the only important type of signal is called 'composite', meaning that the various timing pulses are combined with the brightness level into one signal, which the monitor then sorts out to produce the picture.

COLOUR MONITORS

A similar scheme is used in some colour monitors, but because of the greater complexity of the signal these are more closely related to television sets and operate on much the same systems. The main types are PAL, SECAM and NTSC, the names of the colour systems used in television broadcasting in different parts of the world. They represent methods of encoding the three 'additive' colours (red, green and blue) and the two synchronisation pulses.

Alternatively, the various signals can be sent to the monitor separately. Though there are subtle variations in the schemes used, they are generically known as RGB, after the colour guns (red, green, blue). The simplest is TTL (transistor-transistor logic), in which the colours have only two states, on or off, and so in various combinations can produce the familiar eight colours seen on viewdata systems such as Prestel and Ceefax.

More colours can be produced if each additive colour can be given an intensity, and though these intensities are usually given in discrete (digital) steps, the result is known as an 'analogue' or

Bandwidth

Bandwidth is an important consideration in your choice of a monitor. It is a measure of how small a dot the circuitry can produce. To an extent, the smaller the dot the better, but the decision as to what bandwidth is best for a given machine is based on other considerations as well.

Your priority is to work out what the absolute minimum bandwith could be for your machine. This is calculated by multiplying the maximum possible number of character lines on the screen by the number of characters on each line, giving the total number of characters. This figure is multiplied in turn by the width of the character matrix in dots, then by the depth of the matrix.

The result is the maximum number of dots on the screen, which is generally somewhere between 10,000 and 1.5 million. On an ordinary 80 × 24 screen with a 7 × 9 matrix the figure is 110,960. All these dots are illuminated by the 'raster' on the screen at a rate of 50 times a second (60 in the US and many other countries), which means that the number of dots on the screen must be multiplied by this figure. The result will generally lie between 500,000 and 75,000,000, and this is the number of times the controlling circuitry must be able to turn the beam on and off per second.

This is a frequency, so is expressed in hertz (Hz), and because the figures are almost all in millions the units are Megahertz — Meg for short.

Monitors are readily available with bandwidths of 5, 7, 10, 12 and 15MHz, and 20MHz is possible, though the price rises sharply as the figure increases. Monitors operating at 100MHz can be built but they cost many thousands of pounds.

In general, the higher the bandwidth of your monitor, the clearer its image, although too much resolution can be as unwelcome as too little, particularly in colour graphics.

If the bandwidth of the monitor is too low for the computer, the letters will be smudgy and hard to read, as though the signal were being muddied up. If the bandwidth is too high, individual dots will become too clearly separated, breaking the image up.

Monochrome Monitors
The simplest and least expensive of all monitors are the monochrome models. For £100 or less, these units offer the user a choice of phosphor colours and reasonably high definition. They are ideally suited to word processing and other business applications, but are often used to display simple graphics, as well

Three-Colour Monitors
Microvitec's CUB is an excellent example of the less expensive colour monitors available to the home computer user. While its resolution is not of the highest, it is quite suitable for a variety of applications including most graphics

Versatility From Japan
With its ability to decide on the standard of the received signal, JVC's TM90FSN is particularly valuable to those who wish to use their monitor in a variety of different applications. In addition to its use as a computer output device, it can also service a video recorder or video disc player