Graphic Devices

Producing graphics on a home computer is made considerably easier if one of the many different types of graphics devices is used. The cheapest of these are light pens, which can be used to 'draw' directly onto the display screen by using a photoelectric cell to detect the position of the light pen's tip as it touches the screen. A development of this is the Stack Light Rifle, which can be used as an alternative to a joystick in game-playing (see also pages 230-231).

Many people find it difficult to draw 'freehand' on a display screen. Tracing lines on a flat surface is considerably easier, and many devices are manufactured to allow users to do this. Graphics tablets use a special pen that transfers any movement made on the tablet's surface to the computer; this means that they may be used to draw images freehand or to trace over printed images. Other 'drawing' devices are digital tracers, which make use of variable resistors held in a mechanical arm to detect the position of the stylus that is fixed at the tip of the arm.

Here we show British Micro's Grafpad graphics tablet, the Robot Plotter digital tracer and the Stack light pen and Light Rifle.

Modems

The development of cheap modems for home computers allows users to communicate with each other via the telephone network. A large number of modems have been produced for machines equipped with a standard RS232 interface; with the right software, these can access the Prestel database, which has many pages devoted entirely to the home user. Modems can also be used to communicate with other users via 'bulletin boards' — databases that are often run on an amateur basis by micro enthusiasts. However, the question of compatibility arises once again — different baud rates are used by different bulletin boards, and a modem that can use Prestel is often unsuitable for communication with a bulletin board.

Neither the Spectrum nor the Commodore 64 has a built-in RS232 interface, and thus cannot use standard modems. For the Spectrum, the best-selling modem is the Prism VTX5000, which has built-in software to enable the user to access Prestel. Software on tape allows two Spectrums equipped with Prism modems to exchange data programs. Commodore supplies its own modem for use with the 64, and has set up its own system, Compunet, to link Commodore 64 owners in a network.

Modem users should keep a careful eye on the clock, as enthusiasts can soon run up huge telephone bills. Fixed annual charges for Prestel and Compunet users are also high.

Our picture shows the Prism VTX5000 and the Commodore modem.

Speech Synthesisers

Many popular home machines can produce speech with the addition of a speech synthesis unit. The units available may be grouped under two headings — one type is supplied with a fixed vocabulary of 100 or so different words (the Acorn speech synthesiser for the BBC Micro uses the voice of Richard Baker), while the other uses 'allophones' — a set of different sounds and pauses from which words are constructed.

The Currah range of speech units uses the allophone system, and the company produces modules for both the Spectrum (Microspeech) and the Commodore 64 (Speech 64). Some Spectrum and Commodore 64 games, notably those produced by Ultimate, have speech built in — this is produced automatically if a Currah unit is connected. Our picture shows the Currah Speech 64, and the Cheetah Sweetalker for the Spectrum.

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