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New York 10504



E50

Color Monitor  
User Guide

BH68-00109W-00



### **First Edition (May 2003)**

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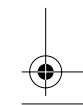
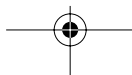
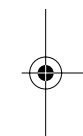
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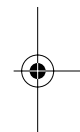
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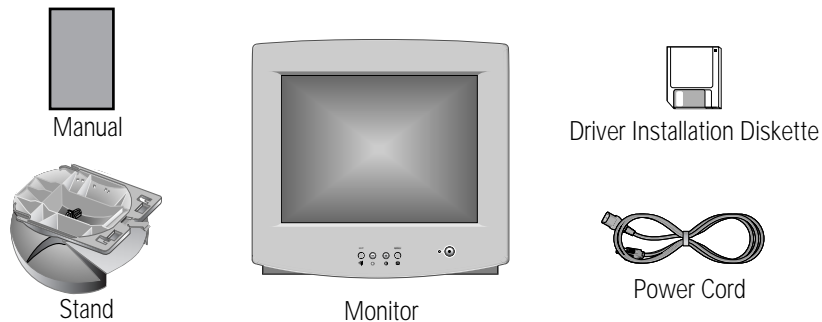
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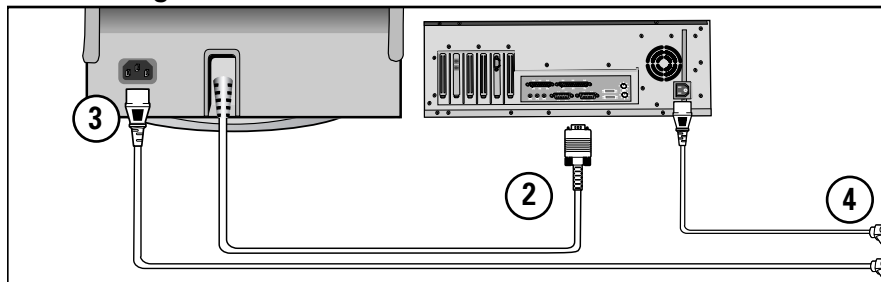


## Your New Monitor

Please make sure the following items are included with your monitor. If any items are missing, contact your dealer.



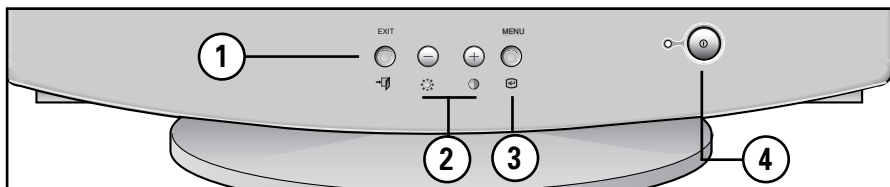
### Connecting Your Monitor



- 1** Turn off your computer and unplug the power cord.
- 2** **Signal cable**  
Connect the end of the signal cable to your computer's video port (Video board, video card, or graphics card).
- 3** **Power port**  
Connect the power cord for your monitor to the power port on the back of the monitor.
- 4** **Power cords**  
Plug the power cord for the monitor and the power cord for your computer into a nearby outlet.
- 5** Turn on your computer and monitor. If your monitor displays an image, installation is complete.
- 6** **Install monitor driver**
  - Insert the provided diskette into the A:drive, when prompted by the operating system.

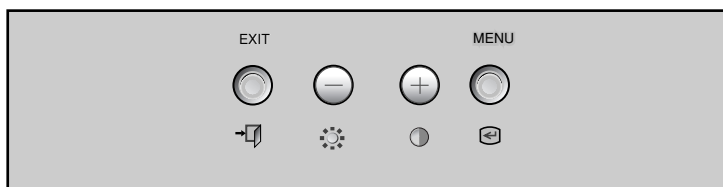
## Your New Monitor

### Front Panel



- 1 EXIT (→) button**  
Closes the OSD. It is also used to return to the previous menu when using the OSD.
- 2 The / ( / ) buttons**  
These buttons allow you to select and adjust items using the OSD. When adjusting an item using the OSD, the button lowers the value of the selected function. The button raises the value of the selected function. These buttons are also direct access buttons for the Contrast and Brightness feature controls. (See the section below on Direct Access Buttons.)
- 3 MENU (←) button**  
Opens the OSD. It is also used to select a highlighted function, open a sub-menu, or move between menus when using the OSD.
- 4 Power button**   
The power button turns the monitor on and off. The power indicator light glows green during normal operation, see "Specifications" section.

### Direct Access Buttons
















Most of the adjustments you make to your monitor will be accessed through the OSD described in the next section. The Contrast and Brightness features can also be accessed directly from the front of your monitor.

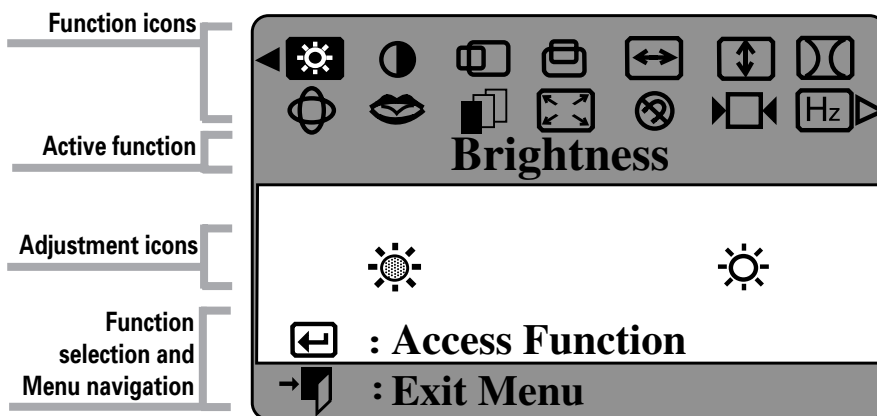
- 1** With the menu off, press the or button on the front of your monitor. The button accesses the Brightness feature. The button accesses the Contrast feature.
- 2** Push the button to increase or the button to decrease the value of the selection.
- 3** Press the EXIT button twice to exit the OSD.

## Operation

### On Screen Display(OSD)

Your monitor has an OSD, accessed by the buttons on the front of your monitor, that allows you to adjust characteristics of the screen image. Display changes are indicated by on-screen adjustment icons. Some functions have sub-menus.

- 1** Push the menu button  to display the main menu. Function icons are arranged across the top of the OSD.
- 2** Push the  or  button to move through the icons. The name of the function will appear below the rows of function icons.
- 3** To select a function or open a sub-menu, push the  button. The screen will display the options for adjustment. If there is a sub-menu, use the  or  button to highlight the feature you want to adjust, then push the  button to select it.
- 4** Use the  and  buttons to make adjustments.  increases values and  decreases values. On-screen calibration numbers show the effect of your adjustment. If you are in a sub-menu, use the EXIT button  to return to the previous menu.
- 5** Push the EXIT button  to exit and save your changes.





## Operation

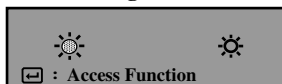
### Icon Monitor Function Control



#### Brightness

Background brightness of screen.  
-- Decreases brightness  
+ Increases brightness

#### Brightness



#### Contrast

Contrast of screen image.  
-- Decreases contrast  
+ Increases contrast

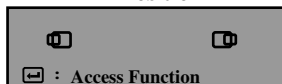
#### Contrast



#### Horizontal Position

Horizontal screen position.  
-- Moves screen left  
+ Moves screen right

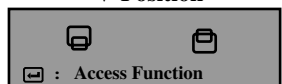
#### H-Position



#### Vertical Position

Vertical screen position.  
-- Moves screen down  
+ Moves screen up

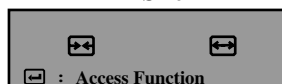
#### V-Position



#### Horizontal Size

Horizontal screen size.  
-- Decreases size  
+ Increases size

#### H-Size



#### Vertical Size

Vertical screen size.  
-- Decreases size  
+ Increases size

#### V-Size





## Operation

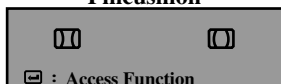
### Icon Monitor Function Control



#### Pincushion

- Straightens screen vertical edges.
- Curves image inward
- + Curves image outward

#### Pincushion



#### Geometry



##### Trapezoid

- Width of top and bottom of screen.
- Widens bottom of screen
- + Widens top of screen



##### Parallelogram

- Skews screen image left
- + Skews screen image right



##### Pinbalance

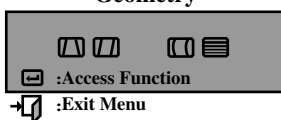
- Curves vertical lines to left
- + Curves vertical lines to right



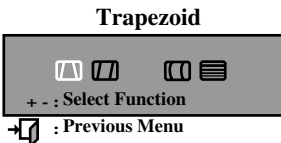
##### V-Linearity

- Compresses image at top of screen
- + Compresses image at bottom of screen

1.



2.







## Operation

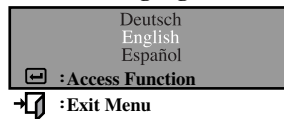
### Icon Monitor Function Control



#### Language

-- and + scroll through on-screen language options.  
(English/ Español/ Português/ Italiano/ Français/ Deutsch)

#### Language



#### Advanced

##### H- Moiré



Corrects for on-screen moiré pattern.  
-- and + clear Horizontal Moiré

#### Advanced

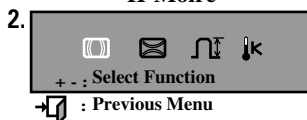


##### V- Moiré



Corrects for on-screen moiré pattern.  
-- and + clear Vertical Moiré

#### H-Moiré



##### Video Input Level

Selects the video signal level  
-- Select 0.7 V  
+ Select 1.0 V



##### Color Temperature

-- 9300k more blue  
+ 6500k more red



## Operation

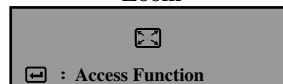
### Icon Monitor Function Control



#### Zoom

- Reduces view of display area
- + Enlarges view of display area

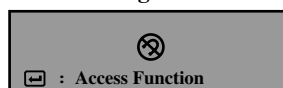
#### Zoom



#### Degauss

Removes color distortion caused by magnetic fields. Do not use more than once in 30 minutes.

#### Degauss



#### Recall

- Returns monitor to original settings.
- No
  - + Yes

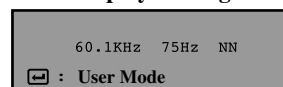
#### Recall



#### Display Timing


- Monitor display settings.
- Factory timing
  - + User timing

#### Display Timing



### OSD Lock/Unlock

Allows you to secure the current control settings so that they cannot be inadvertently changed. You can unlock the OSD controls at any time by using the same procedure.

- Push and hold the Menu (  ) button for 10 seconds or more to Lock or to Unlock.

#### OSD Lock/Unlock





## Troubleshooting

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Before calling for service, check the information in this section to see if you can solve the problem yourself.

### **There is no screen image**

- Check to see that both the monitor and the computer are plugged in and turned on.

### **"No Connection, Check Signal Cable" appears**

- Check the signal cable connection between the computer and the monitor.

### **"Sync. Out of Range" appears**

- The input signal frequency is over or under the synchronization range of the monitor, see "Specifications" section.

### **The screen image is too light or too dark**

- Adjust the brightness or contrast settings, see On Screen Display section.

### **The screen image is too large or too small**

- Adjust the size settings, see H-size and V-Size On Screen Display section.
- Adjust the Zoom setting, see On Screen Display section.

### **The colors are distorted with dark or shadowed areas**

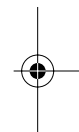
- Activate the degauss feature, see On Screen Display section.
- Adjust the color temperature, see On Screen Display section.

### **The power indicator light is blinking green**

- The monitor is using its power management system, see "PowerSaver" section.

### **You need the monitor driver software**

- Download the driver from the internet at <http://www.ibm.com/support>





## Help & Service

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Machine Name - E50 Color Monitor (M/T 6518)

Warranty Period - Three (3) Years

See the IBM Statement of Limited Warranty included in this publication for IBM's warranty terms and conditions.

The IBM Machine Warranty worldwide Web site at

[http://www-1.ibm.com/servers/support/machine\\_warranties/](http://www-1.ibm.com/servers/support/machine_warranties/) provides a worldwide overview of IBM's Limited Warranty for IBM Machines, a Glossary of IBM definitions, Frequently Asked Questions (FAQs) and Support by Product (Machine) with links to Product Support pages. **The IBM Statement of Limited Warranty is also available on this site in 29 languages via pdf files.**

### Service and support

With the original purchase of an IBM machine, you have access to extensive support coverage. During the IBM machine warranty period, you may call IBM or your reseller for problem determination assistance under the terms of the IBM Statement of Limited Warranty. You may seek help as follows:

#### Call IBM HelpCenter

**In the US call 1-800-772-2227**

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

**(all others) 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. Type, model and serial number from the label on the back 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.

If possible, stay by your computer system. Your technical support representative might want to go through the problem with you during the call.

## PowerSaver

This monitor has a built-in power management system called PowerSaver. This system saves energy by switching your monitor into a low-power mode when it has not been used for a certain amount of time. The monitor automatically returns to normal operation when you move the computer's mouse or press a key on the keyboard. For energy conservation, turn your monitor OFF when it is not needed, or when leaving it unattended for long periods. The PowerSaver system operates with a VESA DPMS compliant video card installed in your computer. Use a software utility installed on your computer to set up this feature.

State	Normal Operation	Power-off Mode (EPA/ENERGY 2000)
Power Indicator	Green	Green, Blinking (1 sec. interval)
Power Consumption	75 W (Maximum) 61 W (Nominal)	Less than 2 W

**NOTE:** This monitor is EPA ENERGY STAR® compliant and ENERGY 2000 compliant when used with a computer equipped with VESA DPMS functionality.

## Display Modes

Display Mode	Vertical Frequency (Hz)
IBM, VGA2, 720 x 400	70
IBM, VGA3, 640 x 480	60
VESA, 640 x 480	75
VESA, 640 x 480	85
VESA, 800 x 600	60
VESA, 800 x 600	75
VESA, 800 x 600	85

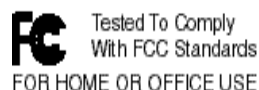
## Specifications

Specifications	Model: IBM E50
Picture Tube	<ul style="list-style-type: none"> <li>• 15" (38 cm) Full square type (35 cm Viewable)</li> <li>• 90° Deflection</li> <li>• Dot pitch: 0.28 mm (0.24mm horizontal)</li> <li>• Aluminized tri-color phosphor dot trio with black matrix.</li> <li>• Anti-doming invar shadow mask.</li> </ul>
Synchronization	<ul style="list-style-type: none"> <li>• Horizontal: 30 kHz to 54 kHz</li> <li>• Vertical: 50 Hz to 120 Hz</li> </ul>
Display Color	<ul style="list-style-type: none"> <li>• Over 16 million</li> </ul>
Maximum Resolution	<ul style="list-style-type: none"> <li>• 1024 Dots    • 768 Lines</li> </ul>
Active Display	<ul style="list-style-type: none"> <li>• Horizontal: 10.5 ± 0.16 inch (267.0 ± 4 mm)</li> <li>• Vertical: 7.9 ± 0.16 inch (200.0 ± 4 mm)</li> </ul>
Input Signal, Terminated	<ul style="list-style-type: none"> <li>• Analog: 0.7 Vpp positive at 75 ohms</li> <li>• Separate Sync.: TTL level, positive or negative</li> </ul>
Maximum Pixel Clock	<ul style="list-style-type: none"> <li>• 65 MHz</li> </ul>
Power Supply	<ul style="list-style-type: none"> <li>• AC 100-240 V, 50 Hz / 60Hz</li> </ul>
Power Consumption	<ul style="list-style-type: none"> <li>• 75 W (maximum)</li> </ul>
Dimensions/Weight (WxDxH)	<ul style="list-style-type: none"> <li>• Unit : 362 x 384 x 384 mm / 12.9kg</li> <li>• Carton : 454 x 497 x 445 mm / 15.2kg</li> </ul>
Environmental Considerations	<ul style="list-style-type: none"> <li>• Operating temperature: 41°F to 104°F (5°C to 40°C)</li> <li>Humidity: 10% to 80%</li> <li>• Storage temperature: -4°F to 113°F (-20°C to 45°C)</li> <li>Humidity: 20% to 80%</li> </ul>

*Design and specifications are subject to change without notice.*

## Compliances

### Federal Communications Commission (FCC) Statement



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 receptions, 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 the dealer or an experienced radio/TV technician 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.

### 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 m (15 ft) 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 m (15 ft) 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. 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 Fig. # (Plug Std.)	IBM P/N (1.8M)	Using Countries or Regions
4 (NEMA 5- 15P) 125V	6952301	US, Canada, Mexico, Brazil, Costa Rica, Peru, Colombia, Ecuador, Venezuela, Bolivia, Panama, El Salvador, Honduras, Nicaragua, Dominican Republic, Guatemala, Taiwan, Saudi Arabia, Thailand, Phillipines, Japan
5 (NEMA 6- 15P) 250V	1838576	US, Canada, Mexico, Brazil, Costa Rica, Peru, Colombia, Ecuador, Venezuela, Bolivia, Panama, El Salvador, Honduras, Nicaragua, Dominican Republic, Guatemala, Taiwan, Saudi Arabia, Thailand, Phillipines, Japan
6 (AS/NZS C112)	13F9939	Australia, New Zealand

18 (CEE 7 - VII)	13F9978	France, Germany, Sweden, Norway, Austria, Netherlands, Finland, Belgium, Bosnia, Croatia, Egypt, Greece, Hungary, Poland, Portugal, Romania, Slovenia, Spain, Sweden, Turkey, Iceland, Estonia, Latvia, Lithuania, Luxembourg, Andorra, Guadeloupe, French Guyana, Martinique, Monaco, New Caledonia, Madagascar, Mauritius, Greece, Turkey, Portugal, Albania, Armenia, Azerbaïdjan, Belarus, Bosnia, Croatia, Czech Republic, Georgia, Hungary, Kazakhstan, Kyrgyzstan, Macedonia, Moldavia, Poland, Romania, Serbia, Slovakia, Slovenia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan, Russia, Lebanon, Syria, Egypt, Iran, Algeria, Benin, Cape Verde, Burkina Faso, Cameroon, Central African Republic, Chad, Congo (Republic of), Congo (Democratic Republic of), Djibouti, Equatorial Guinea, Gabon, Guinea, Guinea Bissau, Ivory Coast, Mali, Mauritania, Morocco, Niger, Senegal, Togo, Tunisia, Angola, Burundi, Ethiopia, Mozambique, Rwanda, Somalia, Sao Tome, Eritrea, Mayotte, Comoros, Reunion, French Polynesia, Vanuatu, Wallis and Futuna, Korea, Vietnam, Indonesia
23 (BS 1363/A)	14F0032	UK, United Arab Emirate (Dubai), China (Hong Kong S.A.R.), Singapore, Malaysia, Ireland, Cyprus, Bahrain, Jordan, Kuwait, Oman, Qatar, Yemen, Gambia, Malta, Botswana, Seychelles, Nigeria, Ghana, Kenya, Liberia, Malawi, Sierra Leone, Sudan, Tanzania, Zambia, Zimbabwe
19 (DK2-5a)	13F9996	Denmark

25 (CEI 23-16)	14F0068	Italy, Chile
2 (IRSM 2073)	36L8879	Argentina, Uruguay, Paraguay
62 (GB 2099.1)	02K0545	China
32 (SI 32)	14F0086	Israel
22 (SABS 164)	14F0014	South Africa, India, Sri Lanka, Pakistan, Uganda, Lesotho, Namibia, Swaziland
24 (1011-S24507)	14F0050	Switzerland, Lichtenstein

**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.



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

**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) emissions.



### ***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 6518**

73P2000	6518 -J1N	Monitor - Stealth Black
73P2002	6518- H1N	Monitor - Pearl White
73P2008		Tilt/Swivel Stand - Stealth Black
73P2009		Tilt/Swivel Stand - Pearl White