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BASICS; Pamper Your Pixels: Making the Most of the Monitor

By LARRY MAGID

IT is one of the paradoxes of the computer age that the object that users spend the most time looking at, the monitor, is often the most overlooked.

But how a monitor is set up and adjusted is important because it can have an impact on both your eyes and your electric bill. This is true regardless of whether your monitor is a cathode-ray-tube model or one of the newer flat-panel liquid crystal displays.

Monitors are fairly simple pieces of equipment, and it is not difficult to get them running optimally and keep them that way. Here are some monitor characteristics and settings to keep in mind.

Resolution

Resolution is a crucial monitor specification because it determines the clarity of what you see as well as how much data can be displayed.

All other things being equal, the higher the resolution, the crisper the images. But increasing the resolution also decreases the size of text and images. That can be good if your goal is to get a lot of information on your screen, and bad if it causes you to strain your eyes to read the text.

All monitors have a maximum resolution, which is the number of pixels that can be displayed from side to side and top to bottom. Resolution is specified by two numbers like 640 by 480 or 1,280 by 1,024. The first number designates the maximum number of pixels that can be displayed horizontally, and the second is the number that can be displayed vertically. (A pixel is made up of three tiny dots: one red, one green and one blue.)

If your screen is very large, it makes a great deal of sense to crank up your resolution as high as possible because the larger screen will compensate for the higher resolution. But if you are using, say, a 15-inch monitor, you might want consider lowering the resolution just a bit to make everything bigger.

Resolution is controlled by the machine's video card and configured by software that comes with the operating system. The vast majority of C.R.T.'s in use today will have no problem displaying any resolution from the maximum down to 640 by 480, but an L.C.D. screen is more or less hard-wired for a particular resolution (also called "true" or "native" resolution).

If your L.C.D. is rated at 1,280 by 1,040, that is the resolution that will look best. You can use a lower resolution, but what you see -- especially small text -- will be noticeably fuzzier. That is because a flat-panel display, unlike a C.R.T., is built with a specific number of pixels. For example, a 1,280-by-1,040 screen actually has 1,280 pixels across and 1,040 down.

To change your display resolution in Windows, click on the Display icon in the Control Panel or right click anywhere on the desktop to bring up the Display Properties dialog box. Then click on the settings tab and adjust the screen resolution. With a C.R.T, you can adjust the resolution from the maximum down to 640 by 480 without any sacrifice of clarity.

Macintosh users with OS X can change the screen resolution by clicking on the Displays icon in System Preferences. For other versions of the Macintosh operating system, select Control Panels and Monitors from the Apple menu.

Fonts

Regardless of whether you have an L.C.D. or C.R.T., you also have the option of making the screen more readable by using larger fonts. All programs allow you to adjust font sizes, and many, including Microsoft Office and Internet Explorer, have a zoom feature that increases the size of screen fonts without affecting their size when printing. Those options are typically set from the View or Tools menu.

You can also adjust the sizes of Windows system fonts from the Appearance tab under the Display option on the Windows Control Panel. If you need more extreme magnification, the Magnifier option in the Accessibility folder on the Start menu's Programs area should help.

If you have Windows XP and an L.C.D. screen, you can improve the clarity of fonts by turning on the ClearType option. ClearType improves font clarity by allowing the system to turn portions of a pixel on or off rather than the entire pixel, increasing sharpness. In the Display area of the Control Panel, click on Appearance and then on Effects. Users with Macintosh OS 8.5 or higher can control font jaggedness, or "jaggies," by using the Smooth Fonts option in the Control Panel or the System Preferences box.

Saving Energy

Another important setting lets you configure your monitor to go into "sleep mode" a specified number of minutes or hours after the last keystroke or mouse movement. Those settings can save a significant amount of electricity, especially with C.R.T.'s, which use about three times as much power as L.C.D.'s.

Having your monitor go black may not be as entertaining as displaying a screen saver, but it is far better for the environment and your electric bill.

These and other energy-saving options can be set in the Power area of the Windows Control Panel or the Energy Saver section of the Mac's Control Panel or its System Preferences.

Colors and Shapes

Most monitors allow you to control brightness, and some also have a contrast knob or button. C.R.T.'s often have a "degauss" button that demagnetizes the screen. This should be used whenever you notice spots of color in the corners or other discontinuities in screen colors. You'll notice that the screen goes crazy when you push it, but it settles down in a second or two.

Other controls adjust horizontal and vertical alignment and size, "color temp" and other settings. Many modern monitors have a button that brings up a menu that allows you to make all sorts of adjustments. In some cases, any changes you make will be temporary unless you select the option or push the button that saves your changes. Some L.C.D. monitors come with software that can be used to change the default settings.

Taking advantage of a lot of options is fine, but be sure to read the manual before messing with the default settings. If you can't find the manual, see if you can download one from the monitor maker or a PC vendor's Web site.

Pixels

It is not uncommon for L.C.D. screens to have one or more dead pixels. These are defects that cause a pixel or one color dot in a pixel either to fail to light or to remain lighted all the time. It can be very noticeable if you have a solid dark color on the screen -- when your machine starts up, for example -- but you may not notice it when you are using software programs, especially if the dead pixel is white, which is often the case.

L.C.D. monitor manufacturers generally consider one or even a few missing pixels to be acceptable, so the defect may not be covered by the warranty. But many stores let you return products within the first 30 days or so for any reason.

C.R.T. monitors have what is called a refresh rate, which is the number of times per second that the screen is redrawn by the electron gun inside the monitor. The rate ranges from 60 to about 120 cycles per second. The higher the refresh rate, the less the monitor flickers. But the maximum rate is determined partly by the monitor itself, your video card and the resolution you are using. Consult manuals before changing the default settings.

Pitch

Dot pitch is another number associated with C.R.T. monitors. It refers to the distance, in millimeters, between adjacent dots of the same color. In general, the closer they are, the crisper the images look, which is why a lower dot pitch is better. This is not something you can set but a specification of the monitor itself. Look for a dot pitch of 25-hundredths of a millimeter or below.

If you are shopping for a new monitor, be sure to look at it in action before you make your buying decision. Don't let the salesperson dazzle you with cool graphics, videos or animations -- they look good on almost any screen. Instead, run a word processing program and see how it looks with 8- or 10-point type when you put it through the paces you normally would.

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