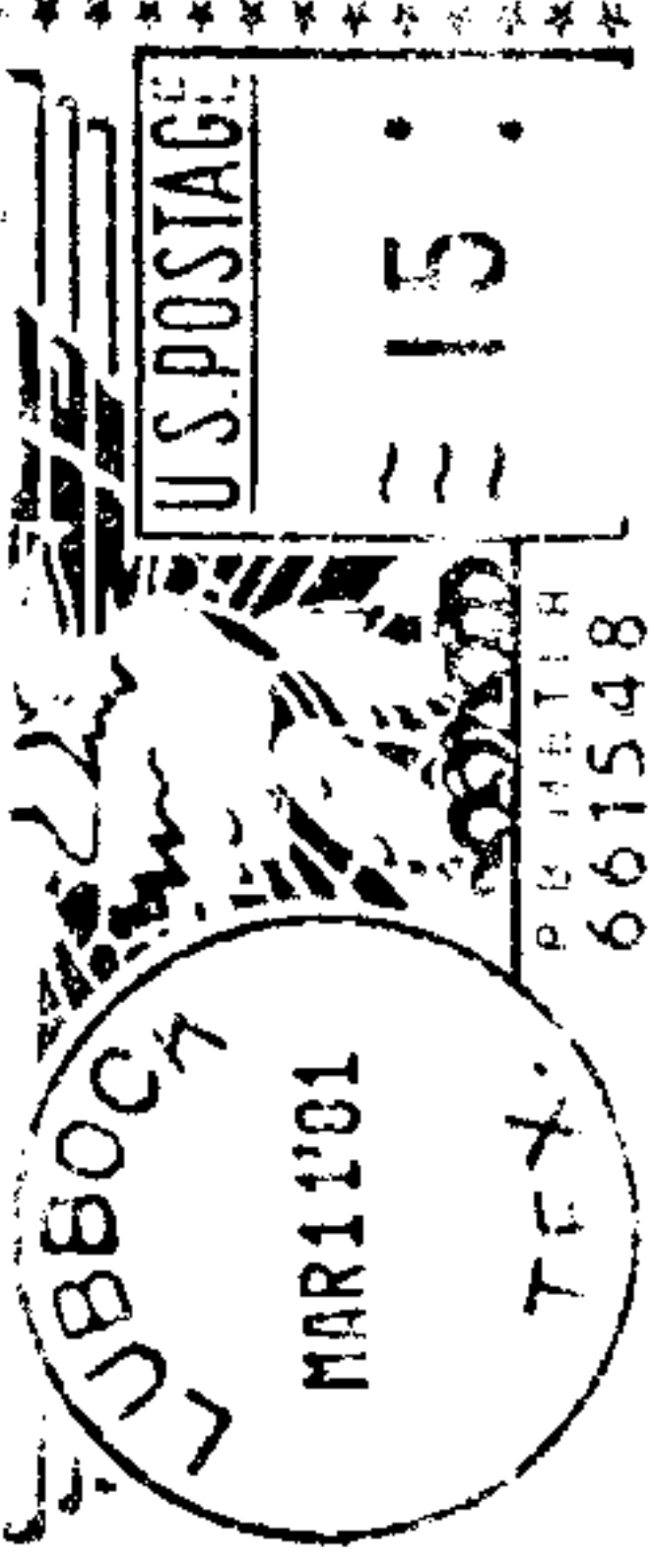
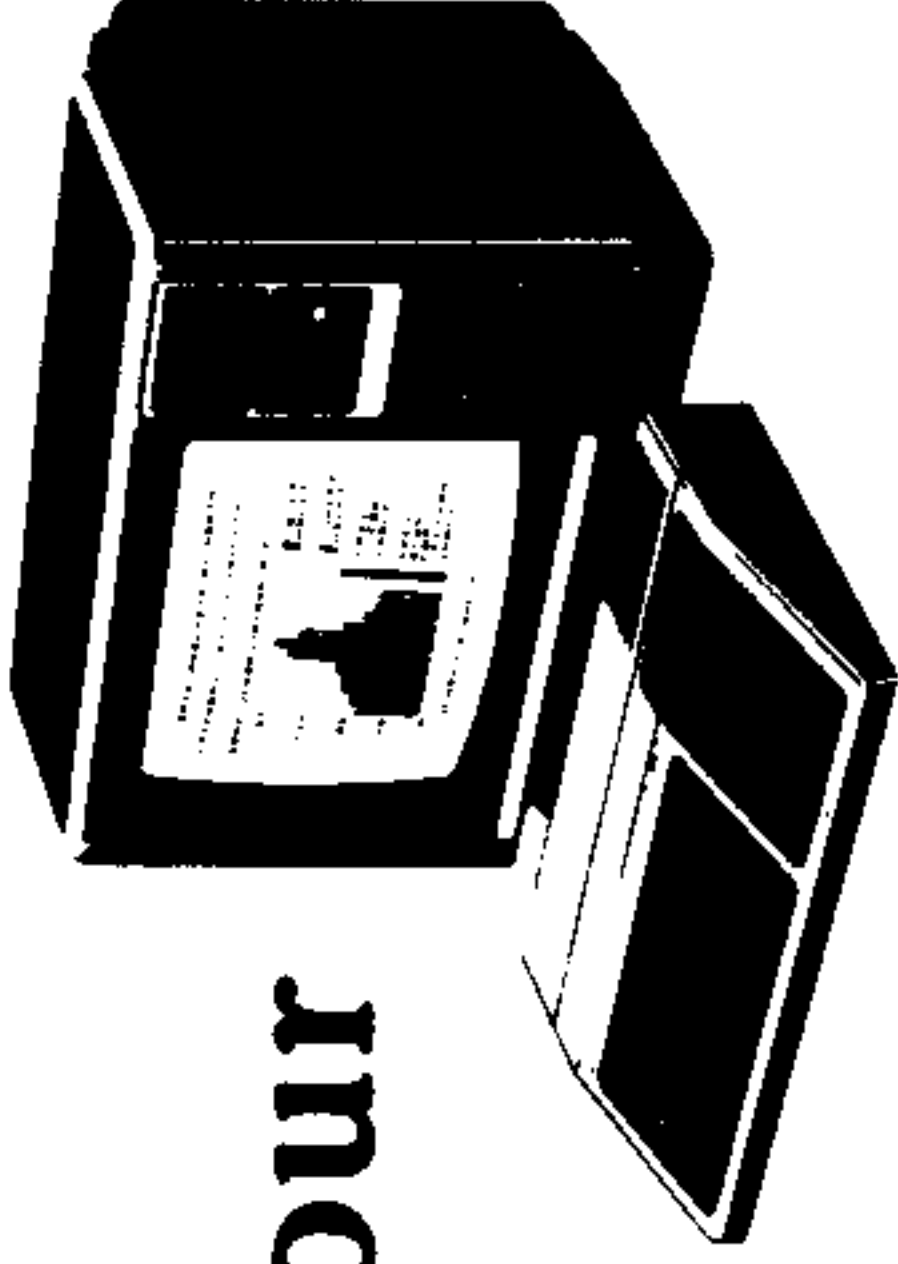


1981

# 99'er MAGAZINE<sup>T.M.</sup>

**Emerald Valley Publishing Co.  
P.O. Box 5537 • Eugene • Oregon 97405**

**Finally . . . A Magazine For Your  
TI-99/4 Home Computer**



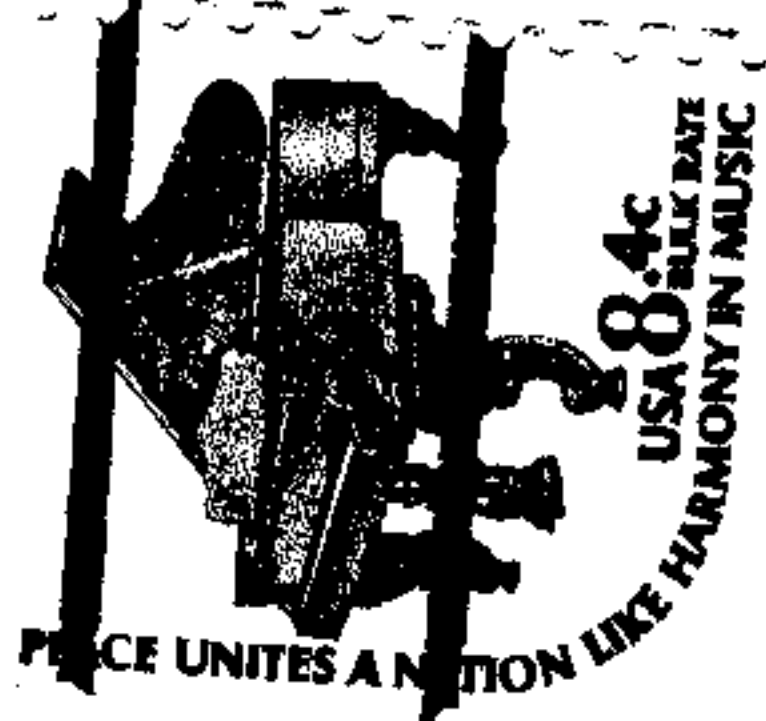
**And A**

**☞ FREE GIFT**

**To Help You  
Get More Out Of It!**

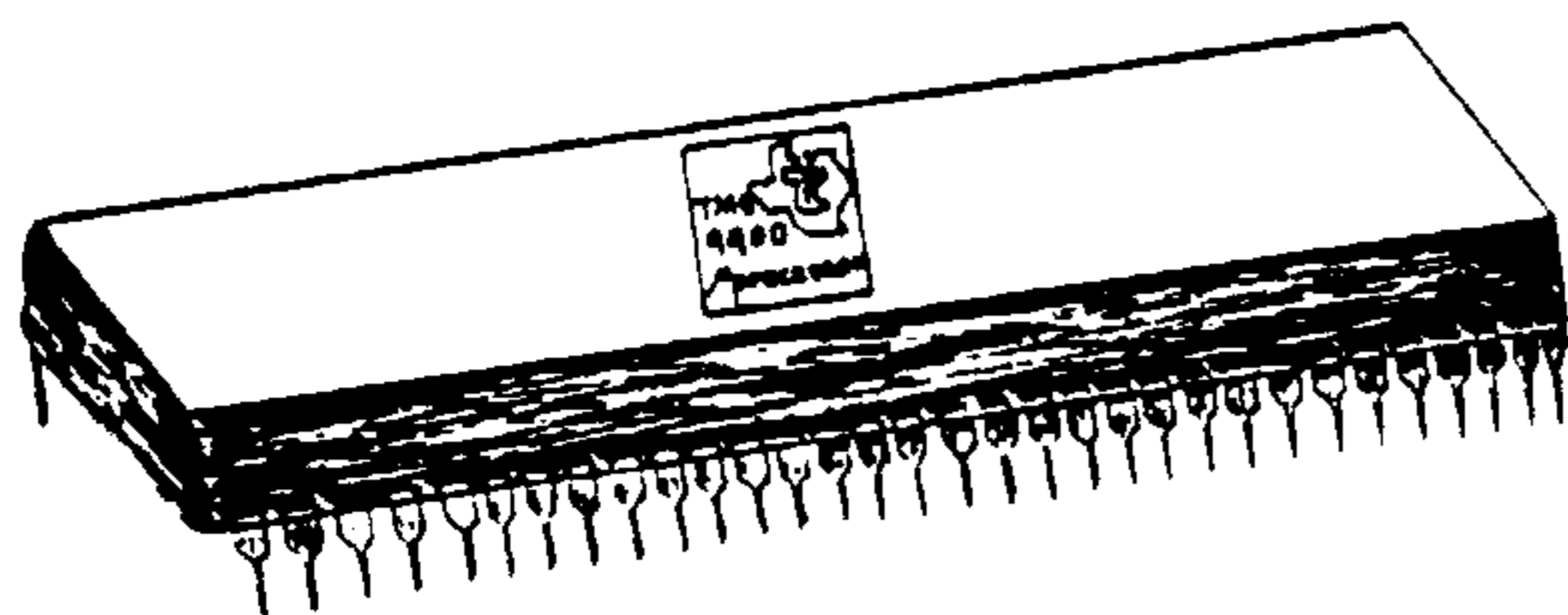
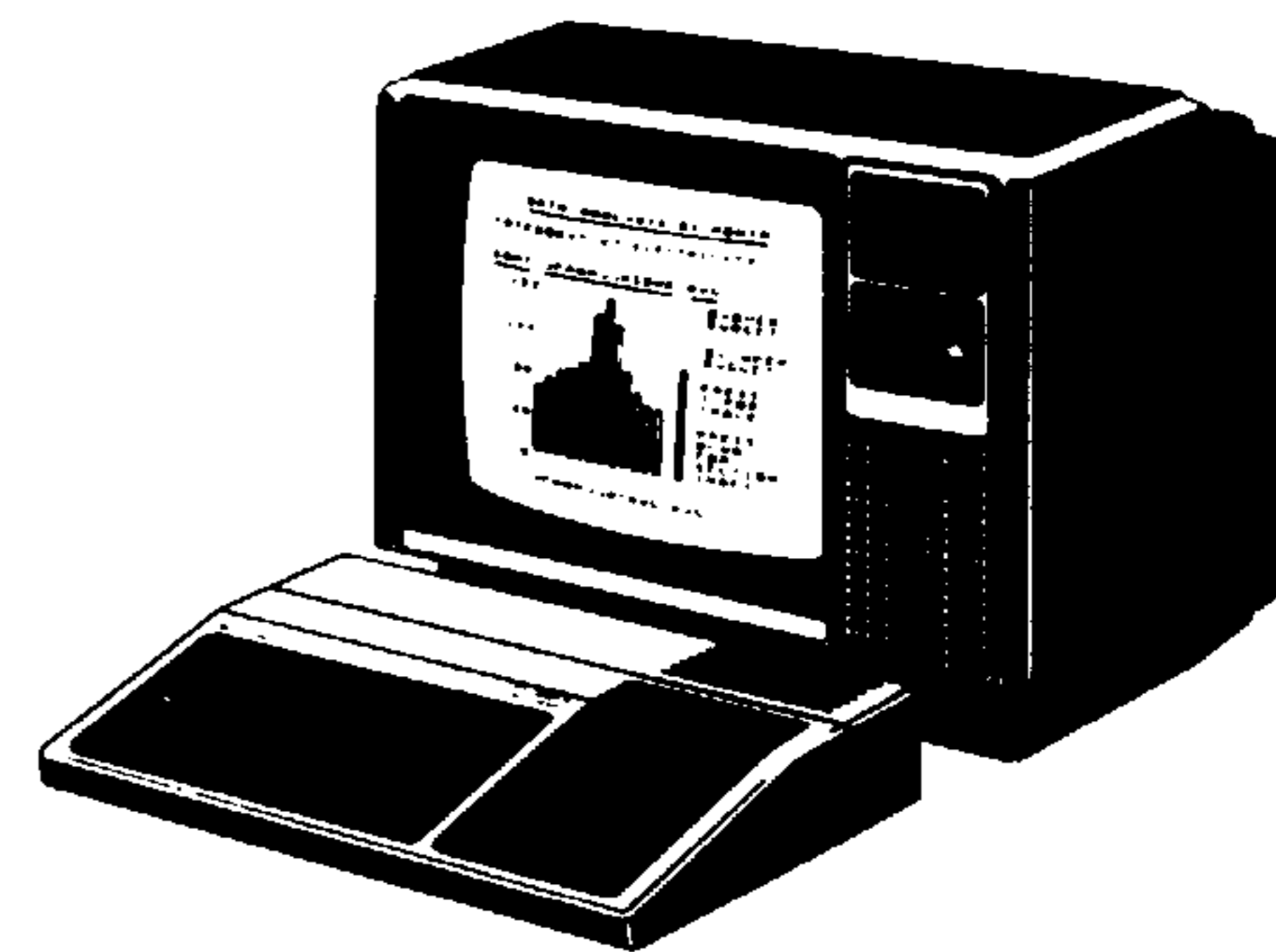
# 99'er Magazine™

P.O. BOX 5537 • EUGENE, OR 97405



# Finally – A Magazine Devoted Exclusively To Your 16-Bit Personal Computer

# 99'er MAGAZINE<sup>TM.</sup>



For Users Of The Texas Instruments TI-99/4  
And Other TMS9900-Based Personal Computer Systems

If you've ever searched the nearly two dozen existing microcomputer magazines for tutorial articles about, or software for the TI-99/4 home computer (or other personal computer using the TMS9900 microprocessor), you've probably come up empty-handed. Now, with the timely introduction of 99'er Magazine, this never again has to be the case . . .

## A Powerful CPU Comes Home

At the heart of the TI home computer lurks a 16-bit powerhouse capable of many feats of computing legerdemain. Yet most of this power lies brooding beneath many layers of "friendliness" and "human engineering." In each issue of 99'er Magazine you'll find hints and tricks to help you unleash the throbbing brute power of the beast within. We intend to take the TI-99/4 system all the way to its limits . . . and then push beyond, to find new tricks, new applications, and innovative ways of doing things that "couldn't be done" before.

## A Multi-Level Teacher

99'er Magazine will teach you the basics of TI BASIC and s-t-r-e-t-c-h your programming skills with the powerful techniques of the new Extended BASIC. With prescriptions from our resident Software Doctor, you'll be successfully writing and debugging your own programs in no time. New languages? Sure—we'll be covering them. Learn about 9900 assembly language, Pascal, LOGO, and how to make your speech synthesizer "sing for its supper . . ." Interested in moving up to a floppy—without slipping a disk? Or how to interface to the peripheral world of printers, plotters, bit pads, CRTs, and modems? You'll find it all in 99'er Magazine: tutorials for the beginners, early learning fun for your preschoolers, and applications tips that will keep the pros coming back for more.

## Lots of Ready-to-Run Software

We recognize that our readers are hungry for good software—programs written expressly for *their* machines, without time-consuming conversions and debugging. That's why in 99'er Magazine you'll find page after page of program listings ready to type in and run. (Note: We'll also provide language translation articles to help

you convert programs written in other popular BASICs.) Whether your interest is education, games and simulations, or business and professional applications, each issue will have something of value for you.

## Hard-Hitting Reviews

By selecting a 16-bit personal computer in the predominantly 8-bit microworld, you've shown that you're an astute buyer, able to recognize value and performance. We at 99'er Magazine take the responsibility of disseminating accurate information seriously, and believe that just publishing manufacturer or supplier descriptions is *not* enough. Therefore you'll find each product thoroughly evaluated—letting the chips fall where they may. Whether it's software, peripherals, or books, you'll get all the straight facts you need, when you need them.

## News, Views, "A"s & "Q"s

No other user resource has the wealth of information that 99'er Magazine contains. Rounding out each issue is a no-holds-barred editorial on a topic vital to our readers' interests. In addition, there's news from the users groups, database and network activities on *The SOURCE* and *TEXNET*,\* letters to the editor, and a valuable Q&A technical forum.

## A Supermarket of New Products

Surprisingly enough, advertising content is rated as a very important feature by readers of microcomputer magazines. The sharp, machine-specific focus of 99'er Magazine ensures that *most* of the advertised products and services will be of immediate interest to the vast majority of our readers. This means that 99'er Magazine—an extremely efficient marketing medium for our advertisers—will actually act as a powerful catalyst in stimulating innovative new product development . . . something that all users will benefit from.

## An Invitation to Participate

Right now we need all the help we can get. First of all, we'd like you to subscribe to 99'er Magazine. Subscriptions cost only \$15 for one year (6 issues). Your satisfaction is guaranteed, or the unfilled portion of your subscription will be refunded.

Please do it right away so that we can get an accurate count for producing a large-enough print run of the important charter issue. Since this first issue will contain essential reference material, we don't think that any present TI-99/4 users will want to miss it. So please send in your payment today.

The second way you can help is to let us know *what* you know, or *want* to know. Obviously, we can't fill up all the pages in each big issue without your programs, articles, hints and tips, comments, evaluations, and questions. So send them in right away. Don't forget illustrations and screen photos if appropriate. Remember: We're more interested in practical programs and useful applications than in fancy prose. Our editorial staff stands ready to help polish up your manuscripts. In addition to your name and address, please include your home and work telephone numbers, and enclose a self-addressed, stamped envelope for return of material. Incidentally, we do pay for contributions. And our payment schedule is definitely more generous than the typical "two-bit" micromagazine rate. In keeping with our philosophy, you can expect no less than a full 16 bits . . .

We're now ready to embark on an exciting adventure. Won't you join us?

# 99'er MAGAZINE<sup>TM.</sup>

Emerald Valley Publishing Co.

P.O. Box 5537

Eugene, Oregon 97405

Tel. (503) 485-8796

# Free!

Mail In Your  
Subscription Payment  
Within 7 Days . . .

And We'll Send You A FREE

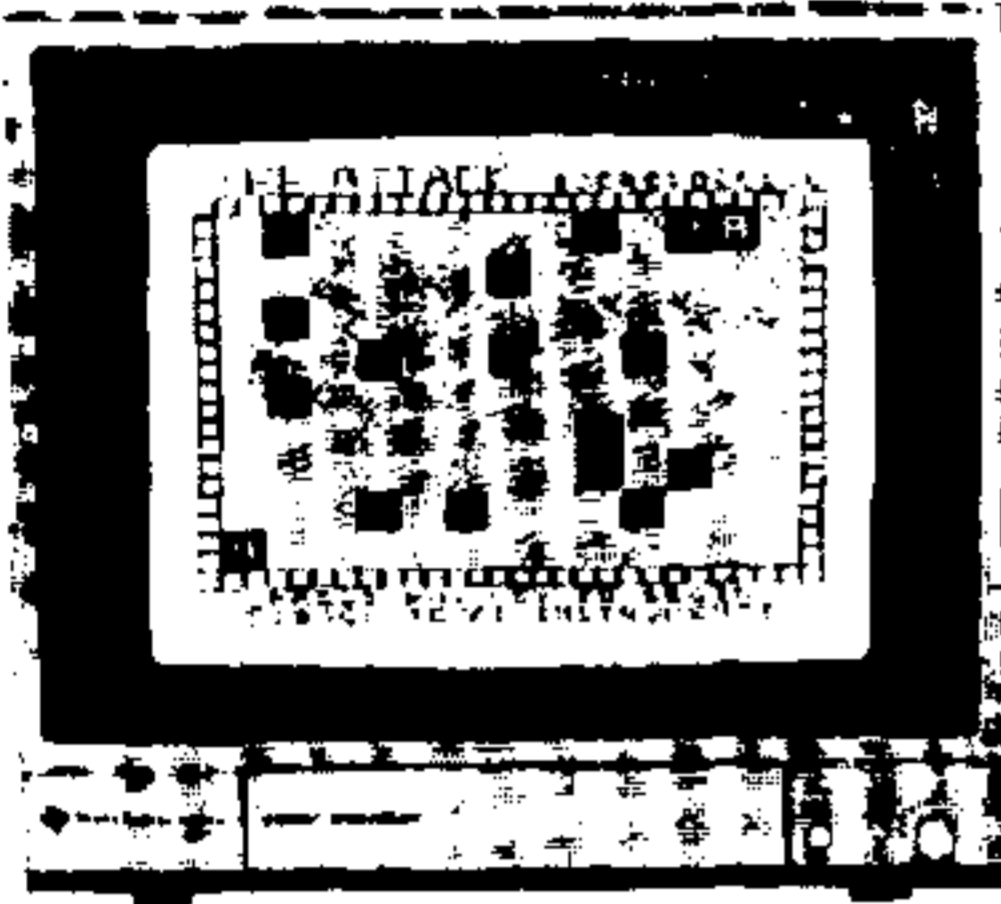
99'er  
TYPING ERROR REDUCTION KIT

See Enclosed Subscription Order Form  
For Complete Details

\*Service Mark of Texas Instruments

## User's Newsletter

### The Attack\* Is Here!



The Attack\* is a one-player game on four levels of difficulty which challenges you to successfully attack an onslaught of aliens.

The wait is finally over! TI's most exciting new entertainment package, The Attack\*, is now available. While you travel through space as the commander of a fleet of spaceships, infestations of "spores" gather to create "aliens." These "aliens," if uncontrolled, pose a serious threat to the safety of the cosmos. Your mission is to maneuver your ship to avoid these deadly creatures, while firing missiles to destroy both

"aliens" and gathering "spores."

This entertainment package provides continuous excitement and action. Four levels of difficulty enable anyone, from the novice to the pro, to enjoy the challenge of The Attack\*. This *Solid State Software*™ Command Module (model number PHM 3031) has a suggested retail price of \$39.95 and can be used with optional Wired Remote Controllers.

\*A trademark of Milton Bradley Co.

### Winners Announced in Author Incentive Program

Texas Instruments is proud to announce the winners of the Author Incentive Program — a contest for authors of quality, innovative, microcomputer software. The contest, which started in September, resulted in the award of cash prizes to the top 26 entries. One \$3,000 award, five \$1,000 awards, and twenty \$500 awards were included. The winners will be featured in a one-page ad in the summer edition of *onComputing*.

**FIRST PRIZE WINNER (\$3,000)**  
Charles M. Ehninger  
Household Inventory System

The Household Inventory System allows the TI-99/4 user to build and maintain an up-to-date list of household inventory items. The package calculates the "actual replacement value" of each item based on its purchase date and the previous years' price indices (such as those published by the U. S. Bureau of Statistics). The package is especially useful for compiling

a comprehensive list of reimbursable property when filing an insurance claim. The program not only provides a simple way to prepare and maintain a list of assets, but also can automatically compute the actual replacement value of each item of property. Up-to-date lists of assets can be produced on a regular basis with this easy-to-use package.

**SECOND PRIZE WINNERS (\$1,000)**  
Fred J. Baker  
Kepler — Planetary Motion  
Norman S. Kerr  
Mendelian Inheritance in Widgets  
Jack Kirby  
Math Remediation  
Glen M. Kleinman  
Teaching Tools — Addition  
Wayne O. Williams  
Metric System Tutor

**THIRD PRIZE WINNERS (\$500)**  
John M. Anderson  
Quantitative Business Techniques Tutorial  
Donald E. Bertrand  
Stock Chart and Timing System  
Edward G. Blakeway  
Math Pack I  
Morris C. Burkhart  
Discrete Probability Distribution  
Chris and Craig Christianson  
Flags — Flag Recognition

William Q. Christianson  
FHASTEP — Loan Analysis  
John and Norma Cluiow  
Music Program  
Charles W. Engel  
Games — Microregatta and Buccaneer  
Richard A. Ertl  
Mini Planner  
Suzanne M. Hawkinson  
Context — On-line Text Presentation  
Colin James III  
Astrology  
Rajeev Jayavant  
Chemistry  
Robert M. Kiehn  
Client Log Time Billing  
Richard I. Larson  
Automobile Cost Analysis  
Richard L. Loggins  
Order Tracking V1. 2  
Melvin W. Mills  
Golf Handicapping  
Robert J. Prondizinski  
Graphics Design System  
Don C. Rich, Jr.  
Chemistry Helper  
Janet Rieker  
AMWAY Inventory, Orders  
Alan Winkley  
PIPEINCR — Fluid Flow Analysis

The Personal Computer User's Newsletter is published by the Texas Instruments Personal Computer Division, P.O. Box 53, Lubbock, Texas 79408. All correspondence concerning this newsletter should be mailed to the above address.

**THIS**

**BECOMES**



WITH THE USE OF



**\* DENALI DATA BACKER™ BUS**  
Allows placement of Peripheral Boxes behind Console in an area (25" W x 24" D) Cords drop neatly off back of desk. Multi-layered P.C. board/sturdy alum. frame. \$60.00

**\* ARTI-STIC™ JOYSTICK ADAPTER**  
Allows use of a pair of ATARI® JOYSTICKS  
ARTI-STIC™ for BALLY™ or ODDESSY™ or LE-STICK™  
Specify which of the 4 Arti-stic™ adapters you prefer \$20.00ea

**\* ARTI-STIC™-2 ATARI® JOYSTICKS - \$35.00 Pkg Deal**

**LOOK FOR DENALI'S BOOTH AT**



**\* HARDWARE**

**\* JOYPAD™** Plugs into Joystick port allows direction & numeric entry in one hand held unit with software

**\* SPLIT-T™** - Change devices from RS232 with a flip of a switch or share devices with 2 Computers

**\* CABLES** - X-box RS232 Card - (Parallel & Y) 36 pin 9 or 25 pin (Serial Port to Printer, Modem, etc.) Specify

**\* SOFTWARE**

**\* BLACKBOOK™** - General Purpose Data Base

**\* TIMEBOOK™** - Schedule Manager, you can't miss

**\* FLYER™** - Mail Mergable Single Page Word Processor

**SEND FOR COMPLETE INFORMATION & CATALOGUE  
OR CALL 1-(405) 524-7764**

Denali Data Design • 1411 N. McKinley • DR. C. OK • 73116

ADDRESS OF BUSINESS OR HOME PHONE IS 5000 1/2 N. W. 101



**ORDERS CALL 1-800-654-8499**



I WISH TO BE ON DENALI DATA MAILING LIST

**WE WOULD APPRECIATE YOUR  
COMMENTS ON OUR CURRENT  
PRODUCTS AND SUGGESTIONS  
FOR FUTURE PRODUCTS.**

DENALI DATA MEMBER • 1978 • MEMBER OF • COUNCIL OF • 1979



# TEXAS INSTRUMENTS

## INCORPORATED

POST OFFICE BOX 10508 • LUBBOCK, TEXAS 79408-3508

*Consumer Products Group*

December 11, 1981

Dear Users Group Meeting Attendee:

Hello from the Lone Star State! We have been extremely busy the last few weeks, but we haven't forgotten the wonderful people we met while we were in California. The meetings proved to be an excellent opportunity for us to visit with users of our Home Computer product. Our discussions on new products and some of the concerns that you have as users were mutually beneficial. We feel that User's Groups are becoming more and more important to TI as well as our users and therefore we will continue to support their development and progress.

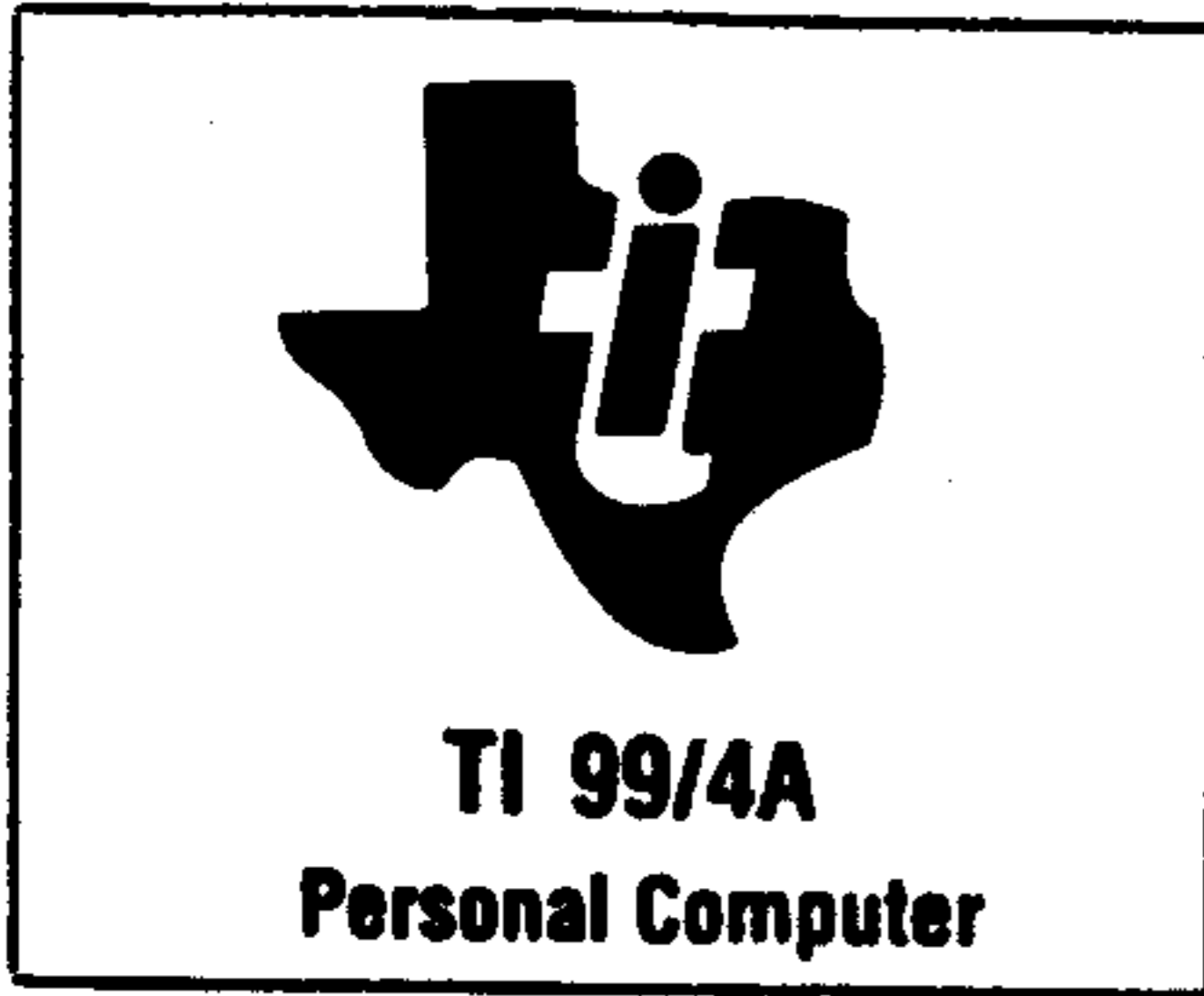
As an added bonus for your attendance at the User's Group Meeting, we will be sending you a complimentary cassette software package directly from Lubbock. We appreciated your comments and suggestions, and we will do our best to implement our programs around users' concerns.

Thanks again for making our trip a successful one!

Don P. Bynum, Manager  
Personal Computer Division

Brian K. Gratz  
User's Group Coordinator

# NEW PRODUCT & PRICE SHEET — FALL 81 — SPRING 82



(213) 873-6112 SOURCE—TI0166

**CALVERT ENGINEERING, INC.**

TI — 99/4A

**TEX-COMP<sup>TM</sup> USERS SUPPLY DIVISION**

**P.O. BOX 33084 — GRANADA HILLS, CA. 91344**

Dear TI-99/4 Users:

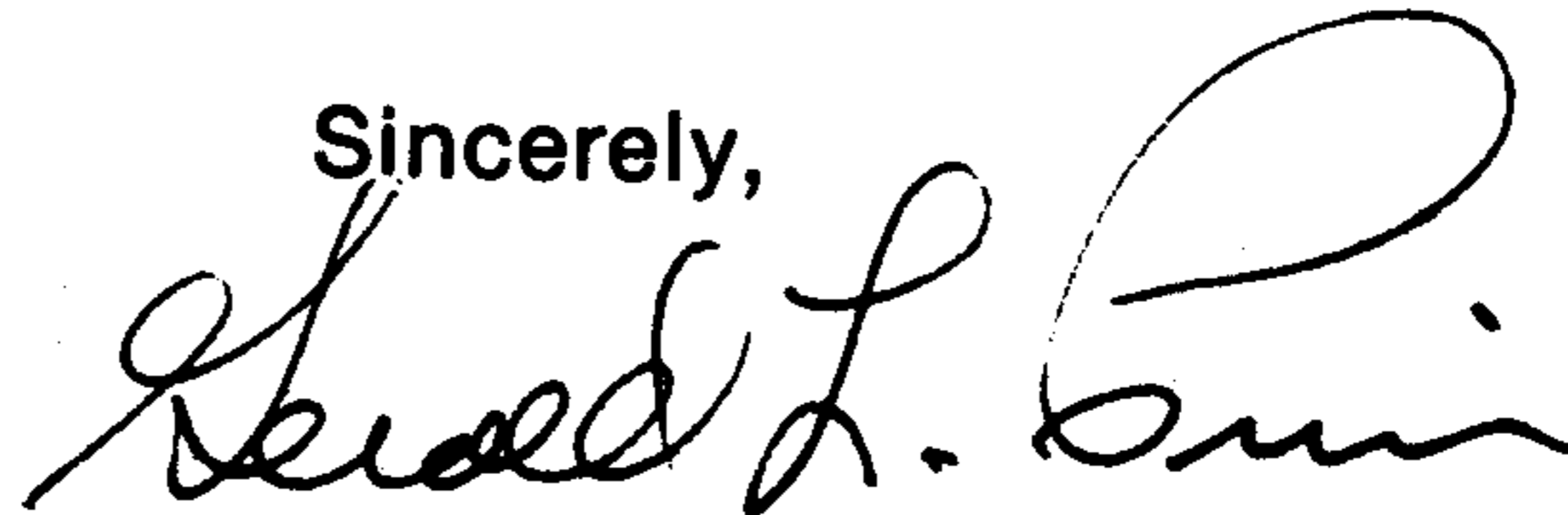
Shortly after the introduction of the TI-99/4 personal computer in 1980, Calvert Engineering, a major manufacturer of fluid moving equipment for over twenty years, recognized the potential of this powerful 16 bit micro and developed proprietary fluid mechanics software to assist in the design and development of products for firms such as 3M, Xerox, and General Dynamics.

At the request of some of our customers, we became a TI-99/4 dealer and began to market systems comprising TI-99/4 hardware and our software. Many of these purchasers desired to acquire additional TI hardware and software and to accommodate them, we began to market the complete TI-99/4 line at professional discounts to our established accounts.

Due to increasing requests, Calvert has established a separate TEX-COMP Division to supply TI-99/4 users with the complete line at professional discounts. Most available items are in stock or can be obtained directly from TI on a "next day" basis. Our price sheet is attached and offers meaningful savings to seasoned users who do not require personal demonstration and assistance. As a TI direct account, we have met the high standards Texas Instruments has set for a dealer to qualify for this relationship which assures you the user of the best possible service and reliability.

Feel free to call direct to discuss any specific requirement.

Sincerely,



Gerald L. Price  
V. P. TEX-COMP DIVISION

.....Texas Instruments TI-99/4A — COMPUTERS, COMPONENTS AND SOFTWARE.....

TEX-COMP, TEX-SOFT & TEX-NET are trademarks of Calvert Engineering, Inc.

© 1982 Calvert Engineering, Inc.

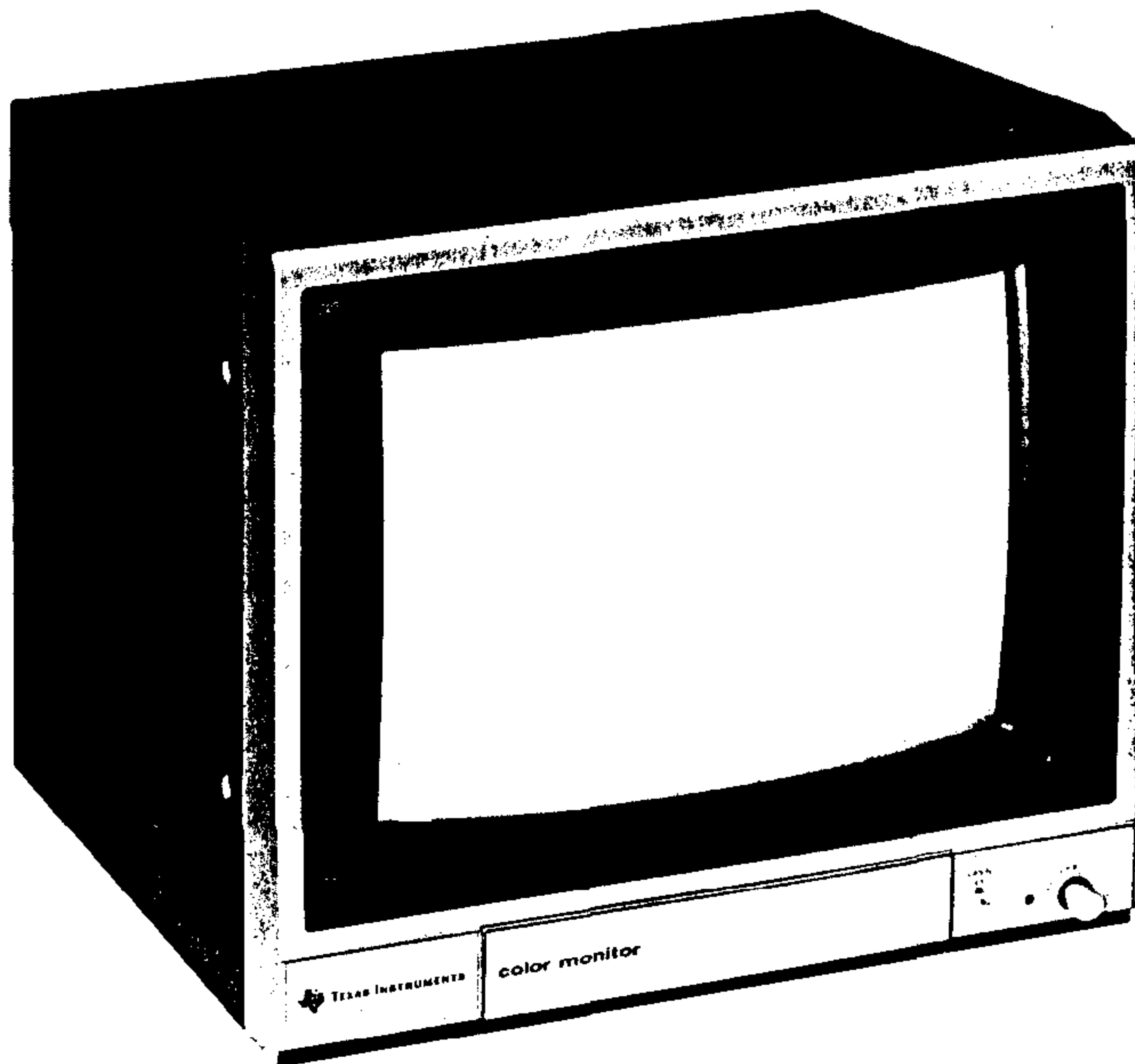




**Texas Instruments**  
**Home Computer Accessory**

# **10-inch Color Monitor**

## **Model PHA 4100**



- **Excellent color resolution**
- **Superior picture quality**
- **Compact, space-saving design**

The Texas Instruments Color Monitor is a high quality unit specially matched for use with the TI Home Computer. The display format is 24 lines of 32 characters. The monitor provides excellent color resolution (192 x 256 dot density) and picture quality. The Home Computer connects via cable directly to the video input on the Color Monitor

which eliminates the chance for interference and distortion from a tuner. Therefore, the picture quality will be superior to pictures acquired using a normal home TV set as a monitor.



# TEXAS INSTRUMENTS

INCORPORATED

Dear *Mr. Price*

Thank you for your inquiry regarding becoming a direct customer of Texas Instruments. Attached you will find a sheet requesting the needed information to process your request. Please fill the form out completely and with the understanding that Texas Instruments requirements for direct account are:

Retailer:       1) \$1,500 minimum initial order  
                  2) \$25,000 total annual purchases  
                  3) D&B listing or audited financial statement of  
                      \$200,000 net worth

Distributor:     1) \$3,000 minimum orders  
                  2) \$50,000 total annual purchases  
                  3) D&B listing or audited financial statement of  
                      \$200,000 net worth

If you do not wish to meet these requirements, please contact me at 1-800-255-9604 (toll free, within Texas call collect 806-741-2584) and I will get you in contact with the Texas Instruments distributor nearest you. Thank you again for your interest in Texas Instruments products.

Regards,

*Dennis C. James*

Direct Account Qualification Manager

# FUTURA

SOFTWARE for the T.I. 99/4



*Ehninger Associates, Inc.* PO Box 5581, Fort Worth, Texas 76108, 817-246-6536

Thank you for your response to our ad in CREATIVE COMPUTING, and welcome to the world of FUTURA, the best software you can buy for your TI99/4! We are pleased to send you CHALLENGE II, which is Item C1040 on the enclosed Price List/Order Form. Documentation for both games is printed on the reverse of this page.

Program description for each item is printed on the reverse of the order form; however, we would like to give you additional information about a few of the listings.

HOUSEHOLD INVENTORY SYSTEM is our prize-winning program, having placed first in Texas Instruments Author Incentive Program. Certainly the information this program produces is invaluable in case of loss and is important in determining if you have adequate insurance coverage. It could easily be adapted to catalog any extensive collection --- art, books, coins, records.

SAM DEFENSE is our most authentic simulation program. The screen on your computer puts you at the control panel of a World Power surface-to-air missile site. This program is a challenge ... certainly not one that you will tire of easily. It will take many sittings to master the technique used daily in an actual defense network.

ALL\*STAR BASEBALL has been our best-seller thus far, and with the strike on, it's your only source of major league level competition! This program is available in TI Basic and Extended Basic.

GALACTIC WAR was introduced in June. Available only in Extended Basic, it takes full advantage of the "sprite" capabilities of that Command Module.

ALL\*STAR BOWLING, also available only in Extended Basic, is the latest addition to our inventory. The graphics are super, and each player has complete control over the action. No bowling shoes required on the FUTURA lanes!

We hope you enjoy CHALLENGE II. We will look forward to hearing from you again soon.

**International  
99/4  
Users-Group**



**Owner  
Written and Translated  
Software Catalog**



**Please Use Owner-Written Form**

**November 10, 1981**

**PRICE \$1.25**

# ORDER FORM FOR Owner-User

International  
**99/4**  
Users-Group



## Written and Translated Software Programs

(Prices Subject To Change Without Notice)

Program Number	Program Name	Cassette Tape \$3 per Program	Disk \$3 per Program	Hard Copy \$1.25 per Listing	Amount

Total \$ \_\_\_\_\_

FOR CREDIT CARD SALES ONLY:

Card Type \_\_\_\_\_  
 Card Number \_\_\_\_\_  
 Expiration Date \_\_\_\_\_

SEND ORDER AND MAKE CHECKS PAYABLE TO:

International  
**99/4**  
Users-Group



P.O. BOX 67  
 BETHANY, OK 73008  
 (405) 787-8521

# 99/4 HOME COMPUTER USERS - GROUP PRODUCTS



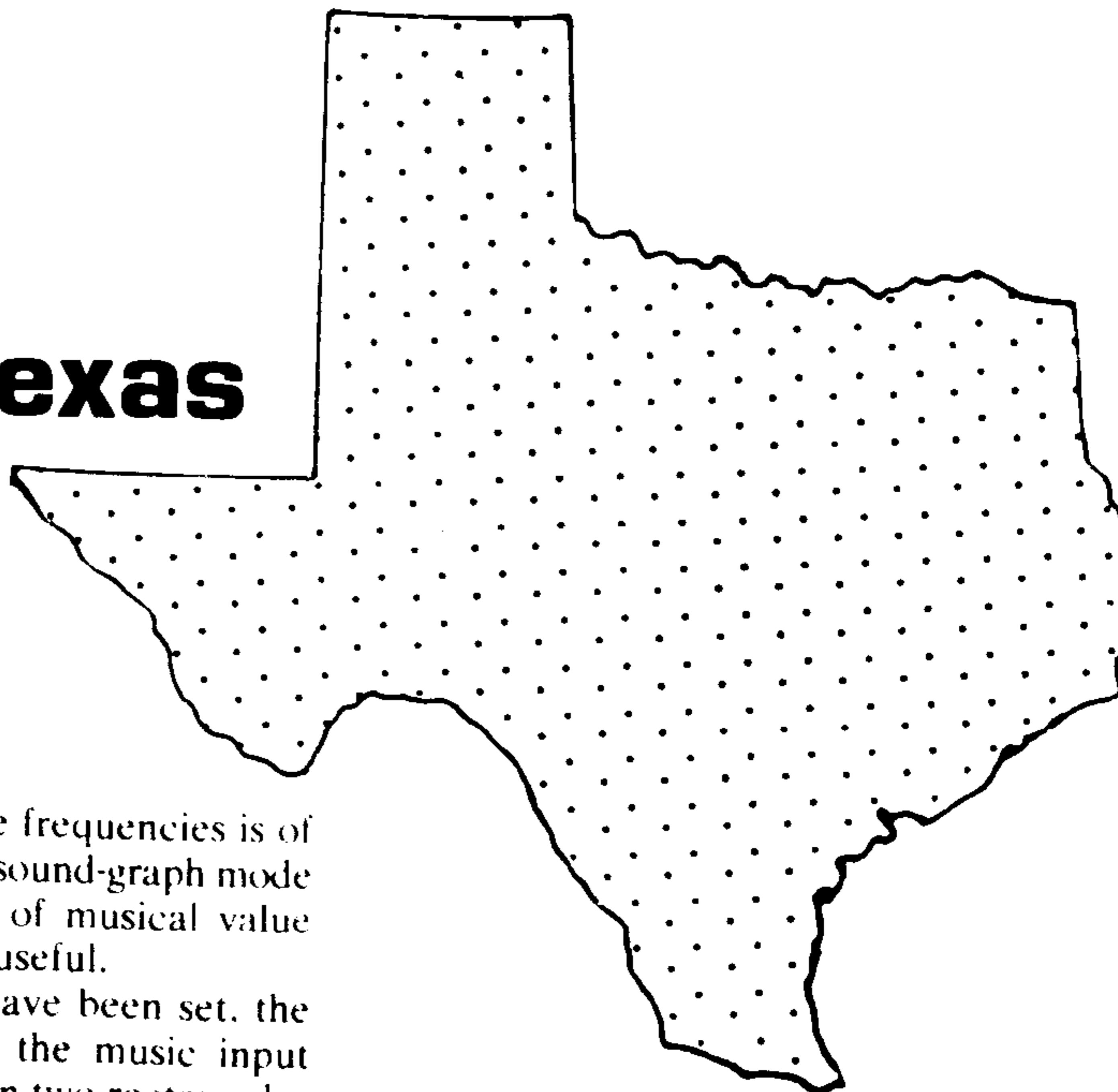
Prices Effective August 10, 1981

Model	Name	Suggested Retail	Users-Group Price
<b>PERIPHERALS &amp; ACCESSORIES</b>			
PHP 1500	Speech Synthesizer .....	149.95	128.00
PHP 1600	Telephone Modem .....	224.95	191.00
PHP 1700	RS-232 Interface .....	224.95	191.00
PHP 1800	Disk Drive Controller .....	299.95	251.00
PHP 1850	Disk Memory Drive .....	499.95	410.00
PHP 1900	Solid State Printer .....	399.95	310.00
PHP 2200	Memory Expansion (32K RAM) .....	399.95	310.00
PHA 2100	R.F. Modulator .....	49.95	41.00
PHA 4100	10" Color Monitor .....	374.00	331.00
PHP 1100	Wired Remote Controllers .....	34.95	29.00
PHA 2000	Dual Cassette Cable .....	14.95	12.00
PHA 1950	Thermal Paper (2 Pack) .....	9.95	8.00
PHA 2605	Blank Overlays (4 Pack) .....	7.95	6.50
PHC 004A	99/4A Computer Console .....	525.00	445.00
<b>COMMAND MODULES</b>			
PHM 3007	Household Budget Mgt. ....	39.95	34.00
PHM 3012	Securities Analysis .....	54.95	46.00
PHM 3013	Personal Record Keeping .....	49.95	41.00
PHM 3016	Tax/Investment Record Keeping .....	69.95	56.00
PHM 3022	Personal Real Estate .....	69.95	56.00

Prices Subject to Change Without Notice

# Deep in the Heart of Texas

Owen Linderholm



## **creative computing** SOFTWARE PROFILE

**Name:** Music Maker Module

**Type:** Music

**System:** TI 99/4

**Format:** Module

**Language:** Machine

**Summary:** Difficult to use, but worth the price.

**Price:** \$39.95

**Manufacturer:**

Texas Instruments, Inc.

P.O. Box 53

Lubbock, TX 79408

From deep in the heart of Texas comes the Music Module, a plug-in module for the TI 99/4 which gives it limited music synthesis capability. No fancy sixteen voice, waveform controlled or stereo output machine, the module provides only three music voices, some volume control and a little bit of noise generation.

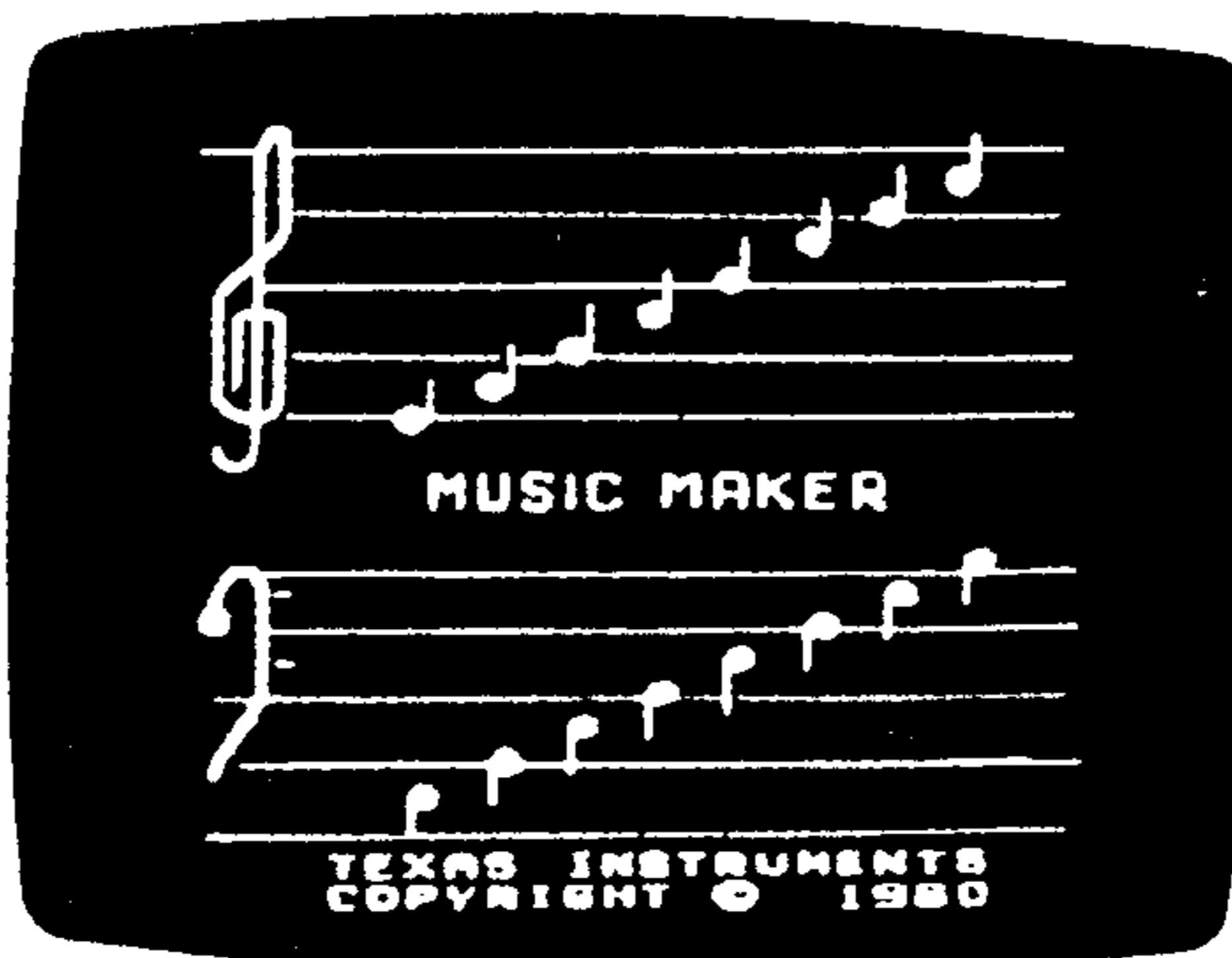
### **Sound-Graphs**

Two modes are available: "sound-graphs" and "traditional," the first is used mainly as a strange noise maker. When you enter this mode you are asked which noise generator you want, what speed at which to play the music and whether you want to change any of the frequencies for the scales. There are eight noise generators available, four of which provide "periodic" noise and four of which provide "white" noise. One generator from each of these two groups plays noise based on the frequency of the third musical voice. When I was experimenting with these generators, I found that they added very little to the sound produced. Of the speeds available, only those between about 15 and 30 were of much use, as those lower than 15 were far too slow to play the music in a recognizable manner.

The ability to change frequencies is of some use, but since the sound-graph mode cannot produce much of musical value this feature is not very useful.

When these values have been set, the computer proceeds to the music input mode. The user is shown two rectangular areas in which he can draw lines which represent various frequencies, volumes and noises. Inputting a measure can be done with the keyboard or the Wired Remote Controllers. I found the keyboard very awkward to use and could only input exactly what I wanted with difficulty.

Editing of the music already entered can be easy or difficult depending on how much needs to be changed and on where and when the mistake is discovered. One very useful editing facility is the ability to copy all or part of a measure already entered. Playback of the music is relatively simple and pleasant effects are obtainable with a little effort. The longest composition can only be 46 measures, which is generally long enough for most purposes but can be annoying if a longer piece is desired.



### **Traditional Mode**

The other mode available is the traditional mode by which music can be entered in standard musical notation. The method of input is similar to the method for sound-graphs. When you enter the traditional mode, you are asked to enter the number of sharps or flats to define the key signature, then the time signature and the speed. All these are necessary and work as they should, except for the speed which is

exactly the same here as for the sound-graphs.

The method of entering music is also the same except that when you wish to change between different types of note, such as between crotchets or quavers, the cursor must be moved from the staff off to the side, where the notes can be changed. This involves a great deal of key pushing and frustration, and makes the entry of most pieces of music a very laborious task.

The staff and the rest of the screen display is very well laid out and the music is easy to read with the three different voices shown in three separate colors. Another feature is that each note can have independent volume control on a scale of one to eight. This allows crescendos and decrescendos and so on, but is also a bit difficult to use.

Editing and playback are similar to the sound-graph mode and are reasonably straightforward. Music can be easily stored on cassette or disk and retrieved. It is also possible to print out music if the TI thermal printer is connected. These are very useful functions and not available on many more expensive and complicated computer music synthesizers. The other major disadvantage of the module is its three-octave range.

Now comes the great advantage of the Music Maker Module: the extremely low price of \$40. At that price, the Music Module is a worthwhile investment for the average user who is not thinking of recording contracts or playing at major concert halls. It is also quite possible that using the remote controllers makes the entry of music a lot simpler. □

October 9, 1981

Dear Friend:

Join the Orange County TI-99/4 User's Group on Saturday, October 17, for an afternoon with the management of TI. Mr. Don Bynum, the Personal Computer Division Manager, and Mr. Brian Gratz, User's Group Coordinator for TI, will present the program.

Highlight of the afternoon will be the demonstrations of the Editor/Assembler Package, Text-to-Speech, Logo, and some exciting future entertainment packages.

The meeting is scheduled to be held at 1:00 p.m. in the "Cafe Ricard" room of the Airporter Inn, 18700 McArthur Blvd., Irvine. Join us for an afternoon with Texas Instruments.

mb





# TEXAS INSTRUMENTS

INCORPORATED

POST OFFICE BOX 10508 • LUBBOCK, TEXAS 79408-3508

*Consumer Products Group*

December 11, 1981

Dear Users Group Meeting Attendee:

Hello from the Lone Star State! We have been extremely busy the last few weeks, but we haven't forgotten the wonderful people we met while we were in California. The meetings proved to be an excellent opportunity for us to visit with users of our Home Computer product. Our discussions on new products and some of the concerns that you have as users were mutually beneficial. We feel that User's Groups are becoming more and more important to TI as well as our users and therefore we will continue to support their development and progress.

As an added bonus for your attendance at the User's Group Meeting, we will be sending you a complimentary cassette software package directly from Lubbock. We appreciated your comments and suggestions, and we will do our best to implement our programs around users' concerns.

Thanks again for making our trip a successful one!

Don P. Bynum, Manager  
Personal Computer Division

Brian K. Gratz  
User's Group Coordinator

**UCSD P-System\***



The  
P-SYSTEM  
Product  
Family



## EduSystems Incorporated

2221 University Avenue S.E. • Suite 121 • Minneapolis, Minnesota 55414 • (612) 623-4061

Dale LaFrenz  
Vice President  
Electronic Publishing  
Scott Foresman and Company  
1900 East Lake Avenue  
Glenview, IL 60025

Dear Dale:

Enclosed are some highlights of each of the following packages:

Class Data Recorder	Payroll Assistant	Course Manager
Mark Reporter	Personnel Data Recorder	
Scheduling Assistant	Activity Accountant	
Attendance Recorder	Accounting Assistant	
Test Scorer	Salary Planner	
Student Data Recorder	Property Manager	
School Mailer	Data Analyzer	

Comments about emphasizing speed relate only to the Apple applications.  
In general, the TI applications are extremely slow.

I hope these comments are of use to the marketing staff.

Sincerely,

*Gary Johnson*  
Gary Johnson  
*Gerry Cullen*  
Gerry Cullen

GLJ:sh

# THE SOURCE RATES & FEES

Continental U.S. • Effective November 1, 1981

## \$100 Registration & Guarantee

This one-time fee covers registration, account set-up, ID and password assignment, *User's Manual* and *SOURCE Digest*. If you are dissatisfied, this registration fee may be refunded upon written request made within 30 days of subscribing. You will be responsible only for usage and other charges incurred.

## Connect Time

These charges are for the amount of time you are actually connected to THE SOURCE.® Time is computed to the nearest minute as recorded by computer.

		Weekday 7 am-6 pm	Evening, Weekends & Holidays	Midnight to 7 am daily
THE SOURCE 1,200 information and communication services	300 baud service	\$18.00/hr	\$ 5.75/hr	\$ 4.25/hr
	1200 baud service	25.00/hr	9.00/hr	6.00/hr
SOURCE * PLUS value - added information services	300 baud service	30.00/hr	15.00/hr	10.00/hr
	1200 baud service	40.00/hr	25.00/hr	15.00/hr

## Storage

These rates are for storage of personal or business files on THE SOURCE computers. One block equals 2,048 characters.

Storage Rate for Personal Files		Block equals 2,048 Characters
First 1-10 blocks	=	50¢/block/month
Then: 11-99	=	20¢/block/month
Then: 100-999	=	15¢/block/month
Then: 1,000-9,999	=	10¢/block/month
Then: 10,000-99,999	=	5¢/block/month

## Minimums

These are minimum monthly charges for THE SOURCE services.

\$1	For account maintenance (2 storage blocks)
\$9	Usage. (If you use less than \$9 in connect time, you will be billed \$9.)
25¢	Minimum connect fee each time you access THE SOURCE.

## Miscellaneous

- Holiday rates are effective New Year's Day, Washington's Birthday, 4th of July, Memorial Day, Labor Day, Thanksgiving Day and Christmas.
- For rates other than continental U.S., contact THE SOURCE. Subscribers are responsible for telephone charges.
- Payments must be in U.S. dollars.
- Connect time charges are calculated as of your local time.
- System is down from 4-6AM EST for updating of data base and maintenance.
- Rates are subject to change with 30 days prior written notice.

## Terms

Bills will include all applicable taxes and charges for other items furnished by STC at the Subscriber's request, including but not limited to manuals, software, postage, and handling. STC may require business accounts to advance a non-interest bearing deposit which may be applied against all past-due balances. STC reserves the right to impose late charges on all accounts of 1½% per month on all unpaid balances 30 days past due.

THE SOURCE is a service mark of Source Telecomputing Corporation, a subsidiary of The Reader's Digest Association, Inc.  
1816 Anderson Rd. • McLean, Virginia 22102 • 800/336-3366 (In Virginia, 703/734-7500)

(see other side)

PC-112

# THE SOURCE EQUIPMENT COMPATIBILITY REQUIREMENTS

PERSONAL COMPUTER	NECESSARY HARDWARE
Apple II Apple II Plus Apple III	Micromodem <sup>®</sup> , acoustic coupler or direct-connect modem, and communications card. Terminal software recommended.
Atari 400/800	Telelink cartridge. 850 Interface Module and acoustic coupler.
Commodore CBM	IEEE interface and acoustic coupler. Terminal software.
Heath/Zenith	Modem.
IBM Personal Computer	Modem and communications card.
Osborne I	Acoustic coupler with modifying circuit (available from manufacturer or Osborne Dealer). Terminal software recommended.
TI 99/4 and TI/99/4A	RS-232 interface, acoustic coupler, and Terminal Emulator I or II.
TRS-80 Model I	RS-232 board and expansion interface. Modem and cassette software.
TRS-80 Model II	Modem.
TRS-80 Model III	RS-232 board and modem.
VIC (Commodore)	IEEE interface and IEEE PET modem.
Xerox (SAM 820)	Modem and communications software.
Most CPM-based computers	Acoustic coupler or direct-connect modem.

Standard data terminals require only a standard RS-232 interface and a modem.

You also can use THE SOURCE on word/information processing equipment by adding an asynchronous communications package and modem.

Your hardware system must be set up to meet the following technical requirements:

300 or 1200 Baud  
Full Duplex  
No Parity  
8 Bit ASCII Code  
1 Stop Bit

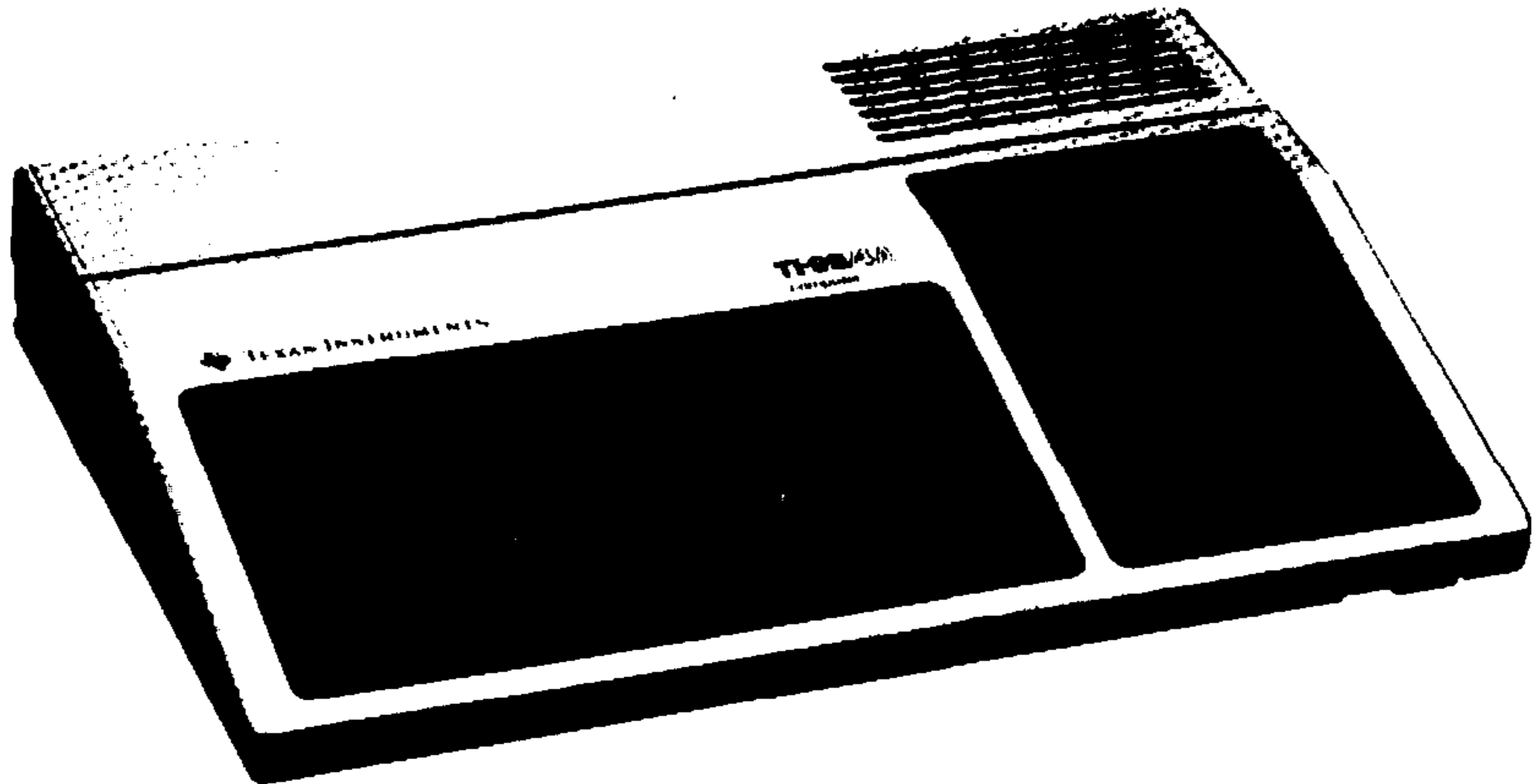
For more information, call Customer Support 800/336-3330

(see other side)



# TI-99/4A Home Computer Console

## Model PHC 004A



- Home enrichment for the whole family, from pre-schooler to senior citizen.
- Easy to use. Over 50 plug-in *Solid State Software™* Command Modules available now — covering *Education to Home Financial Management to Computer Literacy to Entertainment.*
- 1000-plus cassette and diskette programs available from TI and independent sources.
- Superior color, sound, music, graphics — and with the optional *Solid State Speech™* Synthesizer, *it even talks!*
- With built-in TI BASIC; available languages include Extended BASIC, Assembler, Pilot, Pascal, and TI LOGO.
- Excellent expandability with the space-saving, convenient peripheral expansion system and a wide selection of accessories, including data base access.

# YOU'VE BEEN HEARING ABOUT THEM... NOW THEY'RE HERE!!

TI'S HOTTEST NEW ENTERTAINMENT COMMAND MODULES ARE NOW AVAILABLE FROM  
UNISOURCE ELECTRONICS...JUST IN TIME FOR CHRISTMAS.

## TI INVADERS

~~\$39.95~~

Your world is under attack by downright nasty creatures from the black pit of Space. It's up to you -- can you save your world from this hostile horde? You must use your wit and quick movement to destroy the multi-colored creatures. But, as you shoot down each attacker, the swarming horde increases its speed and sprays shots at your missile. Your missiles are limited, so you also must be cautious. Your goals are to attach and destroy the invaders and shoot down the yellow control ship.

## TOMBSTONE CITY

~~\$39.95~~

Your survival instinct is challenged immediately as you find yourself in the 21st Century in an Old West ghost town threatened by an invading horde of green alien monsters. These villainous creatures called morgs live off of only two things -- tumbleweeds and people. It's up to you and your security force of prairie schooners to stop the morgs before they infest the earth!

## CAR WARS

~~\$39.95~~

If you enjoy the excitement of high-speed racing, combined with the challenge of out-maneuvering a canny opponent, this is your kind of game! With the Car Wars Solid State Software™ Command Module, you pit your speed and skill against the computer's as you try to get your car around the track without getting "crashed" off the field.

# QUALIFY FOR ADDITIONAL FREE SOFTWARE!

YOUR PURCHASE OF THESE EXCITING NEW ARCADE-QUALITY GAMES FROM TI CAN BE ADDED TO THE AMOUNT NEEDED TO QUALIFY YOU FOR FREE SOFTWARE AS DESCRIBED ON PAGE 3 OF THE ENCLOSED "SPECIAL OFFER" BROCHURE. CHECK IT OUT. AND, PLACE YOUR ORDER TODAY...IN TIME FOR CHRISTMAS.

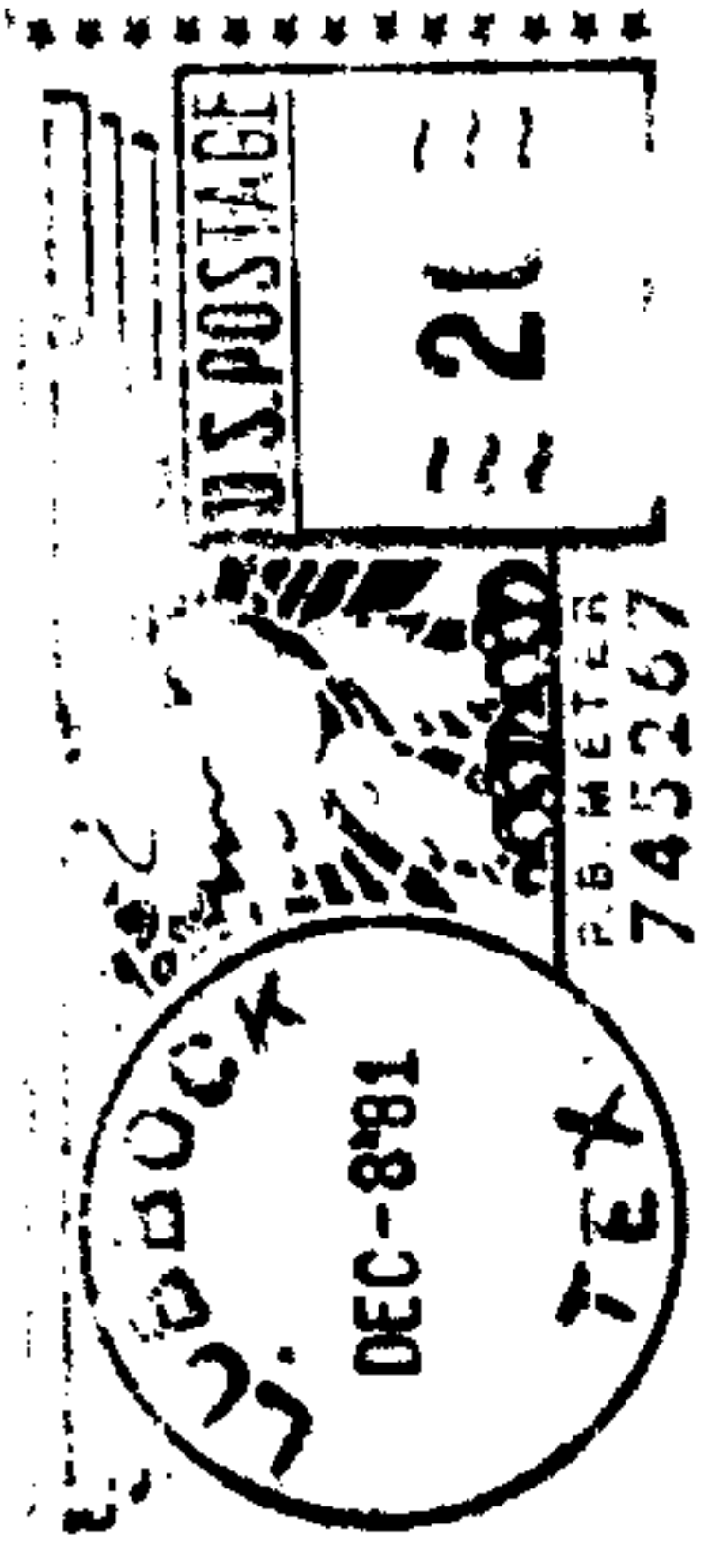
CALL TOLL FREE

**Unisource Electronics, Inc.**

Order Hotline: 1-800-858-4580 (in Texas 1-806-745-8835)

P.O. Box 84240 • Lubbock, Texas 79484

**UNISOURCE ELECTRONICS, INC.**  
P.O. BOX 64240 • LUBBOCK, TEXAS 79464



**Exciting New  
TI Home Computer  
Software Packages!**



# User's Newsletter

## TI issues comprehensive TI-99/4 software directory.

The new Application Program Directory for the TI-99/4 accompanies this newsletter and lists the software packages currently available from TI and other companies. More than 100 packages are listed by application category. Information on each package includes the media, title, brief description, required or recommended peripherals, and suggested retail price.

Software packages are now being produced in three media — *Solid State Software*™ Command Modules, cassettes, and

diskettes. Presently, 64 software packages are available from Texas Instruments, and many more are being developed. Over 40 packages, covering a wide range of applications, have been produced by other companies. Ordering information has been included in the directory so that you can purchase these software packages directly from their producers.

New additions to the TI library of software packages include those on music, real estate, weight control and

nutrition, securities analysis, tax/investment record keeping, TI Extended BASIC, and games. Two exceptional games, A-MAZE-ING and The Attack\*, have become very popular in the short time they have been available.

As the number of software packages for the TI-99/4 increases, the Application Program Directory will be revised. Call the toll-free telephone number listed in the directory to obtain the latest updates of the software listings.

\* A trademark of Milton Bradley Co.

## 99/4 Home Computer Users-Group: a national organization.

Charles LaFara, a computer novice interested in a greater variety of software for his TI-99/4 Home Computer, turned his interest into action on Sept. 6, 1980, when he organized the 99/4 Home Computer Users-Group. Today, the group provides an active software exchange for over 3,000 users.

The group's newsletter lists more than 300 programs originated by users and available on diskette or cassette for a minimum of \$2.50 per program. At present, all programs are written in TI BASIC.

LaFara gets 4,000 program requests a month and has sent out more than 18,000 programs to date. He can also put people in touch with member users who can create custom software programs to meet their business or personal needs.

The 99/4 Home Computer Users-Group is not affiliated with Texas Instruments. Unlike many users' groups, no dues are charged. Group members range from first-time computer users to high-level engineers.

The 99/4 Users-Group has become a family hobby for the LaFaras. Family members share in answering the phone, replying to letters, copying programs on cassette and diskette, and evaluating new user programs. The living room of the LaFara home in Oklahoma City is outfitted with two TI-99/4 computers and monitors, one 80-column printer, four disk drives, three cassette recorders, an RS232

Interface, a *Solid State Speech*™ Synthesizer, modem, and joysticks.

LaFara has also written four programs for use in his meat processing business. They include an inventory program, least-cost formularization, ground meat formularization, and accounts receivable program. All LaFara's activities total to an involvement that has grown rapidly for a computer novice.

For complete information on the 99/4 Home Computer Users-Group, write or call Charles LaFara at:

P. O. Box 95148  
Oklahoma City, OK 73143  
405-787-8521

The Home Computer User's Newsletter is published by the Texas Instruments Personal Computer Division, P.O. Box 53, Lubbock, Texas 79408. All correspondence concerning this newsletter should be mailed to the above address.

# InfoWorld

The Newsweekly for Microcomputer Users

## New electronic typewriter challenges IBM's market lead

### Xerox Memorywriter to link into networks

By Deborah Wise, IW Staff

NEW YORK, NY—The Xerox Corporation has announced its previously rumored series of electronic typewriters. The Memorywriters, which had been codenamed Sabre, are aimed at the stand-alone typewriter market that has for so long been dominated by IBM.

The four new machines are designed for the secretary's desktop, which Xerox calls "the cornerstone of the multistation integrated network strategy of the office of the future."

The Memorywriters are upgradable, and the high-end models, available in June 1982, will have a

communications function that links them to one another and to other work stations via the Ethernet local-area network.

The low-end model 610 has a limited memory-storage capability of 946 characters for phrase and format recall as well as other advanced typewriter functions. It costs \$1430.

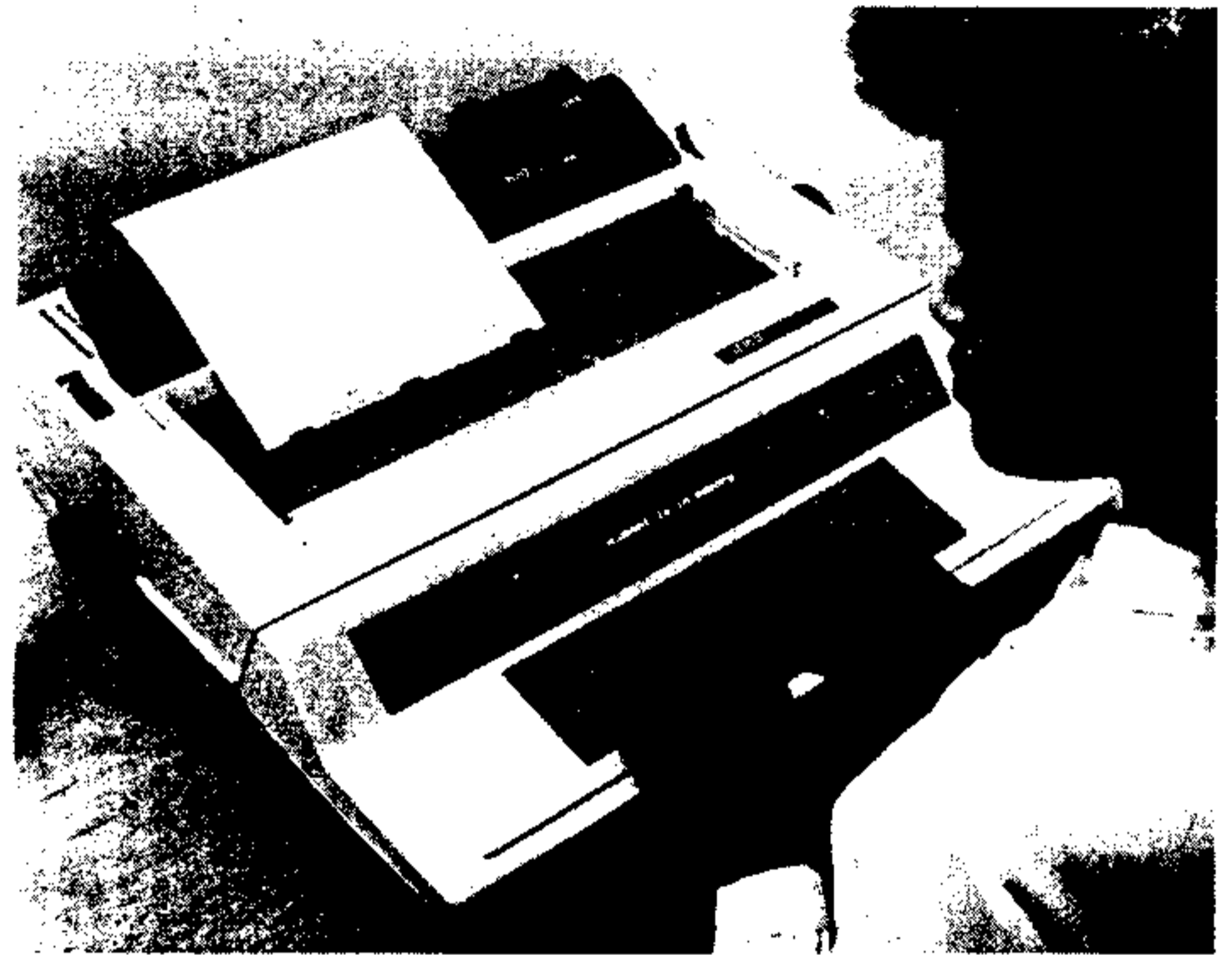
The 620 and 625 models have five and ten pages of storage capacity respectively and can communicate using the Xerox 872 and 873 communications server at a rate of 300 to 1200 bauds. Prices will be announced next year.

With this communications function, Memorywriters can fit into local-area networks, using Ethernet to pass information between other Xerox office products such as the Xerox Star, the Xerox 820 personal computer and the Xerox 860 word-processing system, a company spokesman said.

Xerox also said that when LSI chips are available from semiconductor companies, Memorywriters will be able to communicate by a direct attachment.

#### Copier sales force

The company will market the Memorywriter through its copier sales force as well as through Xerox retail outlets, the office-products division, direct mail and telemarketing. Having the copier sales force sell the product is a departure from normal company strategy and will, according to Xerox,



"double the number of people selling electronic typewriters overnight."

Memorywriters offer a selection of different fonts and are all equipped with daisy-wheel printers that can be adjusted to any of four pitches. They can accommodate 15 languages with different daisy wheels. Memorywriters will be sold worldwide, according to a company spokesman, who said that the firm's product announcement in New York was also made, simultaneously, in London. ■

### Japanese introduce hand-held computer

By John Markoff, IW Staff

The race to put more into smaller packages is showing no sign of letting up. Matsushita Electric Industrial has introduced the HHC Link pocket computer, to be distributed by its U.S. marketing arm, Panasonic Company.

The Link, which has been seen in test configurations for over a year in this country, contains a 6502 processor and includes Microsoft BASIC derived from Applesoft code with several extensions. The basic price of the system will be \$600.

The Link will be available with a range of peripherals including an acoustical modem, a TV interface to support text and color graphics, a small printer, RS-232 interface and a variety of nonvolatile RAM software capsules.

The new pocket computer was designed over the past three years by a small San Francisco development firm, Friends Amis.

Software initially available for the Link will include two telecommunications packages. Telecommunications I will be a terminal emulator that retains enough dialogue so that the system's one-line display can retain a screenful of information and allow the

continued on page 6

### TI introduces new video controller

By John Markoff, IW Staff

LUBBOCK, TX—Texas Instruments, Inc., has announced the TI Video Controller (VP-1000), designed to allow the TI-99/4A computer to link to selected videotape players or to the Pioneer Video Disc player.

The system, still in prototype form, was previewed recently at Video Expo in New York City.

The Video Controller has been described by Texas Instruments officials as being intended for developing and delivering customized teaching or training programs. It will probably find its way into the hands of experimenters intent on blending video and personal-computer technology as well.

"We have provided an interface between our technology and videotape and disk technologies," said Bill Turner, a marketing executive for Texas Instruments.

The Video Controller can be used without the need for disk storage, since programs can be stored on the second audio track of the video player, according to Al Groh, marketing manager for Texas Instruments's home-computer division.

The controller has been released with an initial Course Designer software package intended for industrial training and vocational courses.

The Video Controller will sell for \$699.95, and the initial software package will cost \$199.95.

### Digital Research eyes 16-bit sales

By Deborah Wise, IW Staff

Digital Research, the company that developed CP/M, a widely used operating system for 8-bit microcomputers, is now targeting the emerging 16-bit micro market with CP/M-86 and its new MP/M-86.

Competition for dominance in this already crowded field is tough. Microsoft markets Xenix, and IBM has DOS; but perhaps the most talked-about product is Bell Laboratories's UNIX. Digital Research says this cannot be compared with CP/M-86 and MP/M-86, however.

"UNIX isn't a commercial product at all," said Gordon Eubanks, Jr., vice-president and manager of the language division at Digital Research.

According to Eubanks, UNIX is de-

signed for a scientific environment and doesn't have the security features he feels a commercial system needs, such as file protection, passwords or record lock-out, for example.

"Some UNIX people actually fear that what it takes to make UNIX commercially viable will hurt UNIX," he added.

Digital Research has developed CP/M-86 and MP/M-86 for the 16-bit commercial market, a market that is fast becoming more flexible.

The 16-bit microcomputer has a memory capacity that an operating system can take advantage of to bring "minicomputer capabilities into the micro world," according to Gary Kildall, president of Digital Research

continued on page 6

#### INDEX

News . . . . .	1	Random Access . . . . .	28
Features . . . . .	9	Software . . . . .	30
Editorial . . . . .	26	Hardware . . . . .	44
Letters . . . . .	26	Classifieds . . . . .	46
Viewpoint . . . . .	27	End of File . . . . .	48

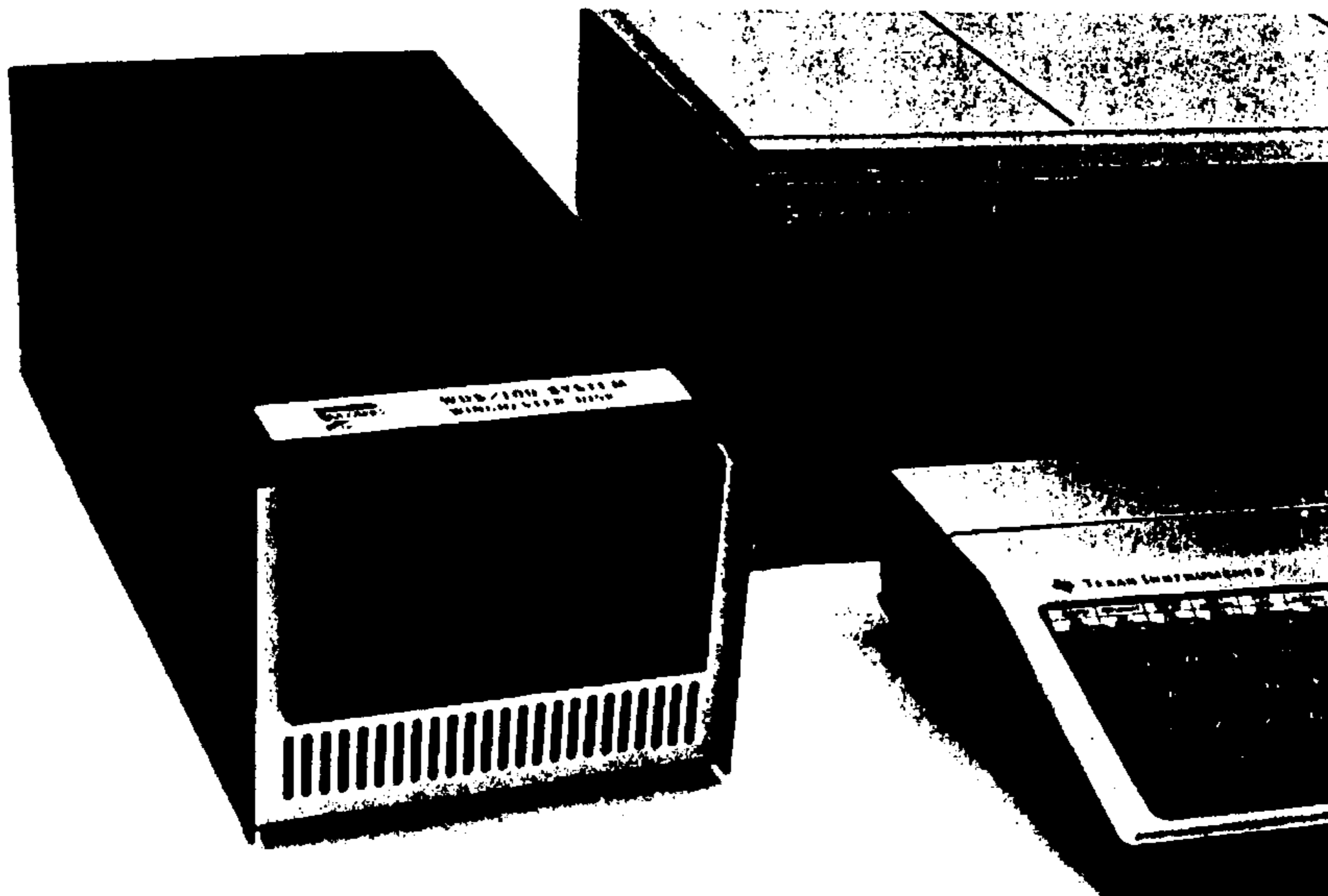
#### SPECIAL SECTION

How well do you understand the distinctive styles of different programming languages? Try this: Pascal is to disco as \_\_\_\_\_ is to punk. This and other questions are stylishly answered in our special section on the languages of computers, starting on page 18.

FORTH PL/I APL  
COBOL FORTRAN  
Logo BASIC Pilot  
Pascal



## ***Winchester Disk And Controller System***



### ***MYARC's WDS/100***

The newest MYARC product combines a unique system of "Directory" management with Winchester technology for the TI microcomputer.

MYARC, INC. presents its Winchester Disk and Controller System, the WDS/100, which brings hard disk capacity and reliability to users of the TI 99/4(A). MYARC's UNIX\*-like "Directory" management uniquely adapts to the file processing requirements of individual users while program and data file integrity is maintained thru MYARC's error correction coding. Available in 5-, 10- and 15-Megabyte models, the WDS/100 is simple to install and requires no costly preventative maintenance!

\*a trademark of Bell Laboratories

## W H Y T I ?

- 1930 - COMMERCIALIZED ITS INVENTION, THE REFLECTION SEISMOGRAPH, AND REVOLUTIONIZED PETROLEUM EXPLORATION. CORPORATE NAME WAS "GEOPHYSICAL SERVICE," ABBREVIATED AS GSI.
- 1946 - DIVERSIFIED BY ADDING ELECTRONIC SYSTEMS MANUFACTURING.
- 1952 - ENTERED THE TRANSISTOR BUSINESS WITH A NEW CORPORATE NAME: "TEXAS INSTRUMENTS INCORPORATED"
- 1954 - BECAME THE FIRST COMPANY TO MASS-PRODUCE GERMANIUM RADIO TRANSISTORS; DEVELOPED THE FIRST COMMERCIAL TRANSISTOR RADIO; INTRODUCED THE FIRST COMMERCIAL SILICON TRANSISTOR - THE TYPE REQUIRED IN SPACE AND MILITARY SYSTEMS.
- 1958 - ANNOUNCED TI INVENTION OF INTEGRATED CIRCUIT, WHICH PROVIDES THE BASIS FOR VIRTUALLY ALL MODERN DEVELOPMENTS IN ELECTRONICS.
- 1961 - INTRODUCED FIRST SYSTEM TO USE INTEGRATED CIRCUITS: A MINIATURE COMPUTER FOR THE U.S. AIR FORCE; INTRODUCED FIRST EQUIPMENT AND TECHNIQUES FOR RECORDING AND PROCESSING GEOPHYSICAL DATA IN DIGITAL FORM, REVOLUTIONIZING EXPLORATION FOR OIL AND GAS.
- 1965 - INVENTED THE SEMICONDUCTOR THERMAL PRINTER.
- 1967 - INTRODUCED TI INVENTION: THE WORLD'S FIRST ELECTRONIC HANDHELD CALCULATOR.
- 1969 - ANNOUNCED FIRST DATA TERMINAL TO USE THERMAL PRINTING, THE SILENT 700.
- 1970 - INVENTED THE "SINGLE-CHIP MICROPROCESSOR," WHICH TODAY IS THE "BRAIN" OF A WIDE RANGE OF PRODUCTS.
- 1971 - COMMERCIALY INTRODUCED THE MICROCOMPUTER, OR "MIRACLE CHIP," A TI INVENTION THAT INCLUDES ALL THE ELEMENTS OF A COMPLETE COMPUTER, INCLUDING MEMORY, IN ONE INTEGRATED CIRCUIT.
- 1972 - ENTERED CONSUMER END-USER MARKET WITH THE DATAMATH\* HANDHELD CALCULATOR, INITIALLY PRICED AT \$149.95.
- 1973 - INTRODUCED A "4K-BIT RANDOM ACCESS MEMORY" (RAM), SETTING NEW INDUSTRY STANDARD.
- 1975 - INTRODUCED FIRST 16-BIT MICROPROCESSOR FAMILY TO USE MEMORY-TO-MEMORY ARCHITECTURE, INCREASING PERFORMANCE. INTRODUCED "3D" SEISMIC DATA GATHERING AND PROCESSING.
- 1976 - DEVELOPED SOLID STATE SOFTWARE\* PLUG-IN MODULES FOR POCKET CALCULATORS.
- 1977 - RECEIVED PATENTS FOR "CLOSED-LOOP" SOLAR ENERGY SYSTEM FOR CONVERTING SUNLIGHT TO ELECTRICITY.
- 1978 - INTRODUCED REVOLUTIONARY SPEAK&SPELL\* LEARNING AID USING SYNTHETIC SPEECH CHIP.
- 1979 - INTRODUCED FIRST "64K ERASABLE PROGRAMMABLE RANDOM ACCESS MEMORY"(EPROM); IT WAS PRECEDED BY TI INTRODUCTION OF FIRST 16K EPROM IN 1977 AND FIRST 32K EPROM IN 1976. INTRODUCED A HOME COMPUTER.

\* TI TRADEMARK

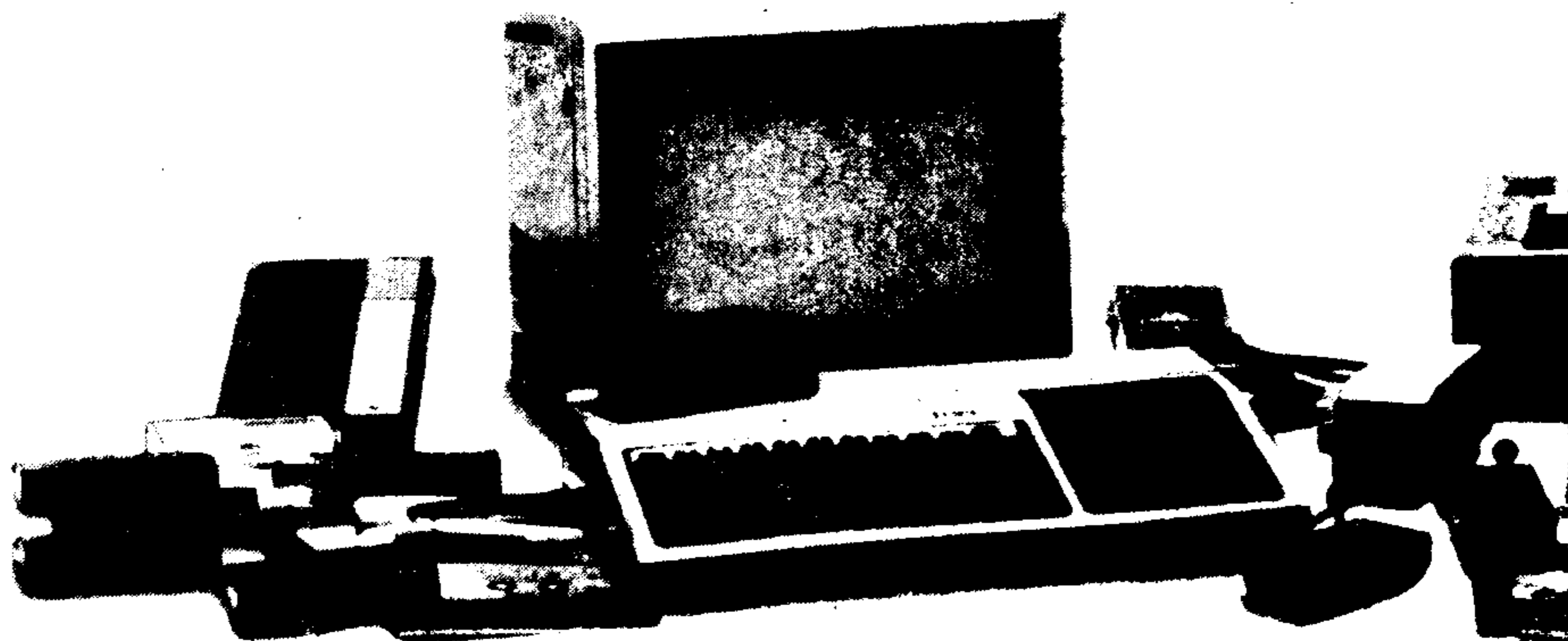
- 1980 - PRODUCED FIRST COMMERCIAL SINGLE-CHIP, 16-BIT MICROCOMPUTER, THE TMS 9940.
- 1981 - INTRODUCED "TI LOGO", THE FIRST MICROCOMPUTER LANGUAGE ENABLING CHILDREN TO USE COMPUTER TO SOLVE PROBLEMS.
- 1981 - INTRODUCED THE TMS 7000 FAMILY OF 8-BIT SINGLE-CHIP MICROCOMPUTER CIRCUITS. ACHIEVED VOLUME PRODUCTION OF LEADERSHIP 64K-BIT DYNAMIC RAMS.

# The Sleeping Giant Stirs

Owen Linderholm

## Creative Computing SOFTWARE PROFILE

**Name:** Extended Basic  
**Type:** Language  
**System:** TI 99/4  
**Format:** Module  
**Language:** Machine  
**Summary:** Worth every penny  
**Price:** \$99.95  
**Manufacturer:**  
Texas Instruments, Inc.  
P.O. Box 53  
Lubbock, TX 79408



Until now the capabilities of the TI 99/4 have been severely limited because the Basic supplied with the machine was not as useful as that supplied with many other machines. Many of its shortcomings still remain, but for certain applications, the TI has become a computer that not only equals but often outdoes its rivals. The old Basic was extremely slow and did not make good use of many of the features of the computer.

Arrays were limited to three dimensions, multiple statement lines were impossible, graphics handling was possible but difficult, and many commands considered standard on other computers were either absent or available only in a limited form. While some of these problems remain, others have been solved and a few new commands never dreamt of have been added.

The new Basic comes (in its preliminary form) as a black box, about half the size of a disk drive, which plugs into the ROM socket on the front of the computer. It costs approximately \$100 and is worth every penny.

Some of the more advanced features include subroutines which operate exactly like Fortran subroutines, graphics which operate independently of program control and a Basic which does most of the things we have come to expect from Microsoft Basic.

The manual that comes with the Basic seems to include everything in the "User's Reference Guide," plus descriptions of the new commands. It lists near the beginning all the changes that take place when the new ROM is plugged in. There is a long list of new instructions, functions and commands. Also, at the end are mentioned the disadvantages that accompany the new Basic. These include a loss of 864 bytes, a loss of 16 user programmable characters and the inability of some TI Basic programs to run in TI Extended Basic. So far I have not been able to find anything else. Graphics buffs who think that the loss of 16 programmable characters is serious are advised to reserve judgement.

Taking some of the less exciting features of the Basic first, I will look at the ACCEPT statement. This is a very advanced form of the INPUT statement and allows you to specify input fields anywhere on the screen, clear the screen before input, beep, put default values in the input field and verify that the data input is of the type required, all in one statement. The DISPLAY statement has been improved to allow one to do most of these things with output.

Other improvements are: multiple statement lines, with :: as the separator; the inclusion of the command RUN as a program statement; IF-THEN-ELSE con-

structions improved to Microsoft standard; MAX and MIN functions; a pre defined constant pi (guess what?!); improved error handling, including the ability to read protect a Basic program using a Basic command; read protection for disk files; and a few other changes or improvements of somewhat lesser importance.

We now come to the goodies. Leaving the best for last (always a good policy), the next thing to look at is the formation of what TI calls subprograms, subroutine that can be called with a parameter list exactly like Fortran subroutines. Suppose we decide to have a subprogram called TEST which multiplies two numbers together, adds one of the numbers to the result and then prints it. This can be done in ordinary basic by saying:

```
10 DEFFNA(X,Y)=X*Y+X
20 INPUT A,B
30 Z=FNA(A,B)
40 PRINT Z
```

but this is not a subroutine and it never can be in ordinary Basic, since it will only work on the variables A and B. In TI Extended Basic this can be done with:

```
10 INPUT A,B
20 CALL TEST(A,B)
30 GOTO 10
40 END
50 SUB TEST(X,Y)
60 PRINT X*Y+X
```

## Extended Basic Modules Still Scarce

Although we here at the International Users-Group did receive 2/3 of the total Extended Basic Command Modules which we had ordered from Texas Instruments we fear that nagging production problems will continue to delay new orders which we receive. We strongly suggest that if you wish to order an Extended Basic Command Module from us or other sources that you prepare yourself for a wait of up to 2 months.

Sources at the Texas Instruments assembly plant in Lubbock, TX. inform us that the problem lies in low yields on 64K ROM chips that they are purchasing from third party vendors for use in the Extended Basic Modules.

Our latest shipment arrived on Dec. 2 and we are clearing our back log on an oldest invoiced

basis. We had considered a complete withdrawal of Extended Basic from our price list but feel that it would be unfair to many of our members who depend on us to supply them with TI products which they cannot locate on a local basis.

For those of you who have Extended Basic on order from us or those of you who are thinking of ordering Extended Basic from us please be patient as we will deliver product as soon as it becomes available.

### NOTE:

Due to TI's allocation system Extended Basic may be available in your local area from time to time. If you locate Extended Basic at the local level please to not hesitate to request a refund from us.

### New Software Catalog

On November 25, we mailed out to our 7500+ members a new owner written and translated software catalog. Written in a new 8½ x 11 format it contains many new programs written in TI Basic, Extended Basic and for the first time TI Logo.

This catalog will be updated on a regular basis and rather than replacing the entire catalog you will receive updated pages. You will notice that we have for the first time placed a price on the catalog itself, \$1.25. This is a replacement cost only as it was mailed free of charge to all active members of the International 99/4 Users-Group. We would like to ask that you treat this catalog with care and place it in a binder of your own choosing for easy reference.

The total cost to us here at the Users-Group to produce and mail this catalog was in excess of \$8,000 and as we charge no dues or membership fees and receive no financial support from Texas Instruments Inc. we would like all of our members to continue to support us

with your purchases and exchanges in this area of our business.

We have recently received a lot of flack from dealers and TI marketing and sales people as to our role as a retail outlet for TI and Third Party Products for the 99/4 and 99/4A. If you would like to see us continue to provide Texas Instruments and Third Party Hardware and Software through the Users-Group please let us know, we will leave it up to you.

### Holiday Schedule

The International 99/4 Users-Group office will be closed for the holiday season from Thursday, December 24th until Monday, January 4th, 1982.

We sincerely hope that all of our members have a HAPPY HOLIDAY SEASON AND A PROSPEROUS NEW YEAR.

### TI Will Expand Customer Service

Due to a large increase in the sale of the 99/4A Computer, TI customer service in Lubbock is increasing its staff. Effective Monday, Dec. 7, one extra customer service rep has been assigned to the personal computer with others to follow shortly according to our sources at TI. Customer Service Manager Larry Walker informed the Users-Group that they were just not prepared for the large sales increases of the new 99/4A and it has taken some time to train qualified personnel.

Mr. Walker says that the toll free line is receiving up to 10 times more calls per day than it did just 5 months ago and that his department is working very hard to answer all information requests. Please remember that the toll free line is for product information only and that technical questions must be referred to the tech hotline at (806) 741-2663. If you are unable to reach TI's customer service and feel that we here at the Users-Group can be of help please feel free to call us at (405) 787-8521.

## EXTENDED BASIC PROGRAMMING LANGUAGE

Extended BASIC is a leadership programming language available in a Solid State Command Module for the TI-99/4. Features in the language make it easier and faster to write both serious programs and entertainment programs. Programs written in regular TI-99/4 BASIC generally will run in Extended BASIC without any conversion. With the optional RAM expansion box, there is a total of 40K bytes of memory available.

### FEATURES:

#### o Control of Up to 28 Moving Objects (Sprites) From BASIC

Formerly, control of moving objects required detailed programming in low-level assembly language. But now it is possible to define colored objects ( up to 32 x 32 pixels in size), and give them an X and a Y velocity, all from BASIC. It is even possible to detect the coincidence of two objects from BASIC. This leadership feature allows action packages to be programmed with very little effort.

#### o Subprograms

This highly requested feature lets a programmer write true subprograms that can have arguments passed to them and have their own local variables. This allow programs to be smaller and eliminates a frequent source of hard-to-find mistakes, duplicate variable names. This feature also saves programming effort because the same subprogram (say, a sorting routine) can be used in many different applications without any recoding.

#### o Print Using

This powerful feature makes it easy to format neat columns of data on the display or printer. One can easily align decimal points and add dollar signs as well.

#### o Display At and Accept At

This feature makes it easy to display or input information from any location on the display screen. This is particularly useful for filling in forms of all kinds. This feature also writes information to the screen much faster than the HCHAR or VCHAR statements in regular TI-99/4 BASIC.

#### o Chaining of Programs

With this feature, it is possible for one program to load and run another program from disk. This allows programs to be segmented into small chunks to fit into a limited RAM memory space.



- o Complicated IF/THEN Statements

This convenient, space-saving feature allows full statements in the THEN and ELSE clauses. It also allows Boolean expressions (AND, OR, etc.). For example, this complex statement is now possible:

```
IF A > 0 AND (B < 10 OR B = 0) THEN A = A + 1 ELSE A = A + 2
```

- o Error Handling

This feature intercepts an execution time error that would otherwise be fatal. For instance, it is possible to write a highly human-engineered program that recovers from user mistakes such as entering a letter instead of a number, dividing by zero, or inserting the wrong disk in the system.

- o Size

This feature quickly allows a programmer to determine how much memory his program is taking.

- o Multiple Statement Line With Tail Remarks

This feature saves time and memory space. For example:

```
10 FOR I = 1 to 10::PRINT I;::NEXT I::END!ANOTHER PROGRAM
```

- o Merge

This feature merges two BASIC programs together. This makes it easy for a programmer to merge a "canned" subroutine, such as a graphing or sorting routine, into his main program.

- o Auto Boot From Disk

When Extended BASIC is selected from the TI-99/4 menu screen, the computer will automatically load and run a turnkey program from disk without further user intervention - if the program is present.

- o Protected Programs

With this feature, it is possible to save a program in a form in which it can't be easily listed or copied. This protects your investment if you have developed software you are planning to sell.

- o Speed

Many functions have been speeded up from TI-99/4 BASIC. These functions include PRINT, SIN, COS, TAN, SQR, LOG, and EXP. Some functions are slower than in regular BASIC, including the NEXT statement. On the balance, however, most realistic programs (such as sorting programs) run faster in Extended BASIC than they do in regular TI-99/4 BASIC.