



# COMPUTER

# PRODUCTS



## ADDENDUM



The MF-68 is sold in kit form only and includes chassis, cover, power supply, controller, cables, software, assembly and operating instructions, plus two Shugart SA-400 drives for \$995.00 ppd. in the continental U.S. The MF-6X expansion kit is used to expand the system from a two drive to its four drive maximum. It is also sold in kit form only and includes everything supplied with the MF-68 kit less the controller and sells for \$850.00 ppd. in the continental U.S.

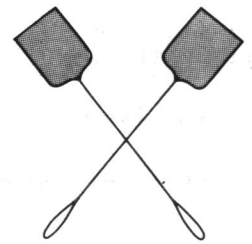
### DUAL MINIFLOPPY DISK FOR LESS THAN \$1000!

SWTPC is proud to announce its MF-68 minifloppy disk system. The unit was designed for the SWTPC 6800 Computer System with the controller board for the disk drives plugging right onto one of the I/O card slots on the 6800 Computer System mainframe. The unit is supplied complete with FDOS software and 8K DISK BASIC. FDOS system commands include CREATE, SAVE, LOAD, RUN, PURGE (delete), PACK, CATALOG, INITIALIZE and PATCH. There are additional commands for copying all or part of one diskette onto additional diskettes. DISK BASIC is the SWTPC Version 2.0 altered to include the ability to SAVE and LOAD. BASIC programs to and from disk. A minimum of 16K of memory is required on the Computer System to operate the MF-68 disk. Each diskette can store approximately 85K bytes of data and the disk system can be expanded to accommodate up to four disk drives.

### CALCULATOR INTERFACE FOR THE SWTPC 6800

We now have a calculator interface board for the SWTPC 6800 Computer System. This makes it easy to do arithmetic functions within machine language programs while simultaneously conserving program memory. All necessary interface subroutine listings are supplied with the kit for maximum simplicity and ease of use. The interface uses the new National Semiconductor MM57109 Number Oriented Processor and features Reverse Polish Notation, floating point or scientific operation, up to an eight digit mantissa and two digit exponent, four register stack, memory register, trig functions, base ten and natural logarithms and overflow indicator. The interface plugs onto one of the seven interface card positions and is powered by the computer system's power supply. The unit is sold in kit form only and includes the 3½"X 5¼" circuit board, all components, assembly and operating instructions for \$46.50 ppd. in the continental U.S.

# SWTBUG



## SWTBUG<sup>R</sup> MONITOR

SWTPC 6800 Computer System owners - The SWTPC SWTBUG<sup>R</sup> (Swatbug) monitor is here. SWTBUG is a 1K byte 6830 masked ROM integrated circuit hardware and software compatible with the Mikbug<sup>R</sup> monitor ROM. SWTBUG features:

- \* Major Mikbug<sup>R</sup> subroutine entry point compatibility
- \* Communication thru an MP-C Control and/or MP-S Serial Interface (auto-configuring)
- \* Single level breakpoints
- \* Generation of CT-1024 Terminal System screen control commands.
- \* Vectored Software Interrupt Instruction (SWI)
- \* Resident SWTPC MF-68 Minifloppy disk boot.
- \* Generation of punch dump end of tape formatting

Since the introduction of the SWTPC 6800 Computer System, Motorola's Mikbug<sup>R</sup> has been supplied as the SWTPC mini-operating system monitor. Because of the popularity of the SWTPC 6800 Computer System, the majority of all 6800 programs written for this and other 6800 computer systems rely on the subroutines and memory organization of the Mikbug<sup>R</sup> monitor ROM. The problem is that Mikbug<sup>R</sup> was not really written with the idea of the expandable SWTPC 6800 Computer System in mind and only half of the available ROM was actually used for the Mikbug<sup>R</sup> monitor.

The staff at Southwest Technical accumulated a list of additions, modifications and corrections to Mikbug<sup>R</sup> and put together what it feels is the most functional and flexible replacement for the Mikbug<sup>R</sup> monitor. Sixteen

major subroutines have been positioned with the same entry points as Mikbug<sup>R</sup> so that most programs which are Mikbug<sup>R</sup> compatible, will be SWTBUG<sup>R</sup> compatible as well, without modifications.

SWTBUG<sup>R</sup> supports an ACIA MP-S Serial Interface at I/O Port #1 as well as a PIA MP-C Control Interface at I/O Port #0 or #1. This allows those users which have the MP-C Control Interface to use SWTBUG<sup>R</sup> without having to purchase an additional MP-S Serial Interface Option. It allows those users who do have an MP-S Serial Interface to operate their control terminal at baud rates from 110 to 9600 baud on the MP-S Serial Interface while an optional MP-C Control Interface handles the "Kansas City" standard AC-30 cassette interface at 300 baud. Control signals are even generated by SWTBUG<sup>R</sup> on the MP-C Control Interface for Reader ON, Reader OFF, Punch ON and Punch OFF so that no terminal control character decoding is necessary as with Mikbug<sup>R</sup>. The Mikbug<sup>R</sup> INEEE and OUTEEE subroutines are fully functional for either type of interface and reside in SWTBUG<sup>R</sup> at the same addresses (as with most subroutines) for maximum compatibility.

SWTBUG gives the operator the ability to set single level breakpoints within user programs for debugging purposes. To set a breakpoint you simply type B followed by the address at which you wish to set the breakpoint. When you start your program and it encounters the address at which the breakpoint was located, it stops, prints a register dump and returns to the monitor. You may then clear the first breakpoint and set a new one by retyping B followed by the new address. You may just clear the first breakpoint by typing B followed by a carriage return. In either case retyping a G will restart the user program from the address where the previous breakpoint stopped it. This is something you just could not do with Mikbug's<sup>R</sup> handling of the software interrupt instruction.

Those customers using the SWTPC CT-1024 Terminal System will be happy to know that there is a single character clear screen command in SWTBUG<sup>R</sup> which "homes" and "erases" the screen on the CT-1024 terminal system. SWTBUG<sup>R</sup> also erases each CT-1024 line before it writes for improved legibility.

Unlike Mikbug<sup>R</sup>, SWTBUG<sup>R</sup> vectors all Software Interrupt instructions to a location pointed to by a user definable address located in the scratchpad RAM. Since this address is under user control the SWI instruction is now more functional and may be used within complex debugging routines or specialized user applications.

The SWTPC MF-68 Minifloppy disk may be booted in with SWTBUG<sup>R</sup> by typing the single character D command. Anyone with the disk will surely want the SWTBUG<sup>R</sup> monitor since the alternative to this is loading the boot from cassette or hand typing the sixty bytes of code required from the control terminal.

Those users making cassette or paper tape dumps of their own machine language programs know how annoying it is to have to separately output the program counter and append the S9 to the end of the tape. SWTBUG<sup>R</sup> features a single letter command that does this for you. It even outputs all of the RECORD/PUNCH - ON/OFF control commands as well. Maybe we made it too easy?

All SWTPC 6800 Computer Systems with Mikbug<sup>R</sup> may be upgraded to the SWTBUG<sup>R</sup> monitor by replacing the socketed 6830 Mikbug<sup>R</sup> ROM with the SWTBUG<sup>R</sup> IC and by making one minor board change on the MP-A processor card. SWTBUG<sup>R</sup> sells for \$19.95. Optional MP-S Serial Interfaces sell for \$35.00. Both items are shipped postpaid within the continental United States.

Mikbug<sup>R</sup> is a registered trademark of Motorola Inc.

Swtbug<sup>R</sup> is a registered trademark of Southwest Technical Prods Corp.

## NEW SWTPC 6800 SOFTWARE

Several new game programs are available for users of the GT-6144 graphics terminal on a SWTPC 6800 computer system.

GOMOKO/TTT3D- Side one of this tape enables the user to play Gomoko (five in a row tic-tac-toe) on his graphics terminal. The object of the game is to get five "X"'s or "O"'s in a row on a 10 by 10 grid. Side two is three dimensional TIC-TAC-TOE, sometimes called cubic. Instead of getting three X's or O's in a line like regular tic-tac-toe, you must get four in a row in a three dimensional cube. A game of challenge! GAM2 sells for \$4.95 ppd. in the continental U.S. and is available on "KC" cassette tape.

RACE- The object of this game is to maneuver a space ship through a maze of moving asteroids. Requires a PPG-J joystick. RACE sells for \$4.95 ppd. in the continental U.S. and is available on "KC" cassette tape.

The following new programs do not use the GT-6144 Graphic Terminal:

MASTERMIND/BIORYTHM-Side one of this tape will allow the user to play MASTERMIND against the computer. The computer will choose four "pegs" of possibly different colors and place them in four imaginary holes. The object of the game is to guess what colors the computer has chosen and in what order. The BIORYTHM program will plot the biorythm of a person for X number of days depending on the person's birthdate. The purpose of a biorythm is to predict a physical, emotional and intellectual pattern that indicates a person's up and down days for any given period of time. These predictions are based on scientific studies to determine why accidents occur. This program was written to run on a 80 column hard-copy terminal, but can be used on others. The GAM3 tape is available on a "KC" cassette tape for \$4.95 ppd. in the continental U.S.

- \* Multiple statement lines are now accepted.
- \* LOAD has been improved
- \* ATAN has been added
- \* 32 character strings
- \* Errors in SIN (270°), RND, DIGITS and certain FOR-NEXT problems have been corrected.

NAME \_\_\_\_\_  
(FIRST NAME) (MIDDLE INITIAL) (LAST NAME)

Rural Route \_\_\_\_\_ Rural Box No. \_\_\_\_\_ P.O. Box No. \_\_\_\_\_

Street Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

Date \_\_\_\_\_ ZIP \_\_\_\_\_

P		D	UPS	BUS	AIR	SPD	PAL	MFT	MO	CCK	MC	CHK	COL	SPL	
C		F	PP	REA	SPH	CM	SAM	SPL	CSH	CHX	BAC	TOD	PO		

[illegible]

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TOTAL FOR GOODS		
TAX (See Note Below)		
TOTAL CASH PRICE		
AMOUNT ENCLOSED		

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**BANKAMERICARD**  
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**master charge**  
THE INTERBANK CARD

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Print Name Exactly As It Is On Your Card \_\_\_\_\_

Good thru \_\_\_\_\_ Inter Bank # \_\_\_\_\_  
Enter Date Above

Enter Above the Exact Number On Your Card \_\_\_\_\_

Your Billing Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

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