

APPENDIX H
: USER'S MANUAL

IBM ThinkVision™ Monitor L190



L190

User's Guide

English

First Edition (December/2004)

Note: For important information, refer to the Monitor Safety and Warranty manual that comes with this monitor.

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Safety: Read first

Before installing this product, read the Safety Information.

Avant d'installer ce produit, lisez les consignes de sécurité.

Vor der Installation dieses Produkts die Sicherheitshinweise lesen.

Πριν εγκαταστήσετε το προϊόν αυτό, διαβάστε τις πληροφορίες ασφάλειας (safety information).

לפני שתתקינו מוצר זה, קראו את הוראות הבטיחות.

A termék telepítése előtt olvassa el a Biztonsági előírásokat!

Prima di installare questo prodotto, leggere le Informazioni sulla Sicurezza

Antes de instalar este produto, leia as Informações de Segurança.

Läs säkerhetsinformationen innan du installerar den här produkten.

Prije instalacije ovog produkta obavezno pročitajte Sigurnosne Upute.

Les sikkerhetsinformasjonen (Safety Information) før du installerer dette produktet.

Przed zainstalowaniem tego produktu, należy zapoznać się z książką "Informacje dotyczące bezpieczeństwa" (Safety Information).

Пред да се инсталира овој продукт, прочитајте информацијата за безбедност.

Před inštaláciou tohto zariadenia si prečítajte Bezpečnostné predpisy.

Pred namestitvijo tega proizvoda preberite Varnostne informacije.

Ennen kuin asennat tämän tuotteen, lue turvaohjeet kohdasta Safety Information.

Před instalací tohoto produktu si přečtěte příručku bezpečnostních instrukcí.

在安装本产品之前，请仔细阅读 Safety Information (安全信息)。

安裝本產品之前，請先閱讀「安全資訊」。

مج، يجب قراءة دات السلامة

Læs sikkerhedsforskrifterne, før du installerer dette produkt.

製品を設置する前に、安全情報をお読みください。

본 제품을 설치하기 전에 안전 정보를 읽으십시오.

Antes de instalar este producto lea la información de seguridad.

Antes de instalar este produto, leia as Informações de Segurança.

Перед установкой продукта прочтите инструкции по технике безопасности.

Lees voordat u dit product installeert eerst de veiligheidsvoorschriften.

Always observe the following precautions to reduce the risk of injury and property damage.

Do not attempt to service a product yourself unless instructed to do so by the IBM Support Center. Use only an IBM authorized service provider who is approved to repair your particular product.

Note: Some parts can be upgraded or replaced by the customer. These parts are referred to as Customer Replaceable Units, or CRUs. IBM expressly identifies CRUs as such, and provides documentation with instructions when it is appropriate for customers to replace those parts. You must closely follow all instructions when performing such replacements. Always make sure that the power is turned off and that the product is unplugged from any power source before you attempt the replacement. If you have any questions or concerns, contact the IBM Support Center.

Use only the power cords and power adapters supplied by the product manufacturer.

Never wrap a power cord around the power adapter or other object. Doing so can stress the cord in ways that can cause the cord to fray, crack or crimp. This can present a safety hazard.

Always route power cords so that they will not be walked on, tripped over, or pinched by objects.

Protect the cord and power adapters from liquids. For instance, do not leave your cord or power adapter near sinks, tubs, toilets, or on floors that are cleaned with liquid cleansers. Liquids can cause a short circuit, particularly if the cord or power adapter has been stressed by misuse. Liquids can also cause gradual corrosion of the power cord terminals and/or the connector terminals on the adapter which can eventually result in overheating.

Always connect power cords and signal cables in the correct order and ensure that all power cord connectors are securely and completely plugged into receptacles.

Do not use any power adapter that shows corrosion at the ac input pins and/or shows signs of overheating (such as deformed plastic) at the ac input or anywhere on the power adapter.

Do not use any power cords where the electrical contacts on either end show signs of corrosion or overheating or where the power cord appears to have been damaged in any way.

Ensure that extension cords, surge protectors, uninterruptible power supplies, and power strips that you use are rated to handle the electrical requirements of the product. Never overload these devices. If power strips are used, the load should not exceed the power strip input rating. Consult an electrician for more information if you have questions about power loads, power requirements, and input ratings.

If a receptacle (power outlet) that you intend to use with your computer equipment appears to be damaged or corroded, do not use the outlet until it is replaced by a qualified electrician.

Do not bend or modify the plug. If the plug is damaged, contact the manufacturer to obtain a replacement.

Some products are equipped with a three-pronged plug. This plug fits only into a grounded electrical outlet. This is a safety feature. Do not defeat this safety feature by trying to insert it into a non-grounded outlet. If you cannot insert the plug into the outlet, contact an electrician for an approved outlet adapter or to replace the outlet with one that enables this safety feature. Never overload an electrical outlet. The overall system load should not exceed 80 percent of the branch circuit rating. Consult an electrician for more information if you have questions about power loads and branch circuit ratings.

Be sure that the power outlet you are using is properly wired, easily accessible, and located close to the equipment. Do not fully extend power cords in a way that will stress the cords.

Connect and disconnect the equipment from the electrical outlet carefully.

All IBM personal computers contain a non-rechargeable coin cell battery to provide power to the system clock. In addition many mobile products such as ThinkPad notebook PCs utilize a rechargeable battery pack to provide system power when in portable mode. Batteries supplied by IBM for use with your product have been tested for compatibility and should only be replaced with IBM approved parts.

Never attempt to open or service any battery. Do not crush, puncture, or incinerate batteries or short circuit the metal contacts. Do not expose the battery to water or other liquids. Only recharge the battery pack strictly according to instructions included in the product documentation.

Battery abuse or mishandling can cause the battery to overheat, which can cause gasses or flame to "vent" from the battery pack or coin cell. If your battery is damaged, or if you notice any discharge from your battery or the buildup of foreign materials on the battery leads, stop using the battery and obtain a replacement from the battery manufacturer.

Batteries can degrade when they are left unused for long periods of time. For some rechargeable batteries (particularly Lithium Ion batteries), leaving a battery unused in a discharged state could increase the risk of a battery short circuit, which could shorten the life of the battery and can also pose a safety hazard. Do not let rechargeable Lithium-Ion batteries completely discharge or store these batteries in a discharged state.

Computers generate heat when turned on and when batteries are charging. Notebook PCs can generate a significant amount of heat due to their compact size. Always follow these basic precautions:

- Do not leave the base of your computer in contact with your lap or any part of your body for an extended period when the computer is functioning or when the battery is charging. Your computer produces some heat during normal operation. Extended contact with the body could cause discomfort or, potentially, a skin burn.
- Do not operate your computer or charge the battery near flammable materials or in explosive environments.
- Ventilation slots, fans and/or heat sinks are provided with the product for safety, comfort, and reliable operation. These features might inadvertently become blocked by placing the product on a bed, sofa, carpet, or other flexible surface. Never block, cover or disable these features.

CD and DVD drives spin discs at a high speed. If a CD or DVD is cracked or otherwise physically damaged, it is possible for the disc to break apart or even shatter when the CD drive is in use. To protect against possible injury due to this situation, and to reduce the risk of damage to your machine, do the following:

- Always store discs in their original packaging
- Always store discs out of direct sunlight and away from direct heat sources
- Remove discs from the computer when not in use
- Do not bend or flex discs, or force them into the computer or their packaging
- Check discs for cracks before each use. Do not use cracked or damaged discs

Setting up the monitor

Product description

The IBM ThinkVision Monitor, [L190](#), is a TFT LCD Color Monitor. It requires a computer with a suitable on-board sub-system or Video Adapter card that can support SXGA 1280 x 1024, XGA 1024 x 768, SVGA 800 x 600, or VGA 640 x 480 at 60Hz.

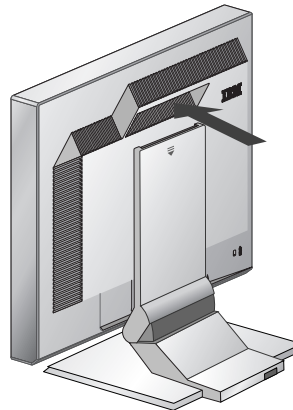
In addition to your monitor, your option package includes the following:

- *User's Guide and Installation Files CD*
- Monitor Safety and Warranty Information Manual
- IBM ThinkVision Monitor [L190](#) Setup Guide
- Power Cord
- [L190](#) ThinkVision Monitor
- Analog Interface Cable - Attached to Monitor

Handling instructions

Do not support the monitor within the screen area. The Liquid Crystal Display is glass and can be damaged by rough handling or excessive pressure.

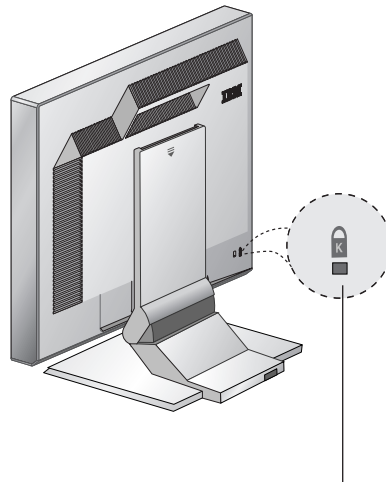
1. Lift the monitor by placing your hands where indicated by the arrow in the figure below.



2. Before using your monitor for the first time, remove the clear protective film from the front of the screen.

Kensington security slot

This slot can be used to connect to a locking cable. Locking cables can be purchased separately at most computer stores.



Kensington security slot

Workplace preparation

i This section gives advice on what you should consider before you set up your monitor.

Height

Position the monitor so that the top of the screen is slightly below your eye level when you sit at your workstation.

Orientation

1. Choose a position that gives the least reflection from lights and windows, usually at a right angle to any windows.
2. Position the monitor directly in front of you so that you do not have to twist your body to use it.
3. Tilt the monitor to a comfortable viewing angle.

Adjusting the monitor position

i With the IBM Flat Panel Monitor, you can adjust its position in various ways for maximum comfort.

Viewing angle

You can tilt the screen forward and backward as shown below in Figure A.

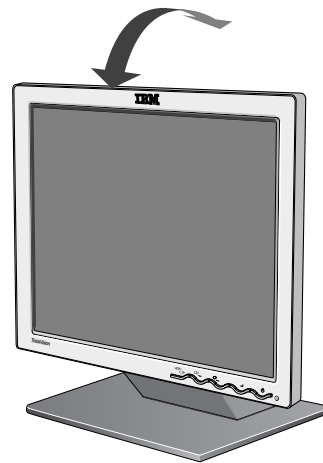


Figure A

Working practices

i This section gives advice on how you can work comfortably and reduce fatigue.

Rest

Take regular breaks. Vary your posture, stand up and stretch occasionally as prolonged use of computer workstations can be tiring.

Back

Sit back in your chair and use the backrest.

Hands

Adjust the seat height so that your forearms are approximately horizontal and your wrists are straight when using the keyboard. Your upper arms should be relaxed with your elbows near your body.

Use a light touch on the keyboard, keeping your hands and fingers relaxed. Allow a space in front of the keyboard to rest your wrists when not typing. Consider using a wristpad.

Eyesight

Working with monitors, in common with any prolonged close work, can be visually demanding. Look away from the screen periodically and have your eyesight checked regularly.

Screen settings

Set the screen brightness and contrast to a comfortable level. You may have to adjust these settings as the lighting changes during the day. Many application programs let you select color combinations which can help you to view in comfort. See the User controls section on page 18 for more information.

Caring for your monitor

Be sure to disconnect the power cord from your monitor before you perform any maintenance on the monitor. Clean your monitor as follows:

- Gently wipe the covers and the screen with a soft cloth, do not use solvents or abrasives.
- Never drop water or other liquid into your monitor.
- Remove finger marks and grease with a damp cloth and mild detergent.
- Never use flammable cleaning materials to clean your IBM monitor or any other electrical apparatus.
- Do not rub, touch, or tap the surface of the screen with sharp or abrasives items such as a ballpoint pen or screwdriver. This type of contact may result in a scratched picture tube.
- Do not use any type of cleaner containing an anti-static solution or similar additive as this may scratch the screen's coating.
- Never apply detergent or other liquid directly to the screen. Dampen the cloth and then wipe.

Connecting your monitor

Be sure to read the Safety Information located in the Monitor Safety and Warranty Information Manual before carrying out this procedure.

1. Turn off your computer and all attached devices. Next, unplug all power cords to your computer and all attached devices.
2. Connect the signal cable.
 - The analog signal cable is already connected to your monitor (See ❶ in Figure A).
 - When connecting the analog signal cable, connect the free end of the attached signal cable to the 15-pin monitor port on the computer and tighten the screws. ❷

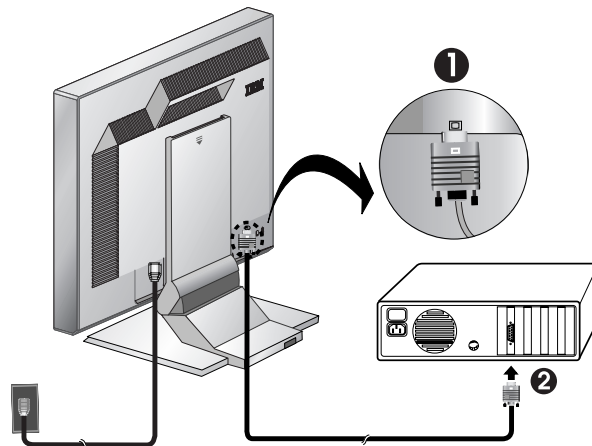


Figure A

3. Connect the power cord to the monitor and then plug the power cord into a properly grounded outlet. Next, reconnect the power cords to your computer and all attached devices.

Turning on your monitor

1. Turn on your computer.
2. Turn on your monitor by pushing and releasing the power switch marked "⏻" at the front of the bezel.
 - To turn off your monitor, push and release the power switch again.
3. To update or install device drivers, follow the instructions in the Device driver installation section on page 11.
4. If you are using the analog connector, run Image setup by following the instructions in the Automatic Image setup section on page 14.

Device driver installation

Installing the device driver in Windows 95 or Windows 98

This section must be completed before continuing with the Windows 95 or Windows 98 Image setup on page 14.

i *On LCD monitors, unlike CRTs, a faster refresh rate does not improve display quality. For optimal performance, use either 1280 x 1024 at a refresh rate of 60Hz or 640 x 480 at a refresh rate of 60Hz.*

To install the device driver in Microsoft® Windows® 95 or Windows 98, do the following:

Note:

You must download files from the *User's Guide and Installation Files CD* to use the Plug and Play feature in Windows 95 or Windows 98.

1. Turn off the computer and all attached devices.
2. Ensure that the monitor is connected correctly.
3. Turn on the monitor and then the system unit. Allow your computer to start the Windows 95 or Windows 98 operating system.
Your computer's Plug and Play code might warn you that your system hardware has changed. This means that it has detected your new monitor for the first time.
4. Open the Display Properties window by clicking **Start -> Settings -> Control Panel** and then double-clicking on the **Display** icon.
5. Click the **Settings** tab.
6. If you are using Windows 95, complete the following steps:
 - a. Click the **Change Display Type** button.
 - b. Click the **Change Monitor Type** button.
 - c. Proceed to Step 7.
- If you are using Windows 98, complete the following steps:
 - a. Click the **Advanced** button.
 - b. Click the **Monitor** tab.
 - c. Open the Update Device Driver Wizard window by clicking on the **Change** button and then select the **Next** button.
 - d. Select **Display a list of the known drivers for this device so that I can choose a specific driver** and then select the **Next** button.
 - e. Proceed to Step 7.
7. Insert the *User's Guide and Installation Files CD* into the CD drive and click the **Have Disk** button.
8. Click **OK**.
9. Ensure that the CD drive letter is selected, and then select the **DRIVERS** folder.
10. Select **IBM L190** monitor and click **OK**. The files will be copied from the CD to your hard disk drive.
11. Close all open windows and remove the CD.
12. Restart the computer.

The system will automatically select the maximum refresh rate and corresponding Color Matching Profiles.

Installing the device driver in Windows 2000 or Windows Me

This section must be completed before continuing with the Windows 2000, Windows Me Image setup on page 14.

i *On LCD monitors, unlike CRTs, a faster refresh rate does not improve display quality. For optimal performance, use either 1280 x 1024 at a refresh rate of 60Hz or 640 x 480 at a refresh rate of 60Hz.*

To install the device driver in Microsoft Windows 2000 Professional or Microsoft Windows Millennium Edition (Me), do the following:

Note:

You must download files from the *User's Guide and Installation Files CD* to use the Plug and Play feature in Windows 2000 or Windows Me.

1. Turn off the computer and all attached devices.
2. Ensure that the monitor is connected correctly.
3. Turn on the monitor and then the system unit. Allow your computer to start the Windows 2000 or Windows Me operating system.
4. Open the Display Properties window by clicking **Start** -> **Settings** -> **Control Panel** and then double-clicking on the **Display** icon.
5. Click the **Settings** tab.
6. Click the **Advanced** button.
7. Click the **Monitor** tab.
8. Click the **Properties** button.
9. Click the **Driver** tab.
10. Open the Upgrade Device Driver Wizard window by clicking on **Update Driver** and then click the **Next** button.
11. Select **Display a list of the known drivers for this device so that I can choose a specific driver** and then click the **Next** button.
12. Insert the *User's Guide and Installation Files CD* into the CD drive and click the **Have Disk** button.
13. Click **OK**.
14. Ensure that the CD drive letter is selected, and then select the **DRIVERS** folder.
15. Select IBM **L190** monitor and click **OK**. The files will be copied from the CD to your hard disk drive.
16. Close all open windows and remove the CD.
17. Restart the computer.

The system will automatically select the maximum refresh rate and corresponding Color Matching Profiles.

Installing the device driver in Windows XP

This section must be completed before continuing with the Windows XP Image setup on page 14.

i *On LCD monitors, unlike CRTs, a faster refresh rate does not improve display quality. For optimal performance, use either 1280 x 1024 at a refresh rate of 60Hz or 640 x 480 at a refresh rate of 60Hz.*

To install the device driver in Windows XP, do the following:

Note:

You must download files from the *User's Guide and Installation Files CD* to use the Plug and Play feature in Windows XP.

1. Turn off the computer and all attached devices.
2. Ensure that the monitor is connected correctly.
3. Turn on the monitor and then the system unit. Allow your computer to start the Windows XP operating system.
4. Open the Display Properties window by clicking **Start -> Settings -> Control Panel** and then double-clicking on the **Display** icon.
5. Click the **Settings** tab.
6. Click the **Advanced** button.
7. Click the **Monitor** tab.
8. Click the **Properties** button.
9. Click the **Driver** tab.
10. Open the Hardware Update Wizard window by clicking on **Update Driver** and then click the **Next** button.
11. Select **Install from a list or Specific location(Advanced)** and then click the **Next** button.
12. Insert the *User's Guide and Installation Files CD* into the CD drive and click the **Have Disk** button.
13. Click **OK**.
14. Ensure that the CD drive letter is selected, and then select the **DRIVERS** folder.
15. Select **IBM L190** monitor and click **OK**. The files will be copied from the CD to your hard disk drive.
16. Close all open windows and remove the CD.
17. Restart the computer.

The system will automatically select the maximum refresh rate and corresponding Color Matching Profiles.

Automatic Image setup

Image setup

Before carrying out this section, it is very important that the correct monitor drivers have been installed. (See pages 11 and 13.)

i The Setup Utility included on the setup CD displays a test pattern of dots. It does not replace or modify the display drivers.

i The Image setup instructions require the monitor to be warmed up for 15 minutes. This is not required for normal operation.

i If your computer does not run with the setup CD shipped with the monitor, refer to Manual Image setup on page 17.

i The Image setup process only applies to the current screen mode. When a new mode is selected, repeat this section to reset the monitor.

When you first use your monitor, you must perform Auto Setup for analog input. This procedure sets up your monitor to process the video signals from your computer without image discoloration or smearing. After you perform Auto Setup, the settings are stored and used each time you turn on the monitor.

In order to optimize the displayed image a set-up utility is provided on the IBM *User's Guide and Installation Files CD*. Operation of this utility is dependent on the operating system on your computer. You may choose to run Image setup for each operating system that you use. This means that if you sometimes use your monitor while running any version of Windows and sometimes also use it from within DOS (not a DOS window), you must run Image setup for both Windows and DOS. You may run versions of Image setup in any order.

Before you begin Image setup for your computer, make sure the computer video mode is set in the range of the supported screen resolution shown in the table on page 22.

You should perform Image setup for each screen mode you use.

Image setup for DOS

***i** If the monitor is in standby mode, it may automatically turn off while you are waiting for it to warm up. If this happens, turn off the monitor and turn it on again after a few seconds.*

***i** If you are using PC-DOS/V, change to U.S. mode by typing CHEV US and pressing enter at the command prompt.*

***i** The size and diversity of the dot pattern varies with the screen resolution.*

***i** If the screen flickers, repeat the setup several times until the flicker is minimized, or adjust it manually by following the instructions in Manual Image setup on page 17.*

To set up the monitor automatically in DOS, do the following.

1. Turn on the monitor first; then turn on the computer.
If the message "Check Signal Cable" is displayed, or if nothing is displayed, check:
 - That the video interface cable is not connected properly.
 - The correct video adapter card is not installed.
 - The correct supported display mode is selected for your computer.
2. Wait approximately 15 minutes for the monitor to warm up.
3. Insert the *User's Guide and Installation Files CD* into the computer's CD-ROM drive.
4. Display the command prompt screen of the DOS full-screen display.
5. Type d:\TESTPAD where d is the letter of the CD-ROM drive.
6. Press enter.
7. Select the number for the color or text mode you want to set up.
8. Select the number for the video mode you want to set up. You can repeat this process for as many color and video modes as you need.
9. When the dot pattern appears, press the "↵" button at the bottom of the monitor. This activates the Auto setup procedure, which will optimize the display settings with the provided dot-patterns. The screen will momentarily turn black while auto adjustment proceeds. When finished, the Image setup message disappears and the screen returns to a normal display.
10. To clear the Image setup test pattern, press the Esc key on your keyboard.
11. Type **Exit** at the command prompt to return to Windows.

If you use other operating systems, perform the appropriate Auto setup for those systems using instructions given in Image setup Windows 95, Windows 98, Windows NT, Windows 2000, Windows Me, or Windows XP on page 16.

Image setup for Windows 95, Windows 98, Windows NT, Windows 2000, Windows Me, or Windows XP

i If the monitor is in standby mode, it may automatically turn off while you are waiting for it to warm up.

To set up the monitor automatically in Windows 95, Windows 98, Windows NT, Windows 2000, Windows Me, or Windows XP, do the following:

1. Turn on the monitor first; then turn on the computer.
If the message "Check Signal Cable" is displayed, or if nothing is displayed, check:
 - That the video interface cable is not connected properly.
 - The correct video adapter card is not installed.
 - The correct supported display mode is selected for your computer.
2. Wait approximately 15 minutes for the monitor to warm up.
3. If the icon bar and tool bar are displayed, drag them to the bottom of the screen.
4. Insert the *User's Guide and Installation Files CD* into the computer's CD-ROM drive.
5. Check the operating system installed on your computer and follow the instructions from the table below.

i The size and diversity of the dot pattern varies with the screen resolution.

Operating system installation steps

Operating System	Step 1	Step 2	Step 3
Windows 95	Open program manager	Select RUN	Type e:\TESTPAT where e is the letter of your CD-ROM drive, then press Enter.
Windows 98, Windows 2000, Windows NT, Windows Me or Windows XP	Select RUN		

6. When the dot pattern appears, press the "[F10]" button at the bottom of the monitor. This activates the Image setup procedure, which will optimize the display settings with the provided dot-patterns.
 - The screen will momentarily turn black while auto adjustment proceeds. When finished, the Image setup message disappears and the screen returns to a normal display.
7. To clear the Image setup test pattern, press the Esc key on your keyboard.












You have completed the monitor setup for Windows. If you are using the DOS operating system, go to "Image setup for DOS" on page 15.

Manual Image setup

i If the monitor is in standby mode, it might automatically turn off while you are waiting for it to warm up.

Normally, you can complete the setup procedure using Automatic Image setup; however, if your screen image is still distorted after you perform Image setup or the setup CD does not run on your system, perform Manual Image setup.

To manually adjust the image setting, do the following:

1. Turn on the monitor and wait approximately 15 minutes for it to warm up.
2. Display the image you most frequently use on the screen.
3. Press the OSD Enter button " " at the bottom of the monitor to display the initial OSD menu.
4. Use the Right Arrow button " " to select the Image setup icon " " and press the OSD Enter button " " to access the function.
5. Use the Right Arrow button " " , to select manual. Press the OK button " " twice to select clock.
6. Use the Arrow buttons to manually adjust to correct for jitter or noise in the image. Press the OK button " " .
7. Press OK " " and use the Arrow buttons to adjust phase, then press OK " " .
Press OK " " again to save and exit. Then press Exit button " " twice to exit OSD.

You have completed the monitor setup.

Adjusting your LCD monitor

User controls

***i** The image is already optimized for many display modes, however the user controls can be used to adjust the image to your liking.*

***i** The settings are saved after adjustment and when exiting the OSD and will be effective thereafter.*



USER CONTROL FEATURES

Icon	Monitor controls
	Switches the monitors on and off.
	Displays main OSD menu and selects highlighted menu item.
	Moves the cursor to highlight icons or make adjustments.
	Exits from current OSD menu.

Icon	Direct access functions
	Displays the Brightness adjustment.
	Executes automatic image setup.
	<p>CONTROLS LOCK / UNLOCK</p> <p>This feature allows you to secure the current control settings, while allowing the user to adjust Brightness, so that they cannot be inadvertently changed. Push and hold the enter button [↵] for 10 seconds; the message "Menu is Locked" appears.</p> <p>You can unlock the OSD controls at any time by pushing the enter button [↵] for 10 seconds; the message "Menu is Unlocked" will appear.</p>

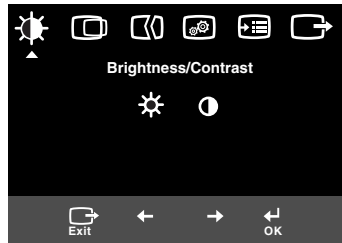
On-screen display (OSD) controls

***i** The LCD monitor needs time to become thermally stable the first time you turn it on each day. Thus, to achieve more accurate adjustments for parameters, allow the LCD monitor to warm up for at least 15 minutes before making any screen adjustment.*

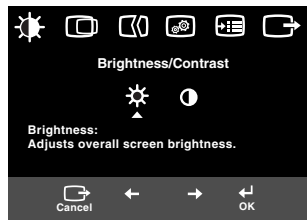
The settings adjustable with the user controls are viewed through the On - Screen Display (OSD). Press the enter button "↵" to display the main OSD menu.

Initial appearance of OSD

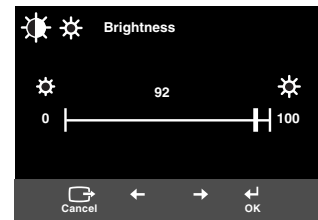
Main menu



Sub menu















Adjustment screen



OSD functions

OSD Icon		Description	Sub menus	Control and adjustments
 Brightness / Contrast	 Brightness	Adjusts brightness		
	 Contrast	Adjusts contrast		
 Image Position	 Horizontal Position	Moves the screen left and right.		
	 Vertical Position	Moves the screen up and down.		

OSD Icon		Description	Sub menus	Control and adjustments
 Image Setup	 Automatic	The Image setup function is used to adjust the level of noise in the video signal, which causes horizontal lines or areas on the screen where the image appears to be unstable and jitter or shimmer. This can be adjusted automatically or manually.		If Auto is selected, the image will automatically adjust.
	 Manual	If manual is selected, the user will go to the manual adjustment screen.	<ul style="list-style-type: none"> • Clock • Phase • Save 	This selection enables you to adjust the focus of the display, remove any horizontal noise, and sharpen the image of the characters.
 Image Properties	 Color	Select the Color mode you find most comfortable or fine tune the colors using the Custom menu, if necessary.	Preset <ul style="list-style-type: none"> • 6500K (Pink White) • 7200K (Normal White) • 9300K (Blue White) 	
			Custom <ul style="list-style-type: none"> • R • G • B • Save 	<p>Increases or decreases redness</p> <p>Increases or decreases greenness</p> <p>Increases or decreases blueness</p>

OSD Icon		Description	Sub menus	Controls and adjustments
 Options	 Information	Displays the detailed information of mode, model name, serial number and microcode.		
	 Language	The language chosen affects only the language of the OSD. Select one of the five languages to use for the OSD. Your selection does not affect any software running on the computer.	<ul style="list-style-type: none"> • English • Français • Italiano • Deutsch • Español • 日本語 	
	 Menu Position	Changes the position of the OSD on the screen.	Default	Moves the OSD to the center of the screen.
			Custom <ul style="list-style-type: none"> • H • V • Save 	
	 Reset	Reset should return all available functions to their factory presets. Note: The language will not change unless it is adjusted through the Language menu.	<ul style="list-style-type: none"> • Cancel • Reset 	
	 Accessibility	Change button repeat rate and menu time-out setting.	Button repeat rate <ul style="list-style-type: none"> • Off • Default • Slow 	Adjusts speed of button.
Menu time out			Adjusts the length of time for which the menu will stay on the screen before it disappears.	
 Exit		Exits from current OSD menu.		

Further information

Display modes

***i** If your computer has previously been used with a CRT monitor and is currently configured to a display mode outside the range that the Flat Panel monitor can display, you may need to re-attach the CRT monitor temporarily until you have reconfigured the computer, preferably to 1280 x 1024 at 60Hz.*

The display mode the monitor uses is controlled by the computer. Therefore, you should refer to your computer documentation for details on how to change display modes.

The image size, position and shape may change when the display mode changes. This is normal and the image can be readjusted using Image setup and the monitor controls.

Unlike CRT monitors, which require a high refresh rate to minimize flicker, TFT technology is inherently flicker-free. If possible, configure your computer for 1280 x 1024 addressability at 60Hz vertical refresh rate.

For the display modes listed below, the screen image has been optimized during manufacture.

Factory set display modes

Addressability	Refresh rate	Horizontal frequency
640 x 350	70.8 Hz	31.5 kHz
640 x 480	59.9 Hz	31.5 kHz
640 x 480	66.6 Hz	35.0 kHz
640 x 480	72.8 Hz	37.8 kHz
640 x 480	75.0 Hz	37.5 kHz
720 x 400	70.1 Hz	31.5 kHz
800 x 600	60.3 Hz	37.8 kHz
800 x 600	72.1 Hz	48.0 kHz
800 x 600	75.0 Hz	46.8 kHz
832 x 624	74.5 Hz	49.7 kHz
1024 x 768	60.0 Hz	48.3 kHz
1024 x 768	70.0 Hz	56.4 kHz
1024 x 768	75.0 Hz	60.1 kHz
1152 x 870	75.0 Hz	68.6 kHz
1152 x 900	65.9 Hz	61.8 kHz
1280 x 1024 †	60.0 Hz	63.9 kHz
1280 x 1024	70.0 Hz	74.4 kHz
1280 x 1024	72.0 Hz	78.1 kHz
1280 x 1024	75.0 Hz	79.9 kHz
1280 x 1024	76.0 Hz	81.1 kHz

Note: VESA timings are as detailed in the VESA "Display Monitor Timing Specification". Version 1.0, Revision 0.8, Dated 09/17/98.

† Recommended

Power management

To benefit from power management, the monitor must be used in conjunction with a computer that implements the Video Electronics Standards Association (VESA) Display Power Management Signaling (DPMS) Standard.

The power management feature is invoked when the computer recognizes that you have not used your mouse or keyboard for a user-definable period. There are several states as described in the table below.

As an Energy Star 2000® Partner, IBM has determined that this product meets the Energy Star 2000 guidelines for energy efficiency.

For optimal performance switch off your monitor at the end of each working day, or whenever you expect to leave it unused for long periods during the day.

State	Power Indicator	Screen	Restoring Operation	Compliance
On	Steady green	Normal		
Active off	Steady amber	Blank	Press a key or move the mouse.*	ENERGY STAR 2000

* There may be a slight delay before the picture reappears.

Product disposal

The fluorescent lamps in the liquid crystal display contain a small amount of mercury. Dispose of it as required by local ordinances and regulations.

Troubleshooting

If you have a problem setting up or using your monitor, you may be able to solve it yourself. Before calling your retailer or IBM Support Center, try the suggested actions that are appropriate to your problem.

Problem	Possible cause	Suggested action	Reference
Screen is blank and power indicator is off.	No power to monitor.	<ul style="list-style-type: none"> • Ensure that the electrical outlet and the monitor are both switched on. • Check that the power cord is firmly plugged into the electrical outlet and the power supply unit. • If the power cord plug has a removable fuse, replace it. • Try another power cord. • Try another electrical outlet. • Check the power connection at the back of the panel. 	"Connecting your monitor" section on page 9.
Screen is blank and power indicator is steady green.	Brightness and Contrast may be too low.	<ul style="list-style-type: none"> • Adjust brightness and contrast. 	"User controls" section on page 18.
Screen is blank and power indicator is steady amber.	The monitor is in the Power Management Standby state.	<ul style="list-style-type: none"> • Press any key on the keyboard or move the mouse to restore operation. • Check the Power Management software on your computer. • Press the " " button to switch between analog and digital mode. If the panel is the wrong mode for the signal being provided, the monitor appears to go into sleep mode. 	"Power management" section on page 23.

Problem	Possible cause	Suggested action	Reference
Screen is blank and power indicator is flashing green every 0.5 second	Display mode of the computer is outside the range of the monitor	<ul style="list-style-type: none"> Reconfigure key on the computer to use a supported display mode. 	"Further information" section on page 22.
Check Signal Cable message is shown and power indicator is steady amber.	The monitor is not receiving a video signal	<ul style="list-style-type: none"> Check that the signal cable is firmly connected to the computer. Check that no pins are bent in the signal cable connector. 	"Connecting your monitor" section on page 9.
Image appears to be smeared	There are noises in the video signal	<ul style="list-style-type: none"> Select Image setup menu in the OSD. Then select Manual to adjust Clock / Phase settings. 	"User controls" section on page 20.
Image appears to be discolored	The color setting may be incorrect.	<ul style="list-style-type: none"> Adjust the Color settings. 	"User controls" section on page 20.
A few dots are missing, discolored, or inappropriately lighted.	A small number of missing, discolored, or lighted dots may be present on the screen, which is an intrinsic characteristic of the TFT LCD technology and is not an LCD defect.		

***i** For image problems, you may want to run Image setup again before referring to this section. In most cases, Image setup can fix the problems. See Automatic Image setup for the computer on page 14 for details.*

Help and service information

If you are unable to correct the problem yourself, you may seek further help as follows:

Call the IBM Service and Support.

In the U.S.A and Puerto Rico call 1-800-426-7378

In Canada (Toronto only) call 416-383-3344

In Canada (all other) call 1-800-565-3344

***i** If possible, stay by your computer. Your Technical Support Representative may wish to go through the problem with you during the call.*

***i** More help, late-breaking news and details of the latest accessories for these products may be found on the worldwide web at:*

<http://www.pc.ibm.com/us/accessories>

In other countries contact your dealer, retailer, or other IBM authorized service representative.

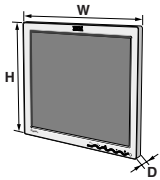
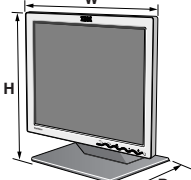
Before calling, please have available as much of the following information as possible:

1. Model and serial number from the label on your monitor.
2. Purchase receipt.
3. Description of problem.
4. Computer type and model.
5. System configuration (hardware fitted, etc.).
6. System BIOS version number.
7. Operating System and version number.
8. Display driver version number.
9. Video Adapter Type.

Specifications

***i** Power consumption figures are for the monitor and the power supply combined.*

This color monitor (Type-model 9329-Ax9) uses a 19.0-inch TFT LCD.

	Without Stand	With Stand
	 <p>Height: 346.0 mm (13.12 in.) Width: 408.0 mm (16.06 in.) Depth: 59.6 mm (2.35 in.)</p>	 <p>Height: 413.0 mm (16.26 in.) Width: 408.0 mm (16.06 in.) Depth: 222.0 mm (8.74 in.)</p>
Weight	Without Stand: With Stand:	4.2 kg (9.259 lbs) 6.1 kg (13.45 lbs)
Image	Viewable Image Size: Maximum Height: Maximum Width: Pixel Pitch:	19.0 inch (481.84 mm) 376.32 mm 301.056 mm 0.294 mm (H) x 0.294 mm (V)
Power Input	Supply Voltage: Rated Current:	100 - 240 Vac 60/50 ± 3Hz 1A
Power Consumption	On Mode: Sleep Mode: Off Mode:	< 40 W < 2 W < 1 W
Video Input	Input Signal:	Analog-75 ohm 0.7V
	Horizontal Addressability: Vertical Addressability: Clock Frequency:	1280 pixels (max) 1024 lines (max) 135 MHz
Sync Input	Type	Analog - Separate
Communications	VESA DDC:	DDC 1/2B
Supported Display Modes	Standard modes :	IBM, VESA, MAC
	Horizontal Frequency:	30-83 kHz
	Vertical Frequency:	55-76 Hz
Environment	Temperature:	
	Operating:	10 to 35° C
	Storage:	- 20 to 60° C
	Shipping:	- 20 to 60° C
	Humidity:	
	Operating:	10 to 80%
Storage:	5 to 95%	
Shipping:	5 to 95%	

Service information

The following parts are for use by IBM service, or IBM authorized dealers, to support the customer warranty. Parts are for service use only.

Model Type **9329-AB9**

P/N	Description	Video	Color	MTM	Geography
73P4590	FRU Monitor	Analog	Business Black	9329-AB9	WW
73P4592	FRU Stand	Analog	Business Black	9329-AB9	WW
22P9262	FRU Video Cable	Analog	Business Black	9329-AB9	WW

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This section contains information on notices and trademarks.

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*IBM Director of Licensing
IBM Corporation
North Castle Drive
Armonk, NY 10504-1785
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Compliances

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an IBM authorized dealer or service representative for help.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Proper cables and connectors are available from IBM authorized dealers. IBM is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

<p>Declaration of Conformity Trade name Trade name: IBM Corporation Model Nos.: 9329-xx9 Responsible Party: LG Electronics USA Inc. Address: 6133 North River Road Suite 1100 (Riverview Plaza) Rosemont, Illinois, 60018 Telephone No.: 847-692-4630 ext 329 This Device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.</p>
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Power Cords

For your safety, IBM provides a power cord with a grounded attachment plug to use with this IBM product. To avoid electrical shock, always use the power cord and plug with a properly grounded power outlet.

IBM power cords used in the United States and Canada are listed by the Underwriter's Laboratories (UL) and certified by the Canadian Standards Association (CSA).

For units intended to be operated at 115 volts: Use a UL-listed and CSA-certified cord set consisting of a minimum 18 AWG, Type SVT or SJT, three-conductor cord, a maximum of 15 feet in length and a parallel blade, grounding-type attachment plug rated 15 amperes, 125 volts.

For units intended to be operated at 230 volts (U.S. use): Use a UL-listed and CSA-certified cord set consisting of a minimum 18 AWG, type SVT or SJT, three-conductor cord, a maximum of 15 feet in length and a tandem blade, grounding-type attachment plug rated 15 amperes, 250 volts.

For units intended to be operated at 230 volts (outside the U.S.): Use a cord set with a grounding-type attachment plug. The cord set should have the appropriate safety approvals for the country in which the equipment will be installed.

IBM power cords for a specific country or region are usually available only in that country or region.

IBM power cord part number	Used in these countries or regions
74P4360	Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, Bermuda, Bolivia, Calicos Island, Canada, Cayman Islands, Costa Rica, Columbia, Cuba, Dominican Republic, Ecuador, El Salvador, Guam, Guatemala, Haiti, Honduras, Jamaica, Mexico, Micronesia (Federal States of), Netherlands Antilles, Nicaragua, Panama, Peru, Philippines, Saudi Arabia, Thailand, Taiwan, United States, Venezuela
74P4362	Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, Bermuda, Bolivia, Brazil, Caicos Islands, Canada, Cayman Islands, Costa Rica, Columbia, Cuba, Dominican Republic, Ecuador, El Salvador, Guam, Guatemala, Haiti, Honduras, Jamaica, Japan, Mexico, Micronesia (Federal States of), Netherlands Antilles, Nicaragua, Panama, Peru, Philippines, Taiwan, United States, Venezuela
74P4366	Denmark
74P4368	Liechtenstein, Switzerland
74P4370	Israel
74P4372	Chile, Italy, Libyan Arab Jamahiriya
74P4374	Bangladesh, Lesotho, Maceo, Maldives, Namibia, Nepal, Pakistan, Samoa, South Africa, Sri Lanka, Swaziland, Uganda
74P4376	Abu Dhabi, Bahrain, Botswana, Brunei Darussalam, Channel Islands, Cyprus, Dominica, Gambia, Ghana, Grenada, Guyana, China (Hong Kong S.A.R), Iraq, Ireland, Jordan, Kenya, Kuwait, Liberia, Malawi, Malaysia, Malta, Myanmar (Burma), Nigeria, Oman, Qatar, Saint Kitts & Nevis, Saint Lucia, Saint Vincent and the Grenadines, Seychelles, Sierra Leone, Singapore, Sudan, Tanzania (United Republic of), Trinidad & Tobago, United Arab Emirates (Dubai), United Kingdom, Yemen, Zambia, Zimbabwe
74P4378	Australia, Fiji, Kiribati, Nauru, New Zealand, Papua New Guinea
74P4380	Korea (Democratic Peoples Republic of), Korea (Republic of)
74P4382	Japan
74P4384	India
74P4386	China (PRC)
74P4388	Brazil
74P4390	Argentina, Paraguay, Uruguay
74P4364	Afghanistan, Albania, Algeria, Andorra, Angola, Armenia, Austria, Azerbaijan, Belarus, Belgium, Benin, Bosnia and Herzegovina, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo (Democratic Republic of), Congo (Republic of), Cote D'Ivoire (Ivory Coast), Croatia (Republic of), Czech Rep, Dahomey, Djibouti, Egypt, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Finland, France, French Guyana, French Polynesia, Gabon, Georgia, Germany, Greece, Guadeloupe, Guinea, Guinea Bissau, Hungary, Iceland, Indonesia, Iran, Kazakhstan, Kyrgyzstan, Laos (Peoples Democratic Republic of), Latvia, Lebanon, Lithuania, Luxembourg, Macedonia (former Yugoslav Republic of), Madagascar, Mali, Martinique, Mauritania, Mauritius, Mayotte, Moldova (Republic of), Monaco, Mongolia, Morocco, Mozambique, Netherlands, New Caledonia, Niger, Norway, Poland, Portugal, Reunion, Romania, Russian Federation Rwanda, Sao Tome and Principe,

IBM power cord part number	Used in these countries or regions
74P4364	Saudi Arabia, Senegal, Serbia, Slovakia, Slovenia (Republic of), Somalia, Spai, Syrian Arab Republic, Tajikistan, Tahiti, Togo, Tunisia, Turkey, Turkmenistan, Ukraine, Upper Volta, Uzbekistan, Vanuatu, Vietnam, Wallis and Futuna, Yugoslavia (Federal Republic of), Zaire

Industry Canada Class B emission compliance statement

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.

Avis de conformité à la réglementation d'Industrie Canada

Cet appareil numérique de classe B est conforme à la norme NMB-003 du Canada.

TCO Compliances Section



Models [9329-xx9](#) comply with TCO '99 guidelines.



Congratulations!

You have just purchased a TCO'99 approved and labeled product! Your choice has provided you with a product developed for professional use. Your purchase has also contributed to reducing the burden on the environment and also to the further development of environmentally adapted electronics products.

Why do we have environmentally labeled computers?

In many countries, environmental labeling has become an established method for encouraging the adaptation of goods and services to the environment. With the growing manufacture and usage of electronic equipment throughout the world, there is a recognized concern for the materials and substances used by electronic products with regards to their eventual recycling and disposal. By proper selection of these materials and substances, the impact on the environment can be minimized.

There are also other characteristics of a computer, such as energy consumption levels, that are important from the viewpoints of both the work (internal) and natural (external) environments. Electronic equipment in offices is often left running continuously, resulting in unnecessary consumption of large amounts of energy and additional power generation. From the standpoint of carbon emissions alone, it is vital to save energy.

What does labeling involve?

This product meets the requirements for the TCO'99 scheme which provides for international and environmental labeling of personal computers. The labeling scheme was developed as a joint effort by the TCO (The Swedish Confederation of Professional Employees), Svenska Naturskyddsforeningen (The Swedish Society for Nature Conservation) and Statens Energimyndighet (The Swedish National Energy Administration). Approval requirements cover a wide range of issues: environment, ergonomics, emission of electric and magnetic fields, energy consumption and electrical safety

Environmental criteria impose restrictions on the presence and use of heavy metals, brominated and chlorinated flame retardants, CFCs (freons) and chlorinated solvents, and other materials. The product must be prepared for recycling and the manufacturer is obliged to have an environmental policy which must be adhered to in each country where the company implements its operational policy.

Energy requirements include a demand that the computer and/or display, after a certain period of inactivity, shall reduce its power consumption to a lower level in one or more stages. The length of time to reactivate the computer shall be reasonable for the user.

Labeled products must meet strict environmental demands, for example, in respect of the reduction of electric and magnetic fields as well as physical and visual ergonomics.

Below you will find a brief summary of the environmental requirements met by this product. The complete environmental criteria document may be ordered from:

TCO Development

SE-114 94 STOCKHOLM, Sweden

Fax: +46 8 782 92 07

E-mail (Internet): development@tco.se

Current information regarding TCO'99 approved and labeled products may also be obtained via the Internet, using the address: <http://www.tcodevelopment.com/>

Environmental requirements

Flame retardants

Flame retardants are present in printed circuit boards, cables, wires, casings and housings. Their purpose is to prevent, or at least to delay the spread of fire. Up to 30% of the plastic in a computer casing can consist of flame retardant substances. Most flame retardants contain bromine or chlorine, and those flame retardants are chemically related to PCBs. Both the flame retardants containing bromine or chlorine and the PCBs are suspected of giving rise to health effects, including reproductive damage in fish-eating birds and mammals, due to the bio-accumulative* processes when not disposed of in accordance with strict standards for disposal.

The relevant TCO'99 demand requires that plastic components weighing more than 25 grams must not contain flame retardants with organically bound bromine or chlorine. Flame retardants are allowed in the printed circuit boards since no substitutes are available.

Cadmium**

Cadmium is present in rechargeable batteries and in the colour-generating layers of certain computer displays.

The relevant TCO'99 requirement states that batteries, the colour-generating layers of display screens and the electrical or electronics components must not contain any cadmium.

*Bio-accumulative is defined as substances which accumulate within living organisms.

**Lead, Cadmium and Mercury are heavy metals which are bio-accumulative.

Mercury**

Mercury is sometimes found in batteries, relays and switches. The relevant TCO'99 requirement states that batteries may not contain any mercury. It also demands that mercury is not present in any of the electrical or electronics components associated with the labeled unit. There is however one exception. Mercury is, for the time being, permitted in the back light system of flat panel monitors as there today is no commercially available alternative. TCO aims on removing this exception when a mercury free alternative is available.

CFCs (freons)


The relevant TCO'99 requirement states that neither CFCs nor HCFCs may be used during the manufacture and assembly of the product or in its packaging. CFCs (freons) are sometimes used for washing printed circuit boards. CFCs break down ozone and thereby damage the ozone layer in the stratosphere, causing increased reception on earth of ultraviolet light. This restriction assures that further damage to the ozone layer from this type of equipment will be eliminated.

Lead**

Lead can be found in picture tubes, display screens, solders and capacitors. The relevant TCO'99 requirement permits the inclusion of lead since no replacement has yet been developed.

**Lead, Cadmium and Mercury are heavy metals which are bio-accumulative.

ENERGY STAR® Compliances Section

	As an ENERGY STAR® Partner, IBM Corporation has determined that this product meets the ENERGY STAR® guidelines for energy efficiency
---	--

Congratulations!

You have just purchased an ENERGY STAR® qualified product.

What is an ENERGY STAR® qualified product?

The ENERGY STAR® program is a voluntary partnership between the U.S. Environmental Protection Agency / Dept. of Energy and Partners to reduce pollution and save energy. An ENERGY STAR® qualified product meets or exceeds the energy criteria defined in an MOU (Memorandum of Understanding) for that product category. As an ENERGY STAR® Partner, IBM offers ENERGY STAR® qualified computers, monitors and printers that meet the growing performance and networking needs of customers while reducing energy use, saving you money and improving the environment.

IBM is a recognized leader in providing energy efficient office products. In 1998 and 1999, IBM received the ENERGY STAR® Computer Partner of the Year award in the office equipment category and in 2001, IBM received the first ENERGY STAR® Excellence in Corporate Commitment award. ENERGY STAR® products save you more -- look for the ENERGY STAR® label and program information on IBM products, product literature, Web sites, packaging and promotional material.

ENERGY STAR®

Current criteria and information regarding the ENERGY STAR® program can be found at <http://www.energystar.gov>
ENERGY STAR® and the ENERGY STAR® logo are registered US marks.

MPRII

This product complies with Swedish National Council for Metrology (MPR) standards issued in December 1999 (MPRII) for very low frequency (VLF) and Extremely low frequency (ELF) emissions.

Electronic emission notices

Hinweise

Gemäß der Amtsblätter des BMPT Nm. 61Ú1991 und 6Ú1992 wird der Betreiber darauf aufmerksam gemacht, daß die von ihm mit diesem Gerät zusammengestellte Anlage auch den technischen Bestimmungen dieser Amtsblätter genügen muß.

Aus ergonomischen Gründen wird empfohlen, die Grundfarbe Blau nicht auf dunklem Untergrund zu verwenden (schlechte Erkennbarkeit, Augenbelastung bei zu geringem Zeichenkontrast).

Aus ergonomischen Gründen sollten nur Darstellungen auf dunklem Hintergrund bei Vertikalfrequenzen ab 60 Hz (ohne Zeilensprung) benutzt werden.

Die Konvergenz des Bildes kann sich auf Grund des Magnetfeldes am Ort der Aufstellung aus der Korrekten Grundeinstellung verändern. Zur Korrektur empfiehlt es sich deshalb, die Regler an der Frontseite für H STAT und V STAT so einzustellen, daß die getrennt sichtbaren Farblinien für Rot, Grün und Blau bei z.B. der Darstellung eines Buchstabens zur Deckung (Konvergenz) gelangen. Siehe hierzu auch die Erklärungen zu H STAT und V STAT.

European Union (EU) Statement

This product is in conformity with the protection requirements of the EU Council Directive 89/366/ECC on the approximation of the laws of the Member States relating to electromagnetic compatibility

IBM can not accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-IBM option cards.

This product has been tested and found to comply with the limits for Class B Information Technology Equipment according to CISPR 22 Ú European Standard EN55024:1998. The limits for Class B equipment were derived for typical residential environments to provide reasonable protection against interference with licensed communication devices.

Properly shielded and grounded cables and connectors must be used in order to reduce the potential for causing interference to radio and TV communications and to other electrical or electronic equipment. Such cables and connectors are available from IBM authorised dealers.

In accordance with EN 55024:1998 1992, Performance Criterion A:, it should be noted that in the presence of certain electromagnetic fields, some screen jitter may be observed.

Spécifications de la CEE

Ce produit est conforme aux exigences de protection de la directive 89/ 336/ EEC du Conseil de l'UE sur le rapprochement des lois des États membres en matière de compatibilité électromagnétique.

IBM ne peut accepter aucune responsabilité pour le manquement aux exigences de protection résultant d'une modification non recommandée du produit, y compris l'installation de cartes autres que les cartes IBM.

Ce produit a été testé et il satisfait les conditions de l'équipement informatique de Classe B en vertu de CISPR22 / Standard européen EN55024:1998. Les conditions pour l'équipement de Classe B ont été définies en fonction d'un contexte résidentiel ordinaire afin de fournir une protection raisonnable contre l'interférence d'appareils de communication autorisés.

Des câbles blindés et correctement reliés à la terre doivent être utilisés pour réduire les risques d'interférence avec des communications radio et télévisées, ainsi qu'avec des équipements électriques ou électroniques. Ces câbles et connecteurs sont disponibles auprès de vos revendeurs IBM agréés.

Conformément à la norme EN 55024:1998 (Critère de Performance A), l'utilisateur doit être conscient du fait qu'en présence de certains champs électromagnétiques, l'image peut être instable.

Erklärung für die Europäische Union (EU)

Zulassungbescheinigung laut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) vom 30. August 1995 (bzw. der EMC EG Richtlinie 89/336):

Dieses Gerät ist berechtigt in Übereinstimmung mit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen.

Verantwortlich für die Konformitätserklärung nach Paragraph 5 des EMVG ist die:
IBM Deutschland Informationssysteme GmbH, 70548 Stuttgart.

Informationen in Hinsicht EMVG Paragraph 3 Abs. (2) 2:

Das Gerät erfüllt die Schutzanforderungen nach EN 55024:1998 und EN55024:1998 Klasse B.

EN 55022 Hinweis:

“Wird dieses Gerät in einer industriellen Umgebung betrieben (wie in EN 55022:B festgelegt), dann kann es dabei eventuell gestört werden. In solch einem FALL ist der Abstand bzw. die Abschirmung zu der industriellen Störquelle zu vergrößern.”

Anmerkung:

Um die Einhaltung des EMVG sicherzustellen sind die Geräte, wie in den IBM Handbüchern angegeben, zu installieren und zu betreiben.

Declaración de la Unión Europea (UE)

Este producto satisface los requisitos de protección del Consejo de la UE, Directiva 89/ 336/ CEE en lo que a la legislación de los Estados Miembros sobre compatibilidad electromagnética se refiere.

IBM no puede aceptar responsabilidad alguna si este producto deja de satisfacer dichos requisitos de protección como resultado de una modificación no recomendada del producto, incluyendo el ajuste de tarjetas de opción que no sean IBM.

Este producto ha sido probado y satisface los límites para Equipos Informáticos Clase B de conformidad con el Estándar CISPR22 y el Estándar Europeo EN55024:1998. Los límites para los equipos de Clase B se han establecido para entornos residenciales típicos a fin de proporcionar una protección razonable contra las interferencias con dispositivos de comunicación licenciados.

Se deben utilizar conectores y cables debidamente protegidos y conectados a tierra a fin de reducir las posibilidades de que se produzcan interferencias con comunicaciones por radio o televisión y otros equipos eléctricos o electrónicos. Este tipo de cables y conectores pueden adquirirse en concesionarios autorizados de IBM.

De acuerdo con la norma EN 55024:1998, Performance Criterion A, habría que destacar que en presencia de determinados campos electromagnéticos, podría observarse una marcada inestabilidad e la imagen.

Dichiarazione di conformità dell'Unione Europea (EU)

Questo prodotto è conforme alle normative di protezione ai sensi della Direttiva del Consiglio dell'Unione Europea 89/ 336/ CEE sull'armonizzazione legislativa degli stati membri in materia di compatibilità elettromagnetica.

IBM non accetta responsabilità alcuna per la mancata conformità alle normative di protezione dovuta a modifiche non consigliate al prodotto, compresa l'installazione di schede e componenti di marca diversa da IBM.

Le prove effettuate sul presente prodotto hanno accertato che esso rientra nei limiti stabiliti per le apparecchiature di informatica Classe B ai sensi del CISPR 22 / Norma Europea EN55024:1998. I limiti delle apparecchiature della Classe B sono stati stabiliti al fine di fornire ragionevole protezione da interferenze mediante dispositivi di comunicazione in concessione in ambienti residenziali tipici.

Utilizzare cavi e connettori collegati a terra per ridurre il rischio potenziale di interferenza delle comunicazioni radiotelevisive e di altri apparecchi elettrici o elettronici. I cavi sono disponibili presso i rivenditori IBM.

In accordo con quanto previsto nel documento EN 55024:1998, Performance Criterion A, è importante sottolineare che in presenza di determinati campi elettromagnetici è possibile che si verifichi un certo tremolio delle immagini.

Europeiska unionen (EU)

Denna produkt har testats och följer gränsvärdena för Klass B Information Technology Equipment enligt CISPR 22 Ú Europeisk standard EN55024:1998. Gränsvärden för Klass B-utrustning utgår från vanliga bostadsområden för att ge ett rimligt skydd mot störningar i kommunikationsenheter.

Korrekt avskärmade och jordade kablar och kontakter måste användas för att minska risken för störningar i radio- och TV-kommunikationer och annan elektrisk utrustning. Sådana kablar och kontakter finns tillgängliga hos auktoriserade IBM-återförsäljare.

I enlighet med EN 55024:1998 1992, Performance Criterion A påpekas följande: I närheten av en del elektromagnetiska fält kan vissa bildstörningar uppstå på skärmen.

Deutsche EMV-Direktive (electromagnetische Verträglichkeit)

Dieses Gerät ist berechtigt in Übereinstimmung mit dem deutschen EMVG vom 9.Nov.92 das EG-Konformitätszeichen zu führen.

Der Aussteller der Konformitätserklärung ist die IBM UK, Greenock.

Dieses Gerät erfüllt die Bedingungen der EN 55022 Klasse B.



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VCCI Class B Notice (Japan Only)

This equipment complies with the limits for a Class B digital device (devices used in or adjacent to a residential environment) and conforms to the standards for information technology equipment that are set by the Voluntary Control Council for Interference for preventing radio frequency interference in residential areas.

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Japanese statement of compliance for products less than or equal to 20 A per phase:

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