months to follow we will be able to help you gain a better knowledge of your system. There are many new and exciting things that will be presented through both REMark and the HUG Library of Programs for your enjoyment and learning brought to you by your fellow HUG members and the HUG staff. This, then, is what the Heath Users' Group is all about!!!

Margaret Bacon
HUG Secretary

Walt Gillespie
REMark Editor

Heath Users' Group 1983

Welcome to the Heath Users' Group!

It is our pleasure to present the following information to fellow members and the new comers to the National Heath Users' Group. The January Issue of REMark from this date forward will provide you with compiled material especially designed to update your records with a cross-reference index to all previous articles found in REMark, the HUG Software Library abstracts as presented in the previous year, a listing of companies that provide Heath/Zenith related hardware and software products, a listing of Local Heath Users' Groups, related publications information and a variety of small but useful tips for contacting knowledgeable individuals who are familiar with Heath/Zenith computer equipment.

For the New Member:

This Issue of REMark will be your first contact with the Heath Users' Group. The material contained herein represents a good look at the number of people, clubs and organizations supporting the Heath/Zenith Computer Product Line. Further, HUG has selected that information which you may find most helpful to get you familiar with our organization. This Issue, along with the Software Catalog and following issues of REMark provided as a part of your membership, will help you explore the exciting and powerful world of micro-computing.

For the "oldtimer":

The material contained in this Issue of REMark will help previous members stay current with new HUG policies, available HUG software, additional Local HUG Clubs and the new support activities from companies that may be of particular interest. The HUG Software Catalog, as well as the January Issue of REMark will now become a permanent part of the HUG membership package provided to any user joining the HUG community.

General Heath Users' Group Information

Membership Eligibility

A bona fide interest in Heath/Zenith computer related products is all that is necessary for membership eligibility. You need not be an owner of a Heath/Zenith product to join. Membership is open to any individual or company representative.

As a member, you will receive:

- A subscription to REMark, the user magazine
- A HUG binder
- A personal identification card
- Software Catalog
- Access to the users' group program library
- Access to the HUG Bulletin Board via MicroNET

These benefits are described in the following paragraphs.

HUG Membership Rates

The following rate schedule applies as of January, 1983 for membership:

Type of Membership	U.S. Domestic	Canada and Mexico	International
Initial	$18.00	$20.00 *	$28.00 *
Renewal	$15.00	$17.00 *	$22.00 *

*Must be U.S. funds

The initial membership package includes the HUG binder, the HUG Software Catalog, a Heath Parts Order Form and a copy of the January, 1983 Issue of REMark.

Identification Card

When your membership is accepted, a computer generated ID card is issued. The ID card is sent to you separately via first class mail. This card identifies you as a member of the Heath Users' Group. It contains a unique number which can be verified for membership. It is **not** a credit card and can not be used for one in any way. **(Allow several weeks for the processing and delivery of your personal ID card.)**

If you lose your card, you may request a new one by writing directly to the HUG Secretary. Simply provide a statement saying that your card was lost or stolen, sign the statement, and a new card will be issued with a new number.

Publications

The official HUG magazine, called REMark, is sent to each member 12 times a year. The January Issue is designed as a cross-reference to the previous issues and contains valuable information that you may need. A subscription to REMark is included with membership. The magazine is sent via bulk mail, as are most other organization's publications. Bulk mailings means your REMark **will not be forwarded should you move.** Therefore, please notify the HUG Secretary of your address change and the date which you wish the change to take effect.

We encourage each member to use REMark to communicate with other users. You can do this by submitting articles for publication. We strongly encourage any comments which you feel would benefit other users. We welcome your letters, hardware descriptions, software enhancements, applications programs and other material you may wish to share.

How To Submit Articles

If you feel that you have a unique program or hardware application, sit down and write us about it. Did you write a program for the bowling team, or the softball team, maybe a special business or farm program. Possibly you have interfaced your computer to some special machine to gather data for

later evaluation. I'm sure that many of our members would like to hear about it, it might give them some new ideas of their own.

Six to ten pages of double spaced typewriter manuscript will suffice. Be kind to those who might not quite understand your application and explain your special programming tricks with a little extra detail. It's these "tricks" that help others to comprehend programming techniques and to be better programmers themselves.

Please submit all feature materials on disk, 5 1/4 or 8", as unformatted raw text files, (no printout codes, they have to be removed here). Also include a hard copy listing, which can be formatted if you wish. Also please include with your materials a small clear portrait photo of yourself suitable for printing and a single paragraph describing your interests, background, etc.

If you have a major article accepted and printed in REMark, you will receive a one year free membership in HUG and your choice of any single piece of software available through the Heathkit Catalog, FREE. As always, smaller articles, Buggin' HUG letters and Questions for the Q & A series are most welcome but do not qualify for the freebees.

What constitutes a major article? Well, your article should consist of no less than 2000 words and be written about software or hardware used with Heath/Zenith micro-computers. Submissions that are written with minimal editing needed and are of general interest to HUG members will be considered. Again, please submit these articles on disk as text files.

"Article of the Year" AWARD!

Starting in the December 1983 issue of REMark and each December after we will include a voting card on which members may indicate which article published during that calendar year they think was the best. On tabulating this vote the author of the article voted the best by the HUG membership will be awarded a Heathkit Weather Station (ID-4001) FREE.

Should you have questions about an article you would like to submit, please feel free to contact the REMark Editor for any comments or suggestions.

Once you have completed your article, send it directly to:

The Heath Users' Group
Attention: REMark Editor
Hilltop Road
St. Joseph, Michigan 49085

How to Submit Programs to the Heath Users' Group

After you have developed a program and before you submit it, test it thoroughly. Be reasonably sure that it is error free.

Three methods of submitting programs to the Heath Users' Group are available for your selection based on your judgement of the finished program and its value to other members. Your program may be contributed under the following catagories:

- "Public Domain" — free distribution to the membership via bulletin boards or other means available to HUG with the possibility of inclusion into the HUG Software Library.
- HUG Software Library — for development by HUG as a finished software product to be offered for sale to other individuals as source for HUG income to further develop the users' group.
- Royalty Software — author supported, finished, reliable software with a signed contract paying the author for availability of the program to the users of Heath/Zenith computer products.

Submit your program by **completely** filling out the submittal form. Send your program on disk (printed for tape users). Include with your submittal a complete listing of the contents for our records. Submit a sample "run" of your program from a hard copy terminal when possible. If one is not available, hand copy as much as you feel necessary to give us an idea of how the program is supposed to perform. Be sure to sign and date the completed submittal form and check the catagory that you feel is appropriate for your program.

Once we receive your program, you will be notified that your program is now ready for review. On the completion of the review, we will contact you with the status of your program. Remember, the submitter is expected to handle any programming problems.

When your finished program is announced in REMark as an official product of the Heath Users' Group Software Library, you will receive:

- A one year extension of your membership
- A one year membership if you are not already a member
- A free copy of the next release of HUG Software
- Your choice of any single currently available Heath/Zenith software product

Package your program along with your disk or listing in a suitable container and send it to:

The Heath Users' Group
Attention: Software Coordinator
Hilltop Road
Saint Joseph, Michigan 49085

Ordering Information

HUG Software Products are ordered as a standard Heath Company Part. The order can be mailed on a Heath Company Order Form or on a separate sheet of paper. When ordering, along with your payment, include the following:

1. the part number (p/n), quantity, and description of the product to be ordered,
2. your name, address and HUG ID number, and
3. 10% handling charges, up to a maximum of $3.50.

Send the order to:

Heath Company Parts Department
Hilltop Road
St. Joseph, MI 49085

For VISA and MasterCard orders; telephone Heath Company Parts Department at (616) 982-3571. Have the part number (p/n), description and quantity ready for quick processing.

NOTE: HUG currently offers two formats for CP/M 5 1/4 inch disks:

- Single sided, single density, hard-sectored
- Single sided, single density, soft-sectored

To order soft-sectored, add a "-37" to the part number (p/n) of the product; e.g. "885-1207-37". Your order is processed by part number (p/n) not by description, so please be sure to include the "-37" when ordering soft-sectored. This includes the new 885-3000 (Z-100 series) numbers; e.g. "885-3003-37".

The Heath Company Parts Department is NOT capable of answering questions regarding software. For additional information concerning any of the software products, contact the Heath Users' Group (616) 982-3463.

If you should have a problem with a HUG product, please call HUG to determine if you have a bad disk or another problem before you return the product for replacement. A call may save you alot of time and money. If it is determined that your disk requires replacement, return the original disk along with the invoice directly to the Heath Users' Group.

Change of Address

If you change your address, be sure to let us know. REMark is sent via bulk mail and is not forwarded. It takes approximately six weeks for our system to cycle through. Therefore, take the delay into consideration along with mail delays when notifying us.

Use the form in the back of this issue or a suitable copy to change your address. Send it directly to:

The Heath Users' Group
Attention: HUG Secretary
Hilltop Road
Saint Joseph, Michigan 49085

HUG Bulletin Board via MicroNET

MicroNET is a time-share system of CompuServe Inc., which most anyone, located near a major city, can access through a telephone link. The National HUG Bulletin Board on MicroNET provides a way of sharing ideas, questions, and information with over a thousand other members, by simply dialing a number and leaving a message.

MicroNET membership applications are available through the HUG library or through any Heathkit store. This membership is separate from the HUG membership application. The package consists of a User ID, Password, and limited documentation. For further information contact your local Heathkit store, the Heath User' Group, or CompuServe, 5000 Arlington Centre Blvd., Columbus OH 43220 (614) 457-8600.

Special Interest and Local HUG Groups

One of the best sources for information and help is the Local Heath Users' Groups which are becoming a major voice for the Heath/Zenith user community. Many of the local groups can be contacted through your nearest Heathkit Electronics Centers (HEC). These stores can usually provide you the necessary contact information. A listing of known Local HUGs is published twice a year with new additions appearing under the catagory of "Local HUG News" found in most issues of REMark.

Heath/Zenith Related Publications

Of major importance to the new user is the availability of additional information for the Heath/Zenith computer products. Many of the Local HUGs publish newsletters on a regular basis. Using the Local HUG Club listing appearing in this issue, the user can select those clubs that may produce additional documentation.

Three excellent independent publications are listed here:

- BUSS Newsletter
  Editor: Charles Floto
  Phone: 202-544-0900
  Rates: 12 issues $20.00 ($25.00 overseas)
  18 issues $26.00 ($35.00 overseas)
  24 issues $32.00 ($45.00 overseas)
  30 issues $38.00 ($55.00 overseas)
  Address: 716 E Street SE
  Washington, DC 20003

- H-SCOOP
  Editor: Henry Fale
  Phone: 414-452-4172
  Rates: $20.00 per year ($27.00 overseas)
  Address: 2918 South 7th Street
  Sheboygan, WI 53081

- Sextant
  Editor: Charles Floto
  Phone: 202-544-0900
  Rates: 4 issues $ 9.97 ($14.00 overseas)
  8 issues $19.94
  Address: 716 E Street SE
  Washington, DC 20003

CHARGE.....IT!

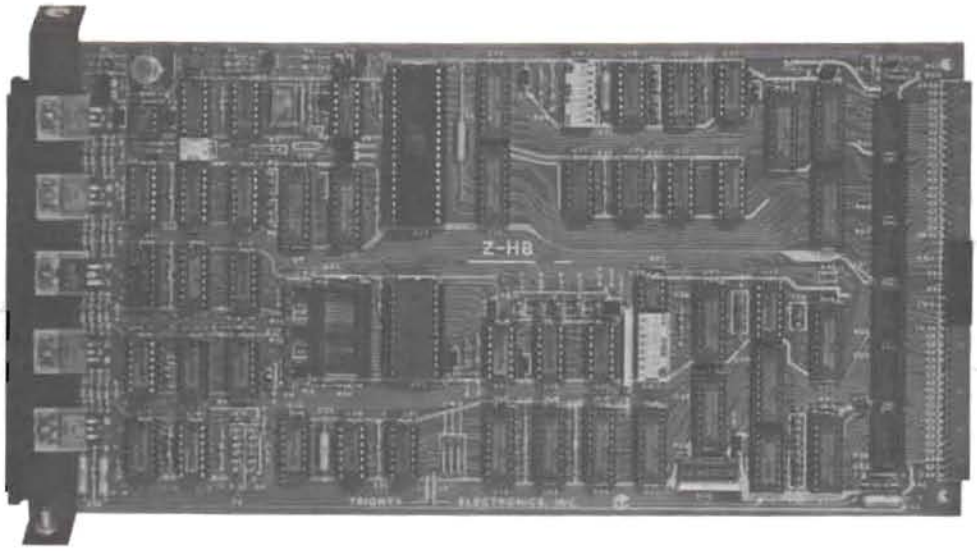
As many of you already are aware, Heath Company agreed long ago to handle the Heath Users' Group software products as we are simply too small to maintain the appropriate HUG inventory levels within our limited office space. Recently, Heath implemented a MasterCard program allowing customers to purchase Heath parts using Visa or their MasterCard. So, why not HUG?

You guessed it! Many of our users have requested the ability to order HUG products by phone using their Visa or MasterCard. With a few minor changes, HUG has now been included in the Heath program to add this increased convenience for our members. You may order any HUG product or products by phoning the Heath Company Parts Department at (616) 982-3571 ($10.00 minimum order, please). Be sure to have the HUG part number (885-) and product description available along with your HUG ID to ensure prompt delivery of the product you desire.

We wish to thank the Heath Parts Department staff for including the Heath Users' Group in their improved program for parts order entry.

Z80 CPU BOARD for the H8*

* H8 is a Registered Trademark of the Heath Company



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Heath Users' Group
PROGRAM SUBMITTAL and AGREEMENT FORM

PROGRAMMER: _____

ADDRESS: _____

COMPANY (if any): _____

TELEPHONE: _____

PROGRAM NAME: _____

Please describe your program in sufficient detail so that other users may understand its intended purpose and use. The following outline is suggested as a guide to help you in preparing an abstract of your program(s), should your program(s) be selected as a future release of the HUG Software Library. Your outline of the abstract should be prepared and submitted on an attached sheet of paper with this Submittal Form. Be sure to fill out all information requested on this form.

Suggested OUTLINE:

Introduction:
Requirements:
  Software
  Hardware
List of the Programs:
Program Content:
  Include **Special Notes**
Comments:

NOTE: Refer to the HUG Software Catalog for examples and details in using this outline.

Brief Information for the Software Evaluator of your program(s):

PREPARED ON/FOR COMPUTER MODEL: _____

SPECIAL HARDWARE/SOFTWARE CONFIGURATIONS, IF ANY: _____

_____

PROGRAM REQUIRES _____ BYTES OF MEMORY

LANGUAGE _____ VERSION _____

I would like you to include the program(s) described on this agreement in the (check one)

☐ Public Domain HUG Programs
☐ HUG Library
☐ Royalty HUG Program

I understand and agree that HUG may distribute it at nomimal cost to HUG members.

I assure you that the program is my own design, that I have run and de-bugged it, and that I will answer questions any library user has about it. You may modify and adapt the program at your option to make it more suitable for your use and the library.

I represent that the program is mine to submit and that any necessary permissions for its use and sale have been obtained.

Date _____ Signed: _____

REMark Cross–reference

Hardware Related

H8, H88, H89 Computers

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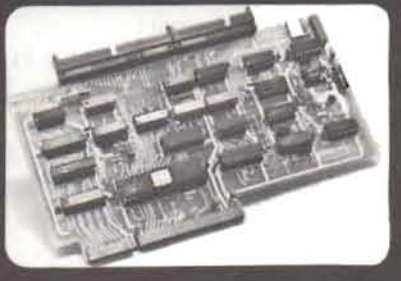

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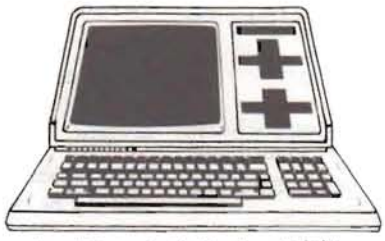

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NEW HUG PRODUCTS

885-1211
CP/M Sea Battle $20.00

Introduction: This version of SEA BATTLE will execute on the H8, H89 (Z89), and the Z-100 computers.

SEA BATTLE is a video action game that uses the H19 graphic features. The role of the SEA BATTLE player is to command a destroyer force in opposition to an aircraft carrier and its escort. The escort includes fighters, bombers, and submarines, all of which attack the player ship.

Requirements: SEA BATTLE requires the CP/M operating system, version 2.2.02 or later, on an H19/H8/H17 or H89 with 32K of memory. Only one disk drive is required.

For the Z-100 computer, SEA BATTLE requires the CP/M-85 operating system. The Z-100 requires the soft-sectored disk format. (Order with a "-37" suffix.)

The program is written in assembly language and the source code is included.

NOTE: *The H19 (H89) terminal is required for the graphics codes of the game.*

The following files are included on the HUG P/N 885-1211 CP/M Sea Battle graphics game disk:

README	.DOC
SEABATTL	.DOC
SEABATTL	.ASM
SEABATTL	.COM

The SEABATTL.DOC file gives detailed instructions of the game. Most players will have fun learning by trial and error.

Author: Victor Abell

Program Content: SEA BATTLE is a very interactive game which requires the entire screen of the H19 terminal. The outline of the game structure is as follows:

A) The Aircraft Carrier and its Escort

The escort consists of an endless number of fighter planes, five heavy bombers, and a number of submarines. The fighter planes are replenished from the aircraft carrier as each is shot down. Each time the aircraft carrier is hit a submarine appears on the horizon.

B) The Player Ship

The player ship has two guns which may only be fired one at a time. The ship moves back and forth across the bottom of the screen dodging the shells and bombs from the air force. The player ship can take a few hits from the fighters, but is destroyed when hit by a bomb. The player ship must flee from the submarines.

C) Scoring

The score (and other data) is displayed on the 25th line throughout the game. The following is the scoring table:

Down a Fighter Plane	5 points
Down a Bomber	50 points
Hit the Carrier	50 points
Sink the Carrier	250 points plus Variable Bonus

The Variable Bonus is determined by the success of staying within the center of the screen, where the most action takes place. The program sets a timer and the player must stay within the marks or the countdown begins.

D) Sinking the Carrier

The aircraft carrier will sink when it has been hit by fifteen shots from the player ship guns. Once the carrier has been sunk, the player can watch it sink into the sea. Then another carrier is there to replace the previous carrier. The next carrier escort, more aggressive than the previous carrier's escort, appears on the screen.

E) Sinking the Player Ship

The player ship may be sunk by 12-15 hits from the shells of the fighters, by a single hit from a bomber, or by being caught by a submarine.

F) Summary

The player must find a battle strategy which will lift him in victory over as many aircraft carriers as possible. Each successive carrier is more dangerous than it's predecessor.

Comments: SEA BATTLE is one of the finest games which has been released from HUG.

885-1222
CP/M Adventure Disk $10.00

Introduction: This version of ADVENTURE has been adapted for the H89 (Z89) CP/M and CP/M-85 for the Z-100.

ADVENTURE is one of the most well known and best liked computer games. It is an adventure through a giant cave to search out and find treasures. Many dangers are in store for the user who ventures into its midst.

Requirements: This game requires the CP/M operating system, version 2.2 or later, on H8/H17 or H-89 with a minimum of 24K of memory. Only one disk drive is required.

For the Z-100 computer, CP/M-85 is required. The soft-sectored disk format is required. (Order with a "-37" suffix.)

NOTE: *The H19 terminal is not required to play this game.*

The following is a list of the files on the HUG P/N 885-1222 CP/M Adventure Game disk:

README	.DOC
ADVENT	.COM
ADVENTUR	.DTB
NEWGAME	.CAV

Authors: This program was originally developed by Willie Crowther. Most of the features of the current program were added by Don Woods (Don @ SU-AI). This microprocessor version was done by G. Letwin of Heath Company.

Program Content: ADVENTURE

Somewhere nearby is a colossal cave, where others have found fortunes in treasure and gold, though it is rumored that some who enter are never seen again. Magic is said to work in the cave. I will be your eyes and hands. Direct me with commands of one or two words. I should warn you that I look at only the first four letters of each word, so you'll have to enter "northeast" as "NE" to distinguish it from "north", "dnstream" for "downstream", etc. Should you get stuck, type "help" and "info" for some general hints.

HELP

I know of places, actions, and things. Most of my vocabulary describes places and is used to move you there. To move, try words like forest, building, dnstream, enter, east, west, north, south, up, or down. I know about a few special objects, like a black rod hidden in the cave. These objects can be manpulated using some of the action words that I know. Usually you will need to give both the object and action words that I know. Usually you will need to give both the object and action words (in either order), but sometimes I can infer the object from the verb alone. Some objects also imply verbs; in particular, "inventory" implies "take inventory", which causes me to give you a list of what you're carrying. The objects have side effects; for instance, the rod scares the bird. Usually people trying unsuccessfully to manipulate an object are attempting something beyond their (or my!) capabilities and should try a completely different tack. To speed the game, you can sometimes move long distances with a single word. For example, "building" usually gets you to the building from anywhere above ground except when lost in the forest. Also, note that cave passages turn a lot, and that leaving a room to the north does not guarantee entering the next from the south.

SUGGESTIONS

Try "ENTER BUILDING".

When you see an object, pick it up.

Go "DNST" (downstream) if you want to find the cave.

HELPFUL WORDS

INVEntory	List items you are carrying
SCORe	Show your current score
LOOK	Type a long description of your current loaction
BACK	Go back the way you came
QUIT	Stop the game and give final score

COMMAND STYLE

Remember, ADVENTURE takes one or two word commands, only. Make them straight-forward, like:

ATTACK DRAGON
EAT BIRD
THROW AXE
GET GOLD
WEST
UNLOCK GRATE
DOWN

INFO

If you want to end your adventure early, say "QUIT". To see how well you're doing, say "SCORE". To get full credit for treasure, you must have left it safely in the building, though you get partial credit just for locating it. You lose points for getting killed, or for quiting, though the former costs you more. There are also points based on how much (if any) of the cave you've managed to explore; in particular, there is a large bonus just for getting in (to distinguish the beginners from the rest of the pack). I may occasionally offer hints if you seem to be having trouble.

****** GOOD LUCK ******

Comments: ADVENTURE will provide many months and even years of fun trying to reach the 350 points.

P/N 885-3003

CP/M-85 ZTERM $20.00

Introduction: This disk contains a modem package for the Z-100 series computers, which enables a user's computer to communicate with another computer. Versions for the H/Z89, Z90, and H8 computers are also included. ZTERM is a modification of the popular CP/M TERM package for the H89/H8 computers.

Requirements: This disk requires the CP/M-85 operating system for use with the Z-100 series. CP/M version 2.2.03 is required for the H8/H19, H89, or Z90 with 32K of memory. The H8 computer must be equipped with either the H8-4 serial interface board or the WH8-47 board. Only one disk drive is required for ZTERM.

The disk contains assembled, ready to use, versions for the Z-100 and H89/H8 computers. The programs are written in assembly language and the source codes are included. The user may modify ZTERM to execute on most any terminal.

ZTERM100.COM — for use on the Z100 version.
ZTERM89.COM — for use on an H89, Z89, or Z90 or H8 using port 340Q.
ZTERM340.COM — for use on the H8 using port 340Q.

NOTE: *The H19 terminal is* **NOT** *required for ZTERM with the H8 computer, but is highly recommended.*

Author: Jim Buszkiewicz

Program Content: This modem communication package allows the user to "talk" or *communicate* to another Heath/Zenith computer or to some other host computer system, e.g. CompuServe and the SOURCE. The package allows the user to change the port used, the baud rate, plus other parameters.

Editor's Note: CompuServe *and the* SOURCE *are two timeshare systems (mainframes) that allow hundreds of individuals to access the* HOST *at a single time. They provide services for these members, e.g. the HUG Bulletin Board.*

ZTERM allows the user to download a file from the host and it will let the user transmit a disk file to the host. The modem package will enable the user to communicate, in the normal fashion with a host, from the main console keyboard. The direct type communication can be either *half* or *full duplex*.

For anyone who uses *TYMNET* and/or *MicroNET*, ZTERM will automatically sign on to both systems by entering one simple escape character sequence. The same is true for those using TYMNET and the *SOURCE*.

General System Requirements: In order to use ZTERM, the computer must have a standard serial RS-232 I/O port. Either an unused or line printer port will suffice. Normally on a Heath/Zenith computer, the user would use the DTE port on the back of the computer.

For systems other than the Z-100 series, an H19 terminal is advantageous but not necessary. The main console must be capable of accepting lower case characters correctly, even though it may convert them to upper case.

Aside from the standard computer system, the only other hardware that is needed is an interconnecting cable, a host computer, and modem.

Configuring ZTERM: ZTERM includes an auto log-on feature, which configures ZTERM to send the User ID number and password. This may be done for MicroNET and/or the SOURCE. Selecting the baud rate is also software selectable. A menu will display the possible baud rates.

If there are other hardware or use requirements that are not met by the pre-assembled versions of ZTERM, the user can alter the assembly source code to meet the requirements. ZTERM was designed to run on just about any computer that can run CP/M, and there are several assembly options that make it easy to configure it to a particular system. The following are some of the possible source code changes:

1) Set for non-Heath system,
2) Set *pause* character,
3) Set *abort* character,
4) Set for a control-H (010Q) in place of delete (07fh), 5) Set for ZTERM to strip the high order parity bit,
6) Set for type and length of data word,
7) Set *port* value, and
8) Set *baud* rate.

Using TERM: ZTERM is not a fancy program that uses graphics or the computer horn, but it does get the necessities done in the most efficient manner. When ZTERM signs on, it displays the size of the storage buffer in decimal bytes. This buffer is used to store characters when down-loading data from the host computer.

While in direct communications mode, ZTERM has nine basic commands available. These commands are executed by entering the appropriate function key across the top row of the Z-100 or H19 keyboard. The command summary is as follows:

Note: The function key columns refer to the H19 and Z-100 terminals respectively.

H19	**Z100**
f1	*f1* — auto-log-on to MicroNET
f2	*f2* — auto-log-on to the SOURCE
f3	*f3* — Duplex toggle - half or full
f4	*f4* — Store all terminal display in buffer
f5	*f5* — Transmit disk file to host
ERASE	*f0* — Display Command Summary
BLUE	*f6* — Save the buffer to a disk file
RED	*f7* — Clear the buffer
WHITE	*f8* — Warm boot CP/M

When downloading files, no type of handshaking is needed. Characters are immediately stuffed into memory eliminating this need. When uploading files to a host, ZTERM will pause when it encounters a pause character.

Comments: ZTERM provides the Z-100 user (or anyone else) with a useful modem communication package.

885-8012 CP/M
Modem Applications Effector (MAPLE) . $35.00

Introduction: MAPLE is a modem program designed to allow the H8/H19 or H89 computer to communicate effectively with another computer, over the telephone or by direct connection.

Requirements: MAPLE requires the CP/M operating system, version 2.0 or later, on the H19/H8/H17 or H89 with 32K of memory. When transferring files, 48K or more memory is recommended. Only one disk drive is required. A line printer device is not required but is recommended for downloading files from the host computer.

To use MAPLE, a modem and appropriate connector will be required to communicate to another system. MAPLE can be set to run on interrupt 3, 4, or 5 of the DTE connector, port 330Q.

The program is written in assembly language and the source code is not included.

NOTE: *The H19 terminal is required due to the use of the function keys and other escape codes.*

The instructions are contained in a 22 page manual.

Author: Dr. William C. Parke

Program Content: MAPLE is a modem communications package, which can be used to connect the users Heath computer system to another Heath system or to a *time-share host system*, e.g. CompuServe or the SOURCE, via the telephone lines. (Time-share host systems can have several hundred users *on-line* at a single time.)

MAPLE, when executed, enters the *communications* mode, with full file send and receive control. The mode and options are displayed on the 25th line of the terminal and are invoked by depressing the appropriate function key. The main communication "menu" function keys displayed on the 25th line are as follows:

f1 - p.page — Send to the printer any text displayed on the screen. The user may edit the screen display before sending to the printer.

f2 - COPY — Store all screen activity in memory.

f3 - SHOW — Display on the screen the text which has been stored in memory with the *COPY* function.

f4 - P.PAD — Send the text saved in memory to a line printer device.

f5 - STORE — Save the text in memory to a disk file.

ERASE - CLEAR — Clear the text stored in memory.

BLUE - SEND — Send a disk file to the host computer. The file may be sent in *block, line,* or *segment* mode.

RED - Exit — Exit to HDOS.

WHITE - Set — Set or change communication options. These options include this *second level* menu:

f1 — convert between ASCII and APL character sets,
f2 — set mode for sending a disk file,
f3 — set the prompt character in sending a file,
f4 — select line printer device,
f5 — select disk drive,
ERASE — set options selected, and return to conversation,
BLUE — select parity check bit,
RED — select baud rate,
WHITE — set the number of bits per byte, and
BREAK — echo all terminal input.

BREAK - break — Send a *hard break* to the host system. This will stop any transmission by the host and return the user to the host's command prompt. (This feature may not work for all host systems.)

MAPLE uses a number of control characters and escape sequences to do a number of functions. The user can refer to the written documentation for details. *Patch Instructions* are included with the manual to aid the user in customizing MAPLE to his requirements.

Comments: MAPLE, one of the most complete modem packages, includes most any feature required for computer communications. The 25th line display "menu" and documentation make it a very user friendly package.

Software Products List

Part Number	Description of Product	Selling Price	Soft Sector
885–1008	Volume I Documentation	$ 9.00	
885–1010	Adventure Disk	$10.00	
885–1013	Volume II Documentation	$12.00	
885–1015	Volume III Documentation	$ 9.00	
885–1022	HUG Editor (ED) Disk	$20.00	
885–1025	RUNOFF Text Processor	$35.00	
885–1029	Games Disk	$18.00	
885–1030	Games Disk	$18.00	
885–1031	Music 8 and 89 Disk	$20.00	
885–1037	Volume IV Documentation	$12.00	
885–1038	WISE on Disk	$18.00	
885–1042	PILOT on Disk	$19.00	
885–1044	Utilities Disk VI	$18.00	
885–1047	Stocks (BHBASIC)	$18.00	
885–1048	Personal Accounting Disk	$18.00	
885–1049	Income Tax Records	$18.00	
885–1052	H11/H19 Support Package	$20.00	
885–1055	MBASIC Inventory Disk	$30.00	
885–1056	MBASIC Mailing List	$30.00	
885–1058	Volume V Documentation	$12.00	
885–1059	FOCAL–8 Interpreter	$25.00	
885–1060	Disk VII Utility Package	$18.00	
885–1062	Disk VIII Utility Package	$25.00	
885–1063	Floating Point Disk	$18.00	
885–1064	Utilities Disk IX	$18.00	
885–1065	Fixed Point Package	$18.00	
885–1066	Utilities Disk X	$18.00	
885–1067	Graphic Games Disk	$18.00	
885–1068	MBASIC Graphic Games	$18.00	
885–1069	Disk XIII Misc. Utilities	$18.00	
885–1070	Home Financial Package	$18.00	
885–1071	MBASIC Small Business Package III	$75.00	
885–1075	HDOS Support Package	$60.00	
885–1077	BASCON/TXTCON Disk	$18.00	
885–1078	Z80 Assembler	$25.00	
885–1079	Page Editor PAGED	$25.00	
885–1082	Programs For Printers	$20.00	
885–1083	Disk XVI Misc. Utilites	$20.00	
885–1085	PILOT Documentation	$ 9.00	
885–1086	Tiny PASCAL	$20.00	
885–1088	MBASIC Graphic Games	$20.00	
885–1089	Utilities Disk	$20.00	
885–1090	Utilites Disk	$20.00	
885–1091	Grade and Score Keeping (MBASIC)	$30.00	
885–1092	Relocating Debugging Tool (RDT)	$30.00	
885–1093	Dungeons & Dragons (MBASIC)	$20.00	
885–1094	Fig–Forth	$40.00	
885–1095	HUG SY: Device Driver	$30.00	
885–1096	MBASIC Action Games	$20.00	
885–1097	Education Quiz Disk (MBASIC)	$20.00	
885–1098	H8 Color Graphics ASM	$20.00	
885–1099	H8 Color Graphics Tiny PASCAL	$20.00	
885–1103	Sea Battle	$20.00	
885–1105	Device Drivers Disk	$20.00	
885–1106	MORSE CODE Transceiver *Ver 1.1*	$20.00	
885–1107	LOGBOOK AND TMS	$30.00	
885–1108	Info Systems and Tele & Mail Sys (MB)	$30.00	
885–1109	Retriever DBMS	$40.00	
885–1110	Autofile (Z80 only) DBMS	$30.00	
885–1111	MBASIC Graphic Games	$20.00	
885–1112	Graphic Games Disk	$20.00	
885–1113	Fast Action Games	$20.00	
885–1114	H8 Color Raiders and Goop	$20.00	
885–1115	NAVPROGseven Aircraft DBMS (MB)	$20.00	
885–1116	Z80 Debugging Tool (ALDT)	$20.00	
885–1117	HT–11 Pirates Adventure	$20.00	
885–1118	MBASIC Payroll	$60.00	
885–1119	BHBASIC Support Package	$20.00	
885–1120	"Whew" Utilities	$20.00	
885–1206	CP/M MBASIC Graphic Games	$20.00	–37
885–1207	CP/M TERM & HTOC	$20.00	–37
885–1208	CP/M Fig–Forth	$40.00	–37
885–1209	CP/M Dungeons & Dragons (MBASIC)	$20.00	–37
885–1210	CP/M HUG Editor (ED)	$20.00	–37
885–1211	CP/M Sea Battle	$20.00	–37
885–1212	CP/M Utilities Disk	$20.00	–37
885–1213	CP/M Utilities Disk	$20.00	–37
885–1214	CP/M MBASIC LOGBOOK	$30.00	–37
885–1215	CP/M BASIC–E	$20.00	–37
885–1217	CP/M Disk Duplication Utilities	$20.00	–37
885–1218	CP/M MBASIC Payroll	$60.00	–37
885–1219	CP/M NAVPROGseven Aircraft (MB)	$20.00	–37
885–1220	CP/M Action Games (BASIC–E)	$20.00	–37
885–1221	CP/M WATZMAN/HUG H19 ROM	$30.00	–37
885–1222	CP/M Adventure Game	$10.00	–37
885–3003	CP/M ZTERM Modem Commun.	$20.00	–37
885–8001	Screen Editor (SE)	$25.00	
885–8003	BHBASIC to MBASIC Utility	$25.00	
885–8004	Universal DUMP (UDUMP)	$35.00	
885–8005	Modem Appl. Effector (MAPLE)	$35.00	
885–8006	SUBMIT	$20.00	
885–8007	EZI–TRANSfer	$30.00	
885–8008	Farm Accouting System (MBASIC)	$45.00	
885–8009	CP/M Galatic Warrior by EVRYWARE	$20.00	–37
885–8010	HDOS Checkoff (Checking Account)	$25.00	
885–8012	CP/M MAPLE Modem Commun.	$35.00	–37

IF: Z100

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IF: Z100... THEN: Studio Computers

MPI

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TERMINAL

A menu-driven, screen-oriented modem package for HDOS. A 2K buffer supports CTRL-S/CTRL-Q protocall. Performs large file transfers with only one drive. Has special Smartmodem features and printer output. Programmable AUTOLOG function allows 16 log-on sequences for remote systems. HDOS commands can be executed from TERMINAL. CP/M version coming soon. Comes with a 50 page manual. $25

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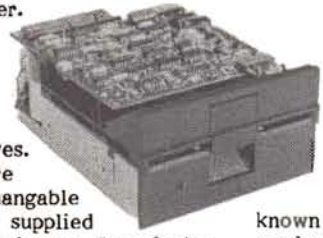
The finest in disk drives, TM-100-4 units are 96 tpi and double-sided. Each drive yields a total capacity of 400K bytes with the standard hard-sector controller and 640K bytes using the Zenith Z89-37 double-density controler.



We also stock the TM-100-1 (48 tpi) and TM-100-2 (48 tpi double-sided) disk drives. The Tandons are directly interchangable with the Heath supplied drives currently in use. Interfacing documentation and manual are included. THINLINE 8" drives (TM-848-2) are also stocked and make an excellent addition to the Z100 computers.

TM-100-4	$359
TM-100-2	$275
TM-100-1	$215

ETC...

As Zenith dealers, we stock many of the original hardware and software products offered by Heath & Zenith, all at great prices. Other products that we carry include:

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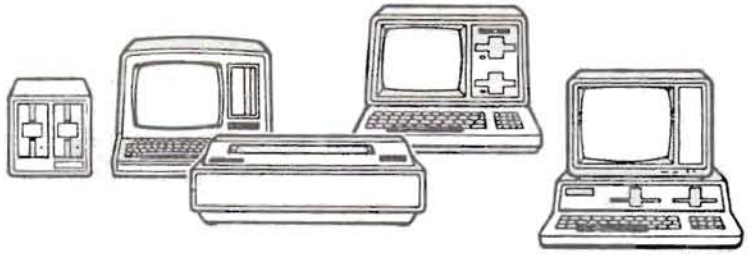

A to Z COMPUTER COMPANY
2413 Kemp Blvd
Wichita Falls, TX 76309

Contact: Dean E. Hyde, Store Manager Phone: 817 322-1007

Comments: Hardware, software, and consultation available. Carry all Zenith Data Systems plus Altos, Atari, Datapoint, IBM System 23 and PC, Intertec, Northstar, Xerox. Also, printers-Anadex, Epson, Diablo, Integral Data Systems, C. Itoh, NEC, Okidata, Qume, Tally. Full support and discounts for members of NORTEX HUG.

AMERICAN COMPUTERS
PO Box 386
Haddonfield, NJ 08033

Contact: Rick Schaeffer Phone: 609 939-0802

Comments: Hardware, software and consultation available. Authorized Zenith Sales and Service Center, Discounting products by Zenith, Epson, Okidata, C. Itoh, Magnolia, Hayes, F.B.E., Sunflower, Keyboard Studio, Software Toolworks, and many other companies. Accept credit cards and COD. Free Catalogs!

AMERICAN SOFTWARE
PO Box 3306
Philadelphia, PA 19142

Contact: Robert Schild Phone: n/a

Comments: No hardware. Software and consultation available. American Software is soliciting authors of unique and original programs. Business utilities, games and general use software in MBASIC or Assembly for CP/M or HDOS. Commissions based upon merit of programs. Immediate consideration given, media will be returned.

APOGEE SOFTWARE
Box 15124
Savannah, GA 31406

Contact: William Gartelmann, Jr. Phone: 912 925-3765

Comments: No hardware or consultation. Software available. Carry arcade style games-Robot Battles, Froggs, Maze Race. Utilities- file recovery, disk-error monitors. For HDOS or CP/M and H8 or H89 systems.

APPLIED COMPUTING
PO Box 75
Codorus, PA 17311

Contact: David E. Warnick, Owner Phone: n/a

Comments: Hardware and software available, will answer customer questions on Applied Computing products. Software runs on CP/M. All programs are compiled or assembled. Have games, ham radio, data base, and more. HDOS expected soon. Hardware-RS232-TTL conv., Graphics wordsheets. Write for catalog.

ARKAY ENGRAVERS, INC.
2073 Newbridge Road
Bellmore, NY 11710

Contact: Ken Kaplan Phone: 516 781-9859

Comments: No software available. Products: custom keytops engraved for Heath/Zenith Keyboards. Also custom replacement keytop sets for word processors (Magic Wand, Spellbinder, etc.). Dealer inquiries invited and consultation is available.

AUDIONICS SYSTEMS CORPORATION
2510 Allendale Road
Wichita Falls, TX 76310

Contact: Alan D. Martin, President Phone: 817 692-2706

Comments: Have hardware and software, consultation for dealers only. Products: all Zenith Data Systems, Altos, Atari, Datapoint, Epson, IBM System 23 and PC, Intertec, Northstar, Sanyo and Xerox. Printers-Anadex, Epson, Diablo, Integral Data, C. Itoh, NEC, Okidata, Qume and Tally. Strong Retailer Program for office supply/furniture dealers in Texas and Oklahoma.

AVONDALE ELECTRO-MECHANICS
3088 St. Clair Dr
Auburn Hts, MI 48057

Contact: Richard Stouffer Phone: 313 852-6428

Comments: Hardware and software available. Total line of Heath/Zenith computers, peripherals and software. Installations for business with software and interface designed to fit your needs.

BEELINE SERVICES
5718 Ponderosa Drive
Stevensville, MI 49127

Contact: Mary Gillespie Phone 616 429-6461

Comments: Manufacturers and distributors of PaperWare (TM) Paper programming aids; Video Layout shts., Flow chart, Printer layout plus others printed in fade-out blue, padded in 50's. The Paper-Porter single sheet tractor feeder plus Form-Start for no loss on first tractor form. Catalog available.

RALPH W. BOYD
761 NW 196 Terrace
Miami, FL 33169

Contact: Ralph Boyd Phone: 305 652-5828

Comments: No hardware or consultation. Software available. Products: Submarine-WWII video game, Blast-color graphics flying saucer game, Hurricane Tracking-color graphics database. Write for list of product descriptions and prices.

BRADLEY COMPUTING
400B Douglas Ave
PO Box 1324
Dunedin, FL 33528

Contact: David C. Bornmann Phone: 813 734-4611

Comments: Hardware, software and consultation available. Products: Winchester disk installations for H8 and H/Z89 from five to thirty megabytes, SpoolQ-HDOS spooler with print queue management facilities, Finance-business decision making tool. Offer custom systems using Heath/Zenith hardware and operating systems.

BUSINESS SUPPORT SERVICES, INC.
705 Butternut Ave
Royal Oak, MI 48073

Contact: Ray Kennedy Phone: 313 585-4736

Comments: No hardware, software, or consultation. Products: Diablo ribbons and printwheels supplier. Call or write for information. Word processing services using Heath/Zenith equipment.

BUSS
716 E Street SE
Washington, DC 20003

Contact: Charles Floto (Editor) Phone: 202 544-0900

Comments: BUSS is an eight page newsletter for Heath/Zenith Computers, mailed first class 20 issues a year. Stresses new hardware and software, community events, user experiences. Subscription: n issues for n + $8.00. Air mail: + 50 cents/issue. Visa/MasterCard accepted. Call 800 341-1522 (Datatel) M-F 6am-9pm.

CCS DATA STATION,
COMPREHENSIVE COMPUTER SERVICES
8 Roanoke St
Christiansburg, VA 24073

Contact: Ted or Priscilla Fleshman Phone: 703 382-4234

Comments: Have hardware, software, and consultation. Products-Zenith Data Systems, Local Service, Software, Custom Software, Supplies, and Peripherals.

CALIFORNIA DATA BASE
20295 Anita Ave Suite 6
Castro Valley, CA 94546

Contact: Neal Texeira Phone: 415 886-7743

Comments: No hardware. Have software and consultation. Exciting game packages less than $8.00 per game include: Superlative Simulations/Fantastic adventures/Potpourri. Personal software: Test Your Logic/Aptitude Test System/Mystery Writer's Assistant/ Budget System/FOR-WORD Text Editor/INSIGHT - Self Analysis. All require HDOS or CP/M. Mention REMark and receive a 10% discount on any purchase.

CAL MED PRODUCTS
PO Box 1349
Tustin, CA 92680

Contact: Jim Plesetz Phone: 714 832-7599

Comments: Hardware and consultation available. Distributer TEAC disk drives. Including the new slim 5 l/4, fast FD55 series. TEAC offers 1 full year warranty. Heath Compatible. Phone for info after 5 pm PST.

WILLIAM N. CAMPBELL, MD.
855 Smithbridge Road
Glen Mills, PA 19342

Contact: William N. Campbell, MD. Phone: 215 459-3218

Comments: Products: Getting Started With CP/M and MBASIC-included is a 56 page manual and a disk containing sample programs. Specify H/Z computer model number, disk size & format, 5 1/4 or 8", CP/M or ZDOS $25.00. Getting Started With HDOS & Assembly Language Programming-a 36 page tutorial covering aspects of Assembly Language programming under HDOS. Provides significant information for HDOS which other manuals lack $15.00.

CLEVELAND CODONICS, INC.
PO Box 45259
Cleveland, OH 44145

Contact: Sales Department Phone: 216 327-6505

Comments: Hardware available and consultation for quantity orders. Software: on board. Product: high resolution (504H by 247V), intelligent graphics retrofit unit for Heath/Zenith H19, H19A, and Z19 terminals and H/Z89 computers. Economical and immediately available.

COMMSOFT, INC.
2452 Embarcadero Way
Palo Alto, CA 94303

Contact: Howard Nurse Phone: 415 493-2184

Comments: Hardware, software and consultation available. COMMSOFT provides hardware interfaces and software designed for amateur radio communications and genealogy. Programs include RTTY89, CIPHER89, CW89 (for Hams), and ROOTS89 (for genealogists). Contact Bill Johnson, 7304 Mariposa Dr, Manassas VA 22111 for information about the independent national ROOTS Users Group.

COMPUTER ASSOCIATES, INC.
1814 S Main St
PO Box 328A
South Bend, IN 46624

Contact: James A. Gross, President Phone: 219 232-7921

Comments: Hardware, software, and consultation available. CAI sells and services all ZDS products, is a DEC OEM and distributes SCM Printers, HiG Printers, SW-10 Terminals and all supplies and accessories. Also have a large library of CP/M software products.

COMPUTER PROGRAMS
PO Box 7323
Madison, WI 53707

Contact: Robert J. Stalder Phone: 608 241-5483

Comments: No hardware. Software and consultation available. Software maps out on your terminal, 8 lines of information on the computer byte or word. Input can be in octal numbers, or decimal bit numbers. Requires EIS, 19kb. 80 or 132 character/line terminal, 8 inch single density floppy disk system for H11.

COMPUTER SYSTEMS SOFTWARE
130 NE Conifer Blvd #1
Corvallis, OR 97330

Contact: Christopher S. Simmons Phone: 503 758-7423

Comments: No hardware. Have software and consultation. Products: XCATALOG-program for cataloging disks, LIST-formatted listing program, PHONEME-dictionary, CONVERT-text to phoneme conversion, PRPATCH-parallel printer (UCSD), DATE-prologue, SPIN-drive time. All programs written for Heath UCSD Pascal. Supplied on SSSD 10 hard sectored disk.

DFD SYSTEMS
4805 N 107th St
Omaha, NE 68134

Contact: Dave Hamilton Phone: 402 493-1390

Comments: Consultation available. Product-Split Screen RTTY Processor, MODEM Driver for H89 and H8/H19. All Baudot and Ascii Speeds, RTTY Picture capability, Sends/Receives Octal/Hex data with checksums. Please specify H89 or H8/H19 and Amateur Radio Callsign (if any) with order. Price is $39.95.

D-G ELECTRONIC DEVELOPMENTS COMPANY
700 S Armstrong
Denison, TX 75020

Contact: Brian Grams Phone: 214 465-7805

Comments: Hardware, software, and consultation availble. Manufacturer of H/Z89 advanced processor card and H8 compatible circuit boards including a 4MHz Z80 card with advanced panel monitor, dynamic and static memory cards. HDOS software, CP/M electronic disk, MP/M.

DOTTED i SOFTSTUFF
70 Old Queens Blvd.
Englishtown, NJ 07726

Contact: William J. Young, President Phone: 201 446-3046

Comments: Currently offering the AUDIT data base management system. Features user oriented generation of data specifications, indexed access to records, multiple, user defined, report capabilities including lables and compute values printing and, ASCII interface to non AUDIT systems. Dealer inquires welcome.

ELEKTROKONSULT AS
Konnerudgt. 3
N-3000 Drammen
NORWAY

Contact: T. Bolstad Phone: 03 83 15 00

Comments: No hardware. Software and consultation available. Elektrokonsult's disk utilities for CP/M (DDUMP, DTEST, DDUP, UNERA, DUSER) are used to dump, patch, test, duplicate and recover crashed disks, and UNERAse ERAsed files. Disk utilities work on all Zenith/Heath computers with any type of disk - even hard disks!

ENVIRONMENTAL CONTROL SYSTEMS
9319 Willowview Lane
Houston, TX 77080

Contact: Donald C. Long, Jr. Phone: 713 464-1717

Comments: Hardware, software and consultation available. Products: PC-12/89: Perpetual Clock/Calendar & Multi Port Parallel I/O boards for H8/H89. RX-10: Universal Remote Controller. ESP Master Control Program Software. All products provide Heath/Zenith computers with extended capabilities for practical applications.

EVRYWARE
PO Box 60802
Sunnyvale, CA 94088 Phone: 415 321-2708, 408 738-1614

Contact: Joe Gargiulo, Dave Murry

Comments: No hardware or consultation. Software available. Products: seven fast action arcade type games for the H8/H19, H/Z89, Z90 and Z100 systems. See ad in November REMark or write for free catalog. Available at most Heath/Zenith retailers or direct from Evryware.

FBE RESEARCH COMPANY, INC.
PO Box 68234
Seattle, WA 98168

Contact: Dave Brockman Phone: 206 246-9815 evenings

Comments: Hardware, software and consultation available. Products: For H89: H89CTI Printer Interfaces, H89UTI Clock/Parallel/Serial/Math Card, and H89RAM Memory Expansion. Parallel HDOS Driver and CP/M support. Write for flyers and price list. Also sell popular printers.

FLOPPY DISK SERVICES, INC.
741 Alexander Road
Princeton, NJ 08540

Contact: Anne or Mark Wolinsky Phone 609 799-4440

Comments: Specialize in disk drives and drive subsystems. Will consult on drive problems or questions. Sell SIEMENS disk drives for exact add on capabilities. Also hard disk and complete systems for Heath/Zenith and the new Z100. Have complete 8" systems for the Z100, totally assembled, tested and ready to go.

GENERIC SOFTWARE
PO Box 790
Marquette, MI 49855

Contact: David J. Powers Phone: 906 475-7151

Comments: No hardware. Software available and consultation from 10 am - 5 pm EST. Offer Data Entry, Database, Financial, Educational and Utility software for H8/H19 and H89 systems running HDOS or CP/M. Products: Seq-Base, Card-It, Mail-It, Energy-Miser, World-Map, Form-It, Form-Rel, Remref, EZ4DVD, SFDVD, Game-Pac-1, Loan-Master, Investment-Master, Depreciation- Master.

H89 CLOCK/SOUND
Box 2116A
San Bernardino, CA 92405

Contact: Earl Holland Phone: 714 886-0812

Comments: Hardware available, no consultation. Product: The H-89 Clock/Sound board is a right-side accessory board for the H/Z89. It has a battery powered hardware clock that provides time and date info, and a 3 channel programmable sound generator. Bare Board + instructions $22.00 HDOS Software $5.00 (CA add 6% tax).

H & H ENTERPRISES, INC.
PO Drawer H
Blacksburg, VA 24060

Contact: Cherie Hassall Phone: 703 552-0599

Comments: Hardware, software and consultation available. Hardware: two serial ports and three user-programmable parallel input/

output ports on one board. Software drivers for most popular printers. C. Itoh Prowriter printer packages available. All products shipped postpaid in continental US. Users' Group discounts available.

HAT SOFTWARE
PO Box 27402
Honolulu, HI 96827

Contact: John Hansen or Alan Taylor Phone: 808 682-1087

Comments: No hardware. Software and consultation available. Products: PFM-a small scale database for use by virtually anyone, MORT-an HDOS .ABS mortgage scheduler, DUTY-a general purpose job or people scheduler, CAR-a car comparer for deciding the best purchase. All programs operate under HDOS 2.0, 5.25 inch SSSD hard sector and MBASIC 4.82.

HELVETIA PROGRAMS, INC.
1415 W Casino #111
Everett, WA 98204

Contact: Gary Martin Phone: 206 347-5417

Comments: Products: INVEST-allows a novice to become a Wall Street whiz $29.50 ACCOUNT EASE-General Ledger, Income, Balance Sheet and more. Set of seventeen programs $59.50 CP/M or HDOS 5 1/4 hard sector. Include $1.50 shipping. Programs require MBASIC. ZDOS versions coming.

HOYLE & HOYLE SOFTWARE
716 S Elam Ave
Greensboro, NC 27403

Contact: Janet C. Hoyle Phone: 919 378-1050

Comments: No hardware. Software and consultation available. Products: A Remarkable Experience-cave exploration, A Galactic Experience-USS Surge to the rescue, A Physical Experience-Captain Player rides again, plus many other games and accessories. Query-General Database Management System $29.95. Telephone consultation, orders and assistance readily available.

HUSKER SYSTEMS of NEBRASKA, INC.
4517 N 61st St
Omaha, NE 68104

Contact: Bill Martin or Dave Winchell

Phone: 402 451-4988, 402 558-5702

Comments: Hardware service only. Software and consultation available. Products: Amateur radio packages, games, computer art, word processing systems, systems utilities. Both HDOS and CP/M supported. Video Professor computer based training systems (assembler, MBASIC, etc.). Z100 software being announced in December which includes communications and modem packages.

SIEBERT ICKLER
PO Box 1571
Corpus Christi, TX 78403

Contact: Siebert Ickler Phone: 512 852-0182

Comments: No hardware. Have software and limited consultation. Products: XSC, utility allows command files with SuperCalc (like SUBMIT/XSUB). QuizGallery, table driven drill and practice target game. FullScreen, copy screen to disk and/or printer. 5 1/4" hard sector only. XSC-CP/M Z80 - $19.95 QuizGallery-HDOS H89 - $14.95 FullScreen-HDOS H89 - $7.95

INTERACTIVE MICRO SYSTEMS
PO Box 21007
Columbus, OH 43221

Contact: Brian Lockrey Phone: 614 846-0902

Comments: No hardware. Software and consultation available. Products: RECIPE-MASTER recipe file utility, KEY-WIZ/SORT-WIZ-multi keyword search index, GAMES #1, EXPRESS binary, decimal, hex octal calculator, SUPER-SUBMIT utility for CP/M. Write for complete product list.

INTER–ACTIVE SOFTWARE
448 Joan Court
West Hempstead, NY 11552

Contact: John Fischetti Phone: 516 485-7950

Comments: No hardware. Software and consultation available. Product: MATH TEACHER-a sophisticated math exercise program for all ages. Random problems are generated in three difficulty levels. Answers are cleverly acknowledged by "the computer". Available on 5 1/4 inch disks for H/Z89 systems running CP/M. Requires 32K. $20.00

JAY GOLD SOFTWARE
Box 2024
Des Moines, IA 50310

Contact: Jay H. Gold, MD Phone: 515 279-9821

Comments: No hardware. Software and consultation available. Product: Complete Home Finance System Version 2 tracks checks, credit accounts, asset accounts (savings, cash, ...), prints checks. User defined codes for expenses, deposits. Separate tax flag. User defined check formats. Requires MBASIC, HDOS 2.0, H89/H8 with 64K, any printer. $85.00

KAJON COMPUTING COMPANY
709 Beacon Hill Dr
Irving, TX 75061

Contact: John Mitchell Phone: 214 259-6194

Comments: No hardware. Software and consultation available. Products: MBASIC games (Concentration, Starship Armada, Keno, Roulette, Craps), Word Processing and Administrative Support Productivity Measurement Systems, Motocross Scoring System. Specialize in office automation productivity measurement systems.

KANDUEAZY COMPUTER SOFTWARE SERVICES
6218 Blossom Lane
Alexandria, VA 22310

Contact: James E Kandul Phone: 703 922-9450

Comments: Hardware, software and consultation available. Products: TAPEIO-disk to tape and tape to disk file backup/restore, PRINTIT-text formatter program with 36 commands, DBIRS-data base information retrieval system. All heath/Zenith software/hardware discounted 10-30%. Custom made leatherette dust covers for the H/Z89/19, H8, etc.

KRES ENGINEERING
PO Box 17328
Irvine, CA 92713

Contact: n/a

Phone: 714 559-1047, 213 957-6322
714 559-8579 Remote CP/M and Bulletin Board

Comments: Hardware, software and some consultation available. Manufacturer and distributor of H/Z89-90 hardware and software products. Hardware: Seven slot board expansion, 2-4 Mhz clock upgrade, color graphics, cable backplate, joysticks. Software: Languages, Unix (like) system, editors, education, CAD/CAM. KRES has a 24 hr/day bulletin board containing public domain software, games, manuals, and product announcements.

LAB DATA SYSTEMS
PO Box 1234
Kirkland Lake, Ontario
CANADA P2N 3M7

Contact: Gerry Killoran Phone: 705 567-3497

Comments: No hardware. Software and consultation available. Products: Applied Statistics I, ver. 1.1, HDOS or CP/M MBASIC $59.95 Applied Statistics II, ver. 1.0, CP/M MBASIC $99.95 All of I plus super linear regression, still expanding. No tables required, manual, built-in data base. Used in universities, research, industry. (Also available from Sunflower Software.)

RICHARD E. LUCKA
64 Fanchers St
Pickerington, OH 43147

Contact: Richard E. Lucka Phone: 614 466-4932 day
614 837-8446 eve

Comments: No hardware. Software and consultation available. Products: CNVRT-interactive number system converter and calculator, SAVE-auto file copy utility. Run under HDOS 1.6 and 2.0, 5 1/4" SSSD hard sector disks.

MAKO DATA PRODUCTS
1441B N Red Gum
Anaheim, CA 92806

Contact: Diane Barron, Order Desk Phone: 714 632-8583

Comments: Hardware, software and consultation available. Products: H89/Z90: MH89+3 Buss Expander $150, PSGx2 Sound Board. H8: MH8-37 5-8 Soft Sector Controller, PSGx4 Sound Board. Software: Unit Conversion Master, Load-'n-Go, Micro-Piano, PSG Demo for HA8-3.

MAXTEK, INC.
2908 Oregon Ct Bldg G-3
Torrance, CA 90503

Contact: Janet Diem Phone: 213 320-6604

Comments: Manufacturer of XCEL Graphics. Retrofit Graphics Hardware and Software for H/Z89, high resoltuion graphics hardware (512 x 240). Graphics Software: Symbol Generator, Graph Plotter, Surface Plotter, 3D Generator, Graphics Terminal and Screen Printer.

MICRO ARCHITECT INC.
96 Donlon St
Arlington, MA 02174

Contact: n/a Phone: 617 643-4713

Comments: No hardware. Software and consultation available. Have business software under CP/M and HDOS. Send long self addressed stamped envelope ($.37) for free 32 page catalog.

MICRO-GRIP, LTD.
3164 Dumbarton Ave
San Bernardino, CA 92404

Contact: Harry Hopkins Phone: 714 864-6643

Comments: No software. Hardware and consultation available. Product: friction feed kit for all Epson MX-70 or MX-80 based printers. Easy installation, no soldering, tractors remain fully adjustable. $39.95 + $2.00 shipping. 15 day unconditional money back guarantee.

MICRO RESEARCH
PO Box 277
Rocklin, CA 95677

Contact: Mike Reisenweber Phone: n/a

Comments: Hardware and software available, no consultation. Products: 16k RAM expansion card for H/Z89. Diagnostic software for the H/Z89.

MICROTRAN
76 Flintwell Way
San Jose, CA 95138

Contact: Rick Lutowski Phone: 408 226-4122

Comments: No hardware. Software available and consultation for MICROTRAN products and FORTRAN programming. Products: FORTRAN support for HDOS: overlay, 9511 arithmetic, address sort, HDOS- interface, console input, "MICRO-CORE" device-independent graphics subroutine libraries. All libraries are FORTRAN-callable and include complete source code and documentation on H17 disk.

MICRO WORLD PUBLISHING
1102 Winona St
Northfield, MN 55057

Contact: Linda Seebach Phone: 507 645-5496

Comments: No hardware. Software and consultation available. Will typeset your text files from any Heath disk configuration, via modem (300 or 1200) from any computer, or from your text on CompuServe. You insert simple typesetting commands to ensure complete control of text and setting. Save money.

MIKETRONICS DIGITAL MICROSYSTEMS
8113 Baywood Dr
Norfolk, VA 23518

Contact: D. C. 'Mike' Michielson Phone: 804 588-4977

Comments: No hardware. Software and consultation available. Product: Miketronics/TCS "Big Four" Accounting System Ver. 5.1 - General Ledger, Accounts Receivable, Accounts Payable and Payroll for H/Z 8080/Z80 microcomputers. Requires 56k RAM, CP/M 2.x, MBASIC 5.x, 2 disk drives and 132 column printer.

MLM ASSOCIATES
1811 Willowtree Lane Suite B6
Ann Arbor, MI 48105

Contact: Dr. William S. Hall Phone: 313 994-3233

Comments: No hardware. Software and consultation available. Products: MORSE 80 - a complete Morse code transceiver system with preload, speed tracking, file operations, clock, Latin, Russian and Greek codes $39.95. ARCHIVE - a utility for storing, retrieving, and updating collections of files $19.95. CP/M and HDOS.

NEWLINE SOFTWARE
PO Box 402
Littleton, MA 01460

Contact: Ron Rocheleau

Phone: 617 486-8535

Comments: No hardware. Software and consultation available. Products: Software designed for Zenith/Heath computers including: screen oriented text editor, TEXT PROCESSOR,; H19 Graphics, VIDEO ARTIST PLUS; learn to type, TOUCH TYPIST; many more. Send for FREE catalog containing complete product descriptions.

NEXT SYSTEMS, INC.
PO Box 2671
Toledo, OH 43606

Contact: Chris Beroset, President

Phone: 419 475-0099 (evenings & weekends)

Comments: Offer hardware, software and business as well as computer consultation. Products: custom peripherals, hard-disk and networking hardware and software, robotics applications, complete data base system for any Z89 with 1/2 Meg or larger disk storage. Have software for the Z100.

O'CONNOR SOFTWARE
191 Oakridge Dr
Lower Burrell, PA 15068

Contact: Pat O'Connor Phone: 412 335-5639

Comments: Software and consultation available, hardware in development. Product: HDOS Extended Tiny BASIC Compiler. Integer math, Z19 Control, and Bit Manipulation. Output-HDOS ASM Compatible 8080 assembly. Fast .ABS single pass compiler. Relaxed line labeling with alpha and numeric characters.

JERRY A. PHELPS
6013 Innes Trace Road
Louisville, KY 40222

Contact: Jerry Phelps Phone: 502 425-4765 (evenings)

Comments: Offer arcade quality games; such as LADDERS-improved version, runs faster; more graphics, cartoons, hazards. Requires 32k, HDOS 1.6 and up, H/Z89 or H/Z19, H/Z17 and H8 with H8-4 board. See BUSS #52. Supplied, 5 1/4 hard SSSD disk. $21.50 or return old version plus $2.50.

POLYBYTES
325 19th Street SE
Cedar Rapids, IA 52403

Contact: Larry C. Reeve Phone: 319 366-3077

Comments: Consultation available. Products: Lucidata Pascal systems for HDOS and CP/M. A p-code Pascal system with a native code option. Support available for H8/H89 graphics, AM9511 hardware math. Requires HDOS 1.5 or higher, CP/M 2.0 or higher.

POWERLINE SYSTEMS
PO Box 97
Lincroft, NJ 07738

Contact: John W. Preusse Phone: 201 842-5751

Comments: No hardware. Software and consultation available. Products: COUPON-grocery coupon management system for consumer use $35.00 PUP-powerline utility package with 22 assembly language utility subroutines, demonstration programs, documentation, and instructions $35.00 For HDOS, 5 1/4 inch disk.

PowerR COMPANY
12624 Lakeland Ave SW
Tacoma, WA 98498

Contact: Aaron Reynolds Phone: 206 784-9890

Comments: No hardware. Software and consultation available. Products: H8,H89 Epson printer support for HDOS. Drivers, support for H19 graphics on Epson, and Font editor. Written contact preferred.

PROFESSIONAL SYSTEMS & APPLICATIONS
3657 Valley View
Norco, CA 91760

Contact: Dick or Connie Fox Phone: 714 734-1515

Comments: Hardware, software and consultation available. Specialize in CDR Controllers for 8" disk systems and computer supplies. Send for catalog.

QUEST COMPUTING
PO Box 1323
Freeport Center Sta, UT 84016

Contact: Byron Hellewell Phone: n/a

Comments: No hardware. Software and consultation for H89 hardware and software. Product: $99 complete accounting system-general ledger, accounts payable, accounts receivable, and payroll with costing. Improved OSBORNE accounting system. Written in BASIC - Run Module included. Requires H89 and 2 or 3 5 1/4 disk drives, CP/M and a printer.

QUIKDATA COMPUTER SERVICES, INC.
2918 S 7th Street
Sheboygan, WI 53081

Contact: Henry Fale Phone: 414 452-4172

Comments: Handle hardware, software and H-SCOOP newsletter. Consultation is available. Products: Professional software-dBASEII, Spellbinder; CP/M utilities; and hardware: disk drives, cabinets, accessories for H8, H/Z89, Z100 series. Lowest prices, total support and service. H-SCOOP #1 independent H/Z user newsletter.

RCK ASSOCIATES
640 Trephanny Lane
Wayne, PA 19087

Contact: Robert C. Koestler Phone: 215 687-3194

Comments: No hardware. Software and consultation available. Products: PORTFOLIO MANAGER-on entry of current stock prices, prints a one page report containing 20 different catagories of stock info and data. Requires HDOS or CP/M, 48k, 1 drive, MBASIC, 132 character printer. PEDIGREE MANAGER-maintains a three generation pedigree for small animal breeders. Male and female pedigrees are automatically combined to give the pedigrees of offspring. Requires HDOS or CP/M, 48k, 1 drive, 132 character printer. Versions for dogs, cats or general purpose. MORSE CODE TUTOR-your H89 sends code lessons. No hardware modifications needed. From 5-13 words per minute. Requires HDOS, 48k, 1 drive MBASIC.

REICHERT DIGITAL SYSTEMS
29 Blazier Road
Warren, NJ 07060

Contact: Roy S. Reichert Phone: 201 469-3854

Comments: No hardware. Software and consultation available. Products: applications software for both HDOS and CP/M. Personal Finance, Data Plotting/Graphics, Index Generators, Flight Navigation, Digital Circuit Analysis, Addressing, etc. Catalog available. Products can be purchased direct or through Heath Centers and Zenith dealers.

STEVEN ROBBINS
4610 Spotted Oak Woods
San Antonio, TX 78249

Contact: Steven Robbins Phone: 512 492-3384

Comments: No hardware. Software and consultation available. Products: EDIT19-a complete full screen editor for HDOS and H89 or H8/H19 $80.00 See BUSS #55 for a review. Z100 SCREEN EDITOR-write for details.

SAMMAMISH DATA SYSTEMS, INC.
1413 177th Avenue NE
Bellevue, WA 98008

Contact: Richard H. Schweitzer, Jr. Phone: 206 644-2442

Comments: Hardware, software and consultation available. Products: Census Data System for the rapid retrieval, display, and analysis of 1980 Census data files. System is implemented around the dBASE II data base management software. 1980 census data files also available in dBASE II or ASCII formats.

SEXTANT
716 E Street SE
Washington, DC 20003

Contact: Charles Floto (Editor/Publisher)

Phone: 202 544-0900

Comments: The independent magazine for the entire Zenith Computer Community. 88+ pages, 50+ ads, average of 10 articles. Four issues, $9.97 (US$11.50 to Canada; US$14, overseas). Visa/MasterCard or "Bill later": call 800/341-1522 (Datatel) M-F, 6 am - 9 pm EST.

SIGMASOFT AND SYSTEMS
4488 Spring Valley #107
Dallas, TX 75234

Contact: C.D. Montgomery Phone: 214 392-1025

Comments: Hardware, software and consultation available. Products: SigmaSound Board $95.00; Set of two joysticks $25.00; SD:sound effects device driver $10.00; Arcade Games Package $30.00; Universal Parallel I/O board $120.00; UP:Universal Parallel Device Driver $10.00; EP:Epson Printer Driver $20.00. For more information about these products please call or write.

SJULSTAD ENGINEERING
503 E Fremont
Northfield, MN 55057

Contact: Dr. Michael Leming
Phone 505 663-3391, 507 663-3422

Comments; Hardware, software and consultation available. Products: 16K Add-on RAM Boards for H/Z 88-90 $120.00; Video Output Boards to send CRT image to TV monitor, provides simultaneous viewing on both displays for group presentations $75.00. More hardware products to follow. Dealer inquiries invited.

SOFTSHOP
35 Shadow Oak Dr
Sudbury, MA 01776

Contact: Jim Teixeira Phone: 617 443-9693

Comments: No hardware. Software and consultation available. Products: software exclusively for Heath/Zenith systems. Utilities, printer drivers/spoolers, languages and educational software for HDOS and CP/M. Call or write for free catalog.

SOFTWARE WIZARDRY, INC.
122 Yankee Dr
St. Charles, MO 63301

Contact: Tom Jorgenson Phone: 314 946-1968

Comments: Authorized ZDS dealership, plan some hardware of their own; currently produce 6 software products, also carry full Zenith line. Consultation via referral to their authors. Perform 3 functions: Produce Wizardry Software, provide systems and software consultation services, distribute Heath compatible products. See REMark ads for details. Wizardry is always looking for QUALITY Heath compatible products to market on a royalty basis. Contact via phone for details.

STRESS ANALYSIS ASSOCIATES, INC.
285 N Hill Ave Suite 201
Pasadena, CA 91106

Contact: M.W. Cleary Phone: 213 684-2478

Comments: No hardware. Software and consultation available. Products: CODEFLANGE-a computer program in BASIC language to calculate the stresses in pipe flanges according to the ASME Boiler Code. Documentation and validation included. $20.00 BEAMVIBS-a system of four computer programs written to provide a complete dynamic analysis of a vibrating beam. Calculates frequencies, deflections, moments, reactions and stresses. $87.50 STATBEAM-an interactive computer software system that provides a static analysis of an axisymmetric beam over multiple supports. Alows redundant beams to be solved explicitly. $67.50 CURVEFIT- a computer program that fits an expression to your data in two, three or four dimensions. A program for scientists. $59.50 CURVEFIT offers a powerful method of least squares fitting which permits large data sets on a computer of limited memory.

STUART SOFTWARE
25381-G Alicia Parkway Suite 316
Laguna Hills, CA 92653

Contact: John S. Mays Phone: 714 770-4707

Comments: No hardware. Software and consultation available. Products: PICK-EM and NBA PICKS predict outcomes of NFL and NBA games, respectively. I CHING automates the ancient Chinese Book of Changes. QBD, main frame Decision Support Software for H/Z computers coming Spring 1983.

SUNFLOWER SOFTWARE
13915 Midland Dr
Shawnee, KS 66216

Contact: Rick Kerbel Phone: 913 631-1333

Comments: No hardware. Software and consultation available. Products: word processing, system utilities, data utilities, compilers & translators, games, education, appplication and business programs, all coupled with unsurpassed customer support. A wide variety of application and utility software for H/Z computer systems. FREE CATALOG.

T & E ASSOCIATES, INC.
PO Box 362
Millersville, MD 21108

Contact: Tom Cauthen, President Phone: 301 987-4748

Comments: Products: HDOS Utilities - multiple device, multiple file 'spooler'; TRS80* to HDOS file converter (and other systems); 'submit' package; FORMAT; DSKDUP; TAPE I/O; and powerful printer drivers. Specialize in printer drivers - bidirectional Diable, C-ITOH and NEC; Epson; Okidata; Paper Tiger; etc. For further information contact above.

TECHNI SERVICE CORP.
106 Arbuelo Way
Los Altos, CA 94022

Contact: Ken Barnes Phone: 415 949-1765

Comments: No hardware. Software and consultation available. Offer a service to produce photo typesetting from ASCII files. Files can be submitted by direct Modem, on CompuServe, or on Heath diskettes.

THE GRAVEN IMAGE
205 Steven St
Mason, MI 48854

Contact: James D. Scott Phone: 517 676-4648

Comments: Hardware and consultation available, will swap own software programs for H-89/H25 for like programs on personal 1-1 basis. Products: custom engraving of labels, legend plates, H89 keys (blue, red, tan, black, gray) & space bar (black only), computer printer parts, etc. Send sketch or specs for free quotation. Self addressed stamped envelope appreciated for general brochure requests.

THE P C & J GRAPHICS CO. INC.
PO Box 108
Deer Park, NY 11729

Contact: Pat Caputo Phone: 516 667-8076
70330,175 CompuServe — TCK755 Source

Comments: Products: custom made nylon H14 ribbons - in colors. H19/H89/H8/Z100 programming aids - video layout sheets, printer layout sheets, cobol program sheets, graphics plotter, paper porter. Also unique Atari software.

THE SOFTWARE SEEKER, LTD.
4181 N Granite Reef Road Suite 201
Scottsdale, AZ 85151

Contact: Robert Zucker Phone: 602 990-0234

Comments: Hardware, software and consultation available. Products: complete line of CP/M software in all H/Z formats at discount prices including Micropro, Ashton-Tate, Condor, Sorcim, Fox & Geller, etc. Catalog & price list available on request.

THE SOFTWARE TOOLWORKS
14478 Glorietta Dr
Sherman Oaks, CA 91423

Contact: Susan Hayes Phone: 213 986-4885

Comments: No hardware. Software available and consultation on problems with their products. Products: the largest line of H/Z specific software, including text processing, editors, languages, utilities, games, spelling for CP/M and HDOS. Available at Heathkit stores and many other Zenith dealers, or write or call for free catalog.

THIN KING THINGIES
115-1 Roxanne Ct
Walnut Creek, CA 94596

Contact: Kurt Schultz Phone: 415 932-5862

Comments: No hardware or consultation. Software is available. Products: Games- STAR * MERCHANT, LUNAR SURVIVAL, TEN THOUSAND $10.00 each, and the Thin King 's Dungeon $15.00. Also: Cheap disks! H17-1 compatible Elephant Memories Disks $27.50/10 pack. Games require H8/H19 cassette system, 48k RAM except Dungeon; 56k and extended BHBASIC 10.06.000.

J.J. THOMPSON
281 Warren Ave
Kenmore, NY 14217

Contact: Jack Thompson Phone: 716 873-0380 (after 5 pm EST)

Comments: No hardware. Software available. Products: file conversion utilities to convert between HDOS, CP/M and UCSD file formats. Six separate programs in the above formats $20.00 each plus shipping. Send self addressed stamped envelope for further information.

K. STEPHEN TINIUS
HQ USEUCOM Box 741
APO New York, NY 09128

Contact: K. Stephen Tinius Phone: Germany 49-0711-730458

Comments: Consultation available. Product: H8-Z80 Adapter for H8. Double-sided plated-thru plug-in Z80 card for H8 8080 CPU board. Bare board, kit or ready to use. See October 1980 Kilobaud. Compatible with static RAM, DG and Trionyx dynamic RAM and Livingston 8" disk controllers.

TOPEKA BUSINESS COMPUTERS, INC.
525 S Topeka Ave
Topeka, KS 66603

Contact: Spencer Smith Phone: 913 232-3264

Comments: Hardware, software and consultation available. Products: all Zenith Data System products, warranty service for ZDS products, service for all H/Z computer products. Also available: custom programming, CP/M based software, leasing, systems integration, on site service, on site system familiarization.

TRAXX COMPUTER CORP.
1467 S Michigan Ave
Chicago, IL 60605

Contact: Dean Cassara Phone: 312 987-1204, 800 621-3102

Comments: No software or consultation. Hardware available. Products: 5 1/4 and 8" floppy disk drives from Siemens and Tandon, also full line of disk drive cabinets and power supplies. Group discounts available.

TRIONYX ELECTRONICS, INC.
PO Box 5131
Santa Ana, CA 92704

Contact: Bill Perry Phone: 714 830-2092

Comments: Manufacturer of H8 computer products: 64K memory, improved motherboard, 2/4 Mhz Z80 CPU board, universal floppy disk controller board. Mass memory and 16 bit 8086 processor coming soon.

ULTIMETH CORP.
24025 Fernlake Dr
Harbor City, CA 90710

Contact: Dean K. Gibson

Phone: 213 539-4276 (9 am to noon PST)

Comments: Hardware, software and consultation available. Products: H89 monitor ROM; HDOS device drivers for H17, Magnolia DD controller, Magnolia 128K board, additional DG 64K boards, DG Super-89 additional memory; Magnolia CP/M 4Mhz patches. Price: $40 (ROMs: $50); includes shipping and handling. CA residents add sales tax.

UNEEKSOFT
Box 159
Schriever, LA 70395

Contact: Cornelius A. Linebaugh Phone: n/a

Comments: No hardware. Software and consultation available. Products: computer enhanced education:customize question/answers to any subject. Uses include: vocabulary, history, etc. Creating new subjects is easily accomplished. Includes 250 trivia questions $20.00. Special discounts available for teachers and HUGgies.

UNIVERSAL RADIO CO.
10528 Tomwood Ave
El Paso, TX 79925
or
PO Box 26041
El Paso, TX 79926

Contact: Wally Thompson, Manager Phone: 915 592-1910

Comments: No hardware or consultation. Software available. Products: *HBBS* Bulletin board software in MBASIC under HDOS $29.95 LazerBlast action game in ABS/HDOS, CP/M or no DOS $19.95 Dragon II maze games in MBASIC/HDOS $19.95 All plus $2.00 per order shipping and handling. Information sheet available upon request.

VIKING SOFTWARE
2243 S Belaire Dr
Salt Lake City, UT 84109

Contact: Grant Phone: 801 484-9573 after 5

Comments: Hardware, software and consultation available. Products: Printer Drivers, Copiers, Sorters, Labeler Database, Vdir/Tdir, HDOS Overhaul, 1-drive Kit, Verify, Pirate & Compare, List, Filer, Crashed Disk Utility. 'Crash' via Software Wizardy. HDOS or CP/M. Free catalog.

WISCONSIN INTELLIGENT SYSTEMS ENGINEERING (W.I.S.E.)
Box 344 422 Third St
Baraboo, WI 53913

Contact: Thomas R. Luck Phone: 608 356-9432

Comments: Hardware, software and consultation available. Products: serial, parallel and real time clock board and supporting hardware and software. Extender and Epson serial boards. Osborne Business packages. More hardware and software as available. Parallel-models come in TTL or serial compatible. Centronics (no special drivers needed) available 1/83.

DAVID WONG AND ASSOCIATES
PO Box 406
Croton Falls, NY 10519

Contact: David Wong Phone: n/a

Comments: No software. Hardware and consultation available. Products: used Heath H8 memory board, I/O card, terminal, and complete H8 system. All equipment is fully tested prior to shipping.

YOUNG INVESTMENT RESEARCH
PO Box 670
Glen Ellyn, EL 60137

Contact: Fredric S. Young Phone: 312 469-1654

Comments: No hardware. Software and consultation available. Product: program for daily stock market anaylsis and individual stock trading signals. Uses proven and original technical indicators. Explanation of indicators and data file is included. Young Investment Research is registered with the S.E.C. as an investment adviser.

ZEDUCOMP
PO Box 68
Stirling, NJ 07980

Contact: Jane E. Hesterman Phone: 201 755-2262

Comments: No hardware. Software and consultation available. Product: ZED, the fast full-screen editor for H/Z personal computers. Ideal for editing program source code and data files, and for simple word processing. ZED runs under CP/M on H8/H19, Z89, and Z90 computers. Requires 32K, one disk. $35.00

Z-RELEASE CO.
995 Wenrick Dr
Beavercreek, OH 45385

Contact: Barry Deer Phone: n/a

Comments: No software or consultation. Hardware available. Product: modification kit for H89 and related terminals, which permits cover release using front panel pull knobs. Kit includes hardware, full instructions, installs in 15 minutes. $7.00/kit.

(NOTE: This listing is of December 8, 1982. If your club is not listed or you are forming a new club and you would like to have it included in our list, please send the proper information to: Heath Users' Group, Attn: Nancy Strunk, Hilltop Road, St. Joseph, MI 49085)

Current Local HUG Clubs

AK, Eagle River
Alaska HUG
P.O. Box 951
Eagle River, AK 99577
907-694-9908 Group Size 20
Contact Person: Ben Sevier

AZ, Phoenix
PHUG (Phoenix Heath Users' GP)
2727 W Indian School Rd
Phoenix, AZ 85017
602 991-2515 Group Size 60
Contact Person: John A Grosberg, President
2nd Tues at 7:00 p.m. at HEC

AZ, Tucson
SUNHUG (Tucson HUG)
7109 E Broadway
Tucson, AZ 85710
602 885-6773 Group Size 15
Contact Person: Steven Kutoroff, President
Meet even months first Sunday 2:00 pm
Tucson HEC
Meet odd months first Thurs 7:30 pm

CA, Anaheim
ANAHUG (Anaheim HUG)
330 E. Ball Road
Anaheim, CA 92805
213 330-8118 Group Size 103
Contact Person: Bob Chamberlain, Sec.
3rd Thursday 7:30 PM at HEC
BB 714 774-7860

CA, Campbell
San Jose HUG
2350 S Bascom Avenue
Campbell, CA 95008
408 377-8472 Group Size 70
Contact Person: Gerlene York, Sec.
Meet lst and 3rd Wed 7:00 p.m HEC Campbell

CA, El Cerrito
ECHUG (El Cerrito HUG)
6000 Potrero Avenue
El Cerrito, CA 94530
415-236-8870
Contact Person: Alan Biocca
4th Wednesday at HEC

CA, El Monte
ETUG (ET/ETA 3400 Users Group)
11231 Oak Street
El Monte, CA 91731
Group Size 100
Contact Person: Charles Van Dyke
Newsletter 4 times year

CA, Fresno
FresHUG (Fresno HUG)
4833 East Santa Ana
Fresno, CA 93726
209-291-6258 Group Size 4
Contact Person: Harlen Collins

CA, Glendora
Southern CA H11 Users Group
430 W. Highland Avenue
Redlands, CA 92373
714-886-4766 Group Size 40
Contact Person: Dr. M.J. Di Girolamo
Meets at 625 E. Palm, Glendora, CA

CA, Los Angeles
Los Angeles HUG
P.O. Box 5334
Pasadena, CA 91107
213 792-4763 Group Size 20
Contact Person: Ray Livingston
1st Thursday 7:00 PM at HEC

CA, Pomona
Pomona HUG
1555 N Orange Grove Ave
Pomona, CA 91767
213 330-8118 Group Size 70
Contact Person: Bob Chamberlain, Sec.
Meet 4th Thursday each month
at 7:30p.m. at HEC
BB will be running by Jan 1, 1983

CA, Redwood City
BAHUG Bay Area HUG
2001 Middlefield Road
Redwood City, CA 94063
415-365-4915 Group Size 219
Contact Person: Bob Bance, Sec.
2nd Tuesday 7:00 PM at HEC

CA, Riverside
Tri-HUG
5705 Via Sotelo
Riverside, CA 92506
714-683-2929 Group Size 20
Contact Person: Kenny Adcock

CA, Sacramento
SHUG (Sacramento HUG)
1860 Fulton Avenue
Sacramento, CA 95825
91 662-7220 Group Size 35
Contact Person: Gloria Stewart, Sec.
Meet 2nd Wed 7:30pm at Sacramento HEC

CA, San Diego
San Diego HUG
12202 Kingford Court
El Cajon, CA 92021
714-561-2540 Group Size 170
Contact Person: Richard Cobb
1st Wednesday 7:00 PM
at Parkway Jr HS La Mesa

CA, Visalia
Visalia HUG
29924 Road 168
Visalia, CA 93291
209 747-3235 Group Size 3
Contact Person: Peter Shkabara
Meeting time and place
not established yet

CA, Woodland Hills
LUVAHUG
22504 Ventura Blvd.
Woodland Hills, CA 91364
213-883-0531 Group Size 40
Contact Person: Paul S. Townsend
2nd Thursday 7:00 PM at HEC

CO, Colorado Springs
CSHUG (Colorado Springs HUG)
Colorado Springs, CO 80906
303 632-3019 Group Size 25
Contact Person: Richard Evers
Meet last Thurs each month 7:00 pm
Have 24hr BB (303) 634-1158

CO, Denver
DENHUG (Denver HUG)
P.O. Box 20422
Denver, CO 80220
303-394-2082 Group Size 120
Contact Person: Alfred K. Carr, Sec./Tres.
BB 303-423-3224 (24 hrs)
2nd Monday 7:00 PM at HEC

CO, Ft. Collins
FT.HUG (Fort HUG)
822 E. County Road 30
Ft. Collins, CO 80525
303 669-4116 Group Size
Contact Person: Ted Benglen, II
Meet once a month at present

CT, Avon
CONNHUG (Connecticut HUG)
395 W Main Street
Avon, CT 06001
203 589-3824 Group Size 35
Contact Person: BOB Conlon, President
1st Wednesday at 7:00 pm at HEC
BB 203 674-8915

CT, Mystic
MYSTIC ZDS/HUG
14 Holmes Street
Mystic, CT 06355
203 536 6953
Group Size
Contact Person: Matt Trask
Last Wednesday at 7:00 pm, above address
MOXON, Inc.

FL, Fort Myers
SWFHUG (Southwest Florida HUG)
P.O. Box 05-37
Tice, FL 33905
Contact Person: Robert Sloat
Meet 2nd Tues each month 7:30 p.m.

FL, Fort Walton
NWFHUG (NorthWest Florida HUG)
812 Cherokee Road
Eglin AFB, FL 32542
904-651-2108 Group Size 30
Contact Person: George A Repasy, President
Meetings 2nd Wed at DATATEC Inc. 7 PM

FL, Jacksonville
JUG (Jacksonville Users Group)
8262 Arlington Expressway
Jacksonville, FL 32211
904 725-4554 Group Size 40
Contact Person: Jerry Leon
Meet lst Wed each month at HEC Jacksonville
BB 904 725-4995 25 hrs

FL, Miami
Miami Amateur Computer Club
4705 W. 16th Avenue
Hialeah, FL 33012
305-823-2280 Group Size 35
Contact Person: Emileo Crespo
Meet 2nd Thurs each month 7:00 pm at HEC
BB (305) 823-2281

FL, Orlando
HUG of Central FL Computer Sc.
135 Stonyridge Drive
Longwood, FL 32750
305-339-8853 Group Size 11
Contact Person: Jim Donlon, President
4th Wednesday at various locations

FL, Pensacola

221 E. Government
Pensacola, FL 32501
Group Size

Contact Person: John Causey
Meet 2nd Tue each month 7:00 pm
at above address
Meet at Professional Business Sys.

FL, Tampa
Al Lynch HUG
PO BOX 155
Ruskin, FL 33570
813 645-6140 Group Size 40
Contact Person: Richard Gunderson,
Secretary
Meet lst and 3rd Wed 7:30 pm at HEC

GA, Atlanta
ATHUG (Atlanta HUG)
5285 Roswell Road
Atlanta, GA 30342
404 436-3677 Group Size 50
Contact Person: Leon Trulove
Meet first & third Thurs 7:00-9:00 p.m.
BB 404 252-4342 6:00pm to 8:00am

Ga, Augusta
CSRA Computer Club
PO Box 284
Augusta, GA 30903
404 860-2934 Group Size
Contact Person: Paul Pennington
Meet 4th Monday at 7:30pm
at Campus Computer Sys
3830 Washington Rd Martinez, GA 30907

HI, Hilo
BIHUG (Big Island HUG)
P.O. Box 4271
Hilo, HI 96720
808 959-8985 Group Size 10
Contact Person: R.A. Curtis
Meetings at HELCO Conference Room, Hilo
Meet 1st Thurs each month 7:00pm

HI, Honolulu
HUGH (HUG Hawaii)
1255 Nuuanu Avenue #1405
Hononlulu, HI 96817
808-531-8843 Group Size 45
Contact Person: Jim Branchaud, President
3rd Saturday at Mililani,
1st Wednesday at Kalihi

IA, Des Moines

4025 E. 32nd Street
Des Moines, IA 50317
515 266-2382 Group Size 8
Contact Person: Harold Dykens
Meet third Wed eat motn 7:00 pm

IL, Champaign
CCCC (Champaign Cty Comp Club)
412 Dorchester
Mahomet, IL 61835
312-586-5100 Group Size 12
Contact Person: Roger Fraumann

IL, Davis
NI-HUG Northern IL HUG
427 Lockwood Rt 1
Davis, IL 61019
815 248-2241 Group Size
Contact Person: Jim Isenhart
Just starting

IL, Downers Grove
I-HUG (Illinois HUG)
6116 Lane
Downers Grove, IL 60516
312-971-1660 Group Size 25
Contact Person: Len Bateman
3rd Wednesday at various locations

IL, Downers Grove
HUG Metro (Local Chicago)
15 W. 780 Fillmore
Elmhurst, IL 60126
312 985-2381 Group Size 30
Contact Person: Larry Shipinski, President
Meet 2nd Monday of each Month 7:30pm at HEC

IL, Peoria
CIHUG (Central Illinois HUG)
408 Bess Street
Washington, IL 61571
309-745-8313 Group Size 17
Contact Person: Ronald Morgan, President
3rd Sunday at 3 PM (Jan, Mar, May, Jul, etc.)

IL, Rockford
Blackhawk Bit Burners
325 Beacon Drive
Belvidere, IL 61008
815-544-5206 Group Size 35
Contact Person: Frank D. Dougherty

IN, Indianapolis
Indianapolis HUG (IHUG)
1189 Cumberland Avenue
West Lafayette, IN 47906
317-257-4321 Group Size 60
Contact Person: Robert Wild, President
2nd Wednesday 7:15 PM at HEC

KS, Wichita
Wichita HUG
1909 Siefkin
Wichita, KS 67208
316-681-3456 Group Size 18
Contact Person: David Horwitz
2nd Sunday of ODD months
2:00 PM at E. Pike Bldg.
Corner of Webb and Kellog in Wichita

LA, New Orleans
NOHUG
1900 Veterans Blvd.
Kenner, LA 70062
504-467-6321 Group Size 60
Contact Person: Nathan Gifford
1st Wednesday at 7:30 PM at HEC

MA, Northampton
Hampshire Computer Club
37 Drewson Drive
Northampton, MA 01060
617 584-6227 Group Size 80
Contact Person: George Scheurer
2nd Tuesday 7 PM
at McConnel Hall Smith College
Beginners Group 1st Tuesday

MA, Peabody
HUG North Shore
6 Susan Drive
Saugus, MA 01906
617-233-2941 Group Size 60
Contact Person: Hal Messinger, President
BB 617-531-9332 24 hours
2nd Wednesday Hilltech Bldg Danvers

MA, Pittsfield
BERCHUG (Berkshire County HUG)
73 Waverly Street
Pittsfield, MA 01201
Contact Person: Paul E. Ouellette, Pres.

MA, Wellesley
HUG'EM
165 Worcester Ave
Wellesley, MA 02181
617 237-1510 Group Size 100
Contact Person: Malcolm Partridge, Dir.
3rd Wed 7:00 p.m. at HEC

MD, Baltimore
Baltimore HUG
6106 Marlora Road
Baltimore, MD 21239
301-323-6093 Group Size 70
Contact Person: William Frey
3rd Thursday 7:00 PM at HEC

MI, Detroit
Metro Detroit Area HUG
7716 Winona
Allen Park, MI 48101
313-928-7423 Group Size 50
Contact Person: Chuck Dattolo

MI, Kalamazoo
SMHUG (Southwest Michigan HUG)
623 Wildwood Place
Kalamazoo, MI 49008
616-349-3535 Group Size 50
Contact Person: Al Jacobs, Sec./Treas.
4th Saturday 1 PM
at Western Michigan University
Moore Hall, Rm 1034, News Letter

MI, Saint Joseph
BLHUG (Blossomland HUG)
P.O. Box 414
Saint Joseph, MI 49085
Group Size 33
Contact Person: Vance Fisher, Chair Person
1st Tuesday 7:00 PM at various locations
Check HEC for place of meeting.

MN, St. Paul-Minneapolis
SMUGH
8895 72nd Street
Cottage Grove, MN 55016
612-459-4382 Group Size 100+
Contact Person: Steve Howard, President
Last Monday at 7:00 PM
(Alt. St Paul & Mpls)

MO, St. Louis
SLHUG (St. Louis HUG)
3794 McKelvey Road
Bridgeton, MO 63044
618 259-8113 Group Size 120
Contact Person: Brad Pulaski, Treasurer
Meet 2nd Wed 7:30 pm at HEC

NC, Charlotte
HUG Charlotte
2721 Picardy Place
Charlotte, NC 28209
704-374-6997
Contact Person: Jim Simpson

NC, Fayetteville
Cape Fear Computer & HUG
2454 Vandemere Avenue
Fayetteville, NC 28304
919-485-4586 Group Size 11
Contact Person: Jerry Mills, President
Bi-Weekly 2:00 PM on Sundays at homes.

NC, Hillsborough
HUG-RTP
Rt 3, Box 39A
Hillsborough, NC 27278
919 73-6678 Group Size
Contact Person: Joe Williams
Meeting place and time unknown

NE, Omaha
OMAHUG (Omaha HUG)
9207 Maple Street
Omaha, NE 68134
402-391-2071 Group Size 200
Contact Person: Chuck Juvenal, Chairman
3rd Sunday 6:30 PM at HEC

NJ, Fairlawn
HUGNJ (HUG of New Jersey)
3507 Broadway
Fairlawn, NJ 07410
201-791-6938 Group Size 85
Contact Person: Mel Beiman
BB 201-791-3015 24 hours
3rd Monday 8 PM at HEC

NJ, Ocean
SHUG (South Jersery HUG)
1013 State Hwy 35
Ocean, NJ 07712
201 775-1231 Group Size 71
Contact Person: James J Jones Jr. (Sec)
Meet 1st Wed 7:30 p.m. at Ocean HEC
BB 201 775-8705 24hrs.

NM, Albuquerque
Albuquerque HUG
7205 Minuteman NE
Albuquerque, NM 87109
505 821-7393 Group Size 15+
Contact Person: Jim Pomerleau
Meet 1st & 3rd Sun 7:00 pm at members homes

NY, APO New York
BWHUG (Bentwaters HUG)
PSC Box 3703 RAF Bentwaters
APO New York, NY 09755
Group Size
Contact Person: Sgt. Rodney Jones

NY, Buffalo
BUG (Buffalo Users Group)
19 Mayfield Lane
Tonawanda, NY 14150
716-662-7122 Group Size 70+
Contact Person: Dick Rose, Newsletter Editor
3rd Sunday 1 PM at HEC

NY, Long Island
Jeri-HUG (Jericho HUG)
329 Maplewood Road
Huntington Sta., NY 11746
516 427-3126 Group Size 86
Contact Person: Darel W. Kadlec, Sec-Tres.
2nd Thursday 7:30 PM at HEC

NY, Rochester
RHUG (Rochester HUG)
937 Jefferson Road
Rochester, NY 14623
716-773-0193
Contact Person: Joanne Lang, Chairperson
Last Tuesday at 7:00 PM at HEC

OH, Cincinnati
Cincinnati HUG
10133 Springfield Pike
Woodlawn, OH 45215
513-771-8850 Group Size 50
Contact Person: Roger Svoboda
2nd Tuesday 6:30 PM at HEC, $10.00 Dues/year
Newsletter I/O Port

OH, Cleveland
NOHUG (Northeastern Ohio HUG)
4705 Tanglewood Place
Lorain, OH 44053
Group Size 40
Contact Person: Art Petkosek
2nd & 4th Thursday 7:00 PM
at Maple Hts. Library

OH, Cleveland
Cleveland HUG
28100 Chagrin Blvd
Cleveland, OH 44122
216 291-1612 Group Size 10
Contact Person: Gerry Ciganko
First Thurs 7:00 p.m. at HEC
BB 216 292-7553 24 hours

OH, Columbus
Columbus HUG
2500 Morse Road
Columbus, OH 43229
614-475-7200 Group Size 50
At HEC

OH, Dayton
Wright-Patterson HUG
4110 Spruce Pine Court
Dayton, OH 45424
513-236-4915 Group Size 36
Contact Person: Jim Moore, President
1st Thursday 4 PM at Wright-Patterson AFB

OH, Toledo
THUG (Toledo HUG)
4804 Mt. Airy Road
Sylvania, OH 43560
419-882-3626 Group Size 30
Contact Person: John F. Priebe, President
Last Sunday 8 PM

OK, Oklahoma City
OKC TUGS
2727 NW Expressway
Oklahoma City, OK 73112
405-848-7593 Group Size 40
Contact Person: Bob Perry
2nd Sunday at 1:00 PM at HEC
BBS 405-848-9329 24 hours

OKINAWA
OKIHUG (Okinawa Users Group)
Box 376, USAFSO
APO San Francisco, CA 96331
Group Size 13
Contact Person: Carl H. Eaton
Meet on Fridays monthly at 7:30 pm
Meeting place varies

PA, Frazer
FUG (Frazer Users Group)
1641 Princess Anne Drive
Lancaster, PA 17601
717-397-3146 Group Size 60
Contact Person: Dave Hendrie, President
1st Sunday 4 PM at HEC

PA, Philadelphia
Philadelphia Heath Users' Group
6318 Roosevelt Blvd
Philadelphia, PA 19149
215 288-0180 Group Size 135
Contact Person: Henry F. Beechhold, Pres.
Meet 2nd Wed. each month 7:00 p.m. at HEC 8

PA, Pittsburgh
Pittsburg HUG
3482 William Penn Highway
Pittsburgh, PA 15235
412-824-3564 Group Size 35
Contact Person: John C. Schultz, President
3rd Thursday 7:00 PM at HEC

RI, Warwick
HUG-RI' (HUG of Rhode Island)
558 Greenwich Avenue
Warwick, RI 02886
401-738-5152 Group Size 150
Contact Person: Walt Phaneaf
2nd Wednesday 8 PM at HEC

TN, Memphis
Memphis HUG
6874 Kirby Brooks Drive
Memphis, TN 38115
901-362-8860 Group Size 4
Contact Person: Morris Proctor
Meets at National Cotton Council

TN, Nashville
Mi Te HUG (Middle Tenn HUG)
C/o Radio Ser Ctr 116 17th Ave S
Nashville, TN 37203
615 242-0556 Group Size
Contact Person: Charlie Wolf
Meet 2nd Monday 6:30 pm
at Radio Service Center

TX, Austin
AHUG Austin Heath Users Group
4206 Tamarack Trail
Austin, TX 78759
512 255-0376 Group Size
Contact Person: George Koehler
Meet once mo 8:00-10:00pm
Applied Research Labs
Univ of Tx 10,000 Burnet Rd Austin

TX, Dallas
DFW HUG (Dallas-Fort Worth)
2715 Ross Avenue
Dallas, TX 75201
214-826-4053 Group Size 70
Contact Person: Henry Gardiner, President
1st Thurs. and 15 days later (Wed.)
at 7:30 PM At HEC BB 214-742-1380

TX, Ft. Worth
FWHUG
6825A Green Oakes Road
Ft. Worth, TX 76116
817 737-8822 Group Size 26
Contact Person:
Meets 2nd and 4th Tues

TX, Houston
HUG-H
7798 Braniff
Houston, TX 77061
713-644-5689 Group Size 75
Contact Person: Tom McCormick, President

TX, San Antonio
San Antonio (SAHUG)
7111 Blanco Road
San Antonio, TX 78216
512-341-8876 Group Size 65
Contact Person: Tom Schneider
First Tuesday at HEC, 7:30 PM

TX, Wichita Falls
NORTEX HUG (N. Texas S. Okla)
2413 Kemp Blvd in Office World
Wichita Falls, TX 76309
817 322-1007 Group Size 24
Contact Person: Alan D. Martin
Meet third Sat 9 am at above address

UT, Castle Dale
Castle Mesa Computer Group
670 N. 90 E. Box 123
Castle Dale, UT 84513
801 381-5173 Group Size 10
Contact Person: Doug Sorensen
Meet 3rd Thurs 5:30 p.m above address

UT, Midvale
UHUG (Utah HUG)
58 E. 7200 South
Midvale, UT 84047
801-566-4628 Group Size 75
Contact Person: Don Greene, President
2nd Wednesday 7:00 PM at HEC

VA, Christiansburg
New River Valley HUG
Christiansburg, VA 24073
703 382-4234 Group Size 35
Contact Person: Ted Fleshman
Meet 1st Thurs 7:30 pm
Christiansburg High School

VA, Fairfax
CHUG (Capital HUG)
P.O. Box 2653
Fairfax, VA 22031
703 591-7861 Group Size 500+
Contact Person: Mike Frieders, President
3rd Monday 7:30 PM at Fairfax High School
Large Software Library (135+ disks)

VA, Richmond
Richmond HUG
1724 Blakemore Road
Richmond, VA 23225
804-232-2925 Group Size 8
Contact Person: Jim Scott
2nd Monday at various locations

VA, Virginia Beach
THUG (Tidewater HUG)
1055 Independence Blvd.
Virginia Beach, VA 23455
804-460-0997 Group Size 90
Contact Person: John E. Smith, President
1st & 3rd Tuesday at 7:00 PM at HEC

WA, Bellevue
Pacific Northwest HUG
C/O Jan Johnson PO BOX 993
Bellevue, WA 98009
206 363-3927 Group Size 150
Contact Person: Nathan Hall
Meet 2nd Thurs odd months 6:00 Tukwila HEC
Meet lst Mon even months Seattle HEC

WA, Spokane
SPOHUG (Spokane HUG)
S. 3810 Havana
Spokane, WA 99204
509-448-9727 Group Size 18
Contact Person: Charles Ballinger
Newsletter

WA, Vancouver
Portland-Vancouver HUG
516 SE Chkalov Drive
Vancouver, WA 98663
206-254-4441 Group Size 25
Contact Person: Dan Heims
1st Thursday at 7:30 PM at HEC
Portland OR and Vancouver Area

WI, Milwaukee
MHUG Milwaukee Heath Users Gp
5215 W. Fond Du Lac Ave.
Milwaukee, WI 53216
414 352-3346 Group Size 40
Contact Person: Marvin Olson, Tres.
Meet 3rd Saturday 2:00 pm at HEC

CANADA, Calgary, ALBERTA
HUG (Heath Users of Canada)
101 5809 Macleod Trail South
Calgary, Alberta T2H 0J9 CANADA
403-252-2688
Contact Person: Gary Selman

CANADA, Ottawa, ONTARIO
HUG 'O' (HUG Ottawa)
866 Merivale Road
Ottawa, ONTARIO K1Z 5Z6 CANADA
613-728-3731 Group Size 30
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Contact Person: Bill Smith

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Vancouver BC, CANADA V5R 5I7
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Contact Person: Eric Worthy
Last Monday 7:30 PM at HEC
BB 604 430-8233

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Dutch HUG
Hofstraat 30
7311 KW Apeldorn HOLLAND
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Contact Person: Evert Jan Stokking

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APO Miami, FL 34001
84-4094 Group Size 6
Contact Person: Michael Gulick, President
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809 725-1612 Group Size 5
Contact Person: Joseph Gonzalez

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APO NY, NY 09757
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Contact Person: Carl Lovett

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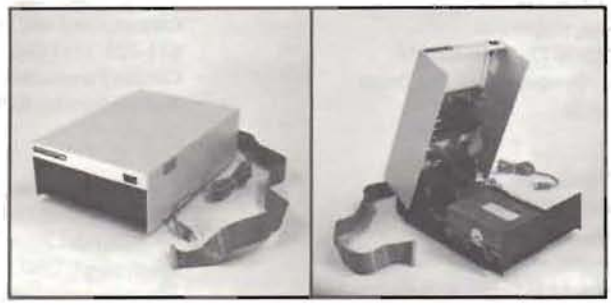

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The 2S+2P+RTC is a board that replaces the serial board in the Heath/Zenith H88/H89 and provides the following:

2-serial input/output ports that are software and cable equivalent to the H88-2 and one part less than the H88-3. Both serial ports can be configured as a DCE or DTE port.

2-parallel input/output ports: 16 bits output and 16 bits input plus handshaking lines. Four of the input bits may be used as status signals. An optional cable is available for Centronics parallel I/O.

RTC-real time clock with 1/10Øth sec, 1/10th sec, seconds, minutes, hours, day of week, day of month, and month counters. May be programmed to interrupt on alarm, or every 1/10th of sec, sec, minute, hour, day, month or never. Optional on board battery and charger will keep the clock running for months.

The 2S+2P+RTC board comes with instructions and program listings in assembly and BASIC source to use the parallel and real time clock.

Available Stock to 90 Days After Receipt of Order. Prices and specifications may change without notice. Foreign orders payable in U. S. Funds on a U. S. bank. Foreign orders please allow $15.00 extra for air shipping and handling. Allow extra time also.

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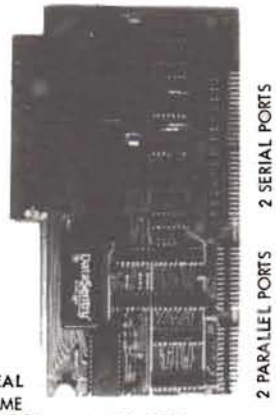

(2S+2P+RTC)

EPSON Serial Interface Board

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Interested in Starting a Local Heath Users' Group?

Read on for some helpful hints....

Many HUG members have been writing requesting that we give some kind of help or ideas when they start to organize a local HUG. With the helpful ideas of Bill Johnson, former President of the Capitol Users' Group as presented at the National Heath Users' Group Conference, and questions we have received; the National HUG has the following suggestions.

What you are about to do is form a local independent group for the purpose of sharing your Heath/Zenith computer experiences. Your group will have no formal ties with the National Heath Users' Group. The National Heath Users' Group exists to provide the Heath/Zenith computer user with a point of help, information, and access to other users' experiences and programs through the REMark magazine.

We can only offer suggestions and tell you what you can or can not do with programs from our library. If you have questions reqarding policy that effects the Heath/Zenith company, we are here to help you find the answer.

Local groups around the country function differently depending on what their membership wants - and that is what you have to determine; what will your group want from their local club? What do they want enough to do it? If your goals are for more than the individual members of the group are willing to work for, it won't succeed. So, please be realistic.

Suggestions for NEW local Heath Users' Groups

1. Don't get too formal too soon. Give yourselves a chance to get to know each other before you start electing officers other than temporary ones. Make your temporary officers in charge for 3-4 months. By then you will have a better idea of who will make good officers and your temporary officers will know if they can handle the load.

2. Your purpose is to provide each other with support, but that is limited to reasonable services. If you try to do too much for each other the group will exhaust itself. Exchange information, have educational programs, workshops and classes.

3. Reasonable services include a library, group purchases, some service to machines, and some consultation.

4. Library - it is possible to contact other HUG groups (groups listed in this issue of REMark) to help you start your library. However, try to get your members to build most of it. Beware of copyrighted materials and problems in distributing it. Contact a local lawyer to help you.

5. Group purchases - if you are small, go together with other groups to make group purchases advantageous to your group.

6. Service and consultation - don't encourage your members to 'hog' your experts time and talents - it's a sure way to lose that talent.

7. Distribute the work load as much as possible. There are lots of things (non-technical) people can do - all the little things that make a group work well, that don't take an expert to accomplish. And maybe, they can help the technical people and develop their skills.

8. Newsletter - don't feel bashful about 'borrowing' from other newsletters, but do give them the credit. It probably wouldn't hurt to get their permission first. Get on their mailing lists, it won't cost much. Your newsletter can be monthly, bimonthly, or quarterly.

9. You do need a person to act as a sounding board. Someone to be contacted about problems, who has knowledge of where to send the problem for help.

10. Check with a local attorney for help with all the legalities - tax status, insurance to protect yourselves against copyright problems, etc.

11. Programs - what do the members want to learn about? Local suppliers are very often happy to come discuss their products and how they work. Local companies and universities often have someone who can help your group learn something the group is interested in. Also, many vendors travel around the country - contact them, they may be willing to talk to your group when they are in the area.

12. Try to meet at the same time and place each month - it is easier to remember. Also consider name tags, it is easier for new people to get to know you that way.

13. Have a central Post Office Box or address for club mail.

14. Keep business matters to a minimum at club meetings. Save these things for board or committee meetings. Nothing kills a group more than all business, and learning nothing during or after the meeting.

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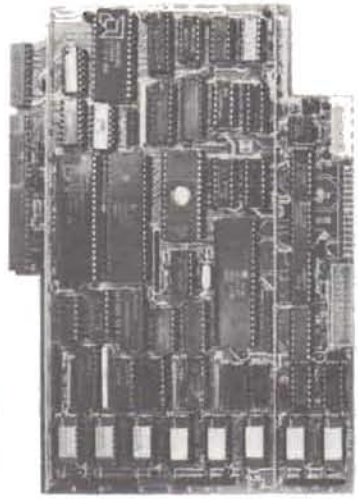

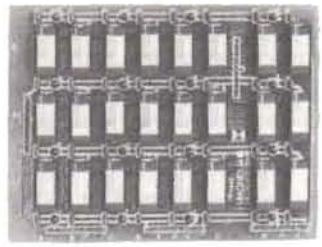

The Z89/90 is a good solid computer. But it does have certain limits.

We've had many requests to increase its CPU speed to 4MHz, but nothing met our standards for both field installation and reliability. And who needs anything less.

We increased its RAM to 176K with our 128K board, allowing use of MP/M™. However, without DMA, multi-user operations under MP/M are slow.

Networking '89s together has been a long-term goal of ours. Through the Corvus Constellation multiplexer we provided the first stage -- allowing computers to share Winchester disk storage. But that technique leaves much to be desired -- since each computer independently manages its disk allocation there are significant operational limitations on sharing disk files.

We first announced our impending 'RS422 Network Interface' at the 1982 West Coast Computer Faire. Our design goals included:

- RS422 Network Communication at 800K baud
- On-board Network Control and Data Buffering

As it progressed, we realized that we had designed an 'I/O Board' which was FAR MORE POWERFUL THAN THE '89 ITSELF!

After agonizing delays, the board is now in production as the '77422 Network Controller'. Compare these specifications with the Z89 itself (or the new 'upgrade' CPU boards):

- 4MHz Z80™ CPU
- 64K RAM, 256K (bank selectable) optional
- 8 K EPROM
- 4 CHANNEL DMA controller
- 2 Serial Ports: RS422 at 500KBaud
  RS232 at up to 19.2 KBaud

We also changed its name from '77321 Network Interface' to '77422 Network Controller'. Our 773xx products must be used in a Z89/90 computer. Although this product CAN be an I/O card in an '89 or 90, it can also be used independently as a stand-alone station on the network:

- permitting a terminal (Z19 or other) as a network station (with local disk storage), or
- permitting a printer to spool data directly from the network.

Network applications software is currently being developed and tested.

Software for an exciting non-network application is included. The workload is split between the Z89/90 CPU and the CPU on the '422 board:

- The Z89's 2MHz CPU continues to run Magnolia CP/M™, handling all physical I/O (console, printer, floppy and Winchester disks)
- The '422 board's 4MHz CPU runs an interface program which 'looks like' CP/M to an application program -- but passes CP/M system calls to the Z89's CPU for execution, allowing a 63K TPA on the '422 board!

With this division, the following Z89 limitations are overcome:

- The application runs on a 4MHz CPU
- The application has 63K of RAM available, independent of BIOS size
- The DMA controller (making a slave I/O processor of the '89 board) frees the application CPU from detailed I/O functions.

This last advantage is especially significant when executing MP/M on the '422 board, using the optional bank-selectable memory.

Hardware-dependent programs (including utilities like 'format') which perform actual physical I/O, must run on the 'slow' Z89 CPU. A special utility is provided to 'mark' those application programs which can execute more efficiently on the '422 board CPU.

The board is presently available in 64K and 256K versions which mount in an I/O slot (P504/P510) on the '89 CPU board. To limit power dissipation within the '89, no disk drive may be used internally.

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