

EVE SP-1

Serial / Parallel Interface Unit

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** - SmartBasic, SmartWriter, ADAM are registered trademarks of
Coleco Industries, Inc.
CP/M is a registered trademark of Digital Research

SECTION I

SYSTEM REQUIREMENTS:

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- * - 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. 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 MB-1 mother board assembly
- * - EVE PS-A Power supply unit

SECTION II

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.
- * - The serial connector shipped with the SP-1 is configured to be connected to a **modem**. An adapter may be required when used with a serial printer. Appendix A lists the pin designations for the RS-232 functions supported by the SP-1.
- * - The Parallel (Centronics) printer cable may be purchased as an option from Eve Electronic Systems or at your local Radio Shack store as a part # 26-1409 (for the Model 100 computer).
- * - 'CAREFULLY' insert the cable into the 26 pin connector on the rear of the SP-1 unit (the top of the connector 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 refer to section IV & V

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 output options using the CP/M 'STAT' program.

The default CP/M LSI 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 'SIAI' program.

SECTION III

The default CP/M LSI 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:filemane.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 Rodney Zaks.

SECTION IV

SmartBasic

=====

The disk 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.

* - 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 card.

H	cpmprinter	---->	Printer driver program for CP/M system
H	cpmserinit	---->	Serial initialization for CP/M system
A	ptrdvr	---->	Configuration program for SmartBasic
A	sw_bas	---->	SmartWriter draft print program
H	ml	---->	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 'ptrdvr's' with SmartBasic.

```
]run ptrdvr's,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}  
list{return}
```

this sends output to the parallel port
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 'ptrdvr's' 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

DRAFT PRINT PROGRAM FOR SmartWriter Files

=====

In order to provide an extra convenience to the owner of the EVE SP-1 unit, we have provided a program, 'sw_bas', to allow the 'draft' print-out of SmartWriter files. This program will not format the text the same as you entered in SmartWriter, since the ADAM Printer uses special 'control characters' to control special printing. Most printers available, have their own 'unique' method of performing special functions such as boldfacing, underscore, superscript, subscript, etc.. For this reason, it would be virtually impossible to provide a 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 of the 'sw_bas' program for a particular type of printer, please contact EVE Electronic Systems for information, cost, and availability.

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 on the previous page, and you must have already run the 'ptrdvr's' program.

To run the draft print program 'sw_bas', type the following commands:

```
]run sw_bas,d5{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)

allows you to enter the unit ID number for the 'Disk Drive' that contains the file to be printed. Enter a 4 if the file is on drive #1, or a 5 if the file is on drive #2, followed by a {return}.

SECTION V

** NOTE **

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

The remaining entries will allow the text to be formatted as desired for 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. This will allow you to preview your document with the desired line length.

** NOTES **

1 - SmartWriter has a tendency to insert extra spaces in the text. These 'extra' spaces will be printed, and appear to be 'gaps' in the text. If desired, you may remove them with SmartWriter.

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.

SECTION V

Next, the prompt,

Line Spacing

will appear. This will allow you to set the program for 1 - single spaced text, or 2 - 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 'ptrdvr's' 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 your printer paper to the top of form if desired, before printing is started.

After you press the {return} key, the desired file will be loaded into memory, and printing will begin. The 'sw_bas' program uses an assembly language program to actually perform the processing of the SmartWriter file and printing. If the file name you entered is not found on the disk unit you specified, the program will stop, and 'FILE ERROR 5 - 0' will be displayed.

Upon completion of the printout, the system will request you to press {return} to continue. The program will then start again, to allow the printing of another file, or to let you do a printout of the same file in a different format if desired.

SECTION VI

***** 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 card is designed to be used either stand-alone, plugged directly into the expansion connector on the side, or it may be removed from the box and plugged into the EVE MB-1 Expansion Unit. The MB-1 will allow up to four cards to be used at the same time. The MB-4 also contains a dual power supply to provide power not only for the EVE cards, 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-A 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. This card, the EVE VD-1 may also be used either stand-alone or in the MB-1 mother board expansion unit. The VD-1 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, plans are in the works for several other I/O units in the future. For example, you can give your ADAM a real 'VOICE' with the EVE SS-1 speech synthesizer. And how about a 'real time clock' with I/O ports to allow control of external devices. They are on the way.

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

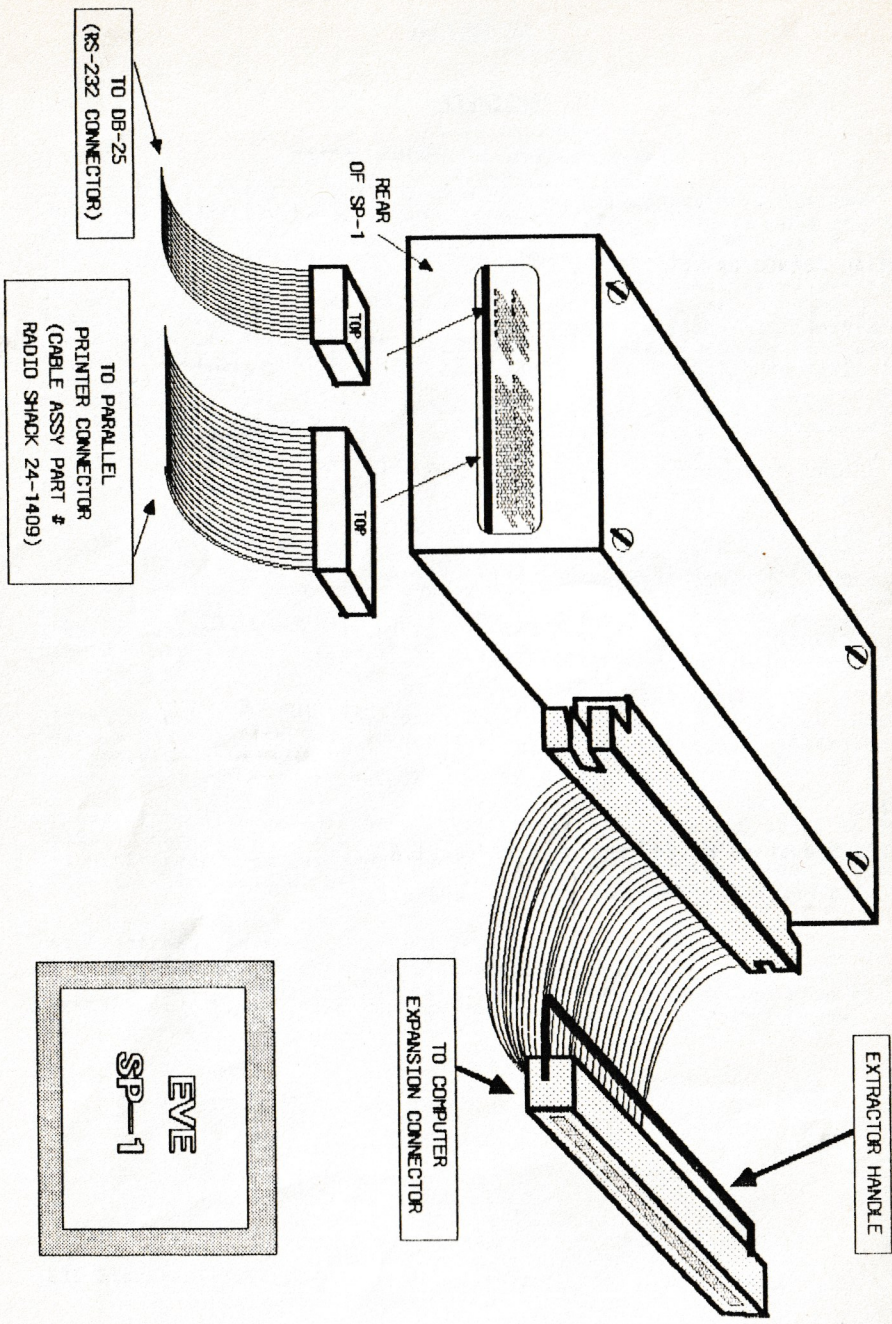
SERIAL CONNECTOR DATA

=====

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

NOTES:

1. DCD must be HI for the unit to receive data.
2. CTS must be HI for the unit to send data.



90 DAY LIMITED WARRANTY

=====

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

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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.