MICROSOFT MULTIPLAN

The MICROSOFT* MULTIPLAN* software package is a second generation electronic spread sheet developed to aid professionals with little or no knowledge of computers by aiding in row-column calculations. It is useful for the projection and development of budgets, financial reports, planning forms, expense statements, data analysis and more. The more familiar you become with MULTIPLAN*, the better you will be able to exercise its powers.

MULTIPLAN* is called a second generation electronic spread sheet because it can do everything VisiCalc** (first generation) can do, but much more.

MULTIPLAN* can replace the pen, paper and calculator used in the work with numeric comparisons. It automatically frees you from traditional calculations by remembering the relationship between entries on the worksheet and performing the calculations. You then have the chance to project or forecast plans and see the results if a critical number is altered.

The worksheet offers 63 columns and 255 rows for words, numbers, and formulas. You can also connect several worksheets so you build up a chain of sheets that provide information to each other. MULTIPLAN* can instantly move, insert or erase data, widen or shrink columns. You can also insert or delete space, thus eliminating the costly and tiresome work of typing or hand printing the worksheet over and over. Cells and areas can be named in English instead of codes; sorting can be done alphabetically or numerically; and there is a convenience and easy-to-use on-line reference guide.

The TI-Writer Word Processor package can merge a text file with a worksheet file and give a report containing text with tabular information wherever you place it. The formatting options produce presentation-quality reports.

MULTIPLAN has a suggested retail price of $99.95. The system is designed to be used with the TI-99/4A only and requires the TI Memory Expansion unit and the TI Disk Memory System (TI Disk Drive Controller and Disk Memory Drive)-sold separately.

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FEATURES OF THE 80 COLUMN PRINTER

The dimensions of the printer are as follows:

LENGTH	16 3/4"
WIDTH	20 1/4"
HEIGHT	8 1/2"
WEIGHT	16 lbs.

The features of the printer are as follows:

- Has the ability to provide a printed copy of programs, data, screens, or displays from certain Solid State Software TM Command Modules. Also, the printer can be used in text mode or the graphic mode in which hard copies of illustrations, graphs, charts and other visuals are printed.
- Speed of 80 characters per second and a 9X9 dot matrix printhead.
- The printer offers 40-, 66-, 80- and 132 column printing widths.
- Characters can be printed in any desired size - normal, enlarged, condensed, etc.
- In graphic printing, both normal-density (480 dots/line) and real density (960 dots/line) modes are available.
- Prints 40 enlarged characters per line, 66 mixed character widths per line, 80 normal characters per line, or 132 condensed characters per line with programmable column widths.
- Has a top-of-form function for paper lengths of either 11 or 12 inches.
- Can be set to skip over paper perforations automatically.
- Has programmable line spacing, vertical and horizontal tabulation, and a programmable buzzer.
- Prints 80 character per second bi-directionally with logic-seeking capability.
- Has eight international character sets selectable by software or dip switch.
- ~~Suggested Retail~~ Price: $750.00

MINI MEMORY MODULE

The Mini Memory Solid State Software™ Command Module increases the versatility of your Texas Instruments TI-99/4 or TI-99/4A Home Computer by providing additional memory for your system as well as important tools for program development. In addition, the module contains a built-in battery, which permits the programs and data stored in the module's Random Access Memory (RAM) to be retained when the computer console is turned off, even if the module is removed from the console.

Enclosed with the Mini Memory module is a cassette tape containing a line-by-line symbolic assembler. When the Line-by-Line Assembler program is loaded into the Mini Memory module's RAM, you can directly enter TMS9900 assembly language statements from the keyboard. These statements are translated immediately into object code and stored directly in RAM. Also included on the cassette tape is a graphics demonstration program named LINES.

The features of the Mini Memory module include:

- o A total of 14K bytes of memory. This memory consists of 6K bytes of Graphics Read Only Memory (GROM), 4K bytes of Read Only Memory (ROM), and 4K bytes of RAM. The programs resident in the GROM and ROM provide additional important program development tools. The RAM provides additional memory space for data and program storage.

- o A built-in battery in the module to preserve the data or programs stored in the RAM memory.

- o Additional files. Besides the 4K-byte RAM file in the Mini Memory module itself, the Memory Expansion unit, if attached, can be used by TI BASIC programs.

- o Additional file-handling capabilities. With the Mini Memory module, assembly language object programs, as well as data, can be loaded into memory.

- o Additional TI BASIC subprograms. With the Mini Memory module, several additional subprograms can be called with TI BASIC statements. These subprograms include the ability to PEEK and POKE values.

- o Additional utility routines. The Mini Memory module includes several program routines which permit access to the compuer's resources; e.g., interfacing user programs with GROM-resident programs, interfacing assembly language programs with the TI BASIC interpreter, and accessing the VDP RAM.

- o A resident debug program. The EASY BUG debug progam is a useful program-development tool with which you can access the internal resources of the computer system and trouble-shoot your programs.

TI LOGO II

The new TI LOGO release has all of the features, key words, and commands that are present in the production version. Thus, with only minor exceptions, any set of TI LOGO procedures produced on the older version will still work on the new release. There are some new commands which have been added to the system. Previously prepared programs using these commands probably would not perform as expected.

There have been quite a few enhancements added to the new TI LOGO. In addition to the correction of previously reported problems, the most notable of these are as follows:

- The music feature allows great flexibility in composing of musical pieces. Three voices and a voice generator with a dumm command are supplemented with the following features: tempo in beats per minute, staccato and legato designations, chromatic on major scales, looping capabilities which allow continuous playing, and many more.

- Memory overflow no longer results in loss of procedures. An out of space message appears when reading in or producing a procedure which cannot be accepted due to limited space. The system is still alive and program recovery is possible.

- Larger sprites (32 x 32 pixels) as well as the standard 16 x 16 pixel sprites can be displayed, but they insist all be big or all be normal. Big sprites make a 2 x 2 area which is equivalent to the 1 x 1 pixel area formerly used in the MAKESHAPE editor.

- User memory space is almost doubled. This makes many more nodes (roughly equivalent to more procedures and variables) as well as more stack (equivalent to the depth of nesting of recursive procedures) available to the user.

- Entering TO ABC automatically enters the variable names in the procedure title line.

- RS232 is now an option when saving a procedure. Column width can vary from 32 to 132, with a default of 80, for carriage returns. Baud rate is selectable from 300, 1200, 2400, and 9600, which is the default.

Many new commands are available to perform a variety of functions. Many of these are designated for the music features, while others provide memory size still available, sprite size, listing versatility, comparison and test features, and control of memory management pauses, among others.

TI LOGO II will be readily available in 1983.

NEW UCSD P-SYSTEM AND PASCAL SOFTWARE

A NEW UCSD P-SYSTEM PERIPHERAL AND THREE PASCAL DISKETTE-BASED SOFTWARE PACKAGES FOR THE TI-99/4 AND TI-99/4A WERE ANNOUNCED BY TEXAS INSTRUMENTS. THE P-CODE PERIPHERAL IS HOUSED IN A STANDARD TI PERIPHERAL PACKAGE. UCSD PASCAL, VERSION IV.0 IS A HIGHLY STRUCTURED, EASY-TO-LEARN AND FLEXIBLE LANGUAGE THAT OFFERS MORE EFFICIENT USE OF MEMORY SPACE, AND GREATER PROGRAM EXECUTION SPEED THAN INTERPRETED BASIC PROGRAMS. THIS NEW SYSTEM ADDS A NUMBER OF POWERFUL FEATURES TO TI SOFTWARE INCLUDING:

- A PASCAL COMPILER PACKAGE TO COMPILE PASCAL PROGRAMS IN "P-CODE". THE "P-CODE" IS A LOW-LEVEL CODE THAT IS THEN INTERPRETED BY THE MACHINE LANGUAGE OF THE COMPUTER.
- AN EDITOR, FILER, AND UTILITY PACKAGE TO PROVIDE FULL-SCREEN EDITING CAPABILITIES, TO MANAGE DISK FILES, AND TO SUPPLY OTHER PROGRAMMING UTILITIES.
- AN ASSEMBLER AND LINKER PACKAGE WHICH WILL ALLOW PROGRAMMING IN TMS 9900 ASSEMBLY LANGUAGE.

VERSION IV.0 WAS DEVELOPED BY SOFTECH MICROSYSTEMS AND THE PROGRAMS ARE BLOCK-STRUCTURED SO THAT LOGICAL ELEMENTS OF A PROGRAM ARE DEVELOPED ONE ENTIRE UNIT AT A TIME. THIS VERSION OFFERS NEW FEATURES AND CHARACTERISTICS IN THE AREAS OF MEMORY MANAGEMENT AND SCHEDULING SERVICES AS WELL AS IMPORTANT NEW OPTIONS FOR THE APPLICATIONS PROGRAM DEVELOPER.

ONE OF THE MOST IMPORTANT BENEFITS OF PROGRAMS WRITTEN FOR THE UCSC P-SYSTEM IS ITS PORTABILITY. THESE PROGRAMS CAN BE RUN ON OTHER COMPUTERS, OFTEN WITH NO MODIFICATION, THROUGH THE USE OF A "P-CODE" COMPILER. LIKEWISE, UCSD PASCAL PROGRAMS DEVELOPED FOR OTHER COMPUTERS CAN BE RUN ON THE TI-99/4A WITH LITTLE, IF ANY MODIFICATION.

THE UCSD P-CODE SYSTEM ALSO OFFERS THE ABILITY TO RUN OTHER LANGUAGES AT SUCH TIME AS THESE BECOME AVAILABLE. THE ADVANTAGE IS THAT THE COMPILED PROGRAMS WILL EXECUTE FASTER AND OCCUPY LESS MEMORY SPACE THAN THOSE GENERATED BY THE RESIDENT INTERPRETED TI BASIC.

TO RUN THE USCD P-SYSTEM AND PASCAL ON THE TI-99/4A REQUIRES THE MEMORY EXPANSION UNIT AND THE NEW PERIPHERAL. ADDITIONALLY, DEVELOPMENT OF THE P-SYSTEM SOFTWARE REQUIRES THE DISK CONTROLLER, AT LEAST ONE DISK DRIVE, AND THE APPLICABLE DISKETTE SOFTWARE PACKAGE.

~~SUGGESTED RETAIL PRICE OF THE NEW PERIPHERAL IS $399.95. PRICES FOR THE SOFTWARE PACKAGES WILL BE ANNOUNCED AT A LATER DATE. ALL OF THESE WILL BE AVAILABLE AT RETAIL IN THE FIRST QUARTER OF 1982.~~

TI-WRITER

The TI-WRITER Solid State Software™ word processing command module was designed to provide many of the features of larger, more complex word processing systems to users of the TI-99/4A Home Computer. Text editing and formatting features include inserting and deleting text and lines, automatic paragraph indentation, right margin justification, automatic word wrapping, overstriking and underlining, moving and copying text and document reformatting. Users can create, edit, save and print documents with the Text Editor Option, in either Word Wrap or Fixed Mode - Word Wrap mode for documents in paragraph form, Fixed Mode for charts, tables, etc. Documents can be printed directly from the Text Editor Option, or Text Formatting commands can be inserted into the document, stored on diskette and printed through the Text Formatter Option. The TI-WRITER module requires the use of the Memory Expansion unit, Disk Memory system, RS-232 Interface and any RS-232 compatible printer. ~~This package will be available during the fourth quarter 1982, and will retail at $99.95.~~