Get more from your monitor

It's vital you make the most of your monitor as it's the component that you spend all day staring at. Rosemary Haworth shows you how to adjust settings, install a better graphics card and upgrade your screen to get a better view. You can even add a second display for additional working space

The monitor is one of the most important components of your PC setup. It's the main interface with your system and you'll spend hundreds of working hours staring at it, irrespective of the applications you use. It's therefore vital that you have the best screen you can afford and optimise it effectively. Working in front of a flickering screen can leave you reeling from a headache and even cause permanent eye damage.

We're going to look at ways to optimise your display to suit your needs. Along the way we'll consider whether your existing screen is up to scratch particularly since the monitor is still a common area PC manufacturers skimp on when creating a competitively priced system. We'll go through the graphics card and monitor specifications you should be considering when choosing an improved screen setup.

But a great display isn't just about working more effectively – it's important for leisure pursuits too. PCs are commonly used as the central part of a home entertainment setup so it's necessary to have effective DVD playback. If your PC has a built-in drive then you don't need to splash out on a standalone player. And if your TV is larger or better than your

ILLUSTRATION: JESS READ

Replace your graphics card

1 Start by uninstalling the drivers for the existing card as there's a small chance of a hardware conflict otherwise. If there's no uninstallation utility on the manufacturer's website, uninstall the card manually by using the Control Panel, Add/Remove Programs function. If you can't find the relevant entry, skip this step and proceed to installing your new card. If your PC has onboard graphics you should disable it in the Bios settings (usually by holding down Del or F1 during startup) but check your PC manual as procedures vary
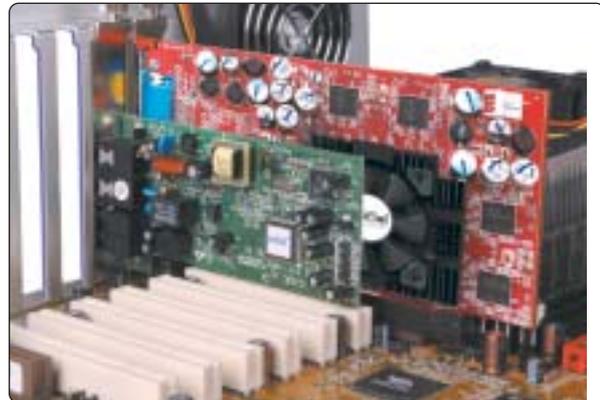
2 Turn off your PC, disconnect any cables and ensure you're earthed – for example, by using an antistatic wriststrap. Unscrew your PC's case and locate the graphics card. It will have an external monitor connector. Unclip its cables, unscrew the retaining screw and gently extract it from its slot.

Insert the new card and ensure it's firmly seated before screwing into position. Our Creative card comes with an extra cable with which to attach it to both the power supply and the hard disk. Having made any extra connections your card installation guide specifies, replace the PC case and power up again. Finally, install your new card's driver by following the onscreen prompts. If asked whether you want to enable multiple monitor support, click Yes

monitor (perhaps you're the lucky owner of a widescreen TV) you can hook it up to your PC and get the best of both worlds.

You can even add a second monitor to extend your work area or to enable you to have, say, a web page open while you work on another document.

Finetune your monitor setup

Most of us give little thought to our monitor settings, but tinkering with just a few options built into the operating system can make a huge difference. Most of the display settings can be accessed from the Properties dialog box – simply right-click anywhere on your desktop. To make changes to the screen resolution, choose the Settings tab then hit Apply or ok.

In Windows 98 and XP you will see a sliding bar (shown right) which will allow you to preview your chosen screen resolution in the display. The higher the figure, the more detail you'll get and the smoother icons and graphics will look. The top resolution will depend on the capability of your monitor and graphics card (we'll discuss this in more detail later).

The menu to the right of the resolution settings lets you alter the colour depth.

A higher figure is better but using the top setting is a drain on system resources. If your PC starts running slowly it's worth dropping down from 36bit to 16bit colour.

The Advanced button on this same screen lets you specify whether changes require a restart to be effective as well as giving further options for refresh rates and moving the screen anchor points. These are handy if your monitor has few onboard buttons and dials to manually adjust the display.

To up the refresh rate and avoid eyestrain choose Monitor and select a higher setting – we recommend 85Hz, if it's available. You won't need to do this if you use a flat-panel, as screen flicker isn't an issue.

The Properties option on this pane leads to a Driver tab where you can request an updated driver. Further monitor

→ From Display Properties you can alter the screen resolution. Simply slide the bar towards More for smoother graphics

settings will depend on the graphics card installed on your system but will enable you to save colour management profiles for a range of monitor types or even a TV.

Next, experiment with the fonts. Settings are accessed by clicking the Appearance tab under the Properties menu. You can alter the font used to display icon details and filenames and adjust their size from standard to extra large.

Connect a second monitor

1 Power down before attaching your second monitor or a TV to your PC. We've got a CTX flat-panel with a DVI connector so we've attached this to the corresponding DVI port on the PC and left the existing analogue monitor attached to the standard D-sub port. If the second port on your graphics card is a DVI version but your second monitor (or TV) is an analogue one you'll need an adapter. Luckily, Crucial supplied one of these with the Radeon graphics card (see *Replace your graphics card* on page 111)

2 Power up the PC and go to the Settings options by right-clicking on the desktop to call up the Properties dialog box. Windows may automatically detect the presence of two monitors. If you haven't already done so, tell the PC you want to use a second monitor by calling up the Display pane under Properties. Two screens should be shown. Specify which is to be the main monitor (labelled 1) and which is the secondary one (2) and drag their icons to match their relative positions

Get a bigger view

If you're visually impaired or your eyesight simply isn't what it used to be, then check out Windows' Accessibility options found under Control Panel, Display. In Windows XP these include a Magnifier which displays the portion of the screen your mouse is hovering over at between two and nine times, depending on what you need.

Another useful feature is the ability to alter the contrast settings or inverse the onscreen display. To do this, tick the High Contrast option on the screen that appears when you navigate to Accessibility Options, Display from the Control Panel. A drop-down list lets you choose a suitable palette depending on the colours you have difficulty distinguishing between. This same

screen lets you alter the cursor blink rate and its width, so if you're forever losing track of the cursor then this will help.

The Accessibility, General tab lets you tell your PC to turn off the selected tools after a specified period and, more usefully, in Windows XP, to tell it whether every PC user wants the same settings.

Power down

To keep your electricity bill to a minimum set your power-hungry monitor to shut down automatically after a certain period of inactivity. Right-click on your desktop to access the Properties menu and click the Screen Saver tab. Then hit the Power button and use the drop-down menu to select the delay time.

You can also choose a background colour scheme and a screensaver from this menu. These were originally designed to prevent screen burn – not something that's an issue with modern monitors but there's no reason why you shouldn't personalise your PC in this way.

Windows comes with a selection of built-in desktop themes (static images) and screensavers, but you can use any image stored on your system as wallpaper. Just browse to the image or screensaver you want to use and click ok to select it (or Apply, ok under Windows XP). The web is a rich source of further images and screensavers. Try typing in a keyword and doing an image-specific search using Google or another search engine.

A more desirable display

You may want a more radical change to your monitor than altering a few settings. Chances are, if you bought your PC as a complete package you're still making do with the same monitor it came with even if other parts have long since been replaced.

Although your trusty monitor may still function, it may not offer high resolutions or a sufficient refresh rate. Perhaps it looks out of date compared with the rest of your kit, isn't large enough for your needs or takes up too much desk space.

As we'll explain, you don't have to get rid of your existing monitor, but high-quality screens no longer cost a small fortune and there are some attractive options out there. There's an ever-expanding array of display options – from competitively priced CRT (cathode ray tube) monitors to waferthin flat-panel screens that are ideal for your less-than-spacious home office setup. The final choice depends on your budget and needs, but ensure you choose a screen with a dot pitch rating of 0.25mm or below if it's a CRT model as well as a resolution of 1,600x1,200 at a refresh rate of 85Hz.

You'll find Top 10 rankings for the latest flat-panel screens and traditional CRT displays on pages 234 and 236 respectively. Here you'll also find helpful buying advice. We chose a CTX 17in flat-panel with a DVI (digital visual interface) connection that could be rotated from landscape to portrait mode when needed. It also has an S-Video port so we can plug the PC straight into the back

Specify your dual-display options

1 Now we need to tell the PC how we want to use our two screens. For giving presentations or showing others what's on your screen, set up a primary display and a clone. For notebooks this is the portable's built-in display with the external monitor merely showing that onscreen information in a larger form.

However, we want to double our working area so we're going to extend our desktop. Below the screen resolution slider you'll see an option to specify one of the screens as the primary device and, on the other, to extend the desktop to this device. Ensure the secondary monitor is selected and then choose this option

2 You can now simply drag any windows you wish over to the second screen, for instance, you can work on a report while having a web browser open on the other screen, keeping an eye on incoming email without having to tab between overlapping windows and view that complex Excel spreadsheet in its entirety without having to scroll continually

of a TV screen, VCR or DVD drive. An RCA (or phono) jack can be used if you don't have this luxury.

Buy a better graphics card

A good screen goes hand in hand with a graphics card capable of showing off its display capabilities to the max. Even if you're not a fan of PC gaming or interested in high-end graphics, it pays to have a quality, dedicated card. Video and photo editing are proving wildly popular and, for the former at least, a graphics card that supports such applications is essential.

These days, you should look for a graphics card with an absolute minimum of 32MB of dedicated memory for day-to-day PC operation plus the option of watching digital video or manipulating photographs and for playing the latest games. For video editing and DVD playback, as well as top-notch gaming, double or even quadruple this figure.

High-end graphics cards provide additional ports such as DVI that provides a superior way of connecting your monitor, assuming it has a corresponding DVI port and FireWire, which

→ An updated driver can often make a difference to your graphics card performance

is the extremely fast data transfer protocol used for importing digital video clips to your computer.

If you're buying a new card it makes sense to choose a model with at least one additional adapter. You'll need an extra port if you want to attach more screens at any point.

We upgraded to a Crucial Radeon 9700 Pro graphics card because it came with 128MB of RAM and DVI and S-Video ports as well as a standard D-sub port. This means we can use it with two monitors at once. Usually, you need to install an additional graphics card for each screen you want to attach to your PC, but our motherboard doesn't have a spare AGP graphics slot so the Radeon is a good alternative. A further option is to use a PCI slot instead, though these are now quite outdated and don't perform as well as AGP versions.

Turn to the Top 10 Graphics cards chart on page 234 for more details and to find out which ones we rate highly. If, like us, you're intending to double your screen

space by adding a second screen, rather than simply replacing the existing board, visit the Microsoft Hardware Compatibility List (www.microsoft.com/hwdq/hcl) to ensure the graphics card you choose is happy taking a back seat to the one you'll be using for your main monitor.

Often, a new driver is all that's required – access the Plug and Play Monitor Properties dialog box from Device Manager which you'll find in Control Panel then click on Update Driver. ■