

PERCOM**PeripheralTM**

ED. NOTE:

FEBRUARY 1981

THE ARTICLES HEREIN ARE SUPPLEMENTARY TO THE MAIN BODY OF THIS ISSUE OF THE PERIPHERAL WHICH APPEARS IN THE JANUARY/FEBRUARY 1981 ISSUE OF SS-50 COMPUTING MAGAZINE.

PRODUCT MAINTENANCE & IMPROVEMENT**PERCOM 6800 SUPER BASIC**

Two of the three patches set forth below were submitted by customers. The patch to version 1.09 was sent in by Bill Vergona, Las Vegas, Nevada, and the patch to version 1.0B was sent in by Peter Stark. Thanks guys!

Patch Application Procedure

To apply the following patches, first load Super BASIC into memory. Then use your system monitor to apply the patches. When all patches have been applied, save the patched Super BASIC: save memory from \$0100 to \$2FFF with program start at \$0100.

Patch to Super BASIC Version 1.09 (by Bill Vergona)**Problems solved:**

1. If a file is read until end-of-file (EOF=1) and an attempt is made to extend it via 'print' statements, Super BASIC will report file full (EOF=2) even if there is space left in the file.
2. Super BASIC will not initialize properly if the console port is set to zero.

PATCH ADDRESS	PATCH DATA
0418	41
06BD	BD 2D 90 01
103B	97 E0 97 DF 86 01 97 77
2D90	C5 80 26 03 7E 16 C6 C5
2D98	20 27 13 C4 DF D7 EA 36
2DA0	37 DE EE DF 05 BD C0 21
2DA8	DE 05 DF F2 33 32 39

Documentation: Application of this patch elevates Super BASIC to version 1.0A. Reference this version in correspondence with Percom.

Patch to Super BASIC Version 1.0A**Problem solved:**

Super BASIC will sometimes attempt to 'close' a file on the wrong drive number.

PATCH ADDRESS	PATCH DATA
0418	42
1690	BD 2D AF
2DAF	96 EB B7 A0 AC 7E C6 8F

Documentation: Application of this patch elevates Super BASIC to version 1.0B. Reference this version in correspondence with Percom.

Patch to Super BASIC Version 1.0B (by Peter Stark)**Problem solved:**

If an I/O is done to port #3 after a disk I/O to file #12 Super BASIC will treat it as I/O to file #12 also.

PATCH ADDRESS	PATCH DATA
0418	43
1C05	7E 2D B7
2DB7	26 06 7D 00 76 27 01 39
2DBF	7E 1C 08

Documentation: With the application of these patches your Super BASIC will be elevated to version 1.0C. Please reference this version in correspondence with Percom.

PERCOM 6809 Super BASIC

The changes set forth below enhance and fix the 6809 Super BASIC interpreter.

Application Procedure

To apply the following changes, it is necessary to load Super BASIC into memory using the MPX/9 "L" command. Exit to the PSYMON monitor with the MPX/9 "M" command. Use the PSYMON "M" command to make the following changes to Super BASIC, then return to MPX/9 using the PSYMON "G" command with no address. Save the new version of Super BASIC with the MPX/9 "S SBASIC.CM 100 2FFF 100" command.

Enhancements

1. Add function "DPEEK(N)" which will return the decimal value of the double byte starting at location (N).
2. Add command "DPOKE(N,N1)" which will place the value of (N1) into two consecutive memory locations beginning at Location (N).
3. Add function "HEX(S\$)" which will return the decimal value of the hexadecimal string (S\$).
4. Add function "HEX\$(N)" which will return a hexadecimal string having the value of the decimal argument (N). (N) must be between 0 and 65535.
5. Allows Super BASIC command to be passed to Super BASIC at execution time.
 - A) MPX? SBASIC chain "LOGIN.BA" Super BASIC will run the file "LOGIN.BA" as soon as it is started.
 - B) When initializing a disk under MPX/9, you specify BASIC to start, and BASIC to chain directly to a file. -MPX? I 2 SBASIC CHAIN "LOGIN.BA" The diskette that was created will start

- BASIC, and have BASIC chain to the file "LOGIN.BA" as soon as this disk is used as a boot.
6. Add function "INKEY\$" which will wait for a key to be pressed on the console, and return it as a single character string. The key will not be echoed to the screen.

Problems solved

1. BASIC cannot be used with the ELECTRIC WINDOW.
2. Halting output requires several presses of the [ESC] key at high baud rates.
3. The occurrence of a "CLS" command can result in writing the clear screen characters to disk. This is highly undesirable. The application of this patch will result in "CLS" being sent to the control port only.

PATCH ADDRESS	PATCH DATA
0100	7E,06,7E
0158	00,80,00,02,FF,FF
0173	2B,A0
0222	44,50,45,45,4B,28,0
0229	48,45,58,28,00,48,45,58,24,28,00,00
0234	49,4E,4B,45,59,24,00,00
0290	2B,60
0292	2B,6D,2B,78
0296	2B,99
03A6	44,50,4F,4B,45,28,00
0441	2B,4A
04D9	36
0588	10,BE,FF,DE,AE,A8,6A,9F,EC,30,A8,6C,9F,EF,AE,84,9F,F1,39
0617	20,22,34,16,9E,EC,C6,04,11,3F,01,47,24,12,8D,36,8D,10,B1,01,45,26,09,8D,2D,8D,07,B1,01,45,26,F7,35,96,34,16,B1,01,44,27,0A,35,96
0642	BD,1A,AA,8E,01,48,39
0656	8D,05,81,20,24,1E,39,9E,EF,6F,84,6F,01,11,3F,03,84,7F,27,F9,9E,F1,AF,9F,00,EF,39
067A	8D,9D,11,3F,02,39
067E	0F,F3,0F,F4,11,3F,0A,27,02,9F,F3,7E,10,4F,0F,21,9E,F3,10,27,02,5C,10,8E,00,63,A6,80,A7,A0,81,0D,26,F8,6F,82,39
08D2	BD,06,42
0FF8	12,12,12,12
10A3	BD,06,8C,12,12
2B4A	BD,1E,CA,10,24,DF,34,BD,0B,24,1F,03,BD,0B,24,1E,30,ED,C4,7E,22,35,BD,22,18,BD,0B,24,1F,01,EC,84,7E,22,D9
2B6D	BD,23,45,11,3F,1E,0F,4E,7E,22,D9,BD,1E,CA,10,25,E0,10,9E,54,96,21,34,12,BD,0B,24,34,06,8E,24,3C,9F,54,1F,41,BD,05,EF,35,06,7E,24,32
2B99	BD,06,5D,1F,89,7E,23,FB

Comment

With the application of these changes, the MP-C interface is no longer supported. Port type 02 will now direct all I/O operations to the console drivers. The port address of any port set to type 02 should be \$FFFF.

Documentation

Application of this patch elevates 6809 Super BASIC to version 9.01. Reference this version in correspondence with Percom.

PERCOM MPX/9 DOS

1. Patch to the MPX/9 ROM

Problem solved:

When any I/O operation is performed, a random byte somewhere in the first 16K of RAM will set to zero.

Patch Application

To patch the MPX/9 ROM, it is necessary to have the capability to read and program 2708 EPROMS. If you are unable to do this, return your MPX/9 ROM to Percom and it will be reprogrammed for you.

If you are able to program 2708's it is first necessary to load the existing MPX/9 ROM into RAM. Apply the following patch, bearing in mind that the addresses given are RELATIVE to the start of the MPX/9 ROM and do not represent actual RAM locations. To determine the RAM address to be changed it is necessary to add the address given in the patch to the address into which the ROM was loaded.

When the patches have been applied use the image in RAM to program a new 2708 EPROM. It is not recommended that you try to program the existing MPX/9 EPROM, as this would require erasure first, eliminating the possibility of a retry in the event of a problem.

PATCH ADDRESS	PATCH DATA
0185	1A 04

Documentation: Application of this patch elevates the MPX/9 ROM to version 1.01. Reference this version in correspondence with Percom.

2. Changes to the MPX/9 Diskette

Problems solved:

Operations using the RDFIL system call routine will not read the last sector of a file correctly if it contains less than 256 bytes.

The changes to the MPX/9 disk are too complex to attempt to patch in place. The MPX/9 system disk should be returned to Percom for replacement with MPX/9 version 1.10. NOTE: Some disks that are shipped from Percom come with the NEW version of MPX/9 on them, e.g., Super BASIC/09. You should still return your old MPX/9 system disk for replacement so that you will receive the corrected source listings of MPX/9.

SBC/9 MAINTENANCE

We have received a report of instability (oscillation) of the +12-volt regulator circuit on the SBC/9 when used with the Midwest Scientific Mainframe. We have not been able to duplicate the problem. However, customer-reported solutions are:

1. Reduce the unregulated voltage to the +12-volt regulator to a value between +14 and +17 volts.
2. Change the value of capacitors C2 and C19 to 4.7 microfarad (tantalum, Sprague 196D475X9010HA1 or equivalent).

Some SS-50 motherboards do not include a reset line pullup resistor on the motherboard as does the SWTP motherboard. In these cases, a 1-kohm 1/4-watt pullup resistor may be installed on the SBC/9. Connect one end of the resistor to TSS pin 1 and connect the other end to IC28 pin 16 (+5 Vdc). If the reset time is excessive, reduce the value of capacitor C23 to 47 or 50 microfarads.

EXORCISER COMPATIBLE PRODUCTS

Motorola's EXORciser is a versatile, industrial quality 680X microcomputer. It uses an 86-pin system bus, with standard gold-plated edge type connectors for function cards. Our EXORciser compatible boards, called ModuLEX modules, are equal in quality to Motorola modules but cost far less. Included in this product line is the LFD-400/800EX mini-disk system; a VC-EX memory-mapped video display card; and, the M64EX, a 64-Kbyte dynamic RAM card. A 6809 MPU card is in the board-layout stage of development. Software for these systems include a number of monitors -- MIKBUG, EXBUG and others -- configured for LFD-400/800EX operation, Percom Super BASIC, an editor and business application programs.

LFD-400EX Storage for the Motorola ADS2A

Bert Goldstone, Lexington, Massachusetts, provided the following information about modifying Motorola's ADS2A low-cost 6800 development system to use LFD-400EX storage. Thank you Bert.

1. Changes to the Motorola M68DIM2A Interface Module:

Rewire the Address Select, using the available jumper field, to use addresses B000 -- B1FF (hex) instead of C000 -- C1FF. This change removes the conflict between the CRT display memory addresses and the MPX ROM.

2. Changes to the I/O Supervisor ROM:

Changes in the I/O Supervisor ROM shown in the following table send data to be displayed on the CRT to the revised set of memory addresses. The I/O Supervisor ROM was originally Motorola Part Number 44615L.

ADD- RESS	ORIG. DATA	NEW DATA
DC18	C0	B0
DC34	C0	B0
DC3B	C0	B0
DC89	C2	B2
DE13	C0	B0
DE6B	C0	B0
DF3D	C0	B0
DF48	BF	AF
DF87	BF	AF

Values are in hexadecimal notation.

FLEXTRAN on CMS Computers Using LFD-400EX Systems

Percom LFD-400EX users with Creative Micro Systems (CMS) computers who want to run FLEXTRAN on their systems can contact:

Joe Sasser
Scada Industries
2220 W. 7th
Odessa, Texas

VENDOR SOFTWARE FOR PERCOM PRODUCTS

The product reviews of this section were prepared by Dale French of our technical staff.

HUMBUG

Designed as an upgrade replacement for SWTBUG and MIKBUG monitors, HUMBUG provides all of the important subroutines and entry points of SWTBUG plus SWTBUG monitor functions, is compatible with existing software, and contains extensive debugging facilities (depending on the version) with multiple breakpoints, single-stepping, formatted dumps and I/O control.

Three 6800 versions are available that use the Percom ELECTRIC WINDOW VDG with a separate terminal or keyboard for main I/O.

A 6809 version of HUMBUG, which we have not had time to evaluate, has been recently released.

Available from STAR-KITS, P.O. Box 209, Mt. Kisco, NY 10549.

DIXIE

DIXIE is a "disk executive" for the Percom LFD-400. It allows dynamic allocation of disk space, multiple catalogs, 12-character file names, file protection facility and space for 14 catalogs and 45 files. DIXIE replaces the MINIDOSPLUSX ROM on the LFD-400 controller card. Also, a 1/2 Kbyte transient driver program resides on disk. The driver is automatically read by DIXIE into its directory buffer area as needed.

Except for the inability to read each other's directories, Percom MINIDOSPLUSX and DIXIE are software compatible, thus allowing easy transfer of files between systems.

Available from Blue Hat Software Company, P.O. Box 4127, Flint, MI, 48504.

PRODUCT CATALOG

This section is a "short-form" catalog covering our major products for 680X microcomputers. Note that some items have two prices listed. The price in parentheses is the regular selling price. The second, lower price is a sale price marking the celebration of our fifth anniversary in business. Sale prices are in effect through May 31, 1981, as long as the supply lasts. After April 30th regular prices apply. To place an order or to request additional product literature, call our toll-free order number, 1-800-527-1592. For additional technical information, or to place an order from within Texas, call (214) 272-3421. Sorry, we cannot service technical information requests on our toll-free order number.

Prices and specifications are subject to change without notice, and prices do not include shipping and handling charges.

SYSTEM-50 (SS-50) HARDWARE

SBC/9 Single-Board Computer/SS-50 Bus MPU:		
SBCSS-9 with 6809 processor.....	(\$199.95)	\$139.95
SBCSS-2 with 6802 processor.....	(\$199.95)	\$139.95
6809 Adapter ADP-09 for SWTP MP-A2		
	(\$69.95)	\$39.95
M24SS 24 K Static RAM card		
	(\$499.95)	\$399.95
M48DES Dynamic RAM Card:		
M16KSS with 16 K RAM	(\$499.95)	\$399.95
16-Kbyte RAM Expansion Kits	--	\$99.95
LFD-400/800 Floppy Disk Controller		
	--	\$115.00
LFD-400/800 Mini-Disk Systems:		
LFD400S1 40-tk, 1-Drive, DOS, Cable	(\$599.95)	\$459.95
LFD400S2 40-tk, 2-Drive, DOS, Cable	--	\$999.95
LFD400S3 40-tk, 3-Drive, DOS, Cable	--	\$1399.95
LFD800S1 77-tk, 1-Drive, DOS, Cable	--	\$895.95

LFD800S2 77-tk, 2-Drive, DOS, Cable	--	\$1549.95
LFD800S3 77-tk, 3-Drive, DOS, Cable	--	\$2195.95
2-Drive Cable LFDCL-2.....	--	\$29.95
4-Drive Cable LFDCL-4.....	--	\$39.95
230-Volt 50-Hertz PS @ \$15/Drive		

ELECTRIC WINDOW Video Display Generator (\$249.95) \$169.95

ColorAMA Memory-mapped Color VDG Card -- \$219.95

the COLOR CONNECTION Interface Assembly -- \$99.95

Motherboards:

50-pin Bus, Extender Card (card only)	--	\$21.95
Conn. Set (10 ea. 10-pin Molex)	--	\$5.00
30-Pin I/O Bus Kit (complete)	--	TBA

Prototyping Boards:

50-Pin Board with Bus Connectors	--	\$24.95
30-Pin I/O Board with Bus Connectors	--	\$14.95

Miscellaneous Hardware:

10- and 12-pin Molex plug strips and edge card sockets with either tin-lead- or gold plated contacts, 34- and 50-pin Ribbon Cable Headers, RAM expansion kits for both the 24-Kbyte static RAM card and the 48-Kbyte dynamic RAM card, ac power line filter kits, diskettes and other accessories are also available.

SYSTEM-50 (SS-50) SOFTWARE**System Software**

PSYMON 6809 Extendable Monitor:	
PSYMON-1 2708 ROM for SBC/9 Board	\$39.95
PSYMON-2 2716 ROM for 6809 Adapter	\$69.95

Disk Operating Systems for LFD-400/800 Systems

6800 MPX - 2 ROMs (40- or 77-tk)	\$69.95
6809 MPX/9 - ROM & Diskette (40- or 77-tk)	\$69.95
6800 INDEX - 2 Diskettes (40- or 77-tk)	\$99.95
INDEX Advanced Programmers Guide	\$29.95

ELECTRIC WINDOW Video Driver:

WINDEX-1 6800 ROM	\$39.95
WINDEX-2 6809 ROM	\$39.95

High-Level Languages Supported by MPX, MPX/9:

6800 Super BASIC (40- or 77-tk)	\$29.95
6809 Super BASIC (40- or 77-tk)	\$29.95
Strubal Compiler (for most systems)	\$249.95

Text Editors:

6800 EDIT-68 (MPX or INDEX, 40- or 77-tk) ...	\$39.95
6809 EDIT/9 (MPX/9, 40 or 77-tk)	TBA
TOUCHUP Adapts TSC Editor for operation with LFD systems (MPX or INDEX, 40- or 77-tk) ..	\$19.95
6800 Linking Editor (MPX or INDEX, 40- or 77-tk) ..	\$49.95

6800 Symbolic Assemblers:

Percom (MPX or INDEX, 40- or 77-track)	\$29.95
Hemenway (MPX or INDEX, 40- or 77-track)	\$79.95

Soft-Sector-to-Hard-Sector Translators:

FLXTRN-1 MiniFLEX to LFD-400	\$24.95
FLXTRN-2 FLEX 2.0 to LFD-400	\$24.95
SMKTRN Smoke 5.1 to LFD-400	\$24.95
FLXTRN9 FLEX 9.0 to LFD-400	\$24.95

LFD-400/800 User Group Diskettes

6800 APPLICATIONS SOFTWARE	\$10.00
----------------------------	---------

General Ledger (LFD-400 Super BASIC)	\$199.95
FINDER DBMS (LFD-400 Super BASIC)	\$99.95
List Processor (LFD-400 Super BASIC)	\$99.95

6502 DOSs for LFD-400 Mini-Disk Systems:

KIMDOS, SYMDOS or AIMDOS	\$99.95
--------------------------------	---------

MODULEX PRODUCTS (EXORcisor Bus)**Hardware:**

LFD-400/800EX Floppy Disk Controller Card	\$365.00
--	----------

LFD-400EX 40-Track Mini-Disk Systems:

LFD400E1 - 1-Drive System, Cable	\$64
LFD400E2 - 2-Drive System, Cable	\$104
LFD400E3 - 3-Drive System, Cable	\$1449.95

LFD-800EX 77-Track Mini-Disk Systems:

LFD800E1 - 1-Drive System, Cable	\$945.95
LFD800E2 - 2-Drive System, Cable	\$1599.95
LFD800E2 - 3-Drive System, Cable	\$2245.95

Add \$15/Drive for optional 230-volt, 50-hertz Pwr

Single-Board Computers:

SBCEX-9 6809 Microprocessor	TBA
SBCEX-2 6802 Microprocessor	TBA

M64EX Dynamic RAM Cards

M64EX 64 Kbyte of RAM	\$875.00
M64EX-P 64 Kbyte of RAM, Parity Checking	\$1025.00
M48EX 48 Kbyte of RAM	\$795.00
M48EX-P 48 Kbyte of RAM, Parity Checking	\$945.00

M32EX Static RAM Card

VC-EX Video Display Generator/Controller	TBA
--	-----

EX-86 5-Slot Motherboard (complete w/connectors)	TBA
--	-----

Software:

EXDOS 6800 ROM Disk Operating System:	\$69.95
--	---------

Versions configured to work with Motorola and Creative Micro Systems monitors available. LFD-400EX or LFD-800EX.

6800 Super BASIC (EXDOS, 40- or 77-track)	\$79.95
---	---------

6800 Super BASIC (EXDOS, 40- or 77-track)	\$79.95
---	---------

Percom Symbolic Assembler (EXDOS, 40- or 77-tk)	\$29.95
---	---------

General Ledger (LFD-400EX, EXDOS, Super BASIC)	\$199.95
--	----------

FINDER DBMS (LFD-400EX, EXDOS, Super BASIC)	\$99.95
---	---------

***** IN THIS ISSUE *****

< PRODUCT MAINTENANCE & IMPROVEMENT >

< EXORCISER COMPATIBLE PRODUCTS >

< VENDOR SOFTWARE FOR PERCOM PRODUCTS >

< PRODUCT CATALOG >

The PERCOM PERIPHERAL is published by PERCOM DATA COMPANY, INC., 211 N. Kirby, Garland, Texas 75042. Address all editorial correspondence to -- Editor, PERCOM PERIPHERAL. Address subscriptions, PERCOM PERIPHERAL. Single copy price is \$1.50. PERCOM PERIPHERAL is mailed first class to subscribers. Each separate contribution to this issue as a whole is copyright 1981 by PERCOM DATA COMPANY.

PERCOM DATA COMPANY, INC.

211 N. KIRBY
GARLAND, TX. 75042

BULK RATE
U.S. POSTAGE PAID
PERMIT#397
GARLAND, TX 75040

Address Correction Requested