SoftBox adds CP/M capability to Commodore micros

By Ned Heite

CP/M is an artifact from the early days of microcomputing; it became a de facto operating-system standard by default. While newer, more advanced operating systems are on the market, CP/M is the industry's 300-pound gorilla. Love it or hate it, it sleeps wherever it wants. With near-simultaneous introduction of two add-on units for Commodore machines, the last major non-CP/M microcomputer now accepts this "standard" software environment.

SoftBox, from Small Systems Engineering (SSE), is a 60K, Z80 microcomputer that uses a Commodore PET or CBM as a terminal and communicates with Commodore peripherals on the IEEE-488 bus. It runs CP/M 2.2. On 8050 drives, it can store 496K bytes per diskette, with 64 directory entries.

Although SoftBox allows you to run CP/M on existing Commodore machines, you won't need it for the recently announced P, B and BX models. These have Z80 coprocessors and can run both Commodore BASIC 4.0 and CP/M without help. Whether the different implementations of CP/M will be compatible remains to be seen.

FEATURES: SoftBox is an external unit, in a metal cabinet about the size of a modem, color-matched to Commodore machines

A standard PET-IEEE cable connects the box to the bus. There is also a serial port for RS-232 devices and a socket for Corvus hard disks. The only control on the box is the on-off switch.

To use CP/M, SoftBox must capture and reconfigure the Commodore computer, and the task couldn't be simpler. You turn on the units and load a CP/M diskette with a standard Commodore shifted run/stop quick-load command. When the cursor returns, the Commodore computer is a terminal, and SoftBox is in control. Now you can read the CP/M directory from the same diskette.

CP/M has six built-in commands. Four have direct Commodore equivalents:

DIR	Directory	
SAVE	Print [#] or Dsave	
REN	Rename	
ERA	Scratch	

For two CP/M commands, there is no PET syntax equivalent: USER makes certain disk files available to different 'users" of the system; TYPE displays an ASCII text file on the screen-TYPE is something like WordPro's "recall" or the PET "list

Separate command files on the CP/M disk perform tasks, some of See SoftBox, page 60

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SoftBox

continued from preceding page which are not available on PET:

• STAT: Displays directory, space remaining on the disk and logical-device assignments.

• PIP: Copies files; this command works like the PET "copy" routine, but it is a separate program that you must call from disk.

- ED: Text editor program.
- ASM: 8080 assembler program.
- LOAD: Hex format loader
- DUMP: Displays a file in hexadecimal format.
- DDT: Debugging program for the
- assembler. • SUBMIT: Allows users to chain

commands together for execution.

• FORMAT: Like the "header" or "new" disk commands in the PET, it formats a new disk.

 NEWSYS: Allows users to change and copy the CP/M system to a new disk that will receive an application program

• MEMTEST: This command is much like the PET disk-utility memory test, but it checks the SoftBox memory.

• SET: Shift-locks the screen to uppercase or lowercase, or to graphics mode-also can assign device number on the IEEE-488 hus

- XFER: Transfers files written for PET
- systems to be used on CP/M. BACKUP: Similiar to PET backup.
- TIME: Reads or sets the PET clock

• COLD: Returns the PET to cold start.

 READ: Transfers files via the SoftBox RS-232 port.

Where PET and CP/M commands can be compared directly, PET syntax is simpler and faster. CP/M has a long backlog of available software, however.

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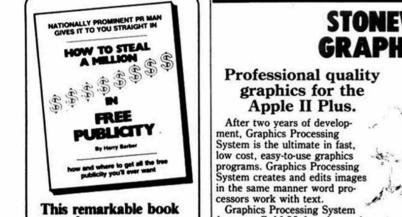
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Logo: Language of the 80's

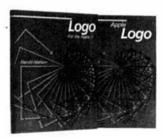
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In spite of its shortcomings, its repertoire makes it attractive as a second software source.

No Commodore computer features survive the conversion; the PET is now a copy of a Lear Seigler ADM3A, Tele-Video 912C or Hazeltine 1500. The reverse-video key is now control, and run/stop is now escape. All keys have a repeat function. Drives 0 and 1 are now named A and B.

While SoftBox won't run PET BASIC, it has a utility to convert PET programs to Microsoft Extended BASIC (ASCII) format, or to convert Commodore sequential files to CP/M format. Softbox can peek and poke PET memory locations. Commodore DOS features contained in the drives' ROM memories remain, but under SoftBox control. SoftBox supports multiple Corvus hard disks, with the Mirror videocassette backup.

PERFORMANCE: My unit arrived damaged. The board is attached to its cabinet by four press-in plastic mounting feet, which succumbed to shipping abuse. The board apparently crossed the continent rattling around inside the case, but it worked when I plugged it in. I therefore decided that further abuse testing would be cruel and unusual.

To test endurance, I left the unit plugged in all day for a week. The transformer became almost too hot to touch, but everything worked. Since SoftBox is on the bus even when it's not active, it can send signals; when you turn on the switch, the printer executes a carriage return without a line feed.

EASE OF USE: The system is simple to plug in and run. The power switch is on the back—an inconvenience Commodore users have come to expect on peripherals.

Generically CP/M is not as easy or as fast as Commodore disk BASIC. Commands that are ROM-resident in Commodore 4.0 BASIC, are disk-command files in CP/M, and must be called from the disk. Moreover, the whole system is in RAM, which makes it difficult to compare the capacity of a 60K SoftBox against a 32K CBM computer with intelligent peripherals, a ROM operating system and a resident language.

Without a language loaded, the 60K SoftBox has about 54K bytes free of

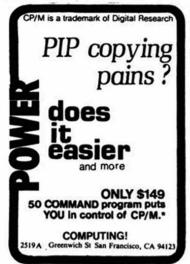
RAM, some of which a language must consume; I did not have a language for review. Since conventional ASCII programs are larger than CBM BASIC programs, the net work-space probably is about the same on a SoftBox as on a 32K PET.

DOCUMENTATION: SoftBox comes with a 72-page indexed loose-leaf manual. Generally, the manual is well organized and clearly written, which is a welcome novelty. However, it is not designed to be an introduction to CP/M for PET owners.

In a section "for CP/M users," the authors state, correctly, "You need not be familiar with the PET or PET BASIC to use the SoftBox." Unfortunately, the manual has no section "for PET See SoftBox, page 62



September 6, 1982



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continued from preceding page users," who will, after all, be the primary market for a PET add-on box.

SERVICEABILITY: Four screws secure the top cover of the SoftBox; once it is removed, the entire component side is revealed. I needed to open the case to check shipping damage, which some sort of temporary tie-down device could have avoided. In case your unit should suffer, it has a 90-day warranty. The manual makes no mention of servicing arrangements, although you can return the unit to the distributor—and gives no schematics.

The board's circuits are all in sockets, for easy replacement if necessary. I had to realign the power-on indicator LED, which did not line up to the little hole in the box.

Software support is a different issue. On page 3 of the manual, the authors wax eloquent about the vast libraries of languages and applications available for CP/M, but nowhere do they tell you how to specify the format to order. The product's advertising mentions a software catalog, which was not included with my copy of the manual. I learned subsequently that the catalog does not yet exist.

To use CP/M software, you must either buy it from SSE or buy it on 8-inch single-density disks and send it to SSE for conversion—at a \$25 charge. Programs supplied by other vendors on standard mini-floppies will not run on the SoftBox. SETUP: I detected no setup problems. You just find a plug, anywhere among the PET cables, and plug it in. SUMMARY: As it comes, SoftBox is a complete CP/M computer, but no applications or languages (except assembler) are included.

Veteran PET users will be taken aback by the complexity of CP/M options. Because the system is portable and modular, it expects us to make configuration decisions that we customarily have left to Commodore.

The Soft Box is a well-designed machine that fills a perceived gap in the Commodore product line. Its designers and authors appear to have touched all bases. I suspect most users will buy it as an accessory not as a primary programming medium.

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