

## Computers for Digital Imaging

In theory, most PCs available today are capable of being used for digital imaging, but imaging does have certain requirements which make the choice of computer worth investigating carefully.

The main issues to consider when purchasing a machine for digital imaging are:

- The amount of memory
- The size of hard disc
- Speed of the computer
- The interfaces with other devices
- The quality of the monitor
- Extra peripheral devices to be attached to the computer

### Mac or PC?

One major question to ask is whether an IBM PC clone (PC) or an Apple Macintosh is best for imaging. The simple answer is that they will both perform very much the same jobs in the same sort of time. The Mac will probably be slightly more expensive, and in the end it will probably come down to personal preference, and other factors such as whether your children use PCs or not. Probably the one major difference nowadays is in the area of colour management, where Apple Macs, using ColorSync, are some way ahead of the Windows operating system.

### Memory

Digital images tend to be quite large – the image from a 2 megapixel camera will use around 6Mb of memory when opened. This is on top of the memory used by the operating system and the imaging software, which may take up to 64Mb. The best advice is to get as much RAM as you can afford, but aim for at least 128Mb if possible. The good news is that in recent years the price of RAM has fallen considerably.

### Speed

The speed of a computer is rated in megahertz (MHz) and giga hertz (GHz), with typical speeds nowadays being around 1 Gigahertz upwards. Obviously speed is important, but rather like a sports car stuck in a traffic jam, so the speed of the processor is not the only thing which will govern the speed of the imaging operations. Fast access hard discs and CD drives and the way in which the computer is set up will all affect the performance of the machine.

### Hard disc

There is an old saying in the computer world that no hard disc is ever large enough, and it is quite remarkable how quickly hard discs fill up! Like RAM, buy the largest you can afford. One way of improving the performance of a machine for imaging is to partition the hard disc into two or more partitions, and to allocate one of the partitions solely for the imaging software.

One very important thing to remember is to always have a back up copy of the data on your hard disc. Discs do sometimes fail, for a variety of reasons, and in some cases the data will be lost forever. A variety of systems are available for backing up your files, from Zip discs to CD recorders, but whatever you use, make sure you back up regularly!

## **Monitors**

An often overlooked component of the computer system is the monitor. As photographers we are used to looking at prints or transparencies that are sharp and have good colour saturation. The same criteria should apply to computer monitors, particularly as we will often spend long periods sitting quite close to them. A monitor that is even slightly soft can easily lead to eyestrain. The monitor will have two main defining specifications, the overall size, and the dot pitch. For imaging purposes, it is good to have a monitor of at least 17", but large monitors do take up a large amount of desk space. Some of the new flat screens based on TFT screens are excellent, but cost substantially more than an ordinary monitor.

The dot pitch is a measure of how sharp a monitor is. The smaller the figure the better. Try to aim for a small dot pitch of around 0.26mm.

## **External storage**

As mentioned above, it is essential to have kind of backup system to the main hard disc in case of failure. Also, however, you may need to give your images to someone else to print for example, and these may be too large to fit onto a standard floppy disc. There are a number of choices available, by probably the commonest are the removable hard disc, such as the Zip system, or the recordable CD ROM. Removable hard discs can be thought of as high capacity floppy discs. Zip discs for example, are available in two sizes 100Mb and 250Mb, costing less than 10p per megabyte.

Recordable CDs have a much larger capacity - 650Mb, so can be used to store large amounts of data. The discs nowadays are very cheap, around 25p if bought in bulk. One tip, wherever possible, is to write "hybrid" PC/Mac discs, so that both PCs and Macs can read the discs.

Re-writable CD drives are becoming increasingly common, though the discs are more expensive than conventional CDs.

A new development is the DVD (Digital Versatile Disc) used mainly for showing feature films on DVD players at home. These discs have about ten times the capacity of CDs, and are currently expensive for recordable systems. They will undoubtedly get much cheaper! DVD drives are often fitted to new PCs.

## **Computer connections**

One thing to look out for when buying a computer is the range of connections it has for linking with devices such as digital cameras, scanners and printers. Traditional connections such as serial and parallel ports have largely been replaced by higher speed USB ports. Some digital cameras require a very high speed FireWire connection, whilst some devices require SCSI connections. All of these ports can be added to the computer, but remember to cost them in to the price of the machine.

## **Other peripherals**

A whole range of other devices is available for connection to the computer such as joysticks for games, and sound systems. One of the most useful as far as imaging goes is the graphics tablet, which replaces the mouse. It consists of a flat tablet and a pen like stylus, which is used in place of the mouse. It is much better for drawing and painting, and is a good investment.

If you have a digital camera which uses CompactFlash or Smart Media you may find that a separate card reader is a worthwhile investment.

## **Computer Viruses**

A virus is a computer program deliberately written to disrupt the normal operation of a computer. They may “crash” the computer, display messages, delete files or cause other strange things to happen on the screen. They can cause a great amount of damage within a computer, perhaps erasing whole hard discs. Many are designed to come into force on particular days, or are transmitted via email attachments such as the notorious Love Bug virus which struck thousands of the world’s computers in May 2000. To minimise the risk of viruses getting into your computer system it is essential to take certain precautions:

Install a virus checker (sometimes known as “disinfectants”) on your computer. Many are freely available from public domain and shareware suppliers, and come into action the instant the computer is switched on, checking all files for viruses.

Do not use floppy discs given to you by other people (particularly with games!) unless you have a virus checker on your machine.

By their very nature, virus checking programs are always one step behind the authors of viruses, so cannot be relied upon to identify all current viruses!

## **Using the Computer**

If you are going to be using the computer for any length of time it is worth taking certain precautions to prevent eye strain, or posture problems. A few simple guidelines may help prevent these problems:

1. Sit comfortably, preferably in a chair with a good backrest, and adjustable height. You should try to sit upright, and at a height where your forearms are in a horizontal position when using the keyboard. Use a wrist support wherever possible.
2. Adjust the monitor height and angle to minimise head and neck movement. If possible, try to have it at such an angle that you are looking down at the monitor slightly. Do not sit too close to the monitor.
3. Place the monitor sideways to windows, avoiding reflections on the screen.
4. Take frequent breaks from the computer. Walk away from the computer to get some exercise and rest your eyes as much as possible.

## **Where to buy**

Look for a reputable dealer (preferably one who knows about digital imaging!) who is local to you. This may not appear to be the cheapest option in the short term but if you encounter any problems it will rapidly become an investment. Purchase from a dealer who offers the appropriate level of support to your needs, and who will let you see the machine in operation before purchase. Some dealers may offer a more expensive deal but this may include training for customers who are not conversant with computers. Clarify the service offered at the time of the initial quote and get it put in writing. This should include the terms of guarantee, the scope of service if included and the details of what will be supplied and installed .

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