



August - October 2003

Flat Panels Explained

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Flat Screen Monitors

If the trend continues, LCD (flat panel) monitors will finally out-sell CRTs by the end of this year. LCDs have dropped considerably in price, that along with quality have spurred sales. If you are in the market for an LCD monitor, you should be aware that even though the specifications may be close, LCD monitors may not be equal in quality.

Flat Screen vs Flat Panel

Of note is that some monitors are listed as having **flat screens**. These are still CRT monitors that have a flat screen vs the slightly curved CRT models. LCDs are referred to as flat panels.

LCD Displays

The most popular sizes are 15 and 17 inch. Unlike CRT monitors, the listed size of an LCD represents the true viewable size.

A 15 inch CRTs provides about 14 inches of viewable space.

A 17 inch CRT provides about

16 inches of viewable space.

So the viewable size on a 15 inch LCD is in between a 15 and 17 inch CRT.

Currently the maximum size for a LCD is 40 inches.

How it Works

An LCD panel consists of five layers.

Layer one is a white **backlight** that provides the illumination.

Layer two is a **polarizing filter** that ensures the light waves from the backlight are aligned in one direction

Layer three is a very small pattern of **red, green and blue colors** forming one pixel. This layer works as a filter, only allowing light through one of the three colors. The amount of fire power issued controls the "twist", affecting the amount of light.

Layer four is the actual **Liquid Crystal cells**. Behind the cells is a grid of wires that can be addressed by x, y coordinates. Your video display controller issues a command to fire at the appropriate coordinates.

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Layer five is another **polarizing filter** that is perpendicular to layer two.

To simplify, polarized light gets colorized and may or may not emerge from the last polarizing layer depending on the "twist".

One of the problems with LCD displays is that when viewed from a side angle, the color intensity drops.

Different technology is used in creating the pattern alignment to improve viewing from the side. The side angle view quality is one of the things that makes a difference in comparing different models.

Contrast Ratio & Brightness

Two specifications to check in comparing LCDs is the contrast ratio and brightness. Both of these specs have to be considered in overall quality. Typically the higher the brightness, the lower the side viewing angle.

The **contrast ratio** is a measurement comparing the brightest (white) and darkest (black) pixels. **A good contrast ratio is at least 500:1.** A minimum contrast ratio to consider is 350:1.

Brightness is measured in nits. The average LCD currently is in the range of **250-280 nits**. Ultra-bright models are capable of 450 nits. A higher nit level isn't always good. In a darker

room, 450 nits would make you reach for your sun glasses.

Viewing Angle

A viewing angle of 160 degrees will provide viewing by a group of people. If you never have to view your monitor from a side angle, a minimum viewing angle of 110 degrees is adequate.

Response Time

This is the amount of time required for panel pixels to turn from completely white to black and back again. This time is measured in milliseconds (ms). Larger values for response time represent a slower response. A minimum response time should be at least 25ms and **17ms is recommended**. If you have a digital video card, you can use LCDs with a 16ms response time. Most users only have an analog video card.

Panel Quality

Many manufacturers use a third party firm to provide the panels. Panels are rated as A, B or C grade. **B and C grade panels are used by mass merchant sites who want to move a volume at the lowest price.** Even within a given manufacturer, different models will use different grade panels. There are no specs that provide information as to the panel grade.

Bezel Size

If you use the ability to have multiple displays, the thinner the bezel the better. This allows you to put two LCDs side by side with very little space between the displays.

Failures

The biggest failure with LCDs is the backlight. Backlights are not cheap to replace. The better models come with a three year warranty.

Plasma Displays

Plasma displays are also considered flat panels and can be 32 to 61 diagonal inches. They work similar to LCD displays. The difference is in place of layer three, each cell has a mixture of neon and argon or xenon. One side of the cell is white and the other side is coated with a red, green or blue phosphor. Wires are attached to each cell and when the cell is charged, the inert gas is heated. The plasma emits invisible Ultra Violet light, but when charged, it emits a visible color.

LCD vs Plasma

LCD displays have a higher resolution. Plasma displays can have a higher contrast ratio of 850:1. Plasma displays can be viewed from a wider side angle LCDs consume less power.



NEC

SONY

Panasonic USA



Plasma displays, just like CRTs, can burn the image on the screen if it is left on the same display too long.

Seeing is Believing

Sometimes the simplest method to compare different models is still the side-by-side comparison. Almost any LCD brand will look good by itself. To see the difference, you really need to view monitors in a side-by-side comparison.

Microsoft Office Suite 2003

What it Contains

Office 2003 will be composed of the same basic applications as its previous versions:

Access 2003, Excel 2003, Outlook 2003, PowerPoint 2003, and Word 2003.

Microsoft has excluded FrontPage 2003 from the suite.

Available Versions

Office **Basic Edition** 2003
Includes Excel 2003, Outlook 2003, PowerPoint 2003 and Word 2003

Only available with the purchase of a new PC.

Office **Standard Edition** 2003
Includes Excel 2003, Outlook 2003, PowerPoint 2003 and Word 2003
SRP Price: \$399

Office **Professional Edition** 2003

Includes Access 2003, Excel 2003, Outlook 2003, PowerPoint 2003, and professional version of Word 2003
The professional version provides more XML-capable options.

SRP Price: \$499

Office **Small Business Edition** 2003

Includes Access 2003, Excel 2003, Outlook 2003, PowerPoint 2003, and standard version of Word 2003

Office **Student and Teacher Edition** 2003

Includes Excel 2003, Outlook 2003, PowerPoint 2003 and Word 2003

Only available via retail or academic license.

Office **Professional Enterprise Edition** 2003.

Includes professional versions for Access 2003, Excel 2003, Outlook 2003, PowerPoint 2003 and Word 2003.

Also includes InfoPath XML-based electronic forms-creation and database client software.
Only available via corporate or academic volume licensing.

Benefits

There don't seem to be many benefits for small and midsize businesses. Office 2003 has some very cool and potentially highly useful features all revolving

around its use of XML. Office 2003 will use custom XML schemas to enhance Word and Excel functionality as well as allow companies to define their own schemas and data formats. **Only Office applications will be able to read these files, so while getting more functionality, Microsoft won't lose its proprietary advantage.**

Office 2003's upgraded database connectivity is an extension of its new XML muscle into SQL Server, although it supposedly supports the other big relational databases as well.

Small businesses won't be able to realize these minor benefits because it will simply be too expensive for them to implement.

For More Info

<http://www.microsoft.com/office/preview/default.asp>

Spam Attacks

I've warned to be on the lookout to protect your company's reputation, as well as users, from a new wave of spam aimed at stealing personal and financial information.

The latest trend in spam and identity theft is called **brand spoofing**. The spam has no traceable return address and appears to be sent from a large



company seeking information from password, user names and credit card information.

It's both spam and identity theft. They use the name of a large company and the idea is that with a large spam attack, at least some of the people receiving the spam will have done business with that bank or retailer or company. It gives it an air of legitimacy that is fooling people.

The spam recipient is usually asked to click on a link to a page that has been doctored up to look like an official company page, or they're asked to send a reply email with the requested information.

Riding a Dead Horse

The tribal wisdom of the Dakota Indians, passed on from generation to generation, says that when you discover that you are riding a dead

horse, the best strategy is to dismount.

In modern corporate America and government, however, a whole range of far more advanced strategies are often employed, such as:

1. Buying a stronger whip
2. Changing riders
3. Threatening the horse with termination
4. Appointing a committee to study the horse
5. Arranging to visit other countries to see how others ride dead horses
6. Lowering the standards so that dead horses can be included
7. Re-classifying the dead horse as "living impaired."
8. Hiring outside contractors to ride the dead horse

9. Harnessing several dead horses together to increase the speed

10. Providing additional funding and/or training to increase the dead horse's performance

11. Doing a productivity study to see if lighter riders would improve the dead horse's performance

12. Declaring that as the dead horse does not have to be fed, it is less costly, carries lower overhead, and therefore contributes substantially more to the bottom line of the economy than do some other horses

13. Re-writing the expected performance requirements for all horses

14. Promoting the dead horse to a supervisory position

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