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COMPUTER BITS

By Carl Warren

Systems And Software

IF YOU'VE been waiting for IBM to enter the personal computer field, you don't have to wait any longer. The IBM Personal Computer was introduced this past August, and it sports a number of very exciting features. Among them:

● An 8088 microprocessor, which provides the best of both the 8- and 16-bit worlds.

● An 83-key adjustable keyboard, with up to 262,144 characters of user memory (it comes with 16K).

● Color graphics that permit displaying 256 characters in any of 16 foreground and 8 background colors.

● An advanced disk operating system, plus Digital Research's CP/M-86, and UCSD Pascal.

Prices for the system start at $1565 which includes the keyboard module, with 16K RAM, the 40K operating system ROM, an adapter to use with home television, and an audio cassette interface. You can add up to four joysticks, and five expansion slots are available for memory (up to 256K), communications boards, and other peripheral controller cards.

If you're worried about application software, don't be. IBM is offering Personal Software's "VisiCalc," IUS's "Easywriter" word-processing package, Peachtree Software's business packages, and a communications package.

Of course IBM doesn't plan to stop there. According to a spokesman, they have established a division dedicated to creating and finding software packages for the machine. Authors can be professional or hobbyist.

Although the basic $1565 machine seems palatable, you might want to spend $4500 and get the complete system, which includes the keyboard, 64K RAM, a full-size green-phosphor monitor, two 5.25-in. disk drives (160K bytes each), and an 80-cps MX-80 printer.

The machines may be seen at your local store (Sears, Computerland or IBM outlets).

Other Systems. The "Findex," which is not really a new system, offers some unusual attributes. This Z-80 microprocessor-based system is characterized by the use of a 240-character (6 lines × 40 characters) plasma display. This unique display operates at a 75.7-Hz scan rate, permits the displaying of upper- and lower-case characters with scrolling.

The display is only a small part of the under-$7000 system. Surrounding the display is a stylized enclosure that houses a 72-key keyboard and 10-key numeric keypad, the Z-80 microprocessor, 4 serial and 1 parallel ports, a dot matrix printer, and an acoustic coupler (the last two being optional). The optional minifloppy, has a capacity of 400K bytes, and works with CP/M.

Although hardware is important in some respects, the manufacturer, based in Torrance, CA, (phone 213-533-6842), hasn't stopped there. He is offering a series of software packages designed to enhance the system. Among these are: "Termio," a terminal I/O package that works with the optional acoustic coupler and provides asynchronous communications in either full or half duplex. Should general business be more your style, packages for financial analysis (TASK), patient accounting for the doctor's office, and a general accounting package are available. Moreover, standard CP/M compatible languages are available and include BASIC, COBOL, FORTRAN, APL, Pascal, and a macro assembler.

The 31-lb machine comes with 8K bytes of system ROM, 1K bytes of static RAM, and 64K bytes of dynamic RAM plus battery backup good for one-half hour. Pricing ranges from under $7000 to $20,000 (depending on add-ons).

Looking for a Machine Built Around Software? You might want to consider the $3450 CPC-1000 from Performance Business Machines Corp,

San Rafael, CA (415-457-8990). This latest entry to the microshopping list employs a Z-80 microprocessor and 80K of RAM.

The RAM is divided up so that 16K are dedicated to CP/M and the other 64K are for you. This makes handling of I/O a little quicker and gives you an almost unlimited amount of work space. But that is only part of the excitement of this machine. Included in the low price tag is a Seagate Technology ST-506 6.38M-byte (unformatted) Winchester and a Tandon quad-density 5.25-in. floppy. These two storage devices come under control of a special bit-sliced processor designed to handle all I/O functions, including terminals and printers.

The use of a dedicated I/O processor relieves the main Z-80 of such duties, which means that you have greater throughput and aren't interrupted when performing such tasks as printing a document under a SPOOLing operation such as found in MicroPro's "Wordstar," which happens incidentally to be the parent organization of Performance Business Machines Corp.

Interestingly, the CPC-1000 is a single-board computer sold for $2100 with a case. You add $175 for power supply, $850 for the Winchester, and $350 for the floppy. Although the machine is intended to be a software vehicle, and was in fact designed to optimize the software rather than the other way around, you still have to purchase your application-ware.

The CPC-1000 in its present configuration is top-notch, but the system designers have more planned for early 1982. The machine, as designed, offers an excellent stand-alone intelligent system once you add the terminal of your choice. Future plans call for adding a local networking interface so that several systems can be connected together in a synergistic manner.

Speaking of Networking. If you own an S-100 bus-based system or, more precisely, if you are lucky enough to own one from Vector Graphics (Westlake

Village, CA), you might start planning to add a few more systems and picking up a new board developed by company chairman Dr. Robert Harp. The yet-unnamed board provides low-cost networking (under $500) to S-100 bus systems operating in a CP/M environment. This innovative design uses inexpensive 75-ohm coax cable, operates at 5M bits/s, and permits a maximum cable length of 1000 feet between any two units. Furthermore, up to 127 logical addresses can be implemented, as well as global (all stations) addressing with a carrier sense multiple access/collision detection protocol.

Although much has been defined for the board, and production has been set up, the software is still being defined. However, Harp advises that production units will be available early in the first quarter of '82.

The Whole World Isn't Hardware. In fact, more of it is becoming software-oriented as evidenced by the number of packages becoming available for a wide spectrum of machines. Software packages for the Apple, for example, are bursting on the scene at an unprecedented rate. One source of such packages is Information Unlimited Software Inc., Berkeley, CA (415-525-9452).

Among the offerings is "EasyWriter," priced at $250. This package requires at least a 48K Apple II or II Plus, an 80-column video card such as that manufactured by Videx, and an interface card for a printer. The package provides such standard features as word wrap, block moves, and formatted output. Also, boilerplate files, and data files can be easily inserted, usually with simple keystrokes from a displayed menu.

Although EasyWriter offers some classy features, most are standard in available word-processing packages. What makes this product unusual is the well-written manual and integrated tutorial to get you up to speed quickly. This is a feature not frequently found in most software documentation.

Since one of the real reasons for owning a micro is to handle data, IUS hasn't been left behind. They offer Datadex for $395 that lets you design the data fields the way you want them rather than restricting you to a fixed format. Furthermore, the designers have added a fast-sorting feature that stands up well even against larger machines. In addition, since you might be building data files to be used for multiple purposes, you can easily extract the information from the database either with a standard Applesoft INPUT statement or by calling the data from EasyWriter.

Even though it would seem as if business is the main objective of software designers, you can always expect to come across a good game, or for that matter a learning tool disguised as a game. Such is the case with IUS's third package, called "Tellstar." This package allows you to study the cosmos from anywhere on earth from the comfort of your own home. It has all the attributes of becoming the hottest software package available to date—and that's all I'm going to tell you for now! You can, however, drop in to your local computer store and ask for a demo.

Prices Are Dropping. Currently, microprocessors are very low in cost, and in the case of 8-bit processors, prices will get even lower (less than $3). Furthermore, with the state-of-the-art being what it is, most designers are able to create very powerful single-board computers for less than $100.

I insist that there is no hardware today that can be considered really fantastic. What can be, though, is the software that turns the hardware into a useful tool. To make my point, turn the pages back to about 18 months ago; most of the available software—I'm speaking of applications—was really barely adequate. Software designers were still refining their ability to handle 8-bit processors. Today you can find virtually an unlimited source of extremely high-level software products that perform tasks not even thought of as early as last year. And if you don't believe me, just check with IBM. Their new system is designed around software that actually optimizes the hardware.

With this almost explosive growth in the past 18-months, just imagine what I'll be writing about next year. Have a happy and joyous Thanksgiving. ◇

IBM Personal Computer System