

## Computer software-related Screen Problems

### Some Basic Information about Computer Screens:

Computer screens can range from standard Landscape 4:3 aspect ratio glass-faced monitors, to the new wide aspect ratio LCD screens. The screen image is made up of hundreds of thousands of picture spots called Pixels.

These are measured horizontally and vertically and their ratio is called the aspect ratio (just like on a piece of paper).

A Screen is also called a Monitor because it monitors & displays the output of the computer video card (also called the video adapter). Each computer video card can be set to varying screen pixel numbers and the monitor automatically adjusts as best it can.

The number of pixels viewable from the video card and on a screen is called the Screen Resolution (Windows 2000 calls it the size).

The glass faced computer monitor uses a high voltage vacuum tube (radio valve) and a scanning electron beam to display the picture. Half an inch (10cm) of picture area is lost at the borders so a 17 inch glass screen has a diagonal dimension of 16 inches.

There will also be screen resolutions that simply do not display.

The LCD screen uses low voltage liquid crystal display technology that is back-lit with a fluorescent tube. A 17 inch LCD should have a diagonal dimension of 17 inches and show the full 1024x768 pixels.

In the case of some LCD screens, they can display several resolution choices, but unless you choose the one that the screen was designed for (the "native resolution"), you will end up with poor quality picture.

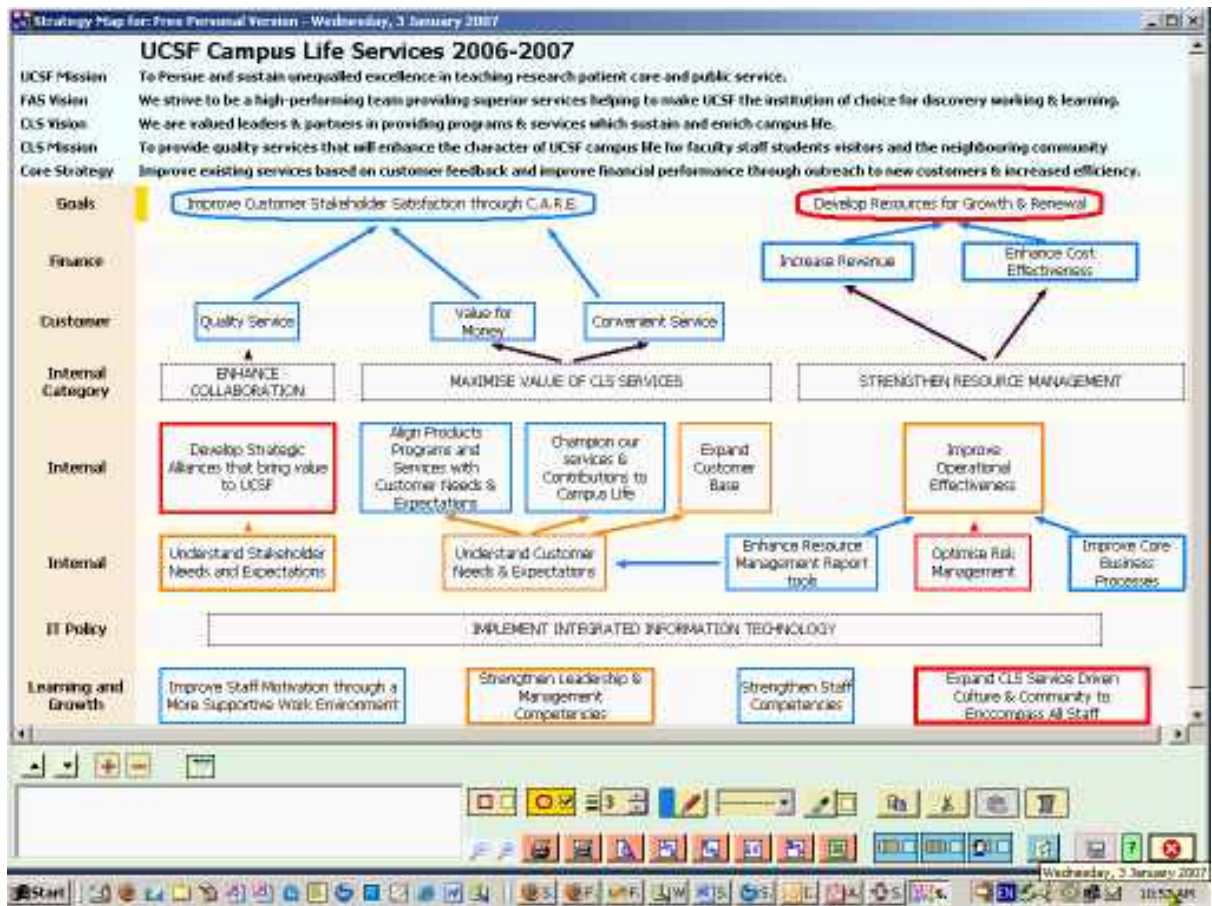
In addition to this some LCD screens can vary their refresh (flicker) frequency and there is a frequency setting on the video adapter card.

Typically you should always be using the maximum resolution that is shown as being allowable - then adjust the frequency for the clearest picture. If you get both the resolution and the frequency correct, you should see a very good clear picture.

LCD screens usually have a longer life and I have seen those used on older laptop computers last for over 6 years. Glass-faced screens usually need replacing or repairing after 3 years of regular use as the picture quality becomes blurred and the brightness decreases.

**Typical Screen Resolutions:**

The Strategy Map Balanced Scorecard software uses 1020 x 733 pixels. This suits viewing on a 17 inch LCD screen at 1024 x 768 resolution which leaves room for the Windows Task Bar to be visible on the bottom.



The minimum standard for most computers is now regarded as 1024x768 for 17 inch LCD screens.

<i>Aspect ratio</i>	<i>Horizontal pixels</i>	<i>Vertical pixels</i>	<i>Screen Resolutions</i>
Landscape 4 x 3	640	480	640 x 480 the original VGA standard
	800	600	800 x 600 was common a few years ago
	1024	768	Common for 17 inch LCD screens
	1280	1024	Common for 19 inch LCD screens

On some monitors that do not display the entire 1024 by 768 pixels, it may be helpful to set the Windows Task Bar on the bottom of the screen to auto-hide. In this case it will show the bottom of the Strategy Map software and when you move the cursor to the bottom of the screen, the Task Bar will pop-up and display. It retracts when the cursor is moved away.

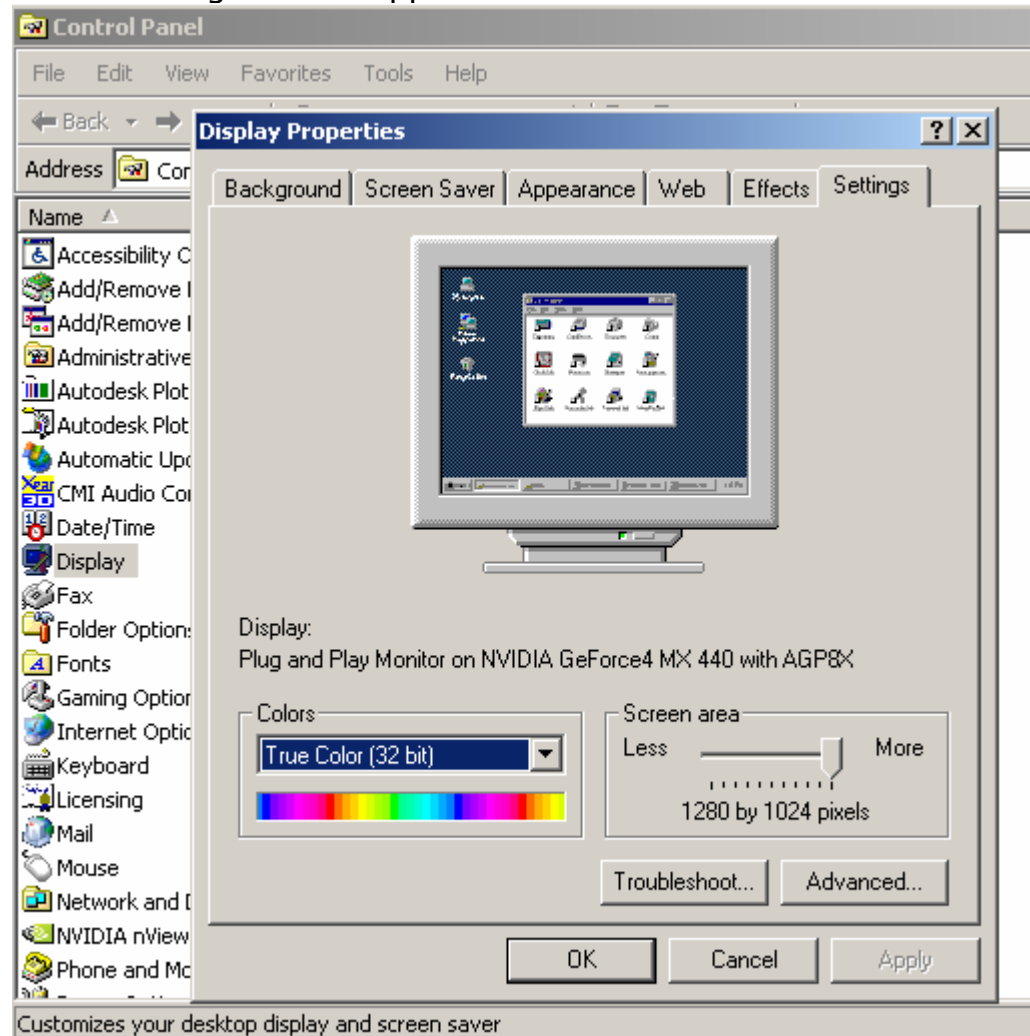
If you have a laptop computer it might be advisable to check your documentation or ring the supplier support phone number as they may have a new video driver available.

Either: It is showing 1024 by 768 pixels or it is not – there is no margin.

## Screen Settings:

To access the computer screen settings, either right-click the mouse on the screen void and choose Properties, or else select Display in the Control Panel.

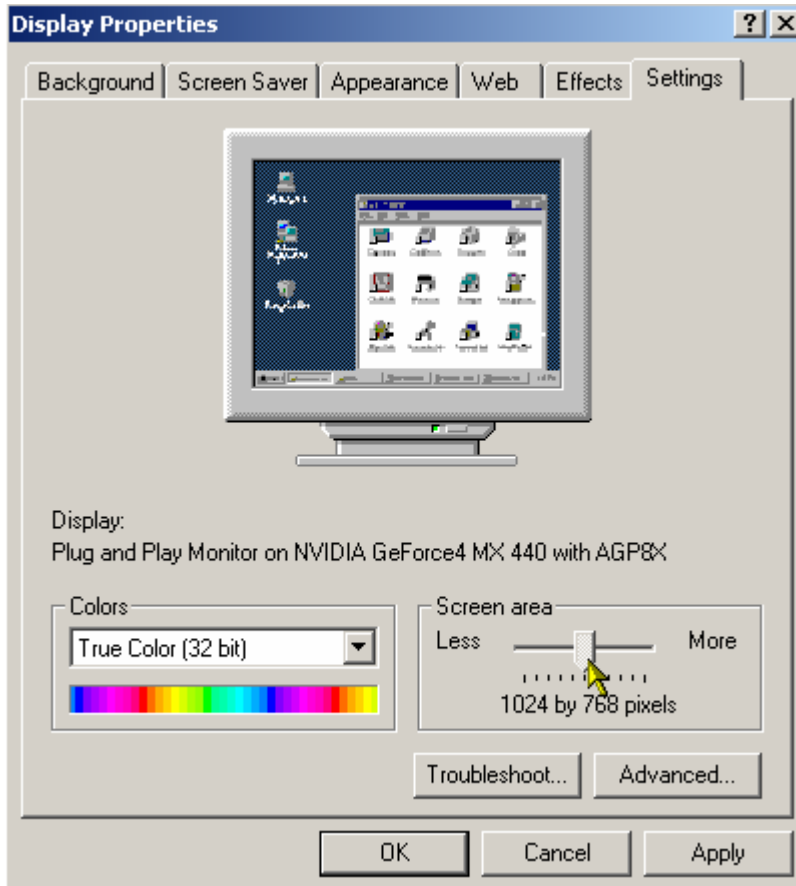
The following window appears...



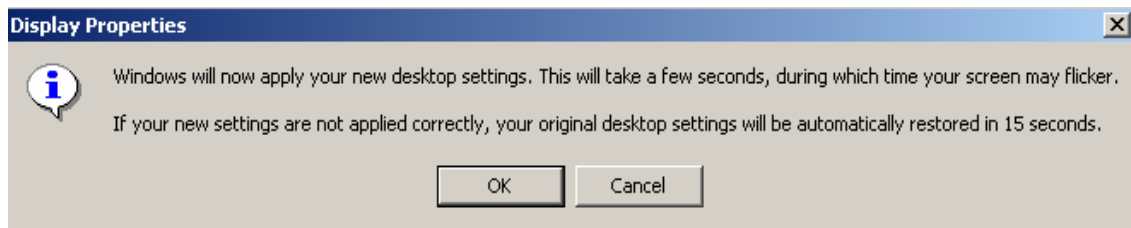
This screen-dump is actually for a Windows 2000 computer, but the screen properties are essentially the same with Windows XP. This example is for a 19 inch LCD screen with a maximum resolution of 1280 x 1024 pixels.

If you are already using a maximum resolution setting of 1024 by 768 and still have problems displaying the bottom of the screen, then set the Task Bar to Auto-hide (see below) and also contact your computer supplier.

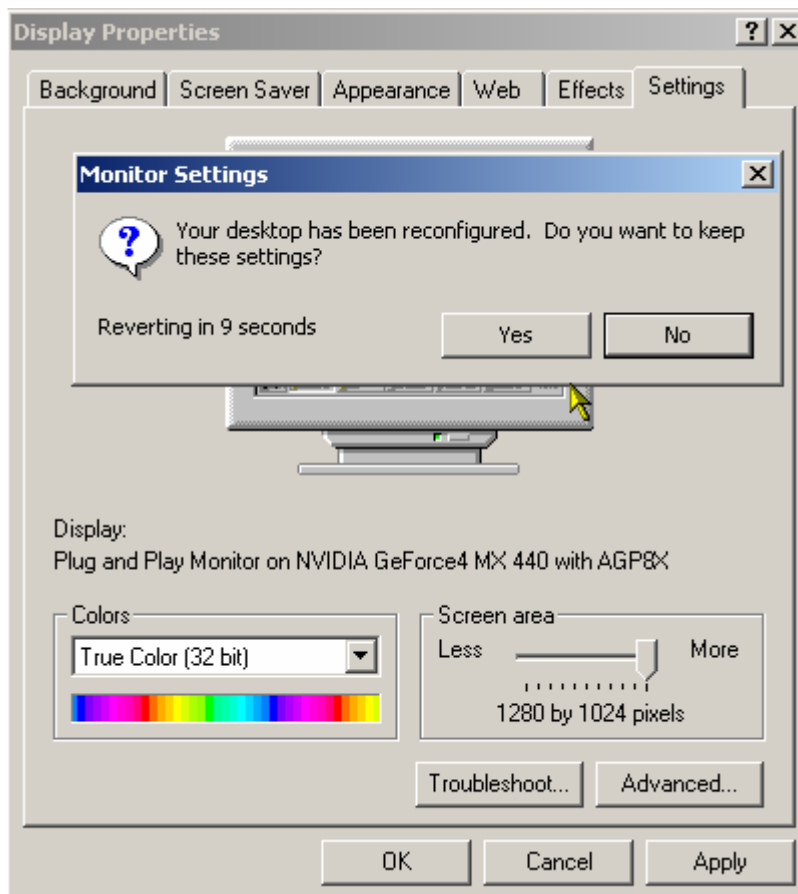
Under the settings in the screen area is the screen resolution setting. Using the mouse, you can drag the resolution pointer (cursor) to a different setting.



When you click [Apply] the following window appears...



When you click OK the video adapter changes its output and the monitor will try to follow and automatically adjust.



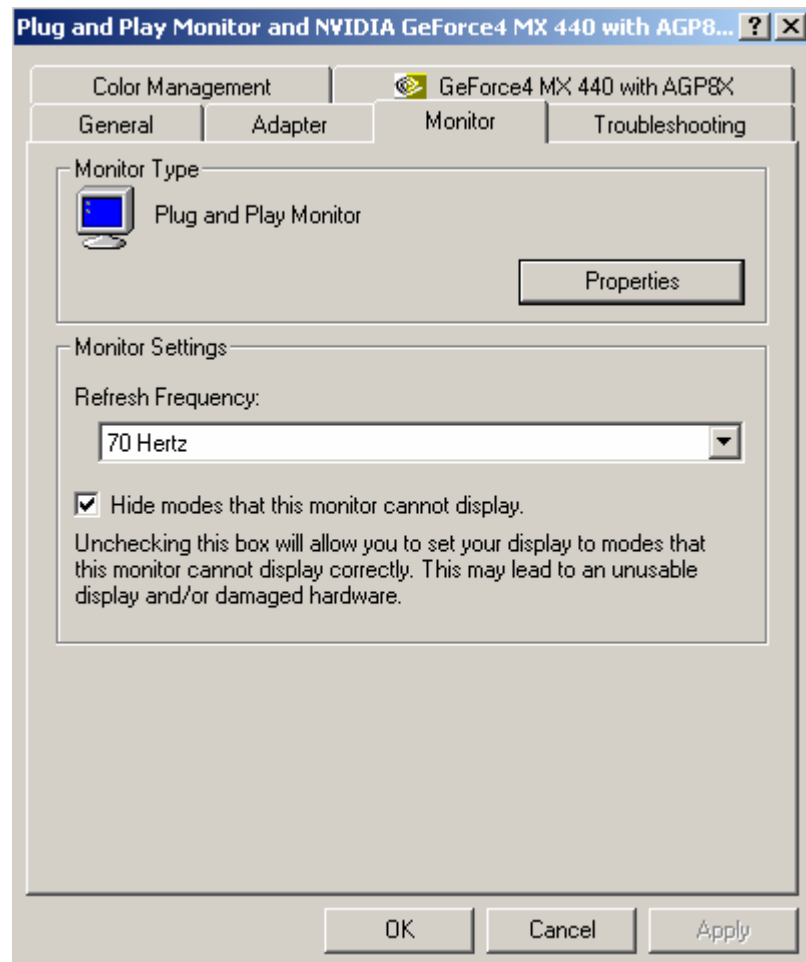
If you do not click [Yes], then the setting will revert to the original value after 15 seconds. This allows for the fact that you may have selected a resolution that your monitor simply cannot display.

Changing your resolution to a higher value can result in the fonts appearing smaller on the desktop. This can be changed in the display properties. If you are using common software such as Microsoft Word, there is a zoom setting.

On some screens it may be necessary to adjust the actual picture height and width using the screen adjustment settings. Some LCD screens have an auto-adjust button.

If you click on the [Advanced] button, you can adjust the screen refresh frequency.

This is actually changed at the display adapter and the monitor responds by adjusting as best it can.



On some LCD screens, changing the frequency causes the screen picture clarity to change remarkably and may introduce vertical fuzzy sections. We currently use 19 inch Diamond View LCD screens and find that the 70 Hertz suits our screen best and shows a very clear picture.

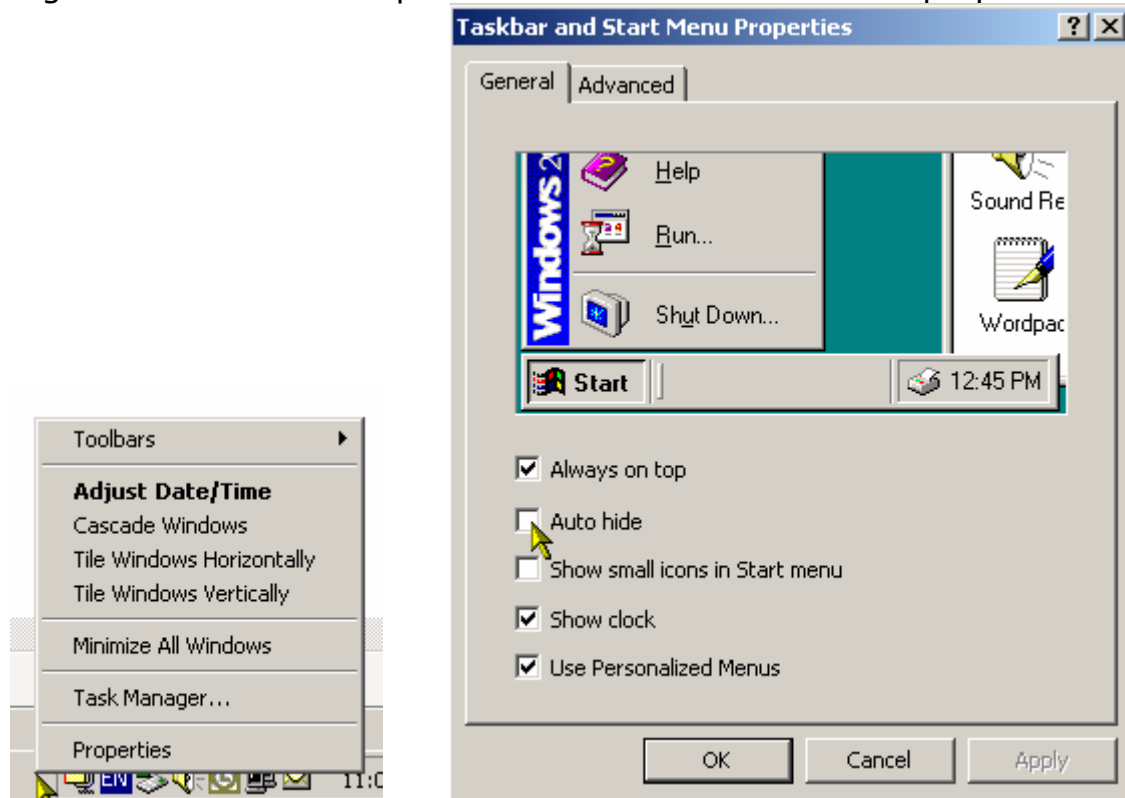
Note that the original idea of the refresh frequency for a glass-faced monitor or television is set to be the same as the electricity power grid so that the office fluorescent room lighting flicker rate was in synchronisation with the computer screen.

With the LCD screens they use a fluorescent tube as a back-light for the Liquid Crystal panel. The best refresh frequency can be related to the way the data is displayed and is not related to the overhead room lighting.

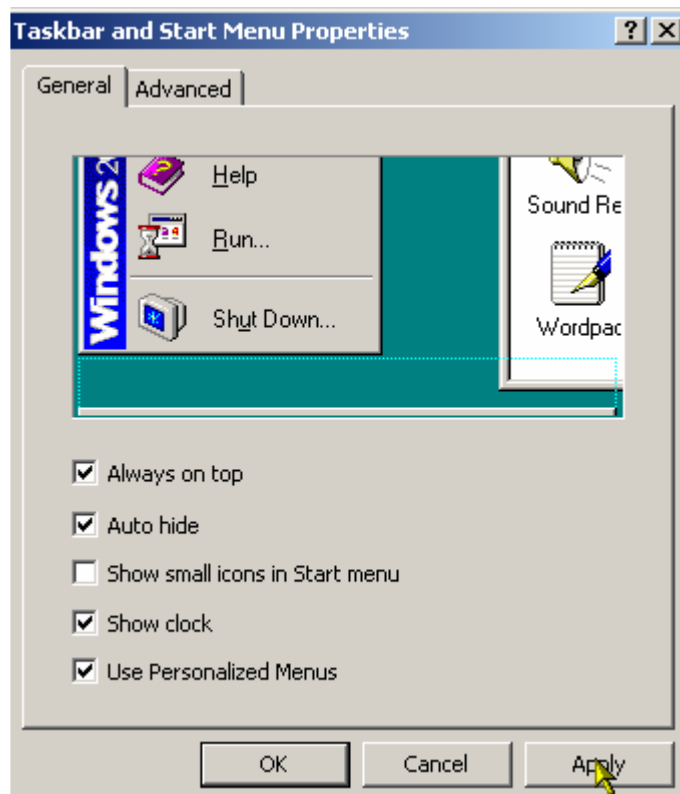
All fluorescent tubes have a limited life and as they lose light output the screen will not be as bright. If the tube fails, the screen will look very dark, but may still just be readable.

### Changing the Task Bar to Auto-Hide:

Right-Click on a vacant part of the Task Bar and choose properties.



On the properties window click Auto-Hide and click on [Apply].

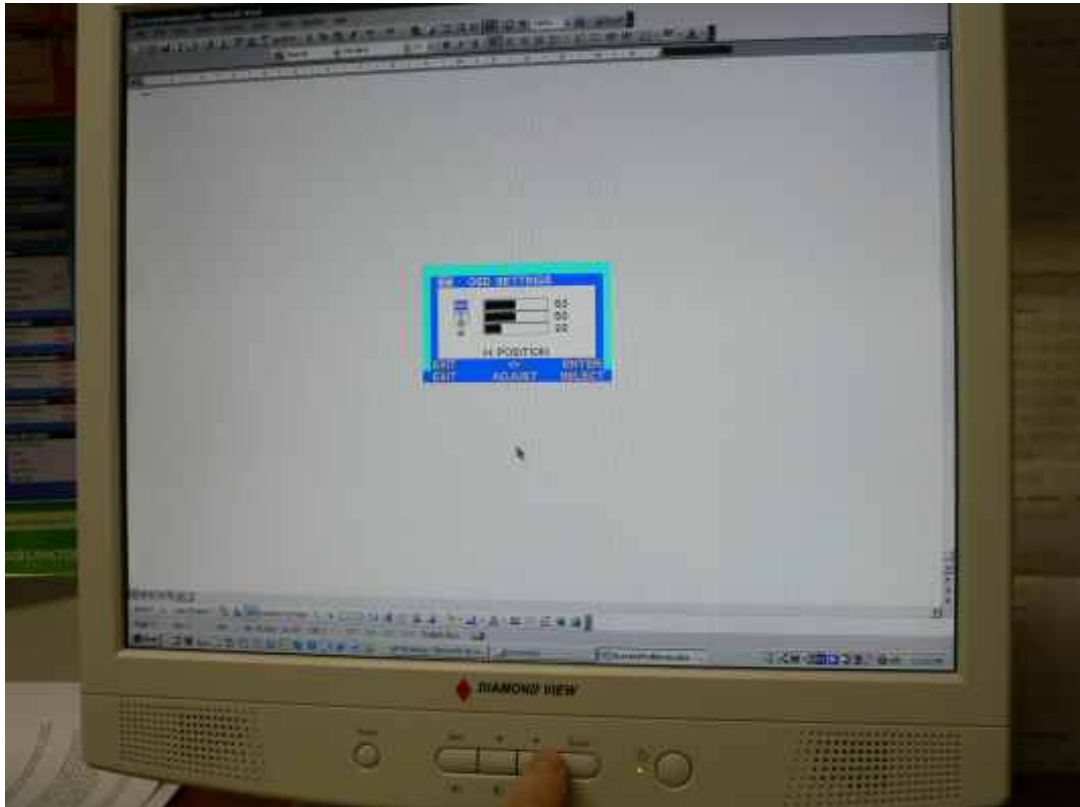


The task bar should now retract and reappear when you move the mouse to the bottom of the screen.

### Adjusting the Monitor Height and Width:

As well as the brightness and contrast, the computer screen also has a height and width adjustment.

If you find that the video card resolution is set on 1024 x 768 but you cannot see all the Strategy Map buttons, then you will probably need to adjust the screen height and width to bring the edges of the picture into view.



This is done on the front of the screen itself and is more likely to be necessary on the older style Glass-faced monitor screens. (You may need to read your screen documentation).

Some earlier Laptop computers may also need this adjustment.

This may be an alternative to setting the task bar to auto-hide.