

computer. The mother unit costs \$275, while the daughter units range from \$165 to \$215.

### Z-RAM

Madison Computer's Z-RAM board is a dynamic add-on board that allows you to run 96K programs on the Commodore PET/CBM systems; it provides CP/M capability as well.

The Z-RAM mounts inside the Commodore 4000 and 8000 series computers and adds a Z-80A microprocessor along with 64K of RAM. A serial port is also included, along with software to run printers with a standard RS-232 interface.

The board allows earlier versions of CBM computers to function as 32K ma-

chines regardless of original memory capacity. In memory expansion mode, 32 mappings are available; using blocks as small as 8K, 32K CBM machines are expanded to 96K useable RAM. Now you can run VisiCalc, WordPro-5+, UCSD Pascal, Wordcraft Ultra and a special version of Silicon Office.

The Z-80A and 6502 microprocessors run simultaneously at full speed. A copy of CP/M version 2.2 is also available as an option. This software emulates a Hazeltine 1500, which allows it to run most CP/M software. The standard 64K expansion board retails for \$500, while the CP/M option brings the price to \$695.

For more information on these and other Commodore products being distribut-

ed by Computer Marketing Services, Inc., see your local dealer or write the distributor at 300 W. Marlton Pike, Cherry Hill, NJ 08002.

### VIC Banana Graphics Cartridge

In combination with the Gorilla Banana printer offered by Leading Edge Products' dealers, you can also obtain a graphics cartridge for the VIC-20 and a mating printer cable. With the special graphics cartridge, you can use the Banana printer exactly like Commodore/VIC printers. In fact, you get even more with the Banana printer and graphics cartridge combination.

### Three Modes

There are three ways you can use the Banana printer with the graphics cartridge.

Emulation mode does just what you'd expect—it emulates the functions of the Commodore 1515 and 1525 printers. It enables you to print in either uppercase only or in upper/lowercase. In addition, it will print the built-in Commodore graphics symbols. On Commodore 1515 and 1525 printers, a number of special commands can be embedded within the printer data. The Emulate mode will duplicate all of these functions except one (inverse alphanumerics).

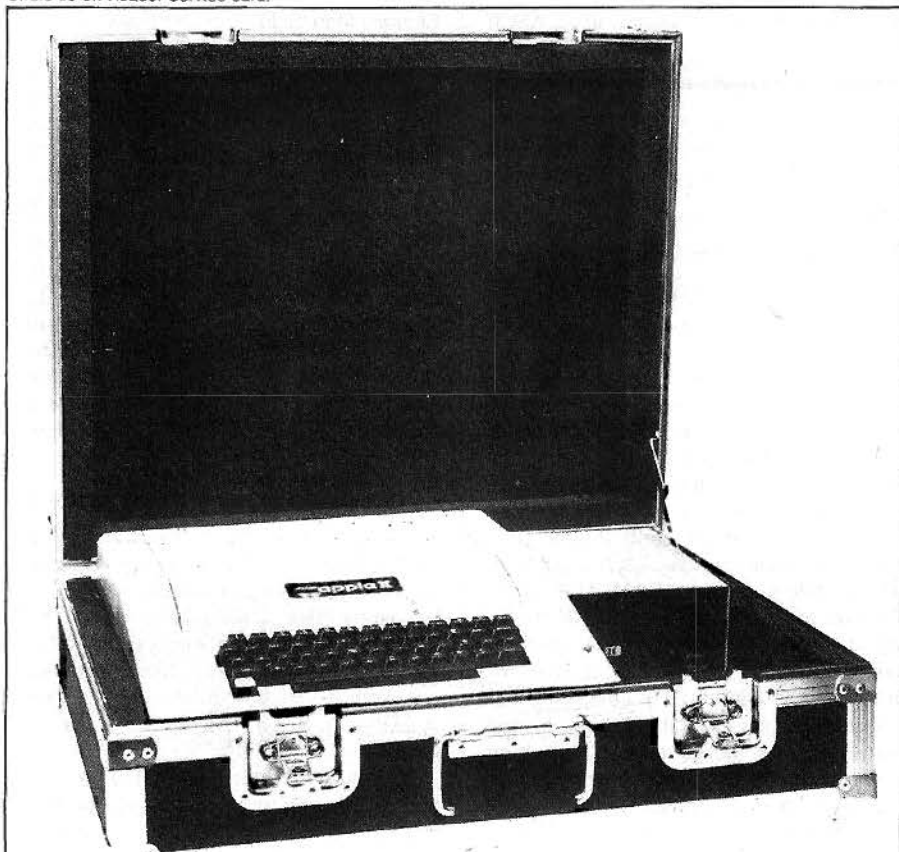
Total Text mode is similar to the emulation mode except that no Commodore graphics symbols are printed. One of two types of substitutions are made. If you're printing a listing, the cursor movement and color assignment symbols that appear within quotation marks in print statements are printed as a three-character mnemonic that describes the function. Thus, you might see <clr> instead of an inverse heart representing clear-home. This makes listings much easier to read—and you don't have to remember what the graphics symbols represent. All other graphics symbols are printed as numbers that represent the CHR\$( ) value associated with that symbol.

Transparent mode prohibits any interpretation or translation of the data being sent to the printer. All data is passed along to the printer without intervention. Emulation and Total Text modes both interpret the information sent to the printer and make the necessary substitutions or conversions.

Each of the functional modes is entered by specifying an appropriate secondary address when opening a file to the printer. Each mode can be selected with or without automatic linefeed at the end of each line.

List price for the VIC Banana Graphics cartridge is \$29.95. For more information, see your local dealer carrying Leading Edge Products. □

Circle 98 on Reader Service card.



## Protective Custody

Your computer may be safe and sound at home or office, but how are you going to protect that major investment when you move or travel? Hard knocks and baggage rooms can reduce your hi-tech hardware to lo-tech junk in a microsecond. Unless of course, you have wisely secured a Flight Form or C-Series case **specifically designed to protect computer hardware**. A tough outer shell and thick foam interior holds and protects your computer from the

pitfalls of travel and pratfalls of handling. There's even room for software and paperwork! We've got one for most major computer brands, or we'll custom build you one. Prices start as low as \$102—a pittance for protection! Visa & M/C welcome. Cases, Inc., 13102 Stone N, Seattle, WA 98133 (206) 365-5210.

### Cases, Inc.

See us at the Vegas Comdex Show!