



PERIPHERAL VISION

Buying a home computer is often only the first step in setting up a complete system. The basic machine may be augmented or adapted by purchasing one or more of the many peripherals on the market. Here we examine some popular add-ons, and give some tips on what to look for when buying.

Until recently, the most important peripheral for the home user was a plug-in module containing extra memory. Memory was expensive, and machines like the ZX-81 and Vic-20 were designed to keep costs to a minimum — indeed, the unexpanded ZX-81 offered the user a mere 700-odd bytes with which to write programs. Today's machines come ready-equipped with up to 64 Kbytes of RAM (some, like the QL, offer even more) and thus add-on 'RAM packs' are now rarely required. Today's user has a plethora of peripherals to choose from — modems allow communication between owners who may live hundreds of miles apart, motorised vehicles or robot arms can be controlled by using a suitable interface, and speech synthesisers may be used for fun or for educational purposes.

Although there are many different peripheral devices on the market, most of these are manufactured for the more popular machines only. This is a consideration that must be borne in mind when you decide on which machine to buy — Spectrum, Commodore and Acorn owners will always have more choice than those who opt for Orics or Sords. Newer machines take time to build up a peripheral market, although the recently introduced MSX standard will make things easier by allowing the same add-ons to be used with all machines that conform to the MSX specification.

A major consideration for the peripheral buyer is the question of compatibility — any purchase must work with any other devices that may be bought in the future. The classic example of this concerns the Sinclair Spectrum. Many Spectrum owners will have bought the Interface One and a Microdrive or two, only to find that some of their existing peripherals — and even some of their software — will not work with the Interface One in place.

However, if compatibility between devices is maintained, choosing add-ons for your machine can greatly increase the fun of computing. Suitable peripherals can allow you to design a computer system that suits your own particular requirements, and this system can then be added to as your needs change.



CHRIS STEVENS

Storage Systems

The most common storage device for use with a microcomputer is the ordinary tape recorder. This has the benefit of being easy to use and relatively cheap, but its drawbacks soon become apparent. Programs take a long time to load, and it is difficult to keep an accurate record of what is on any particular tape. Disk drives are faster and more reliable, but cost more. Most home computers are restricted to one type of disk drive, and some of these — notably Commodore models — are notoriously slow in operation. Most home machines still use 5 $\frac{1}{4}$ in drives, but 3 $\frac{1}{2}$ in or 3 $\frac{1}{4}$ in drives are now becoming more popular. The Oric/Atmos drive, for example, uses 3 $\frac{1}{2}$ in disks with a capacity of 160 Kbytes per side. The BBC Micro is extremely flexible, allowing many different disk systems to be connected. The Torch Disk Pack effectively turns the BBC into a new computer, with a Z80 microprocessor to complement the computer's 6502 and an additional 64 Kbytes of memory. The Torch also provides four 'business' programs and comes with a version of BBC BASIC that is designed to run on the Z80 processor.

The Sinclair Spectrum, on the other hand, has no provision for the connection of standard disk drives, although some independent companies have produced special disk interfaces. Sinclair has produced the Interface One/Microdrive system, which uses a loop of tape that can hold around 85 Kbytes of data. The tape is completely under computer control, and any single item can be located within 10 seconds or so. This gives a performance that is midway between that of a tape recorder and a disk drive, at a price considerably less than the cheapest disk drive system. The Interface One has the added advantage of supplying a (non-standard) RS232 interface, and can be used for 'networking' — linking up to 64 Spectrums or QLs.

A rival to the Interface One system is the Rotronics Wafadrive. This also uses loops of tape to hold data, but includes RS232 and Centronics interfaces and a word processor program in the price. Tapes are supplied in three different sizes — 16, 64 and 128 Kbytes — with the smallest capacity tape giving the fastest working speed. A Wafadrive for the Commodore 64 is now being produced, and versions for other micros are also planned.

Shown here are the Rotronics Wafadrive, the Oric/Atmos disk drive, the Torch Disk Pack and the Sinclair Interface One with Microdrive.