



## User's Newsletter

### Announcing Texas Instruments Author Incentive Program... win up to \$3,000.

Texas Instruments is looking for innovative, quality application programs. To make it worth your while, we've created an Author Incentive Program which will be announced in the September issue of several computer magazines. However, as a preferred customer, we are giving you advance notice of the Program.

The award for the top program will be \$3,000, with five \$1,000 awards and twenty \$500 awards. All winners will be recognized with national publicity. Even if you don't receive one of these monetary awards, we may see enough market potential for your program to help you develop it and sell it.

We want programs that offer real utility and lasting value. Programs that are self-teaching, that communicate clearly and directly. TI is interested in education, personal finance, technical, and managerial programs, as well as home management, hobby, and simulation programs. We prefer that your entries exclude entertainment packages.

Your entry can be a program you've created for use on the TI-99/4 or other microcomputers—in any high-level language, from Pascal and BASIC to COBOL or FORTRAN—or even assembly language. You can use up to 48K RAM.

Keep in mind that programs for the TI Home Computer can incorporate high-quality color graphics, music and sound effects, and TI's remarkably human synthesized speech.

An official entry form must accompany each program you submit. To request your entry submission form, call toll-free 1-800-858-4565 (in Texas call 1-800-692-4279) between 8 a.m. and 4:30 p.m. CDT, Monday through Friday. We'll send you full details about the Author Incentive Program along with the form. Please don't send anything until you receive and fill out the entry form.

Programs must be in by November 15, 1980 — so get your entry form soon.

Offer void where prohibited by law. Author Incentive Program not open to TI employees, TI consultants and contractors or their families.

### Peripherals expand computer's capabilities.

To enhance the effectiveness of your Home Computer, TI offers eight accessories for your TI-99/4. The accessories are easy to connect and use.

**Solid State Speech™ Synthesizer:** The Speech Synthesizer brings the exciting element of speech to your computer without tapes or recordings. It reproduces the human voice electronically, using the same technology as in TI's Speak & Spell™ learning aid. It does require a Command Module programmed for speech, such as the Speech Editor Command Module. The Speech Synthesizer contains a vocabulary of over 300 words stored on chips.

**TI Disk Memory System:** The Disk Memory System is a mini-floppy disk mass storage system consisting of the TI Disk Drive Controller and one to three Disk Memory Drives (sold separately). The Disk Memory System can store up to 90,000 bytes of information on each floppy diskette, and up to 127 files may be defined on every diskette. Fixed- and variable-length records and sequential and relative files can all be handled by the Disk Drive Controller. Free disk space is automatically re-assigned for user file allocation. The Disk Manager *Solid*

(See *PERIPHERALS*, page 2)

*State Software*<sup>™</sup> Command Module is provided with the controller to supply disk utilities, including disk and file maintenance commands.

**RS232 Interface:** The RS232 Interface is a communications adapter that enables you to connect a wide range of accessory devices to your Home Computer. It can connect RS232-compatible devices from other manufacturers, as well as other TI products such as the TI-99/4 Telephone Coupler (Modem) and the TI Model 810 Printer. The interface is programmable — you can select baud rate, number of bits, parity, and number of stop bits so that you can interface with both low- and high-speed peripherals.

**Telephone Coupler (Modem):** The Telephone Coupler allows your Home Computer to communicate directly with other compatible computer systems through standard telephone lines. The modem requires an RS232 Interface unit to operate. Once connected to the Home Computer through the RS232, the Telephone Coupler converts messages, programs, and data entered on the TI-99/4 console into signals that can be sent over telephone lines. The Modem is also capable of converting data received over the phone back to its original form.

**TI Solid State Thermal Printer:** The Thermal Printer prints data in a 32-column, 5x7 dot-matrix character format at the speed of 30 characters per second. Besides printing standard letters and numbers, the Thermal Printer has 32 pre-defined graphic symbols for charts and graphs, and special characters can be defined in your programs. It prints hard-copy listings of programs and

data in either of two character sets and uses thermal (heat sensitive) paper.

**13" Color Monitor:** The TI Color Monitor is specially designed for use with the TI-99/4 Home Computer. It has a display format of 24 lines containing 28 characters each. The monitor has excellent color resolution with 192x256 dot density. Because the Color Monitor connects directly to the video input on the console, there is little interference or distortion.

**TI-900 Video Modulator:** The TI-900 Video Modulator is a home television set adapter. It enables any conventional T.V. set to be used as a computer display. A channel select switch permits you to use either channel 3 or 4. The modulator also includes a switch which lets you use your television set as a T.V. or as a computer monitor without disconnecting the Video Modulator.

**Wired Remote Controllers:** The Wired Remote Controllers are used to position objects on the screen. Each unit includes an eight-position stick and side-mounted action (FIRE) button. Many of the *Solid State Software*<sup>™</sup> Command Modules are programmed to permit use of the Wired Remote Controllers.

## Computers in the home are here — and here to stay.

"The wave of the future"... "An approaching reality"... "A significant addition to households of the 80s"... Statements such as these are often made about home computers. And home computers will undoubtedly become an integral element of most

American households in the next decade. As the consumer electronics industry continues to evolve, the home computer will have a key role in its development.

However, the home computer is not just "the wave of the future" — home computers are a part of our world today. In a recent speech to the American Advertising Federation, Peter Bonfield, manager of TI's Personal Computer Division, said, "Clearly, the home computer is a here and now reality." Even today, home computer users can choose from a wide range of applications. TI offers programs for the TI-99/4 in home management, personal finance, education, entertainment — and even data base access.

And what does the future hold for home computer households? Peter Bonfield sees the home computer of the 80s as part of a complete home electronics system. Such a system would include subsystems for entertainment, family management, education, communication and information, and monitoring and control functions. By the end of the decade, says Bonfield, "the various subsystems will have become so integrated with the home computer, and with each other, that it will be almost impossible to identify separate functions." And home electronic centers won't be only for the very rich — complete systems will probably be available and affordable to "average" homeowners by the late 1980s.

Thus, you as a home computer owner possess one of the most useful electronic products of the present as well as the first phase of the home electronics center of the future.

## Random Bits

*Editor's Note:* This column presents suggestions and ideas for using the TI Home Computer and its peripherals. We'd like to publish your programming problems, solutions and ideas, too. Send letters to:  
TI Home Computer  
Newsletter  
P.O. Box 53  
Lubbock, TX 79408  
Attn: Home Computer  
Newsletter Editor

### Schematics Available

Would you like to see what's inside your Home Computer? Schematic drawings of the TI-99/4 and input/output pin assignments are now available from Texas Instruments. For each data packet, send \$10.00 plus your state sales tax, for copying, shipping and handling, to:

Texas Instruments  
P.O. Box 53  
Lubbock, TX 79408  
Attn: Joe Curry

Dealers Parts Dept.

Send check or money order. All orders must be prepaid.

### Technical Assistance

Need help? For technical questions such as programming, specific Home Computer applications, etc., you can talk to a Home Computer programming specialist. For assistance, call 806-741-2663. We regret that this is not a toll-free number, and we cannot accept collect calls.

### Program Size Calculation

If you'd like to determine the amount of random-access memory (RAM) taken up by a BASIC program, try this easy method:

1. Enter your program into the computer. Do not use line numbers 1 and 2. *(in your prog)*
2. Add these lines to the program:
  - 1 A=A+8
  - 2 GOSUB 1

3. RUN the program. After a few seconds, the program stops running, and the message MEMORY FULL IN 1 is displayed.
4. Type the following imperative command:

```
PRINT 14800-A;"BYTES USED":A;"BYTES REMAINING"
```
5. When you press ENTER, your computer tells you the approximate number of bytes of RAM used by the program and the approximate number of bytes remaining.

*Note:* Be sure to delete lines 1 and 2 before you RUN your program.

### Program Information

To obtain information about new programs or to place an order for programs you can't locate at your retail store, call 1-800-858-4565 (in Texas call 1-800-692-4279).

### Programming Hints

Here are some tips to help you avoid problems in programming with TI BASIC:

1. When using the Edit Mode to expand a program line, be careful not to enter a "statement used as a command" immediately after leaving the Edit Mode. (Refer to the *User's Reference Guide*, p. 45, for a list of "statements used as commands.") To avoid difficulty, RUN the program immediately after leaving the Edit Mode. After the program has been RUN, you may enter a "statement used as a command" without affecting your program. If you fail to follow this precaution, your program may be altered or lost.
2. The position function (POS command) is accurate when the string you are searching is less than 128 characters long. In addition,

you will not encounter difficulty if you are looking for a string that begins in characters 1 through 127, no matter what the length of the string you are searching. However, the position function may not accurately look beyond the 127th character of a string. If the string you are looking for starts between characters 128 to 255 of the string you are searching, the position function may not find it.

3. Certain program lines, because of their length, may contain a line number that "wraps around" to the next screen line. If you LIST the program on the TI Thermal Printer or via the TI RS232 Interface, the "wrapped-around" line number may be replaced by random dot patterns. *The program in memory is not affected by this occurrence.*

## Data Bases accessible through TI-99/4.

*source 800-354-3530*  
Today's consumer data base services offer a wealth of valuable information — from the latest quote for gold in London to airline schedules to tips on how to select and taste fine wines. The Terminal Emulator I *Solid State Software*™ Command Module can link your Home Computer to these data base services.

For information on data base access procedures, call 1-800-858-4565 (in Texas call 1-800-692-4279).

*Note:* To activate the Terminal Emulator I Command Module, a TI RS232 Interface and a TI Telephone Coupler (Modem), both sold separately, must be attached to your computer.

## Cassette interface problems can be alleviated with careful use of compatible equipment.

Have you ever encountered problems in loading a program or data file from cassette tape to your Home Computer? Cassette interface problems are common to users of all home and personal computers. However, many such problems can be eliminated if you make sure that:

- You are using high quality audio tape. See the table below for recommended tapes.
- The tape is not longer than C-60. Longer tapes provide less fidelity and may increase drag.
- The cassette machine is not located within two feet of the monitor or a television set.
- The tape is never placed within two feet of the monitor, a television set, an electric

motor, or any other strong source of magnetic fields.

- The computer system is not located on a continuous metallic surface.
- You are using a cassette recorder which is compatible with the circuitry of the TI-99/4. See the table below for recommended recorders.
- Proper volume and tone control settings are used consistently. It is helpful to use the same volume and tone settings for loading tape data as you used when saving the data. Check the table below for typical settings of recommended recorders.
- You are following the correct procedures for loading and saving as detailed in your *User's Reference Guide* and certain *Solid State Software*™

Command Module user's manuals.

If you own a cassette recorder which is not compatible with the TI Home Computer, you may be able to perform the load/save routines manually by following this procedure: Connect the red (microphone input) and white (external speaker) plugs to the cassette unit, but do *not* connect the black (remote) plug. Then, follow the procedure to either save or load data. When the screen instruction PRESS CASSETTE RECORD (or PLAY) appears, be sure to press the **ENTER** key immediately after pressing the cassette's record (or play) key(s). If you are saving data, have the computer check the data at the end of the save routine.

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### RECOMMENDED CASSETTE RECORDERS AND TAPES

#### Cassette Recorders

The following cassette recorders have been evaluated and found to operate properly with the TI Home Computer. Typical volume and tone control settings are indicated, but adjustments may be required for best performance.

Name	Model Number	Volume Setting	Tone Control
GE	3-5105B	3.5	4
	3-5105C	3.5	4
	3-5105D	3.5	4
	3-5105G	3.5	4
Panasonic	RQ2309A	5.0	10

#### Cassette Tapes

Some suggested types of tapes are:

Brand	Type
Scotch	Master
TDK	SA, Maverick, AD, D
Verbatim	Digital Cassette

NOTICE: These recorders and tapes are listed only because their compatibility with the Home Computer has been determined. Texas Instruments does not endorse these products, nor does it represent that these are the only recorders or tapes which may be compatible.

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### Wide range of software applications offered by TI.

Texas Instruments offers application programs in many areas. Each plug-in *Solid State Software*™ Command Module gives your TI Home Computer an entirely new capability. In addition to Command Modules, the TI Home Computer can be operated with application programs on cassette tape or diskette.

So that you may see the variety of practical software applications now open to you, we are enclosing a booklet describing the preprogrammed software available from TI. Look over the program descriptions, and you'll discover the many ways your computer can teach, entertain, and assist you.