

# **9514 LCD Color Monitor**

## **DANGER**

### **To avoid electric shock hazard:**

- The product is supplied with a grounded plug and power cord which should be used to connect to the AC supply.
- The power cord should only be used with a properly wired and grounded power outlet.
- Any equipment to which this product is attached must also be connected to a properly wired and grounded outlet.
- Do not remove the covers.
- The product does not incorporate an AC power switch. To isolate the monitor from the electrical supply, you must remove the plug from the power outlet. The power outlet should be easily accessible
- Do not connect or disconnect this product during an electrical storm.
- Always use the AC adapter supplied with the monitor.

### **Handling:**

- Handle this product with care when moving it.
- The panel should not be operated in a horizontal position.
- The fluorescent lamp used in the Liquid Crystal Display assembly contains a small quantity of mercury (less than 50 milligrams). For environmental reasons this product should not be disposed of into landfill. It must be disposed of as required by local ordinances or regulations.
- The Liquid Crystal Display assembly is made of glass and can break as a result of rough handling or dropping. This may lead under some circumstances to a small quantity of the liquid crystal material being exposed. Avoid contact with this material as it is an irritant. Should this material come into contact with eyes, hands, etc., the area should be washed with water for at least 15 minutes; medical care should be obtained if any symptoms are present after washing.

# Contents

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<b>Contents</b> .....	<b>1</b>
<b>Setup</b> .....	<b>2</b>
Hardware Requirements .....	2
Workplace Preparation .....	2
Lifting the Monitor .....	2
Working Practices .....	3
Connecting your Monitor .....	4
Switching on the Monitor .....	6
Adjusting the Monitor Position .....	6
Caring for your Monitor .....	6
<b>Configuring your Monitor</b> .....	<b>7</b>
Automatic Setup .....	7
<b>Auto Setup for the PC</b> .....	<b>8</b>
Auto Setup for DOS .....	9
Auto Setup for Windows 3.1, Windows 95, or Windows NT .....	10
Auto Setup OS/2 .....	11
Quick Setup .....	12
<b>User controls</b> .....	<b>13</b>
Front of screen controls .....	13
On-screen display (OSD) controls .....	14
<b>Troubleshooting</b> .....	<b>17</b>
Setting Non Interlaced Mode .....	18
Further Help .....	19
<b>Specifications</b> .....	<b>20</b>
Supported screen addressability .....	21
Default Preset Timing .....	22
<b>Compliances</b> .....	<b>24</b>
<b>Warranty</b> .....	<b>27</b>

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## Hardware Requirements

This Monitor requires a computer with a suitable on-board sub-system or Video Adapter card that can support SXGA 1024 x 768 at 75 Hz.

Make sure the PC's video mode is set in the range of the supported screen addressability shown in the table on page 21.

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## Workplace Preparation

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

### Positioning the Monitor

Choose a suitable place to position the monitor where it is not near fluorescent desk lighting. Ensure that the furniture or equipment can support the weight of the monitor. Allow at least 2 inches (50mm) ventilation space around the monitor.

### Height

The monitor should be positioned so that the top of the screen is slightly below your eye level when you sit at your workstation.

### Orientation

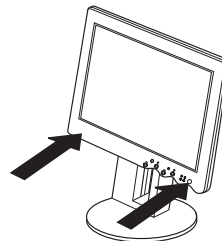
Choose a position that gives the least reflection from lights and windows, usually at a right angle to any windows. The monitor should be positioned directly in front of you so that you do not have to twist your body to use it. Tilt the monitor to a comfortable viewing angle.

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## Lifting the Monitor

**⚠** *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.*

Hold the bottom of the screen with both hands in the positions shown.



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## 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**

You should sit back in your chair and use the backrest.

### **Hands**

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.

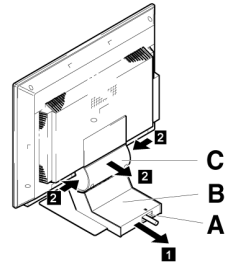
### **Screen settings**

Set the screen brightness and contrast to a comfortable level. You may have to adjust this as the lighting changes during the day. Many application programs let you select color combinations which can help you to view in comfort

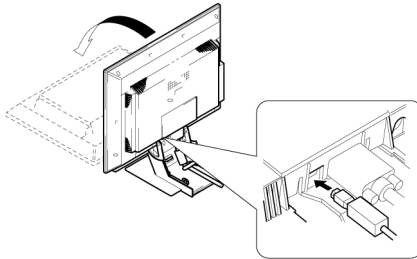
## Connecting your Monitor

 Be sure to read the 'Safety Information' at the front of this User Guide before carrying out this procedure.

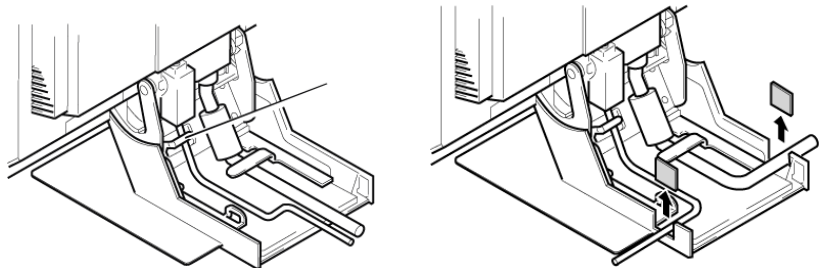
1. Turn off your PC and all attached devices.
2. With the monitor standing vertically, remove the cable covers at the back:
  - remove cable cover 1 by hooking your finger at A and sliding the cover off smoothly.
  - remove cable cover 2 by pressing both sides of the cover and pulling out.
3. Place the screen towards the edge of a flat surface with the stand hanging slightly off the edge. Connect the monitor cable and tighten the screws.



4. Next connect the AC adapter.

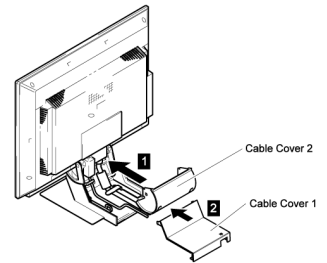


5. Thread the cables through the metal fitting - the AC adapter cable through A and the monitor cable through B as shown below.



6. You can release the cables from each of the three notches by removing the chips as shown above.

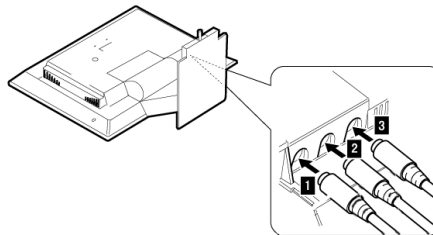
7. Turn the monitor upright and refit the covers. Slide on cover 2, fit cover 1 either side of the hinges and slide on.
8. Connect the monitor cable to the PC and tighten the screws.
9. Connect the power cord to the AC adapter, placing the AC adapter in a safe place.
10. Connect the other end of the power cord to a correctly grounded AC power source.



### Connecting the keyboard and mouse to the monitor

To use the standby mode or extend the cable between the keyboard and mouse. Connect optional keyboard / mouse (P/N: 82H8627) to the connector at the rear of the monitor as shown, then connect the other end of the keyboard and mouse connectors to the PC.

***i** You do not need to connect the optional keyboard / mouse cable if you use the DPMS function for standby mode.*



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## Switching on the Monitor

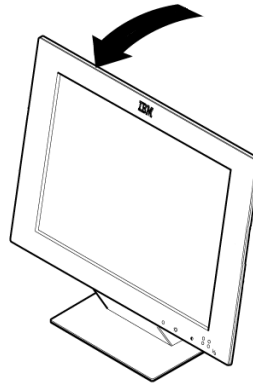
Switch on the power source and PC. To turn on the monitor, push and release the power switch. To switch it off, push and release the power switch again.

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## Adjusting the Monitor Position

### Viewing Angle

You can tilt the screen backward or rotate the monitor to the left or right, as shown below.



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## Caring for your Monitor

Be sure to turn off the power before you perform any maintenance on the monitor. Clean your monitor as follows:

- Gently wipe the device covers and the screen with a soft cloth.
- Do not use chemicals such as thinner or benzene. They may damage the surface coating.



# Configuring your Monitor

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## Automatic Setup

*i* The Setup Utility included on the setup option diskettes are for displaying color-bar patterns. They do not replace or modify the display driver.


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

When you first use your monitor you must perform **Automatic (auto) Setup**. This procedure sets up your monitor to process the video signals from your computer without image discoloration or flicker. After you perform auto setup, the settings are stored and used each time you turn on the monitor.


# Auto Setup for the PC

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Check the operating system installed on your PC and follow the instructions from the table below.

 Before carrying out this section it is very important that The Monitor Information Diskette for Windows 95 and Windows 98 has been run. (See page 10).

Operating System	First follow auto setup on ....	Then follow auto set-up on ....
DOS	page 9	
Windows 3.1	page 9	page 10
Windows 95	page 9	page 10
Windows NT	page 9	page 10
Operating System/2 (OS/2)	page 9	page 11

 If your PC does not run with the setup option diskettes shipped with the monitor, refer to **Quick Setup** on page 12.

Before you begin the auto setup for your PC :

1. Make a backup copy of the setup option diskettes supplied with the monitor.
2. Make sure the PC's video mode is set in the range in the table of **Supported screen addressability** on page 21.
3. Perform the auto setup for each screen mode you use.

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## Auto Setup for DOS

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



***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** If the screen flickers, repeat the setup several times until the flicker is minimised,*

1. Turn on the monitor first; then the PC.

If the message UNSUPPORTED VIDEO is displayed, or if nothing is displayed check:

- that the video interface cable is connected properly.
- the correct video adapter card is installed.
- the correct supported display mode is selected for your PC.

2. Wait approximately 15 minutes, until the monitor warms up.
3. Insert the diskette labelled ' Setup Option Diskette (for DOS / Windows / Windows NT)' into the diskette drive.
4. Display the command prompt screen of the DOS full-screen display:
  - If Windows is installed, open the DOS prompt from the Program Manager to display the DOS full-screen.
  - If OS/2 is installed, open the DOS full-screen display from the command prompt of OS/2.
  - If only DOS is installed, the command prompt is displayed when the system is started.
5. At the command prompt, type '**A:**' and press ENTER.
6. Type '**TESTPATD**' and press ENTER. The color-bar pattern appears.
7. Push the setup switch at the bottom of the monitor. The setup menu appears.
8. Push one of the brightness control buttons  to select AUTO SETUP.
9. Push one of the contrast control buttons  (+ moves the highlighter up; - moves the highlighter down). The AUTO SETUP line changes to start, and auto setup starts.
10. Wait until the PRESS [ENTER] KEY message is displayed.
11. Press ENTER to continue the auto setup procedure.
12. The AUTO SETUP line changes to COMPLETED when auto setup is complete.
13. Push the setup switch at the bottom of the monitor. The setup menu disappears.
14. Type '**Exit**' at the command prompt to return to Windows.

Now continue the setup for your operating system:

## Auto Setup for Windows 3.1, Windows 95, or Windows NT

Continued from **Auto Setup for DOS** on page 9

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

15. Drag the icon bar and tool bar, if they are displayed, to the bottom of the screen
16. Insert the diskette labelled ' Setup Option Diskette (for DOS / Windows / Windows NT)' into the diskette drive.
17. Check the operating system installed on your PC and follow the instructions from the table below

Operating system	Step 1	Step 2	Step 3	Step 4
<b>Windows 3.1</b>	open Program Manager	click on <b>File</b>	click on <b>run</b>	Type <b>'A:\TESTPAT'</b>
<b>Windows NT 3.5</b>	open Program Manager	click on <b>File</b>	click on <b>run</b>	
<b>Windows 95</b>	click on <b>Start</b>	click on <b>Run</b>		
<b>Windows NT 4.0</b>	click on <b>Start</b>	click on <b>Run</b>		

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

18. The color-bar pattern appears and auto setup starts.
19. Position the mouse pointer at the bottom center of the screen. This allows auto setup to run properly.
20. The AUTO SETUP line changes to COMPLETED when auto setup is completed.

If "AUTO SETUP COMPLETED" is not displayed, or the "AUTO SETUP FAILED" message appears, repeat the auto setup procedure several times.

21. Press ALT+F4 to exit auto setup.

You have completed the monitor setup.

**i** If the screen flickers, repeat the setup several times until the flicker is minimised,

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## Auto Setup OS/2

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

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

*i* If the screen flickers, repeat the setup several times until the flicker is minimised.

Continued from **Auto Setup for DOS** on page 9

11. If the WarpCenter Toolbar is permanently on, click the right mouse button on the WarpCenter Toolbar, click on **'Properties'**, **'Display Tab'** and **'Show only when mouse in center position'**.
12. Insert the diskette labelled ' Setup Option Diskette (for OS/2)' into the diskette drive.
13. Open the OS/2 full-screen window or an OS/2 window.
14. At the command prompt type A: and press ENTER.
15. Type TESTPATS and press ENTER.
16. After approximately 1 minute, the color-bar pattern appears.
17. Move the mouse pointer (and the icon bar and tool bar if they are displayed) to the bottom center of the screen to allow setup to run properly.
18. The AUTO SETUP line changes to COMPLETED when auto setup is completed after 10 to 20 seconds.  
If "AUTO SETUP COMPLETED" is not displayed, or the "AUTO SETUP FAILED" message appears, repeat the auto setup procedure several times.
19. Press ALT+F4 to exit auto setup.

You have completed the monitor setup.

## Quick Setup

**i** Check that the screen resolution and the frequencies are within the **Supported screen addressability** on page 21. If not, change the settings on the computer to set them within the range.

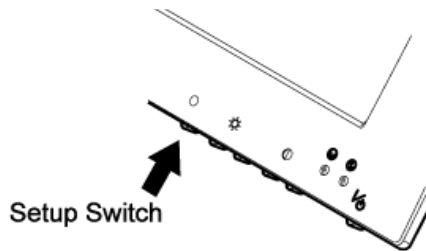
**i** You need a full screen image to perform proper auto setup. You also need a clear contrast between the brightest part of the screen and the darkest for correct adjustment. Otherwise, the screen may flicker.




**i** If the "Save Parameters?" message is not displayed or the auto setup value "START" does not change, push the contrast control button to exit auto setup and go back to step 4. Display another full-screen image and redo auto setup.

**i** If you are using a workstation, the screen appears greenish because the black level is shifted due to the difference of the voltage level of the video signals. If this happens, adjust OFFSET G in the **Specialist Controls** on page 16.

You can perform a quick setup without running the Auto-Setup application

1. Turn on the monitor and the System Unit and wait for about 15 minutes until the machine warms up.
2. Start the operating system on the System Unit and display a full-screen image.
3. Push the setup switch on the front of the monitor. The setup main menu appears.

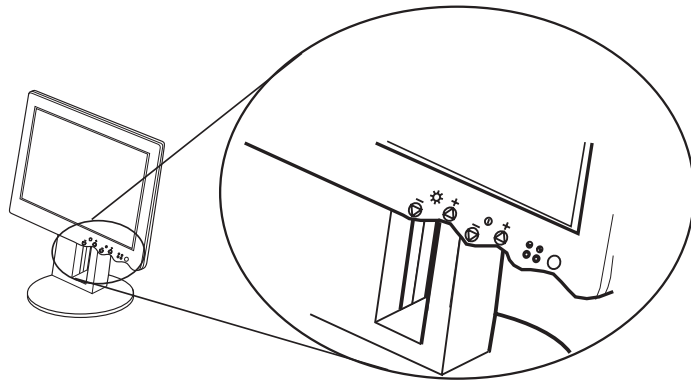








4. Press one of the brightness control  buttons to select AUTO SETUP.
5. Press one of the contrast control  buttons. After about 10 seconds, the message "Save parameters?" is displayed.
6. To save the settings for the monitor, push a contrast control  button. To discard the settings (because some problem such as a screen flicker occurs), push a brightness control button.
7. Press the setup switch on the back of the monitor to turn off the setup main menu.

# User controls

## Front of screen controls

The front of screen user controls allow the user to turn the monitor on and off, adjust the brightness and contrast of the monitor to meet the users preferences, and also to gain access to intermediate and advanced On-Screen Display Controls.







Icon	Control	Description
	Power Switch	Switches the monitor on and off
	Power Indicator	Green Light when monitor is powered on.
	Standby indicator	Green Light when monitor is in standby mode.
	Brightness Control	Adjusts background brightness.
	Contrast Control	Adjust contrast between foreground and background.
	Setup Switch	Displays the setup menu.

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## On-screen display (OSD) controls

To display the OSD, press the setup switch on the front of the monitor.

Menu	+	-
Brightness		
Contrast		



There are eight menus within the OSD. These menus contain the following functions which can be divided into four levels of adjustment : basic, intermediate, advanced and specialised. The final menu "Information" gives the user information regarding their monitor.

### Basic Controls



Function	Location	Effect of control	Description
<b>AUTO SETUP</b>	Menu 1 of 6	OFF / ON	'AUTO SETUP - OFF' is displayed. Start auto setup. 'START'-'COMPLETED' are displayed in sequence until auto setup is complete.
<b>STANDBY</b>	Menu 1 of 6	OFF, 5 to 60 MINS, DPMS	Set the number of minutes the monitor is out of use before automatically entering the power-saving mode. Specify OFF if you do not use this function.



## Intermediate Controls

Function	Location	Effect of control	Description
<b>CLOCK</b>	Menu 2 of 6	+.....MHz.....-	Adjust this parameter to suppress the display of vertical stripes.
<b>PHASE</b>	Menu 2 of 6	0.....23	When there are visual noises on the edges of characters and graphics, adjust this parameter to suppress the noise.
<b>H-POSI</b>	Menu 4 of 6		Moves image left or right.
<b>V-POSI</b>	Menu 4 of 6		Moves image up or down.
<b>SYSTEM RESET</b>	Menu 5 of 6	YES / NO	Use this parameter to restore all the values to the original settings when the monitor was shipped.

## Advanced Controls

Function	Location	Effect of control	Description
<b>H-SIZE</b>	Menu 4 of 6		Adjusts image width.
<b>V-SIZE</b>	Menu 4 of 6		Adjusts image height.
<b>EXPAND-SION</b>	Menu 1 of 6	ON / OFF / USER	To display a screen with resolution less than 1024×768 (the optimum resolution of the monitor), select the optimum size you want by specifying one of the following : <b>ON:</b> Displays a full screen. This is the normal selection. <b>OFF:</b> Displays the screen specified by your PC. <b>USER:</b> Enables you to set the screen size by specifying H-size and V-size. This setting can be set and saved for each screen resolution.

## Specialist Controls

Function	Location	Effect of control	Description
<b>RED</b>	Menu 3 of 6	0.....255	Adjusts the red hue level of the screen.
<b>GREEN</b>	Menu 3 of 6	0.....255	Adjusts the green hue level of the screen.
<b>BLUE</b>	Menu 3 of 6	0.....255	Adjusts the blue hue level of the screen.


## Information

Function	Location	Description
<b>H-FREQUENCY</b>	Menu 6 of 6	The frequency of the video signal (horizontal sync signal) from your PC (KHz).
<b>V-FREQUENCY</b>	Menu 6 of 6	The frequency of the video signal (vertical sync signal, or refresh rate) from your PC (Hz).
<b>SYNC POLARITY</b>	Menu 6 of 6	The polarity of the video signal from your PC. H stands for the horizontal sync signal, and V stands for the vertical sync signal.
<b>RESOLUTION</b>	Menu 6 of 6	The resolution of the video signal from your PC.
<b>SOFTWARE VERSION</b>	Menu 6 of 6	The version number of the control program installed in the monitor.

# Troubleshooting

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If you suspect something is not working correctly, you should :

1. Turn on the computer and monitor.
2. Set the brightness  control to the proper position.
3. Ensure that all cables are securely connected.
4. Disable standby mode if it is enabled. Push the setup switch on the back of the monitor to determine whether standby mode is enabled.
5. Disable the computer's screen saver program if it is enabled.
6. Run the auto setup procedure described in **Configuring your Monitor** on page 7
7. Adjust the CLOCK parameter in the **Intermediate Controls** on page 15 to suppress the display of vertical stripes.
8. To restore all the auto setup settings to the original values in effect when the monitor was shipped, press each minus button of the brightness and the contrast control simultaneously and turn on the monitor. Both LED indicators turn on and off, and all settings are restored.
9. Set the screen mode to the **Supported screen addressability** in the table on page 21.
10. Perform AUTO SETUP for each display mode (each screen resolution).
11. Disable Interlaced Mode. (The monitor does not support interlaced mode).

*i* The LCD contains over 2,300,000 thin-film transistors (TFTs). 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.

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## Setting Non Interlaced Mode

The monitor does not support interlace mode. If the video settings of your IBM PC specify interlace mode, change them with the following steps:

1. Turn on the monitor.
2. Turn on your PC.
3. Press F1 while the message 'Press F1 for configuration/setup' is being displayed.
4. Select Device and I/O in the Device Configuration Utility.
5. Select Setup Video.
6. Set the display type to Customize and the refresh rate to 60Hz or 75Hz.
7. Press ESC three times.
8. Select Save and Exit.
9. Non Interlaced mode has been set.

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## Further Help

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

Call the IBM HELPCENTER.

In the US call 1-800-772-2227

In Canada call 1-800-565-3344

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

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

1. Model and serial number from the label on the front of 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.

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

# Specifications

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*i* Some types of composite sync signals are not supported.

RGB input connector	BNC jack
Video input impedance (RGB)	75 ohms
Video amplification	0.7V <sub>p-p</sub> , 1.0V <sub>p-p</sub> (composite)
Input voltage (AC Adapter)	100 to 127 V rms 50/60 Hz 200 to 240 V rms 50/60 Hz
Power dissipation (max)	55 W
Power dissipation (in power-off mode)	8 W

## Sync Signal Type

The following Sync signal types are supported :

- Separate sync (TTL level).
- Sync on green \*.
- Composite sync (TTL level).

\* Horizontal sync pulses must not be suppressed during the vertical sync period.

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## Supported screen addressability

Type	Screen resolution (D × L)	Hsync (KHz)	Vsync (Hz)
VGA	640 × 350 (NI)	29 – 38	69 – 88
	640 × 450 (NI)	24 – 38	55 – 88
	640 × 480 (NI)	29 – 38	59 – 75
	720 × 350 (NI)	29 – 38	69 – 88
	720 × 400 (NI)	29 – 38	55 – 88
SVGA	800 × 600 (NI)	34 – 50	55 – 76
XGA	1024 × 768 (NI)	48 – 62	59 – 76
Notes: 1. Set the vertical scan range of your computer to the values in this table. 2. NI: Noninterlaced			

The monitor supports the screen resolutions shown in the table on page 41. The following are examples of some common video adapters:

IBM PCs, such as PC750, PC720, PC350, PC330, and Aptiva series, equipped with the following video chips or Matrox Millennium video cards:

- Trident 9680XGI
- S3 Vision 864
- S3 Trio 64V+
- Cirrus GD5446
- Cirrus GD5436
- ATI 3D RAGE
- MGA Millennium (Matrox Graphics Inc.)
- MGA Mystique (Matrox Graphics Inc.)
- ATI 3D EXPRESSION
- NEC PC 9800 series computers that support resolutions more than 640 × 400 and horizontal scan range of 31.5 or more.

## Default Preset Timing

The monitor retains the following timing parameters for 'Clock,' 'Hsync,' 'Vsync,' and Displayable Dots' as default values. The monitor automatically selects the corresponding values to the video signal from your PC.

Screen  Resolution (Horiz. × Vert.)	Timing			
	Clock (MHz)	Hsync (KHz)	Vsync (Hz)	Displayable Dots (Horiz. × Vert.)
640 × 400	25.18	31.47	70.09	800 × 449
640 × 480	25.18	31.47	59.94	800 × 525
720 × 400	28.32	31.47	70.09	900 × 449
640 × 480	31.50	37.86	72.81	832 × 520
640 × 480	31.50	37.50	75.00	840 × 500
800 × 600	36.00	35.16	56.25	1024 × 625
800 × 600	40.00	37.88	60.32	1056 × 628
800 × 600	50.00	48.08	72.19	1040 × 666
800 × 600	49.50	46.88	75.00	1056 × 625
1024 × 768	65.00	48.36	60.00	1344 × 806
1024 × 768	75.00	56.48	70.07	1328 × 806
1024 × 768	78.75	60.02	75.03	1312 × 800
1024 × 768	80.00	58.14	72.00	1376 × 808

**Note:** The Hsync and Vsync frequencies in this table are not the only ones to be displayed. Refer to the table on page 21 for the supported frequencies. The parameters that you set through AUTO SETUP on the main menu or the manual-adjust menu are saved in the monitor memory. Up to 25 settings can be stored.



# Compliances

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## **Federal Communications Commission (FCC) Statement**

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. 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.

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.

## **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 Underwriters 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 4.5 metres (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 4.5 metres (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 rated 13 amperes (minimum), 250 volts. The cord set should be marked <HAR> and have the appropriate safety approvals for the country in which the equipment will be installed.



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



This monitor complies with TCO'92 guidelines.

## **MPRII**

This product complies with Swedish National Council for Metrology (MPR) standards issued in December 1990 (MPRII) for very low frequency (VLF) and extremely low frequency (ELF).

## **Hinweise**

Gemäß der Amtsblätter des BMPT Nm. 61/1991 und 6/1992 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.

**Industry Canada  
Compliance  
Statement**

This Class A digital apparatus meets the requirements of the Canadian Interference-Causing Equipment Regulations.

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

**European Union (EU)  
Statement**

This product has been tested and found to comply with the limits for Class A Information Technology Equipment according to CISPR 22 / European Standard EN 55022. The limits for Class A equipment were derived for commercial and industrial environments to provide reasonable protection against interference with licensed communication devices.

Warning: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

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 50082-1 1992, Performance Criterion A:, it should be noted that in the presence of certain electromagnetic fields, some screen jitter may be observed.

# Warranty

## USA., Canada and Puerto Rico Statement of Limited Warranty

The warranties provided by IBM in this Statement of Limited Warranty apply only to Machines you originally purchase for your use and not for resale, from IBM or an IBM authorized reseller. The term "Machine" means an IBM machine, its features, conversions, upgrades, elements, or accessories, or any combination of them. Machines are subject to these terms only if purchased in the United States or Puerto Rico, or Canada and located in the country of purchase. If you have any questions, contact IBM or your reseller.

<b>Machine:</b>	IBM 9514 LCD Color Monitors
<b>Warranty Period *:</b>	3 Years
* Elements and accessories are warranted for three months. Contact your place of purchase for warranty service information.	

### Production Status

Each Machine is manufactured from new parts, or new and serviceable used parts (which perform like new parts). In some cases, the Machine may not be new and may have been previously installed. Regardless of the Machine's production status, IBM's warranty terms apply.

### The IBM Warranty

IBM warrants that each Machine 1) is free from defects in materials and workmanship and 2) conforms to IBM's Official Published Specifications. IBM calculates the expiration of the warranty period from the Machine's Date of Installation. The date on your receipt is the Date of Installation, unless IBM or your reseller informs you otherwise.

During the warranty period, IBM or your reseller will provide warranty service under the type of service designated for the Machine and will manage and install engineering changes that apply to the Machine. IBM or your reseller will specify the type of service.

For a feature, conversion or upgrade, IBM or your reseller may require that the Machine on which it is installed be 1) the designated, serial-numbered Machine and 2) at an engineering-change level compatible with the feature, conversion, or upgrade. Some of these transactions (called "Net-Priced" transactions) may include additional parts and associated replacement parts that are provided on an exchange basis. All removed parts become the property of IBM and must be returned to IBM.

Replacement parts assume the remaining warranty of the parts they replace.

If a Machine does not function as warranted during the warranty period, IBM or your reseller will repair or replace it (with a Machine that is at least functionally equivalent) without charge. If IBM or your reseller is unable to do so, you may return it to your place of purchase and your money will be refunded.

If you transfer a Machine to another user, warranty service is available to that user for the remainder of the warranty period. You should give your proof of purchase and this Statement to that user.

### Warranty Service

To obtain warranty service for the Machine, contact your reseller or call IBM. In the United States, call IBM at 1-800-772-2227. In Canada call IBM at 1-800-565-3344. You may be required to present proof of purchase.

The service may be 1) a "Repair" service at your location (called "On-Site") or at one of IBM's or a reseller's service locations (called "Carry-in") or 2) an "Exchange" service, either On-site or Carry-in. If in doubt, contact your point of sale.

When a type of service involves the exchange of a Machine or part, the item IBM or your reseller replaces becomes its property and the replacement becomes yours. The replacement may not be new, but will be in good working order, and at least functionally equivalent to the item replaced.

It is your responsibility to:

1. obtain authorization from the owner (for example, your lessor) to have IBM or your reseller service a Machine that you do not own;
2. where applicable, before service is provided -
  - a. follow the problem determination, problem analysis and service request procedures that IBM or your reseller provide.
  - b. secure all programs, data and funds contained in a Machine.
  - c. inform IBM or your reseller of changes in a Machine's location, and
  - d. for a Machine with exchange service, remove all features, parts, options, alterations, and attachments not under warranty service. Also the Machine must be free of any legal obligations or restrictions that prevent its exchange; and
3. be responsible for loss of, or damage to, a Machine in transit when you are responsible for the transportation charges.

## **Extent of Warranty**

IBM does not warrant uninterrupted or error-free operation of a Machine.

Misuse, accident, modification, unsuitable physical or operating environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible may void the warranties.

THESE WARRANTIES REPLACE ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. HOWEVER, SOME LAWS DO NOT ALLOW THE EXCLUSION OF IMPLIED WARRANTIES. IF THESE LAWS APPLY, THEN ALL EXPRESS AND IMPLIED WARRANTIES ARE LIMITED IN DURATION TO THE WARRANTY PERIOD. NO WARRANTIES APPLY AFTER THAT PERIOD.

In Canada, warranties include both warranties and conditions.

Some jurisdictions do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.

For European warranty terms and conditions refer to enclosed IBM warranty statement Part Number 72H9623.

Référez-vous à la garantie IBM N° de référence 72H9623 pour les conditions de garantie européennes.

Die europäischen Garantiebedingungen finden Sie in der beigefügten IBM-Gewährleistungserklärung, Teilenummer 72H9623.

Los términos y condiciones de las garantías en Europa se recogen en la declaración de garantía adjunta del número de pieza IBM 72H9623.

Per le condizioni e i termini di garanzia relativi ai paesi europei, consultare l'apposita dichiarazione IBM (numero di matricola 72H9623).