lenovo

E54 Color Monitor
User's Guide

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.

Pred inštaláciou tohto zariadenia si peèítaje Bezpeènostné predpisy.

Pred namestitvijo tega proizvoda preberite Varnostne informacije.

Ennen kuin asennat t m n tuotteen, lue turvaohjeet kohdasta Safety Information.

Před instalac 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.

Fourth Edition (July 2006)

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Further Help

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

Call the Customer Support Center.

In the US call 1-800-426-7378

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

In Canada (all others) 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.*

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

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.

Contents

PACKING LIST

The product package should include the following items:

1. Monitor
2. Quick set up guide
3. Power cord
4. Swivel base
5. CD manual
6. Monitor Safety, Troubleshooting, and Warranty Guide

PRECAUTIONS

Workplace preparation

Positioning the monitor
Choose a suitable place to position the monitor where it is not near
fluorescent desk lighting or any equipment that produces magnetic fields that
could cause interference. Ensure that the furniture or equipment can support
the weight of the monitor. Allow at least 2 in. (50 mm) 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. Position the monitor directly in front
of you so that you do not have to twist your body. Tilt the monitor to a
comfortable viewing angle.

Work Practices

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 Lenovo monitor or any
  other electrical apparatus.
• Do not rub, touch, or tap the surface of the screen with sharp or abrasive
  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.

Rest

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

Back

Sit back in the chair and use the back rest.

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 might 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.

INSTALLATION INSTRUCTIONS

Swivel Base

To attach the swivel base to the monitor, do the following:

- Carefully turn the monitor on its side or upside down. (see figure 1)
- Locate the cavities at the bottom front of the monitor.
- Insert the pegs on the swivel base into these cavities. Push the swivel base forward until the swivel base locks in place.
- To remove the swivel base, hold the bottom of the swivel base, and then push it out.
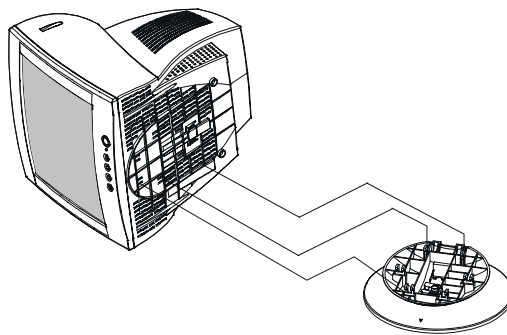

Figure 1   Installing and removing the Swivel Base

Power Source:

1. Make sure the power cord is the correct type that is required in your area.
2. This monitor has a universal power supply that allows operation in 100/120V ac or 220/240V ac voltage (No user adjustment is required)
3. Connect the power cord into your monitor's power input socket, and then plug the other end into a 3-pin ac power outlet. The power cord can be connected to either a wall power outlet or the power outlet socket on your computer, depending on the type of power cord supplied with your monitor.

Power cord:

For safe operation, use the power cord supplied with the unit.

Video cable

Connecting the video cable: The monitor comes with a built-in video cable. Plug the signal cable's 15-pin connector into the computer's video port and tighten the two screws on the cable connector. (see figure 2)

Connecting the power cord: Plug the power cord into the monitor's ac power socket. Then plug the power cord into a grounded ac outlet or UL-approved power strip or the power output socket on your computer.
Caution: If the AC outlet is not grounded(only two holes), install the proper grounding adapter (not supplied).
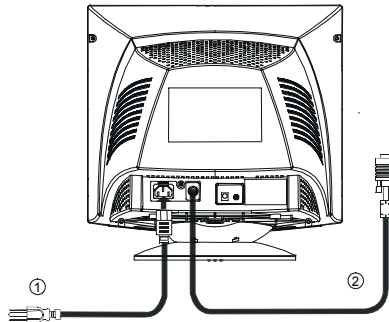
Figure 2   Connecting cables

1.	Power Cord	2.	Signal Cable

OPERATING INSTRUCTIONS

General Instructions

The power switch is located at front panel of the monitor. Press the power switch to turn the monitor on or off. The other control knobs are located at the base of the monitor (See Figure 3). By changing these settings, the picture can be adjusted to your personal preferences.

- The power cord must be connected.
- Connect the video cable from the monitor to the video card.
- To turn the monitor on, press the POWER switch to ON position. The power indicator will light up.
- Your monitor features a unique quick switch system which provides a picture within seconds after the monitor is switched on.
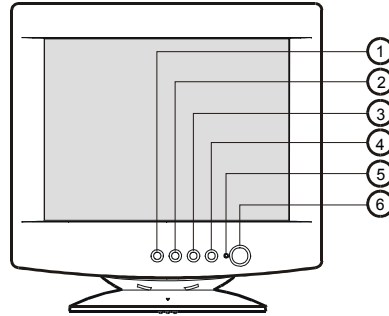

Figure 3   External Control Knob

EXTERNAL CONTROLS

1.	EXIT Key	4.	MENU
2.	BRIGHTNESS/◀	5.	Power Indicator
3.	CONTRAST/▶	6.	Power Switch

Notes

- Do not install the monitor in a location near heat sources such as radiators or air ducts , or in a place subject to direct sunlight , or excessive dust or mechanical vibration or shock.
- Save the original shipping carton and packing materials, as they will come in handy if you ever have to ship your monitor.
- For maximum protection, repackage your monitor as it was originally packed at the factory.
- To keep the monitor looking new, periodically clean it with a soft cloth. Stubborn stains can be removed with a cloth lightly dampened with a mild detergent solution. Never use strong solvents such as thinner, benzene, or abrasive cleaners, since these will damage the cabinet. As a safety precaution, always unplug the monitor before cleaning it.

Front Panel Control

- **Power :** Press this knob to switch ON/OFF of monitor's power.
- **MENU :** Active OSD menu or function adjust confirm.
- **Contrast◑ / ▶ :** Adjust contrast or function adjust.
- **Brightness☼ / ◀ :** Adjust brightness or function adjust.
- **EXIT :** Exit a function or inactive OSD menu.Press and

    hold the "Exit" button for 10 seconds to disable/enable the

    DDC/CI function.The words "DDC/CI function disable/enable

    will be showed on the screen.

- **Power Indicator :**
  Green　—　Power On mode.
  Orange —　Sleep or Off mode.

How to adjust a setting

The monitor controls are accessed by pressing button MENU to enable OSD (On-Screen-Display). The main menu will be displayed as follows.

Figure 4　　The OSD Message

Note: If adjustment or selection of any OSD menu is not made for more than 10 seconds, the current setup will be saved and the OSD will disappear automatically.

ADJUSTING THE PICTURE

The description for function control ICONS

1.	◑	CONTRAST	Adjust the picture contrast.
2.	☼	BRIGHTNESS	Adjust the picture brightness.
3.		H- CENTER	Adjust the horizontal position of the picture.
4.		H- SIZE	Adjust the picture's horizontal size.
5.		V- CENTER	Adjust the vertical position of the picture.
6.		V- SIZE	Adjust the picture's vertical size.
7.		ZOOM	Adjust the picture's horizontal and vertical size simultaneously.
8.		PINCUSHION	Adjust the pincushion and barrel
9.		TRAPEZOID	Adjust the picture's trapezoid distortion.
10.		PIN-BALANCE	Adjust to compensate the pincushion unbalance.
11.		PARALLELOGRAM	Adjust the picture to be a rectangle.
12.	⟳	ROTATION	Adjust the picture tilt to horizontal position.
13.	∴	6500°K/9300°K/SRGB (COLOR TEMPERATURE)	The color temperature for 6500°K is x=0.313, y=0.329 and 9300°K is x=0.283, y=0.297, SRGB is x=0.313,y=0.329,It presents three different color sets on the screen. You can select 9300°K or 6500°K or SRGB by pressing the MENU. Brightness and contrast can't be adjusted in SRGB mode.
14.		USER COLOR (Red / Blue)	If the 9300°K normal white or 6500°K warmer white do not satisfy your desire, properly adjust R . B GAIN controls to obtain your optimum whiteness level.
15.		DEGAUSS	If color impurity occurs when moving or swiveling the monitor, press the MENU and degauss to fix the picture condition.
16.	▨	MOIRE REDUCE	Moire is the result of interference between the phosphor layout and the video signal. In some cases, you may find the moire very noticeable. Press the MENU to enter in the moire reduce setting. Please adjust the level to the optimum condition. Note: Too high of a setting will cause the picture to shake.
17.	↩	RECALL	Press RECALL to restore the monitor to factory settings.
18.	EXIT	EXIT	Close OSD window.
19.	❶	SELECT LANGUAGE	Select the language you like.
20.	⟲	OSD display time	Select the OSD display time: 5s,10s,or 15s.

FEATURES

Green monitor

- The monitor has a power saving function .This feature will switch off
  your monitor to conserve energy,after a user-specified period of inactivity.

The power-saving mode is indicated by the light-emitting diode (LED) on
the front panel:

Mode	Signal				Power	
	Cable	H-Sync	V-Sync	Video	Indicator	Consumption
On*	Attached	Yes	Yes	Active	Green	≤ 75 W
Sleep	Attached	No	No	Blank	Orange	≤ 4 W
Power Off	Attached	No	No	Blank	Orange	≤ 2 W

 * 1. Power consumption at on mode is measured at 1024X768@75Hz

THIS MONITOR WILL APPEAR TO BE NON-FUNCTIONAL IF THERE IS NO VIDEO INPUT SIGNAL. IN ORDER FOR THIS MONITOR TO OPERATE PROPERLY, THERE MUST BE A VIDEO INPUT SIGNAL.

This feature is designed to conserve electrical energy by reducing power consumption when there is no video input signal present.when there is no video input signal present.When there is no video input signal, this monitor, following a time-out period,will automatically switch to an OFF mode. And the LED will turn orange. This reduces the monitor's internal power supply consumption. After the video input signal is restored, full power is restored and the display is automatically redrawn. The appearance is similar to a "Screen Saver" feature except the display is completely off. The display is restored by pressing a key on the keyboard, or clicking the mouse.

Plug and play

Plug & Play DDC2B Feature

This monitor is equipped with VESA DDC2B capabilities according to the VESA DDC STANDARD. It allows the monitor to inform the host system of its identity and, depending on the level of DDC used, communicate additional information about its display capabilities.

The DDC2B is a bidirectional data channel based on the I2C protocol. The host can request EDID information over the DDC2B channel.
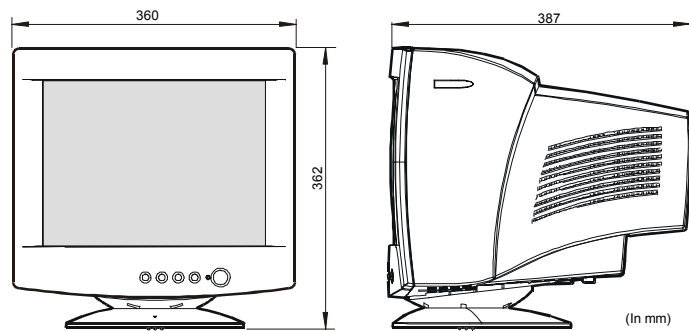
DDC/CI

This monitor can support DDC/CI.

TECHNICAL SUPPORT (FAQ)

Problem & Question	Possible Solution
Power LED is not on	*Verify that the power switch is in the ON position *Power cord must be connected
No Plug & Play	*Verify that the computer system is Plug & Play compatible *Verify that the video card is Plug & Play compatible *Verify that the D-15 plug pin of video cable is bent *Make sure the monitor device drivers are installed
No picture	*Computer power switch must be in the ON position *Computer video card must be snugly seated in its slot *The signal cable must be completely connected to the computer *Check the color of the power LED indicator. If it is orange, then the monitor and the computer system are in power-saving mode. You need to press your keyboard or move the mouse to reactivate the system.
Picture is fuzzy	*Adjust the Contrast and Brightness Controls.
Picture bounces or a wave pattern is present in the picture	*Move electrical devices that might cause electrical interference.
Monitor is stuck in "Power Saving Mode"	*Make sure monitor's video cable is properly connected to the computer. *Inspect monitor's video cable and make sure none of the pins are bent. *Make sure computer is operational by hitting the CAPS LOCK key on the keyboard while observing the CAPS LOCK LED. The LED should either turn ON or OFF after hitting the CAPS LOCK key.
Missing one of the primary colors (RED, GREEN, or BLUE)	*Inspect the monitor's video cable and make sure that none of the pins are bent.

APPENDIX A – SPECIFICATIONS

CRT	CRT Size	38.1 cm (15 in.), 90º deflection, 22.5 mm neck
	Viewable Image Size	35.4 cm (13.9 in.), diagonal
	Type	0.27 mm dot pitch.
Input	Video	0.7 Vpp, R,G,B Analog
	Separate Sync.	TTL Level
	H./V.- Sync.	Positive / Negative
Scanning Frequency	H-Frequency	30 - 69 kHz
	V-Frequency	50 - 120 Hz
Max. Resolution		1280 x 1024
Video dot rate		110 MHz
Factory Preset mode : User Programmable mode :		9 8
Power Source		Universal 100 – 240 V ac, 50 Hz / 60 Hz
Operating		0 to 40º C (0 to 104º F)
Humidity		10% to 85% relative, non-condensing
Dimensions	Carton	452 mm (1.5 ft) × 425 mm (1.4 ft) × 454 mm (1.5 ft) (W × H × D)
	Monitor & Base	360 mm (1.2 ft) × 362 mm (1.2 ft) × 387 mm (1.3 ft) (W × H × D)
Weight	Unit (net) Carton (gross)	11.0 kg (Net) 12.5 kg (Gross)
Signal Cable:		Attached Mini D-sub 15 Male

External Controls:	Switch	• Power On/Off switch • MENU Key • Contrast/►UP Key • Brightness/◄Down Key • EXIT Key
	Functions	• Contrast • Brightness • H-Center • H-Size • V-Center • V-Size • Zoom • Pincushion • Trapezoid • Rotation • 6500°K • User Color • 9300°K • SRGB • Degauss • Moire Reduce • Recall • Exit • OSD Display Time
Plug & Play		DDC 2B
Power Consumption*		75 W
Pre-set Display Area		260 mm (10.2 in.) x 195 mm (7.7 in.)
Regulatory Compliance		TUV-S, NOM, CE, MPR II TÜV/GS,CULus,CCC

APPENDIX B – FACTORY PRESET TIMING TABLE

STANDARD	RESOLUTION	HORIZONTAL FREQUENCY	VERTICAL FREQUENCY
VGA	720 × 400	31.33 kHz	70 Hz
VGA	640 × 480	31.47 kHz	60 Hz
VESA/75	640 × 480	37.50 kHz	75 Hz
VESA/85	640 × 480	43.27 kHz	85 Hz
VESA/75	800 × 600	46.88 kHz	75 Hz
VESA/85	800 × 600	53.67 kHz	85 Hz
VESA/75	1024 × 768	60.02 kHz	75 Hz
VESA/85	1024 × 768	68.68 kHz	85 Hz
VESA/60	1280 × 1024	64.98 kHz	60 Hz

Connector pin assignment
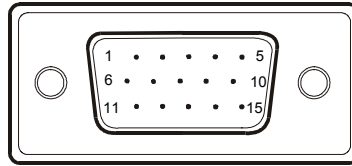
15 - Pin Color Display Signal Cable

PIN NO.	DESCRIPTION	PIN NO.	DESCRIPTION
1.	Red	9.	NC
2.	Green	10.	Ground
3.	Blue	11.	NC
4.	NC	12.	DDC-Serial Data
5.	NC	13.	H-Sync
6.	R-Ground	14.	V-Sync / *V-CLK
7.	G-Ground	15.	DDC-Serial Clock
8.	B-Ground	*	For DDC

Installing the Device Driver

Installing the Device Driver for Windows 95 or Windows 98

To install the device driver in Microsoft® Windows®95 or Windows98, do the following:

Note: You must download files from the Lenovo Monitor 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.

If you are using Windows 95:

6. 1. Click the **Change Display Type** button.
   2. Click the **Change Monitor Type** button.

• *If you are using Windows 98:*

6. 1. Click the **Advanced** button.
   2. Click the **Monitor** tab.
   3. Open the **Upgrade Device Wizard** window by clicking
      on **Change** button and then select the **Next** button.
   4. Click "Display a list of the known drivers for this device so that
      I can choose a specific driver" and then select the **Next** button.

7. Insert the Lenovo Monitor 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 "DRIVERS" folder.

10. Select E54 **CRT 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 for Windows 2000 or Windows Me

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 Lenovo Monitor 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 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 Lenovo Monitor 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 **E54 CRT 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

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

Note: You must download files from the Lenovo Monitor CD to use the Plug and Play feature in 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 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 Lenovo Monitor 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 **E54 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 Vista

To install the device driver in Microsoft® Windows Vista, do the following:

Note: You must download files from the Lenovo Monitor CD to use the Plug and Play feature in Windows Vista.

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 Vista operating system.
4. Open the **Display Properties** window by clicking **Start, Control Panel** and then double-clicking the **Hardware and Sound** icon.
5. Click the Personalization icon.
6. Click the Display Settings icon.
7. Click the Advanced Settings button.
8. Click the Monitor tab.
9. Click the Properties button.
10. Click the Driver tab.
11. Open the "Update Driver Software-Generic PnP Monitor" window by clicking on **Update Driver** and then click the "Browse my computer for driver software" **button**.
12. Select "Let me pick from a list of device drivers on my computer" .
13. Insert the Lenovo Monitor CD into the CD drive and click the **Have Disk** button.
14. Ensure that the CD drive letter is selected, and then click OK.
15. Select **E54 monitor** and click Next. 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.

Service Information

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

Model Type 6331(for E54)

41A1832	6331	BCN	FRU E54 Monitor - NH, MPR-II,	BB	NA,AP
41A1833	6331	BCE	FRU E54 Monitor - EQ, MPR-II,	BB	ASEAN,LA
41A1834	6331	BCS	FRU E54 Monitor - SH, MPR-II,	BB	ANZ
41A1835			FRU E54 - Tilt/Swivel,	BB	WW

Customer responsibilities

The warranty does not apply to a product which has been damaged due to accident, misuse, abuse,
improper installation, usage not in accordance with product specifications and instructions, natural
or personal disaster, or unauthorized alterations, repairs or modifications.

The following are examples of misuse or abuse and not covered by warranty:
- Images burned onto the screen of a CRT monitor. Burned image is preventable by utilizing a moving screen saver of power management.
- Physical damage to covers, bezel, base and cables.
- Scratches or punctures on monitor screens.