

THIS MONTH I'm coming good with all the tantalising news I promised you in the January column.

First, Data General has finally released the Data General/One Personal Computer in the US. This is the first complete, truly portable, personal computer and it's as IBM compatible as DG could make it. 1-2-3, Symphony, Wordstar, and dBase II are already available for the Data General/One, and I expect most other programs will run on it.

This box is *exciting*. A ten-pound (4.5 kg) computer with a CMOS 80C88 chip, 512K of memory, an 80-column by 25-line LCD display with 640 by 256 pixel graphics, two 720K double-density 9 cm diskette drives built in, and it runs off batteries for eight to ten hours of normal use. Yes, that's a true portable.

A portable 1.8 kg printer of near letter quality is also available. It prints graphics and characters in a number of fonts at speeds of 20 to 40 characters per second. It can use normal and thermal sensitive paper. There is also a 13 cm floppy drive available as a stand-alone unit, which enables the Data General/One to use existing PC programs and to share data with other PCs.

While the Data General/One will fit the bill for many people on the move, it should not be seen as an alternative to the PC or PC-XT. LCD screens take some getting used to. They reflect a lot of glare, and strain the eyes more than normal displays. For occasional use by someone on the move that's acceptable, but I wouldn't want to be using one day in, day out, for extended periods.

An expansion chassis will be available sometime in 1985, at which time I expect someone will put a half-height hard disk in it and a display adapter. Then the user should have the best of both worlds; fast data storage and a high quality display in the normal work place, and a true portable for working on the move.

A few words of caution. It's strongly rumoured that IBM is going to release a similar portable in 1985, and that IBM will use the Hitachi-Maxell-designed 7.6 cm diskette drives. If that happens it could spell big trouble for Data General, Hewlett-Packard, and other systems using the Sony 9 cm diskette drives.

### **Tape Back-up For Hard Disks**

Currently, users of personal computers with hard disk storage have to back up

their data using floppy disks. The integrity of floppy disks has always been questionable. Not only are they fragile, but the operator has to use up to 30 floppy disks in the correct sequence, with the whole procedure taking hours. The result is that back-ups are not adequately carried out by most users.

Since the introduction of hard-disk-based personal computers I've been evaluating alternative back-up options. Streaming tape units always seemed to be the best alternative, offering ease of use, security, speed, and the benefits of rigid packaging, but none of the units I evaluated lived up to that promise. Either the hardware, or more often the software, let them down.

Finally I've found one that works. It's the Sigma Design Streaming Tape Unit, which stores 45M on a DC300 data cartridge and 60M on a DC600 data cartridge, and can create a tape image of an IBM PC-XT 10M hard disk in under five minutes. Alternatively, the unit can back up in file mode, which allows individual files to be recovered later. In a 'worst case' test, a full 10M hard disk with some 700 fragmented files took just under one hour to back up in file mode.

Most importantly, it works. I tried it out attached to an IBM Portable PC with 256K, an IBM PC-XT with an AST Research SixPakPlus, an IBM PC-XT with a Sigma Design Maximiser, and an IBM PC with the IBM expansion unit and all sorts of other bits and pieces. The Sigma Design streaming tape unit worked perfectly in every case, regardless of the fancy software and hardware options in use.

The software driving the tape unit offers all the essential features that many leave out. Files and directories, or directories and all sub-directories can be easily backed up. A parameter file can be built and passed to the back-up program. I was impressed with the way the software provided the features and yet stayed quite easy to use.

Sigma Design offers separate controller cards to mount inside the PC-XTs or compatibles, which allows easy sharing of the tape unit between a number of computers. Alternatively, half-height ten, 20 or 32M hard disk drives can be mounted in the external subsystem along with the streaming tape drive. This provides an alternative to the Tallgrass units often used to expand the IBM PC.

The only failing of the Sigma Design

unit is the documentation. What's there is good, but there are some important omissions. For example, the software is more recent than the manual, and a number of important options are not documented. Thankfully, the software is easy to use and fairly self-explanatory.

Installing an option such as this can be difficult if the hardware or software interrupts conflict with existing options. There was no documentation to explain the nature of these problems or the way to overcome them. I tested many variations and had no problems, but if I had had difficulty there would have been nothing in reserve to call upon. That's what complete documentation is for.

What's it cost? The streaming tape drive in an external subsystem with its own power supply retails for \$3,300 including tax. The additional, short-length, streaming tape controller cards are \$675 each. If only I didn't have to hand the evaluation unit back.

### **The IBM PC-AT – First Impressions**

As I write this, the IBM PC-AT has not yet been announced by IBM Australia. Computerland has a warehouse full of ATs in Sydney, which it isn't allowed to sell. No IBM dealer has any, but a few non-IBM dealers do. I've had one for a week and experienced no problems so far.

First impressions? What the hell is that nine-pin connector for? Turns out to be a serial port! Open up the case. Oh! I thought there was a half-height 20M fixed disk – turns out to be a full-height. There is space for a second full-height hard disk, but only for one half-height floppy disk. The half-height 360K floppy drive hasn't arrived yet. When it does I'll try to find a third-party half-height 20M fixed disk to go in the remaining space.

So far I haven't been able to find an Australian source for the 1.2M floppies required. Existing 360K diskettes can be read in the new 1.2M drives. It's also possible to write to the 360K diskettes with the 1.2M drive, but then they can no longer be read in 360K drives.

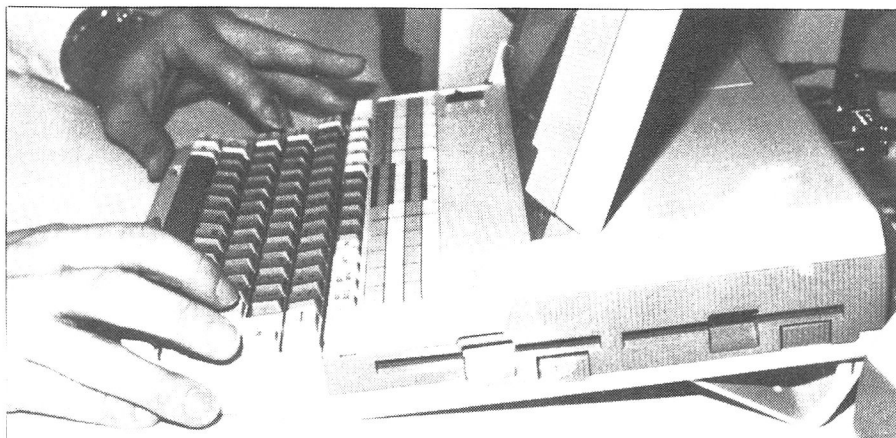
The machine has eight slots, all full length. Two of the slots do not use the new bus, and the colour graphics board can only be installed in these slots. This is the 'extended' version with 512K on the motherboard, a 20M fixed disk, and a 1.2M floppy disk. One controller card is used to support all the disk drives,

and there is also a new serial and parallel port card (the one with the nine-pin connector).

The 512K on the motherboard is in 'base' memory. A special 128K board can be purchased to fully expand 'base' memory to 640K – the same as the PC and PC-XT. Any other memory boards are installed as 'extended' memory above the 1M address limit of the 8088 chip in the PC and PC-XT. When PC-DOS 3.0 runs on the PC-AT with its 80286 chip, the 'extended' memory can be used for RAM disk using the VDISK device driver IBM supplies.

PC-DOS 3.0 actually knows about Australia! There is a COUNTRY option in the CONFIG.SYS file, which is used to set the date format required. Australia is one of the countries supported. If you don't like what you get, it's tough luck. The manual doesn't give examples of the various date formats available, and it's rather tedious to try them all out.

The only problem encountered so far, is with the new PRINT command. It allows a print buffer with a default size of



The Data General/One uses Sony microfloppies; that could be a problem if IBM goes for the smaller Hitachi units.

512 bytes to be set up. That's right, 'bytes'. The manual doesn't mention an upper limit, but I soon found it has one; I usually set up a printer buffer of 64K, but the maximum allowed by PRINT is 16K, or 16384 little bytes.

This machine is fast. The only benchmark done so far was a Lotus 1-2-3

worksheet that takes 300 seconds to recalculate on the PC-XT. The PC-AT knocks it over in 110 seconds.

When the 360K diskette and additional 512K of memory arrive, the AT goes on my desk. Someone else can use my old, much extended, IBM PC. □

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