EVE SP-1

Serial / Parallel Interface Unit

Software Rev. 2.12 (Disk)
1.00 (DDP)

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NOTICE

Eve Electronic Systems reserves the right to make changes in the product and software described in this manual at any time, without notice. Revised manuals will be published as needed, and may be ordered from Eve Electronic Systems at the adress below.

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>>>>> CONTENTS <<<<<

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SECTION I

SYSTEM REQUIREMENTS:
----

* - ADAM computer system

* - ADAM disk drive unit

* - SmartBasic digital data pack

optional:
==========

* - 2nd ADAM disk drive unit

* - SmartBasic on disk

* - Parallel printer (Centronics compatible interface)

* - Parallel printer cable (eg. **EVE CPC**-1 or Radio Shack # 26-1409)

* - Serial printer, terminal, or modem

* - Special serial interface cables or connectors

* - Serial Communications Program (eg. **MITE**, MODEM 7, ASCOM, etc.)

* - ADAM CP/M Operating system

* - EVE VD-MB 80 column video / mother board assembly

* - EVE PS-1 Power supply unit

SECTION II

HARDWARE INSTALLATION
========================

* – Be sure the ADAM Computer is **turned off** before connecting the EVE SP-1 unit to the expansion port on the right side of the machine.

NOTE: When the SP-1 has been properly installed, the 'door', which normally covers the expansion port opening, should be able to close almost completely onto the SP-1 Ribbon Cable.

* – The SP-1 is shipped with **either** a serial cable configured to be connected to a modem, or a parallel cable designed to interface with virtually **any 'Centronics interface' parallel printer**. An adapter may be required when using the serial cable with some serial printers. Appendix A lists the pin designations for the RS-232 functions supported by the SP-1. Also available from EVE are several types of adapter cables.

* – 'CAREFULLY' insert the desired cable(s) into the pin connector(s) on the rear of the SP-1 unit (the top of the connector(s) is marked).

* – Connect the loose ends of the cables to the printer and/or modem devices.

* – The computer may now be turned on.

* – For use with CP/M refer to section III. For use with EOS/SmartBasic and SmartWriter files when using disk refer to section IV & V. For use with DDP refer to sections IV & VII.

SECTION III

CP/M OPERATING PROCEDURE
============================

In this section the user will be provided the needed instructions to 'move' the CP/M programs provided onto a CP/M system disk and operate them.

* – 'boot' your CP/M system disk as normal.

```
*****************************************************************************
*************************         WARNING      ******************************
*****************************************************************************
* THE DISK PROVIDED IS IN EOS FORMAT.  DO NOT ATTEMPT TO DO A CP/M  *
* SYSGEN ON THIS DISK, OR THE PROGRAMS WILL BE LOST.  FOLLOW THE    *
* DIRECTIONS BELOW AND IN YOUR ADAM CP/M MANUAL TO MOVE THE         *
* PROGRAM FILES TO YOUR CP/M DISK.                                  *
*****************************************************************************
*****************************************************************************
```

* – at the CP/M prompt 'A>' follow the directions provided with your CP/M system to move the following programs from the 'ADAM' disk provided to your CP/M system disk. The following are the names and type of files for the **ADAM.COM** program.

ADAM DISK FILE NAME / TYPE		CP/M DISK FILE NAME
cpmprinter ----> H ------>		printer.com
cpmserinit ----> H ------>		serinit.com

* – The 2 programs provided may now be used to configure your system for output to either a serial device or a Centronics compatible printer.

* – To invoke the printer output to either the Parallel or Serial ports, follow the directions for the unit you plan to use.

SECTION III

**** PARALLEL PRINTER INITIALIZATION ****

* - At the 'A>' type in:

   PRINTER<return>

The system is now configured to allow you to select the desired outputoptions using the CP/M 'STAT' program.

The default CP/M LIST device, 'LST:', is normally 'LPT:', or the ADAM printer. To redirect printer output to the **SP-1 Parallel port**, which is now defined as 'UL1:', type in the following:

   STAT LST:=UL1:<return>

The printer output will now go to the SP-1 Parallel port. To test this function, type in a Control-P to echo console output to the printer.

**** SERIAL OUTPUT INITIALIZATION ****

1 - At the 'A>' type in **SERINIT**<return>

2 - Use this program to select the desired parameters for the serial device to be used.

   * BAUD RATE   300,600,1200,2400,4800,9600
   * PARITY   NONE,EVEN,ODD
   * STOP BITS   1,2
   * DATA BITS   7,8

3 - When you have the desired parameters displayed, enter '0' to initialize the port and exit back to CP/M. A control-C will abort the initialization.

4 - To load the printer / IO drivers, type in at the 'A>'

   PRINTER<return>

The system is now configured to allow you to select the desired output options using the CP/M 'STAT' program.

SECTION III

The default CP/M LIST device, 'LST:', is normally 'LPT:' or the ADAM Printer. To redirect printer output to the **SP-1 Serial Port**, which is now defined as 'TTY:', type in the following:

       STAT LST:=TTY:(return)

The printer output will now be directed to the **SP-1 Serial Port**. To test this function, type in a Control-P to echo console output to the printer.

```
***********
*** NOTE ***
***********
```

The **PRINTER.COM** program described above, is used to 'patch in' the SP-1 serial and parallel drivers, and to modify the CP/M IOBYTE table in BIOS to allow the use of these new routines. The 'patches' will remain in effect until the ADAM is 'RESET' or turned off. The 'STAT' program may be used at any time after the patches are made to redirect system I/O. To see what the current device assignments are, type in:

       STAT DEV:(return)

This will show you the driver assigned to:

   CON:(Console)
   RDR:(Reader)
   PUN:(Punch)
   LST:(List)

In order to see the available assignments, type in:

       STAT VAL:(return)

SECTION III

The following will be displayed:

Temp R/O Disk: d:=R/O
Set Indicator: d:filename.typ $R/O $R/W $SYS $DIR
Disk Status : DSK: d:DSK:
User Status : USR:
Iobyte Assign:
CON: = TTY: CRT: BAT: UC1:
RDR: = TTY: PTR: UR1: UR2:
PUN: = TTY: PTP: UP1: UP2:
LST: = TTY: CRT: LPT: UL1:

The 'LIST' device may be reassigned at any time to the **ADAM Printer**, with the use of the 'STAT' program as follows:

STAT LST:=LPT:(return)

*****

For further information on the use of the CP/M STAT program, refer to the 'ADAM CP/M Manual' or to an excellent book, 'THE CP/M HANDBOOK', by Rodnay Zaks.

SECTION IV

SmartBasic
==========

The disk / DDP provided contains the 'programs' necessary to allow the user to reconfigure SmartBasic to direct output to the SP-1 serial or parallel ports. This will allow the use of a high speed dot matrix printer for faster program listings and report generation, as well as the use of various other peripheral devices such as speech synthesizers. The 'BASIC' programs provided utilize assembly language subroutines to allow the SP-1 to be properly initialized. These programs should not be modified by other than experienced programmers familiar with Z-80 and 8080 assembly language in order to allow proper operation of the SP-1 card.

* - Load the EOS operating system and File Manager from the disk provided with the ADAM Disk Drive unit. This step is recommended in order to load the latest version of EOS, and is not mandatory.

* - Load SmartBasic from disk or tape. SmartBasic is provided on the EVE media

* - Once basic is loaded, place the disc provided into the first disk drive, and type:

   ]catalog d5(return)

* - You will now see the names for the programs provided on disk with the SP-1 unit.

    H   cpmprinter----> Printer driver program for CP/M system
    H   cpmserinit----> Serial initialization for CP/M system
    A   ptrdvrs -----> Configuration program for SmartBasic
    H   ml1 ---------> machine language program module
    H   mlser ------> machine language program module
    H   mlptr ------> machine language program module

      ****
      *** NOTE ***
      ****

The first two programs are for use with the CP/M operating system **only**, and will not function under EOS or in SmartBasic.

SECTION IV

* - next, run the program 'ptrdvrs' with SmartBasic.

   ]run ptrdvrs,d5(return)

* - Use the Smart Keys to change any of the serial port parameters as desired. This is not mandatory if you are not using a serial device.

* - When the parameters are set as desired use the the 'SET' Smart Key to complete the program functions and exit back to SmartBasic.

* - SmartBasic is now configured for use of the **PR#2** device as the SP-1 Centronics parallel port, and **PR#3** as the SP-1 serial port with the parameters selected.

```
***********
*** NOTE ***
***********
```

*** - It is not necessary to have both a serial and parallel device connected to the SP-1 unit. However, if the user selects output to a device not on the system, the system will not function properly, and will probably need to be reset to restore proper operation.

* - If a parallel printer is being used, direct output to **PR#2**.

* - If a serial printer is used, direct output to **PR#3**.

* - For Screen output use **PR#0**

* - For Adam Printer output use **PR#1**

SECTION IV

* - The following is an example to demonstrate the use of the SP-1 with a parallel printer.

   load a SmartBasic Program as usual

   list the program on the screen

   ]**list**(return)

now set SmartBasic to list to your parallel printer through the SP-1 unit.

]**pr*2**(return)   this sends output to the parallel port
]**ist**(return)   this will cause the program to be sent to the printer

  pr*0(return)   this will return the system output to the screen

* - The pr*2 and pr*3 statements may be used in your applications programs now to allow you to send your output to the desired devices, just as the normal PR*0 and PR*1 statements.

****
*** WARNINGS ***
****

** - If your program will use the SP-1 unit, the program 'ptrdvrs' provided must be run first as described above.

SECTION IV

** – The device drivers are located in memory above Basic, therefore, to prevent SmartBasic from destroying these routines, the application program you use must protect this memory. This is accomplished by simply adding a line to the beginning of your program as follows.

5 **LOMEM:28050**

** – If your application program already uses memory from 28000 to 28050, you will not be able to use the programs provided. Information will be provided to experienced assembly language programmers to alter the programs as required.

** – If SmartBasic is reloaded, the above driver program must be run, since the patching is eliminated when basic is reloaded.

SECTION V

EOS OPERATING SYSTEM PATCH {DISK VERSION}

The Vers. 2.12 Disk provided with the SP-1 will now allow you to modify your EOS operating system disk to print directly from Smartfiler and Smartwriter.

1. Have a '**copy**' of your EOS system disk (the disk that came with your disk drive) available. DO NOT 'WRITE PROTECT' THIS COPY ! !

2. Place the **EVE UTILS DISK V.ers. 2.12** in the first disk drive and reset the system.

3. After the program loads, remove the EVE UTILS DISK and place the '**copy**' of your EOS disk in the first drive.   **THIS DISK CAN NOT BE WRITE PROTECTED ! !**

4. Follow the directions on the screen to patch the disk for use with either a Serial or Parallel printer.

5. Reset the computer with the '**patched**' copy of the EOS disk.

6. The system will now direct printer output to the SP-1 port selected.

*NOTE: To use a serial printer, the program 'EoSerInit' must be **run** from the EOS **Disk Manager**, or use the 'ptrdvrs' program if using SmartBasic.

7. To print directly from Smartwriter after the EOS and Disk Manager is loaded, press the WP key.

 *NOTE: The EOS patch uses 'buffering' within the operating system to 'convert' the output for other than the ADAM printer. This buffer is emptied only on printing of a CARRIAGE RETURN. It is possible to have undesired data present in the buffer area of EOS. To be sure the buffer is 'clear', type a single (return) in the Typewriter mode before proceeding to the Word Processor.

8. To print through the SP-1 in Smartfiler, **select** and **RUN** the Smartfiler program through the 'Disk **Manager**' on the 'Modified' EOS disk.

*NOTE: The 'Modified' EOS must be loaded to use the SP-1 printer ports. If you reset the machine without the patched disk to load EOS, the 'Unmodified' ROM version of EOS will be loaded. This will not allow SP-1 printing.

**NOTE: The SW_BAS Program is no longer provided on the 'disk' utilities, as it has been replaced by the new custom patch.

Additional notes:

1. Because of a 'bug' discovered in the SmartWriter 'ROM', the **left margin may not be set at '1'**.

2. Since most printers do not support a half-line feed, line spacing may only be set to 1-2-3-4, etc.; **1-1/2, 2-1/2, etc. line spacing is not allowed**.

3. If printing is 'aborted' prior to completion of the requested printout, the **EOS buffer will still contain data**. This data will print at the next print command.

4. Because the EOS buffer is only printed when a carriage return is received, and SmartWriter's 'returns' are actually 1/2 linefeeds, it is necessary to **terminate your document with an extra 'return'**.

5. The ADAM Printer uses special **'control characters'** to handle special printing. Most printers available, have their own 'unique' method of performing special functions such as **boldfacing,** underscore, superscript, subscript, etc.. For this reason the boldface, super- and sub-script functions **are not supported in the standard patch**. It would be virtually impossible to provide a single program that would 'convert' the SmartWriter control characters to the formats of the **'hundreds'** of different printers on the market. However, if you desire a special configuration for a particular type of printer, please contact EVE Electronic Systems for information, cost, and availability of the **CUSTOM PRINT PATCH PROGRAM.**

DRAFT PRINT PROGRAM for SmartWriter Files (DDP Version only)

The Digital Data Pack (**DDP**) version of the EVE SP-1 utilities does **not** contain the EOS patch program as in the DISK version. The latest version of the EOS operating system as well as a 'Disk Manager' program are only distributed by Coleco when you purchase the ADAM Disk Drive Unit. The Eve patch program will 'modify' this <u>Disk EOS</u> program to support the SP-1 to an external printer. Since there is '**NO**' equivalent DDP which contains both the latest EOS and the 'MANAGER' program, it is not possible to perform the same '**patching**' technique. This <u>lack of compatibility</u> between the ADAM DDP and Disk systems is why, unless you own the ADAM Disk Drive **you may not print directly from SmartWriter and SmartFiler**. As an alternative, we have provided ADAM DDP only users with the '**SW_BAS**' program and the EVE SP-1 Version 1.0 DDP. This Basic program will let you do limited '**draft printouts**' of your SmartWriter files.

The ADAM Printer uses special 'control characters' to handle special printing. Most printers available, have their own 'unique' method of performing special functions such as **boldfacing**, <u>underscore</u>, ^{superscript}, _{subscript} etc.. For this reason the underscore, super- and sub-script functions **are not supported in the sw_bas program on DDP**. It would be virtually impossible to provide a single program that would 'convert' the SmartWriter control characters to the formats of the 'hundreds' of different printers on the market. If you do decide to 'upgrade' your ADAM system with a disk drive, you will be able to not only take advantage of the ability to print '**directly**' from SmartWriter, but also order a '**Custom Patch**' for the printer type you have selected.

To use the draft print program, you must first have the ADAM system and the EVE SP-1 set up for the printer you intend to use, as described in the section on SmartBasic. The '**ptrdvrs**' program must also be run in order to load the print drivers for the SP-1 into SmartBasic.

To run the draft print program, '**sw_bas**', from SmartBasic, type in the following commands:

]run sw_bas{return}

The program will load and begin execution. When you are prompted to enter:

SmartWriter File

type in the name of the file you wish to print, followed by a (**return**).

The next prompt,

Drive # (4=dsk1 5=dsk2)   8=ddp1 ~~40~~ 24=ddp2

allows you to enter the ID number for the drive which contains the file to be printed. Enter an '8' if the file is on DDP #1, or a '~~40~~ *24*' if the file is on DDP #2, etc., followed by a (**return**).

** NOTE **

If the file is not found at the time the program attempts to load it into memory, the system will display a 'FILE ERROR 5 – 0'.

The remaining prompts will allow you to format the draft printout. At the next prompt,

Max. Line Length

You may enter the maximum length of a line to be printed, between 32 and 132 characters.

** NOTE **

1 - Because the saved SmartWriter file contains many 'special' characters for the ADAM printer, and the document contains extra spaces which were inserted by SmartWriter, these 'extra spaces' may appear in your 'draft' printout. To avoid this problem, select a 'line length' which is the same as that used in SmartWriter to enter the file.

2 - If you have a 'hard' carriage return in the file, it will be printed.

The next prompt,

Lines per page

will set the program to do a 'form-feed', chr$(12), after the entered number of lines have been printed. The number of lines per page you enter may be between 20 and 66.

The next prompt,

Line Spacing

will appear. This will allow you to set the program for 1 - single spaced text, or 2 - for double spacing, or 3 - for triple spacing. Enter the desired spacing followed by a return.

The next prompt,

Send to (0=Par. 1=Ser.)

is provided to allow you to select the port of the SP-1 unit to send the printout. If you want the output to go to the device you have connected to the SP-1 parallel port, (Centronics compatible), enter a 0 followed by a (return). If you want the output to go to the SP-1 serial port, as configured by the 'ptrdvrs' program, enter a 1 followed by a (return).

The final prompt before printing is,

Press <return> to print

This entry is provided to allow you to set the printer paper to the top of form if desired, before printing is started.

After you press the (return) key, the selected file will load into memory, and printing will begin. The 'sw_bas' program uses an assembly language program in 'protected' memory to perform the actual processing of the SmartWriter file, and printing. If the file name you entered is not found on the drive selected, the program will stop, and 'FILE ERROR 5 - 0' will be displayed.

Upon completion of the printout, the system will prompt you to press **(return)** to continue. The program will start again, to allow print another file if desired.

** NOTES **

1 – The Version 1.0 DDP contains SmartBasic, and may be 'booted' directly. This is done to save you from wasting time swapping tapes around.

2 – The CUSTOM PRINT PROGRAMS are not available on DDP.

SECTION VII

***** ABOUT THE DESIGN ******

The EVE SP-1 Serial / Parallel unit has been designed to allow the maximum versatility of the ADAM computer system. This is only the first of a series of interface cards which will allow the ADAM owner to expand the system into a more powerful and versatile machine.

The SP-1 unit is designed to be used either stand-alone, plugged directly into the expansion connector on the side, or it may be removed from it's box and plugged into the EVE VD-MB Expansion Unit. The VD-MB will allow up to four cards to be used at the same time. The VD-MB also contains a power supply to provide power not only for the EVE units, but also to replace the power supply in the ADAM printer. This will allow you to put the printer aside until you really need the letter quality print.

In addition, a lower cost PS-1 stand-alone replacement power supply is available to replace the ADAM printer and power unit.

The user of CP/M will soon discover a vast amount of software will now be available to ADAM. This software in most cases must be configured for the ADAM system. Eve Electronic Systems has already configured many programs for word processing, spread sheets, data base, communications, etc.. The next problem you will most likely discover by using some of these programs, is the 'NEED' for an 80 column display. The VD-MB and the MON-80 will be available soon.

And as we all know, another 'problem' is disk space. To answer this, there will be a Disk Controller Unit, EVE DC-1, which will allow the use of commonly available 5 1/4, 8, and 3 inch disks, single and double sided. This will really help the storage problem.

In addition, you can now give your ADAM a real 'VOICE' with the EVE SS-CC speech synthesizer with a 'real time clock / calendar.

Eve Electronic Systems also is making arrangements to provide one of the most powerful and user friendly communications packages available for CP/M. The program is available in two versions, the second also allows terminal emulation. More information on this will be forthcoming.

APPENDIX 1

SERIAL CONNECTOR DATA
=======================

SP-1 PIN	FUNCTION	IN/OUT	DB-25 PIN
1	TxD	OUT	2
2	n/c		
3	DTR	OUT	20
4	GROUND	--	7
5	RTS	OUT	4
6	n/c		
7	RxD	IN	3
8	n/c		
9	CTS	IN	5
10	DCD	IN	6

NOTES:

1. **DCD** must be **HI** for the unit to **receive data**.

2. **CTS** must be **HI** for the unit to **send data**.
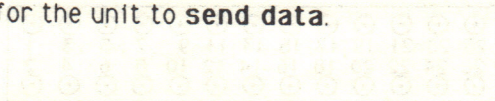
APPENDIX 2

SP-1   PARALLEL PRINTER INTERFACE (Centronics) Connecter Data

SP-1 Pin No.	Symbol	Description	Centronics Conn. Pin
1	STROBE	Data strobe	1
2	GND	Ground	19
3	PD0	BIT 0 (LSB)	2
4	GND	Ground	20
5	PD1	BIT 1	3
6	GND	Ground	21
7	PD2	BIT 2	4
8	GND	Ground	22
9	PD3	BIT 3	5
10	GND	Ground	23
11	PD4	BIT 4	6
12	GND	Ground	24
13	PD5	BIT 5	7
14	GND	Ground	25
15	PD6	BIT 6	8
16	GND	Ground	26
17	PD7	BIT 7	9
18	GND	Ground	27
19	N/C	not used	10
20	GND	Ground	28
21	BUSY	Printer status	11
22	GND	Ground	29
23	N/C	not used	12
24	GND	Ground	30
25	BUSY2	Printer status	13
26	N/C	not used	31

```
 ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙  ⊙  ⊙  ⊙ ⊙
 25 23 21 19 17 15 13 11 9  7  5  3 1
 26 24 22 20 18 16 14 12 10 8  6  4 2
 ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙ ⊙  ⊙  ⊙  ⊙ ⊙
```
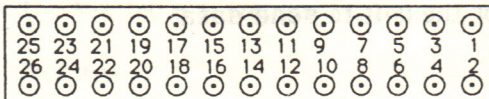
VEIW FROM SP-1 END

NOTE:

This cable is available from EVE Electronic Systems as part # CPC-1, or
from Radio Shack as #26-1409 for the Model 100 computer.

APPENDIX 3   **Assembly Language File Listings**

```
;*******************************************
;*                                         *
;*        serial init program for smartbasic   *
;*        called by - prtrdvrs A -              *
;*        used to init 2651 as required         *
;*                  SERBAS.ASM                  *
;*        Adam file name - mlser H -            *
;*                                         *
;*        05/23/85  H. Szretter                 *
;*        (c) 1985                              *
;*        EVE Electronic Systems                *
;*        2 Vernon St., Suite 404               *
;*        Framingham, MA 01701                  *
;*        (617)653-3003                         *
;*                                         *
;*******************************************
```

```
                title     'Serial Init for Adam Basic  SERBAS.ASM'
0040 =          base:     equ     64              ;base port of SP-1
0044 =          sdata:    equ     base+4          ;serial data port
0045 =          sstat:    equ     base+5          ;serial status port
0046 =          smreg:    equ     base+6          ;mode register port
0047 =          scmdr:    equ     base+7          ;command register port

6D92 =          orign:    equ     28050           ;load address for this module

6D92                      org     orign
6D92 DB47       init:     in      scmdr           ;init 2651 usart
6D94 3E00                 mvi     a,0
6D96 D347                 out     scmdr
6D98 3AAC6D               lda     mr1
6D9B D346                 out     smreg
6D9D 3AAD6D               lda     mr2
6DA0 D346                 out     smreg
6DA2 3AAE6D               lda     crg
6DA5 D347                 out     scmdr
6DA7 DB44                 in      sdata           ;clear data register
6DA9 DB44                 in      sdata           ;   "
6DAB C9                   ret

6DAC 4E        mr1:       db      01001110b       ;default 2651 settings
6DAD 3E        mr2:       db      00111110b
6DAE 27        crg:       db      00100111b

                setpar:                           ;no parity
6DAF 3AAC6D               lda     mr1
6DB2 E6CF                 ani     11001111b       ;strip parity
6DB4 32AC6D               sta     mr1
6DB7 C9                   ret
                setp1:                            ;odd parity
6DB8 3AAC6D               lda     mr1
6DBB E6CF                 ani     11001111b       ;strip parity
6DBD F610                 ori     00010000b       ;odd
```

```
6DBF 32AC6D                sta        mr1
6DC2 C9                    ret
                setp2:                                        ;even parity
6DC3 3AAC6D                lda        mr1
6DC6 E6CF                  ani        11001111b  ;strip parity
6DC8 F630                  ori        00110000b  ;even
6DCA 32AC6D                sta        mr1
6DCD C9                    ret
                ststop:                                       ;# of stop bits
6DCE 3AAC6D                lda        mr1
6DD1 E67F                  ani        01111111b  ;make it 1
6DD3 32AC6D                sta        mr1
6DD6 C9                    ret
                stopb1:
6DD7 3AAC6D                lda        mr1
6DDA F6C0                  ori        11000000b  ;make it 2
6DDC 32AC6D                sta        mr1
6DDF C9                    ret
                numbit:
6DE0 3AAC6D                lda        mr1
6DE3 E6FB                  ani        11111011b  ;make it 7
6DE5 32AC6D                sta        mr1
6DE8 C9                    ret
                nbit1:
6DE9 3AAC6D                lda        mr1
6DEC F60C                  ori        00001100b  ;make it 8 bits
6DEE 32AC6D                sta        mr1
6DF1 C9                    ret
6DF2                       end
```

```
******************************************************************

CP/M MACRO ASSEM 2.0  #001    Adam Basic Printer Driver  - EOSFIL.ASM -

        ;**********************************************
        ;*   PRINTER DRIVER FOR ADAM BASIC            *
        ;*     -- ADAMBAS.ASM --                      *
        ;*   EOS FILE NAME = MLPTR H                  *
        ;*                                            *
        ;*   05/23/85  H. SZRETTER                    *
        ;*         (C) 1985                           *
        ;*         EVE ELECTRONIC SYSTEMS             *
        ;*         2 VERNON ST., SUITE 404            *
        ;*         FRAMINGHAM, MA  01701              *
        ;*         (617) 653-3003                     *
        ;**********************************************
        ;
        MACLIB    Z80

        TITLE     'Adam Basic Printer Driver  - EOSFIL.ASM -'

0040 =            BASE:      EQU       64        ;BASE ADDRESS FOR SP-1
0040 =            PSTAT:     EQU       BASE      ;PAR. STATUS PORT
0040 =            PDATA:     EQU       BASE      ;PAR. DATA PORT
```

```
0044 =              SDATA:    EQU      BASE + 4      ;SER. DATA PORT
0045 =              SSTAT:    EQU      BASE + 5      ;SER. STATUS PORT
0001 =              PMASK:    EQU      1             ;BIT 1 FOR NOW
0000 =              PBUSY:    EQU      0             ;VALUE WHEN BUSY
0001 =              SMASK:    EQU      1             ;BIT FOR TX TEST
0000 =              SBUSY:    EQU      0             ;VALUE WHEN BUSY

000D =              CR:       EQU      0DH
000A =              LF:       EQU      0AH
0024 =              EOS:      EQU      '$'

6D60 =              ORIGN:    EQU      28000         ;LOAD POINT IN ADAM MEMORY

6D60                          ORG      ORIGN
```

;THESE START LOCATIONS ARE POKED BY THE BASIC PROGRAM INTO
; THE DRIVER TABLE FOR PR#X ASSIGNMENT.

```
             PARDVR:                               ;PARALLEL PRINTER DRIVER
6D60 F5                 PUSH      PSW       ;SAVE CHAR. IN A
6D61 F5                 PUSH      PSW       ;AGAIN
6D62 DB40    PLOOP:     IN        PSTAT     ;GET PAR. PORT STATUS
6D64 E601               ANI       1         ;BIT 1 ONLY
                        JRZ       PLOOP     ;LOOP IF BUSY
6D66+28FA               DB        28H,PLOOP-$-1
6D68 F1                 POP       PSW       ;GET CHR.
6D69 D340               OUT       PDATA     ;SEND IT
6D6B F1                 POP       PSW       ;GET CHAR. AGAIN
6D6C FEOD               CPI       CR        ;SEE IF CR
6D6E C0                 RNZ
6D6F 3EOA               MVI       A,LF      ;IF CR, SEND A LF TOO.
                        JR        PARDVR    ;PRINT IT.
6D71+18ED               DB        18H,PARDVR-$-1
             SERDVR:
6D73 F5                 PUSH      PSW
6D74 F5                 PUSH      PSW
6D75 DB45    SLOOP:     IN        SSTAT     ;SER. PRINTER DRIVER
6D77 E601               ANI       1         ;OK TO SEND
                        JRZ       SLOOP     ;ACTUAL BIOS LOOP POINT
6D79+28FA               DB        28H,SLOOP-$-1
6D7B F1                 POP       PSW       ;GET CHAR.
6D7C D344               OUT       SDATA     ;PRINT IT
6D7E F1                 POP       PSW       ;GET CHAR.
6D7F FEOD               CPI       13        ;IF CR
6D81 C0                 RNZ                 ;SEND LF TOO.
6D82 3EOA               MVI       A,10
                        JR        SERDVR
6D84+18ED               DB        18H,SERDVR-$-1

6D86                    END
```
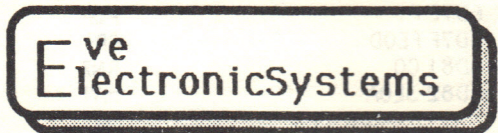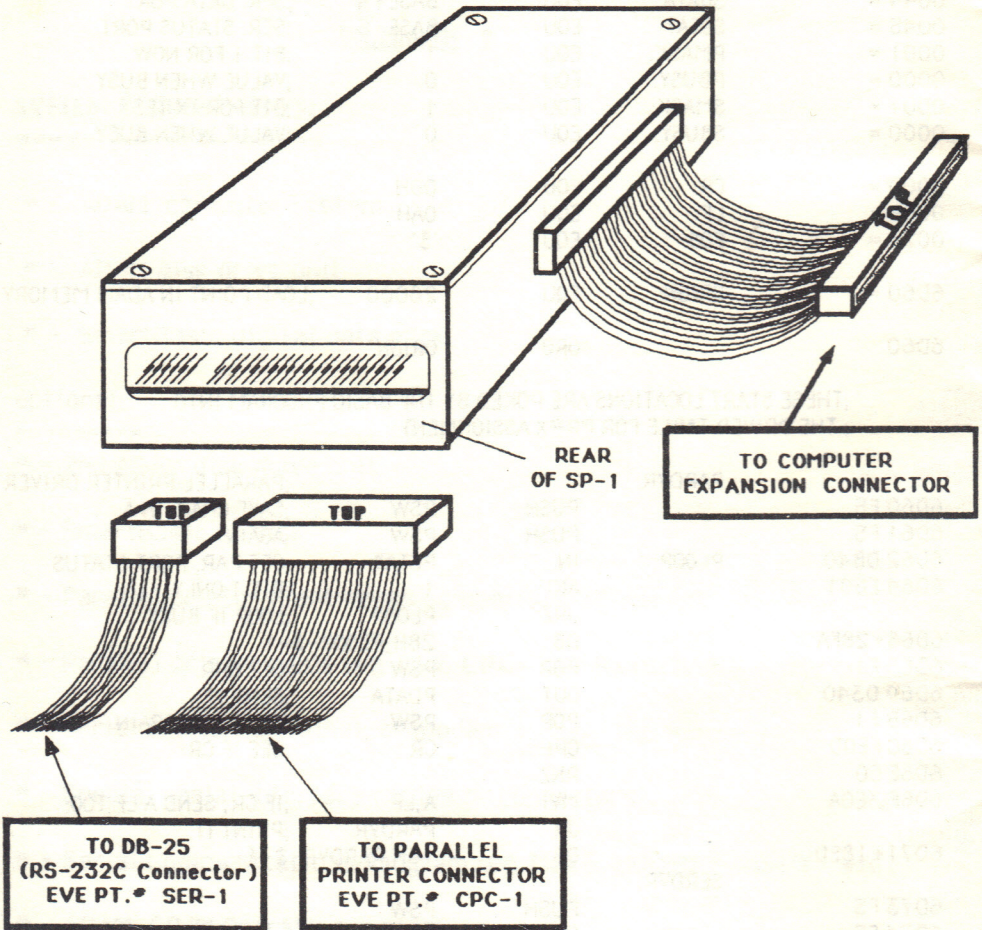
TO COMPUTER
EXPANSION CONNECTOR

REAR
OF SP-1

TOP

TOP

TO DB-25
(RS-232C Connector)
EVE PT.* SER-1

TO PARALLEL
PRINTER CONNECTOR
EVE PT.* CPC-1

E ve
lectronicSystems

SP-1

FIGURE 1

90 DAY LIMITED WARRANTY
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Eve Electronic Systems, Inc. warrants to the original consumer purchaser in the United States of America that this EVE SP-1 unit and disk will be free of defects in material or workmanship for 90 days from the date of purchase under normal in-house use.

The sole and exclusive liability of Eve Electronic Systems, Inc. for defects in material and workmanship shall be limited to repair or replacement by an authorized Eve Electronic Systems, Inc. Service Station. This warranty does not obligate Eve Electronic Systems, Inc. to bear the cost of transportation charges in connection with the repair or replacement of defective parts.

This warranty is invalid if damage or defect is caused by accident, act of God, consumer abuse, unauthorized alteration or repair, vandalism, or misuse.

Any implied warranties arising out of the sale of the EVE SP-1 unit and disk including the implied warranty of merchantability and fitness for a particular purpose are limited to the above 90 day period. Eve Electronic Systems, Inc. shall in no event be liable for incidental, consequential, contingent or any other damages.

This warranty gives you specific legal rights, and you may have other rights which vary from State to State. Some states do not allow the exclusion or limitation of incidental or consequential damages or limitations on how long an implied warranty lasts, so the above limitations or exclusions may not apply to you.

Service Policy
===========

Please read the EVE SP-1 documentation carefully before using the product. If the SP-1 unit or disk fails to operate properly, please check the installation instructions. If you cannot correct the malfunction after checking the installation instructions, please call Eve Electronic Systems, Inc. Customer Service at (617)653-3003 between **9:00 am and 5:00 pm Eastern Time, Monday through Friday.**

If Customer Service advises you to return your EVE SP-1 unit, and disk, please return it postage prepaid and insured, with your name, address,

proof of purchase (dated), a brief description of the problem, and all cables connected to the SP-1 unit at the time of malfunction to the Service Station you have been directed to return it to by the Customer Service representative. If your SP-1 unit or disk is found to be factory defective during the first 90 days, it will be repaired or replaced at no cost to you. If the SP-1, and disk is found to have been damaged or abused and therefore not covered by the warranty, then you will be advised, in advance, of repair costs.

If your SP-1 unit or disk requires service after expiration of the 90 day Limited Warranty period, please call Eve Electronic Systems, Inc. Customer Service for instructions on how to proceed: (617)653-3003

IMPORTANT: SAVE YOUR RECEIPTS SHOWING DATE OF PURCHASE.