

**lenovo**

**D154W** Flat Panel Monitor  
User's Guide



# Product numbers

## 4415-AC1

### **First Edition (June 2008)**

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## Safety information

Before installing this product, read the Safety Information.

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

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

Prije instalacije ovog produkta obavezno pročitajte Sigurnosne Upute.

Před instalací tohoto produktu si přečtěte příručku bezpečnostních instrukcí.

Læs sikkerhedsforskrifterne, før du installerer dette produkt.

Ennen kuin asennat tämän tuotteen, lue turvaohjeet kohdasta 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.

製品の設置の前に、安全情報をお読みください。

본 제품을 설치하기 전에 안전 정보를 읽으십시오.

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

Lees voordat u dit product installeert eerst de veiligheidsvoorschriften.

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

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

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

Перед установкой продукта прочтите инструкции по технике безопасности.

Pred inštaláciou tohto produktu si prečítajte bezpečnostné informácie.

Pred namestitvijo tega proizvoda preberite Varnostne informacije.

Antes de instalar este producto lea la información de seguridad.

Läs säkerhetsinformationen innan du installerar den här produkten.

安裝本產品之前，請先閱讀「安全資訊」。

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## Chapter 1. Getting started

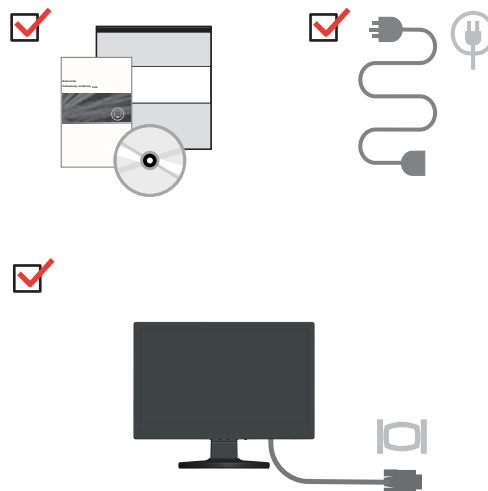
This User's Guide contains detailed information on your Flat Panel Monitor. For a quick overview, please see the Setup Poster that was shipped with your monitor.

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### Shipping contents

The product package should include the following items:

- *Setup Poster*
- *Monitor Safety, Troubleshooting, and Warranty Guide*
- *Reference and Driver CD*
- Flat Panel Monitor
- Power Cord
- Analog Interface Cable
- Audio Cable

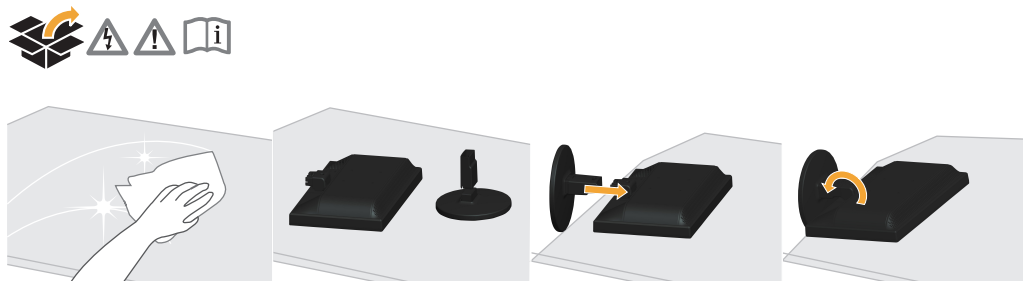


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### Attaching the base and handling your monitor

To set up your monitor, please see the illustrations below.

**Note:** Do not touch the monitor within the screen area. The screen area is glass and can be damaged by rough handling or excessive pressure.



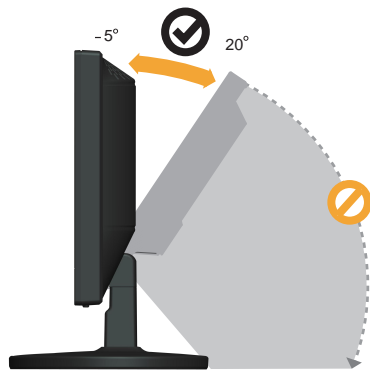
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## Product overview

This section will provide information on adjusting monitor positions, setting user controls, and using the cable lock slot.

### Types of adjustments

Please see the illustration below for an example of the tilt range.



### User controls

Your monitor has controls on the front which are used to adjust the display.



For information on how to use these controls, please see "Adjusting your monitor image" on page 2-3.

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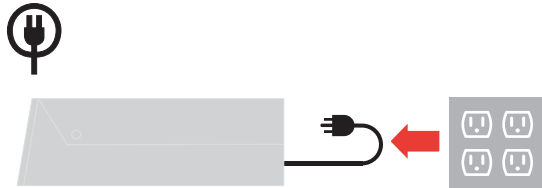
## Setting up your monitor

This section provides information to help you set up your monitor.

### Connecting and turning on your monitor

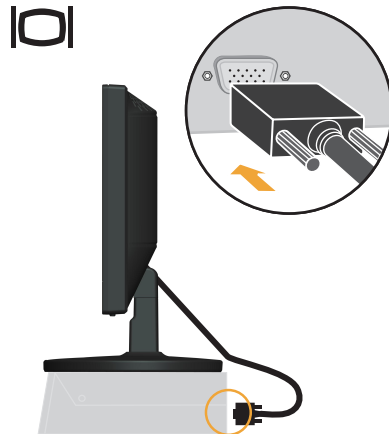
**Note:** Be sure to read the Safety Information located in the *Monitor Safety, Troubleshooting, and Warranty Guide* before carrying out this procedure.

1. Power off your computer and all attached devices, and unplug the computer power cord.

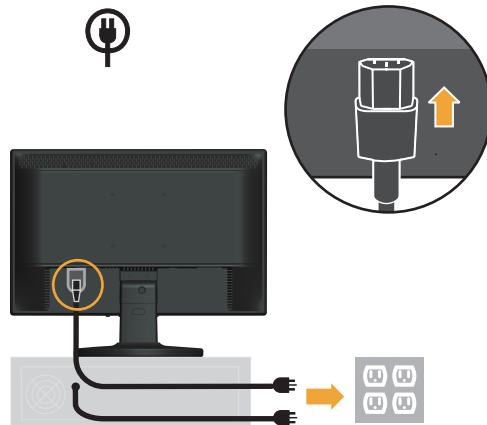


2. Connect the analog signal cable to the video port on the back of the computer.

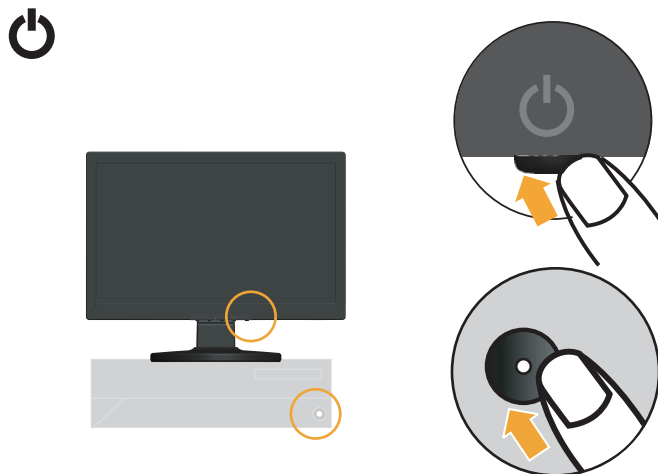
**Note:** One end of the signal cable is already pre-attached to your monitor.



3. Insert the power cord into the monitor, then plug the monitor power cord and the computer cord into grounded electrical outlets.



4. Power on the monitor and the computer.





5. To install the monitor driver, insert the *Reference and Driver CD*, click **Install driver**, and follow the on-screen instructions.



6. To optimize your monitor image, press the Automatic Image Setup key. Automatic image setup requires that the monitor is warmed up for at least 15 minutes. This is not required for normal operation.



**Note:** If automatic image setup does not establish the image that you prefer, perform manual image setup. See “Manual image setup” on page 3-3.

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## Registering your option

Thank you for purchasing this Lenovo® product. Please take a few moments to register your product and provide us with information that will help Lenovo to better serve you in the future. Your feedback is valuable to us in developing products and services that are important to you, as well as in developing better ways to communicate with you. Register your option on the following Web site:

<http://www.lenovo.com/register>

Lenovo will send you information and updates on your registered product unless you indicate on the Web site questionnaire that you do not want to receive further information.

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## Chapter 2. Adjusting and using your monitor

This section will give you information on adjusting and using your monitor.

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### Comfort and accessibility

Good ergonomic practice is important to get the most from your personal computer and to avoid discomfort. Arrange your workplace and the equipment you use to suit your individual needs and the kind of work that you perform. In addition, use healthy work habits to maximize your performance and comfort while using your computer.

For more detailed information on any of these topics, visit the Healthy Computing Web site at: <http://www.ibm.com/pc/ww/healthycomputing>

### Arranging your work area

Use a work surface of appropriate height and available working area to allow you to work in comfort.

Organize your work area to match the way you use materials and equipment. Keep your work area clean and clear for the materials that you typically use and place the items that you use most frequently, such as the computer mouse or telephone, within the easiest reach.

Equipment layout and setup play a large role in your working posture. The following topics describe how to optimize equipment setup to achieve and maintain good working posture.

### Positioning and viewing your monitor

Position and adjust your computer monitor for comfortable viewing by considering the following items:

- **Viewing distance:** Optimal viewing distances for monitors range from approximately 510mm to 760mm (20 in to 30 in) and can vary depending on ambient light and time of day. You can achieve different viewing distances by repositioning your monitor or by modifying your posture or chair position. Use a viewing distance that is most comfortable for you.
- **Monitor height:** Position the monitor so your head and neck are in a comfortable and neutral (vertical, or upright) position. If your monitor does not have height adjustments, you might have to place books or other sturdy objects under the base of the monitor to achieve the desired height. A general guideline is to position the monitor such that the top of the screen is at or slightly below your eye-height when you are comfortably seated. However, be sure to optimize your monitor height so the line of site between your eyes and the center the monitor suits your preferences for visual distance and comfortable viewing when your eye muscles are in a relaxed state.
- **Tilt:** Adjust the tilt of your monitor to optimize the appearance of the screen content and to accommodate your preferred head and neck posture.
- **General location:** Position your monitor to avoid glare or reflections on the screen from overhead lighting or nearby windows.

The following are some other tips for comfortable viewing of your monitor:

- Use adequate lighting for the type of work you are performing.
- Use the monitor brightness, contrast, and image adjustment controls, if equipped, to optimize the image on your screen to meet your visual preferences.
- Keep your monitor screen clean so you can focus on the screen's contents.

Any concentrated and sustained visual activity can be tiring for your eyes. Be sure to periodically look away from your monitor screen and focus on a far object to allow your eye muscles to relax. If you have questions on eye fatigue or visual discomfort, consult a vision care specialist for advice.

## Quick tips for healthy work habits

The following information is a summary of some important factors to consider to help you remain comfortable and productive while you use your computer.

- **Good posture starts with equipment setup:** The layout of your work area and the setup of your computer equipment have a large effect on your posture while using your computer. Be sure to optimize the position and orientation of your equipment by following the tips outlined in "Arranging your work area" on page 2-1 so you can maintain a comfortable and productive posture. Also, be sure to use the adjustment capabilities of your computer components and office furniture to best suit your preferences now and as your preferences change over time.
- **Minor changes in posture can help avoid discomfort:** The longer you sit and work with your computer, the more important it is to observe your working posture. Avoid assuming any one posture for an extended period of time. Periodically make minor modifications in your posture to help deter any discomforts that might arise. Make use of any adjustments that your office furniture or equipment provide to accommodate changes in posture
- **Short, periodic breaks help ensure healthy computing:** Because computing is primarily a static activity, it is particularly important to take short breaks from your work. Periodically, stand up from your work area, stretch, walk for a drink of water, or otherwise take a short break from using your computer. A short break from work gives your body a welcome change in posture and helps to ensure you remain comfortable and productive while you do work.

## Accessibility information

Lenovo is committed to providing greater access to information and technology to people with disabilities. With assistive technologies, users can access information in the way most appropriate to their disability. Some of these technologies are already provided in your operating system; others can be purchased through vendors or accessed at: <http://www.ibm.com/able/>

## Adjusting your monitor image

This section describes the user control features used to adjust your monitor image.

### Using the direct access controls

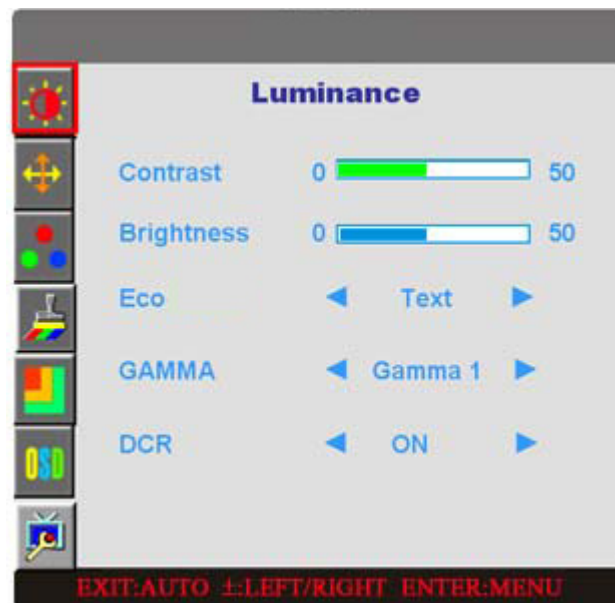
The direct access controls can be used when the On Screen Display (OSD) is not displayed.

Table 2-1. Direct access controls

| Icon         | Control     | Description                           |
|--------------|-------------|---------------------------------------|
| Auto         | Image Setup | Activates automatic image adjustment. |
| VOL+<br>VOL- | Volume      | Increase volume<br>decrease volume.   |




### Using the On-Screen Display (OSD) controls





1. Press the MENU-button to activate the OSD window .
2. Press ◀ or ▶ to navigate through the functions. Once the desired function is highlighted, press the MENU-button to activate it. If the function selected has a sub-menu, press ◀ or ▶ again to navigate through the sub-menu functions. Once the desired function is highlighted, press MENU-button to activate it.
3. Press ◀ or ▶ to change the settings of the selected function.
4. To exit and save, select the exit function. If you want to adjust any other function, repeat steps 2-3.



## ADJUSTING THE PICTURE

The descriptions for function control LEDS

|   |                    |                     |  |                                   |
|---|--------------------|---------------------|--|-----------------------------------|
|    | <b>Luminance</b>   | <b>Adjust Range</b> | <b>Description</b>                                   |                                   |
|   | Brightness         | 0-100               | Backlight Adjustment                                 |                                   |
|   | Contrast           | 0-100               | Contrast from Digital-register.                      |                                   |
|   | Eco                | Standard            |  | Standard Mode                     |
|   |                    | Text                |  | Text Mode                         |
|   |                    | Internet            |  | Internet Mode                     |
|   |                    | Game                |  | Game Mode                         |
|   |                    | Movie               |  | Movie Mode                        |
|   |                    | Sports              |  | Sports Mode                       |
|   | Gamma              | Gamma1              |  | Adjust to Gamma1                  |
|   |                    | Gamma2              |  | Adjust to Gamma 2                 |
|   |                    | Gamma3              |  | Adjust to Gamma 3                 |
| DCR   | Off                |                     | Disable dynamic contrast ratio                       |                                   |
|   | On                 |                     | Enable dynamic contrast ratio                        |                                   |
|  | <b>Image Setup</b> |                     |  |                                   |
|   | Clock              | 0-100               | Adjust picture Clock to reduce Vertical-Line noise.  |                                   |
|   | Focus              | 0-100               | Adjust Picture Phase to reduce Horizontal-Line noise |                                   |
|   | H.Position         | 0-100               | Adjust the vertical position of the picture.         |                                   |
|   | V.Position         | 0-100               | Adjust the horizontal position of the picture.       |                                   |
|  | <b>Color Temp.</b> |                     |  |                                   |
|   | Warm               |                     | Recall Warm Color Temperature from EEPROM.           |                                   |
|   | Normal             |                     | Recall Normal Color Temperature from EEPROM.         |                                   |
|   | Cool               |                     | Recall Cool Color Temperature from EEPROM.           |                                   |
|   | sRGB               |                     | Recall sRGB Color Temperature from EEPROM.           |                                   |
|   | User               | User-B              |  | Blue Gain from Digital-register   |
|   |                    | User-G              |  | Green Gain Digital-register.      |
|   |                    | User-R              |  | Red Gain from Digital-register    |
|   |                    | User-Y              |  | Yellow Gain from Digital-register |
| User-C  |                    |                     | Cyan Gain from Digital-register                      |                                   |
| User-M  |                    |                     | Magenta Gain from Digital-register                   |                                   |

|   |                      |   |  |
|---|----------------------|---|--|
|    | <b>Color Boost</b>   |   |  |
|   | Full Enhance         | on or off   | Disable or Enable Full Enhance Mode                                  |
|   | Nature Skin          | on or off   | Disable or Enable Nature Skin Mode                                   |
|   | Green Field          | on or off   | Disable or Enable Green Field Mode                                   |
|   | Sky-blue             | on or off   | Disable or Enable Sky-blue Mode                                      |
|   | AutoDetect           | on or off   | Disable or Enable AutoDetect Mode                                    |
|   | Demo                 | on or off   | Disable or Enable Demo   |
|    | <b>Picture Boost</b> |   |  |
|   | Frame Size           | 0-100   | Adjust Frame Size  |
|   | Brightness           | 0-100   | Adjust Frame Brightness  |
|   | Contrast             | 0-100   | Adjust Frame Contrast  |
|   | Hue                  | 0-100   | Adjust Frame Hue   |
|   | Saturation           | 0-100   | Adjust Frame Saturation  |
|   | Position             | H. position   | Adjust Frame horizontal Position                                     |
|   |                      | V.position  | Adjust Frame vertical Position                                       |
| Bright Frame  | on or off            | Disable or Enable Bright Frame                              |  |
|  | <b>OSD Setup</b>     |   |  |
|   | H.Position           | 0-100   | Adjust the verticalposition of OSD                                   |
|   | V.Position           | 0-100   | Adjust the horizontal position of OSD                                |
|   | Timeout              | 0-100   | Adjust the OSD Timeout   |
|   | Language             |   | Select the OSD language  |
|  | <b>Extra</b>         |   |  |
|   |                      | Digital   | Select Digital Sigal Source as Input                                 |
|   |                      | Analog  | Select Analog Sigal Source as Input                                  |
|   | Auto Config          | yes or no   | Auto adjust will automatically adjust size, position,clock and phase |
|   | Reset                | yes or no   | Reset monitor to original settings.                                  |
|   | DDC-CI               |   | Turn ON/OFF DDC-CI Support   |
| Information   |                      | Show the information of the main image and sub-image source |  |

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## Selecting a supported display mode

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

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

Unlike CRT monitors, which require a high refresh rate to minimize flicker, LCD or Flat Panel technology is inherently flicker-free.

**Note:** If your system has previously been used with a CRT monitor and is currently configured to a display mode outside the range of this monitor, you may need to re-attach the CRT monitor temporarily until you have re-configured the system; preferably to 1360 x 768 at 60 Hz, which is the Native Resolution Display mode.

The display modes shown below have been optimized at the factory.

Table 2-3. Factory set display modes 4415-AC1

| Addressability | Refresh rate              |
|----------------|---------------------------|
| 640 x 400      | 70 Hz                     |
| 640 x 480      | 60 Hz, 67Hz, 72 Hz, 75 Hz |
| 720 x 400      | 70 Hz                     |
| 800 x 600      | 56Hz, 60 Hz, 72 Hz, 75 Hz |
| 832 x 624      | 75 Hz                     |
| 1024 x 768     | 60 Hz, 70 Hz, 72Hz, 75Hz  |
| 1360 x 768     | 60 Hz,                    |

## Understanding power management

Power management 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.

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.

Table 2-4. Power indicator

| State           | Power Indicator | Screen | Restoring Operation  | Compliance  |
|-----------------|-----------------|--------|--|-------------|
| On              | Steady green    | Normal |  |             |
| Standby/Suspend | Steady amber    | Blank  | Press a key or move the mouse<br><br>There may be a slight delay before the image reappears.<br><b>Note:</b> Standby also occurs if there is no image output to the monitor. | ENERGY STAR |
| Off             | Off             | Blank  | Press the Power button.<br><br>There may be a slight delay before the image reappears.   | ENERGY STAR |



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## Caring for your monitor

Be sure to turn off the power before you perform any maintenance on the monitor.

**Do not:**

- Apply water or liquid directly to your monitor.
- Use solvents or abrasives.
- Use flammable cleaning materials to clean your monitor or any other electrical equipment.
- Touch the screen area of your monitor with sharp or abrasive items. This type of contact may cause permanent damage to your screen.
- Use any cleaner which contains an anti-static solution or similar additives. This may harm the coating of the screen area.

**Do:**

- Lightly dampen a soft cloth with water and use this to gently wipe the covers and the screen.
- Remove grease or finger marks with a damp cloth and a little mild detergent.

## Chapter 3. Reference information

This section contains monitor specifications, instructions to manually install the monitor driver, troubleshooting information, and service information.

### Monitor specifications

Table 3-1. Monitor specifications for type-model 4415-AC1

|  |                           |  |
|--|---------------------------|--|
| Dimensions   | Height                    | 375.9 mm   |
|  | Depth                     | 190 mm   |
|  | Width                     | 304.7 mm   |
| Stand  | Tilt range                | -5°/+20°   |
| VESA mount   | Supported                 | 75 mm (2.95 in.)<br>Make sure the AC jack is located downside when using VESA Mount setup. |
| Image  | Viewable image size       | 395 mm (15.6 in.)  |
|  | Maximum height            | 334.232 mm   |
|  | Maximum width             | 193.536 mm   |
|  | Pixel pitch               | 0.252(H)x0.252(V)mm  |
| Power input  | Supply voltage            | 90- 264V ac(100-240Vac±10%)<br>60/50 ± 3 Hz  |
| Power consumption<br><b>Note:</b> Power consumption figures are for the monitor and the power supply combined. | Normal operation          | <20 W  |
|  | Standby/Suspend           | < 2 W  |
|  | Off                       | < 1 W  |
| Video input  | Input signal              | Analog Direct Drive, 75 ohm<br>0.7 V   |
|  | Horizontal addressability | 1360 pixels (max)  |
|  | Vertical addressability   | 768 lines (max)  |
|  | Clock frequency           | 90 MHz   |
| Communications   | VESA DDC                  | DDC-CI   |
| Supported Display Modes<br>(VESA Standard modes between noted ranges)  | Horizontal frequency      | 30 kHz -60 kHz   |
|  | Vertical frequency        | 50 Hz -75 Hz   |
|  | Native Resolution         | 1360 x 768 at 60 Hz  |
| Temperature  | Operating                 | 0° to 40° C (32° to 104° F)  |
|  | Storage                   | -20° to 60° C (-4° to 140° F)  |
|  | Shipping                  | -20° to 60° C (-4° to 140° F)  |

Table 3-1. Monitor specifications for type-model 4415-AC1 (continued)

|          |           |            |
|----------|-----------|------------|
| Humidity | Operating | 10% to 80% |
|          | Storage   | 5% to 95%  |
|          | Shipping  | 5% to 95%  |

## Troubleshooting

If you have a problem setting up or using your monitor, you might be able to solve it yourself. Before calling your dealer or Lenovo, try the suggested actions that are appropriate to your problem.

Table 3-2. Troubleshooting

| Problem   | Possible cause   | Suggested action   | Reference  |
|---|--|--|--|
| The words "Input Not Support" are shown on the screen | The system is set to a display mode which is not supported by the monitor.   | <ul style="list-style-type: none"> <li>If you are replacing an old monitor, reconnect it and adjust the display mode to within the specified range for your new monitor.</li> <li>If using a Windows system, restart the system in safe mode, then select a supported display mode for your computer.</li> <li>If these options do not work, contact the Customer Support Center.</li> </ul> | "Selecting a supported display mode" on page 2-5     |
| The image quality is unacceptable.                    | The video signal cable is not connected with the monitor or system completely.   | Be sure the signal cable is firmly plugged into the system and monitor.  | "Connecting and turning on your monitor" on page 1-3 |
|   | The color settings may be incorrect.   | Select another color setting from the OSD menu.  | "Adjusting your monitor image" on page 2-3           |
|   | The automatic image setup function was not performed.  | Perform automatic image setup.   | "Adjusting your monitor image" on page 2-3           |
| The power indicator is not lit and there is no image. | <ul style="list-style-type: none"> <li>The monitor's power switch is not switched on.</li> <li>The power cord is loose or disconnected.</li> <li>There is no power at the outlet.</li> </ul> | <ul style="list-style-type: none"> <li>Be sure the power cord is connected properly.</li> <li>Be sure the outlet has power.</li> <li>Power on the monitor.</li> <li>Try using another power cord.</li> <li>Try using another electrical outlet.</li> </ul>   | "Connecting and turning on your monitor" on page 1-3 |


Table 3-2. Troubleshooting (continued)

| Problem   | Possible cause  | Suggested action  | Reference  |
|---|---|---|--|
| Screen is blank and power indicator is steady amber   | The monitor is in Standby/Suspend mode  | <ul style="list-style-type: none"> <li>Press any key on the keyboard or move the mouse to restore operation.</li> <li>Check the Power Options settings on your computer.</li> </ul> | "Understanding power management" on page 2-6                       |
| The power indicator is green, but there is no image.  | The video signal cable is loose or disconnected from the system or monitor.   | Be sure the video cable is connected with the system properly.  | "Connecting and turning on your monitor" on page 1-3               |
|   | The monitor brightness and contrast are at the lowest setting.  | Adjust the brightness and contrast setting on the OSD menu.   | "Adjusting your monitor image" on page 2-3                         |
| One or more of the pixels appear discolored   | This is a characteristic of the LCD technology and is not an LCD defect.  | If there are more than five pixels missing, contact the Customer Support Center.  | Appendix A, "Service and Support," on page A-1                     |
| <ul style="list-style-type: none"> <li>Fuzzy lines in text or a blurry image.</li> <li>Horizontal or vertical lines through the image.</li> </ul> | <ul style="list-style-type: none"> <li>Image setup has not been optimized</li> <li>Your system Display Properties setting have not been optimized.</li> </ul> | Adjust the resolution settings on your system to match the native resolution for this monitor: 1360 x768 at 60 Hz.  | "Adjusting your monitor image" on page 2-3<br>"Manual image setup" |
|   |   | Perform automatic image setup. If automatic image setup does not help, perform manual image setup.  | "Selecting a supported display mode" on page 2-5                   |
|   |   | When working in the native resolution, you may find additional improvements by adjusting the Dots Per Inch (DPI) setting on your system.  | See the Advanced section of your system's display properties.      |

## Manual image setup

If automatic image setup does not establish the image that you prefer, perform manual image setup.

**Note:** Have your monitor powered on for about 15 minutes, until the monitor warms up.

1. Press Menu at the bottom of the monitor to open the OSD menu.
2. Use < or > to select  and press Menu to access.
3. Use < or > to select **Clock** and **Phase** adjustment.

- Clock (pixel frequency) adjusts the number of pixels scanned by one horizontal sweep. If the frequency is not correct, the screen shows vertical stripes and the picture does not have the correct width.
  - Phase adjusts the phase of the pixel clock signal. With a wrong phase adjustment, the picture has horizontal disturbances in light picture.
4. When the image no longer looks distorted, save the Clock and Phase adjustments.
  5. Press **Auto** to leave the OSD menu.

## Manually installing the monitor driver

Below are steps for manually installing the monitor driver in Microsoft Windows Vista, Microsoft Windows XP, and Microsoft Windows 2000 Professional.

### Installing the monitor 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. Click the **Have Disk** button. Click on the **Browse** button and navigate to the following directory:  
**X:\Monitor Drivers\Windows Vista**  
(where **X** is the drive letter designator for the CD-ROM drive).
14. Select the "**LEN113F.inf**" file and click the **Open** button. Click the **OK** button.
15. Select **Lenovo D154 Wide** 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.

**Note:** On LCD monitors, unlike CRTs, a faster refresh rate does not improve display quality. Lenovo recommends using either 1360 x 768 at a refresh rate of 60 Hz, or 640 x 480 at a refresh rate of 60 Hz..

## Installing the monitor driver in Windows XP

To use the Plug and Play feature in Windows XP, files should be loaded from the *Reference and Driver CD*.

**Note:** This section must be completed before continuing with the Windows XP automatic image setup.

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 the system to boot into Windows XP.
4. Open the **Display Properties** window by clicking **Start** → **Settings** → **Control Panel**, select/enter into the **Display** control panel.
5. Click the **Settings** tab.
6. Click the **Advanced** button.
7. Click the **Monitor** tab.
8. Click the **Properties** button.
9. Click the **Drivers** tab.
10. Open the **Hardware Update Wizard** window by clicking on the **Update Driver**. If appears “**Can Windows connect to Windows Update...**” window, please select “**No, not this time**” option. and then click **Next**.
11. Select “**Install from a list or Specific location(Advanced)**”, and then click **Next**.
12. Select “**Don't search. I will choose the driver to install**” option, and then click **Next**.
13. Click the **Have Disk** button. Click on the **Browse** button and navigate to the following directory:  
**X:\Monitor Drivers\Windows XP & Windows 2000**  
(where **X** is the drive letter designator for the CD-ROM drive).
14. Select the “**LEN113F.inf**” file and click the **Open** button. Click on the **OK** button.
15. Select **Lenovo D154 Wide** 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 system. The system will automatically select the maximum refresh rate and corresponding Color Matching Profiles.

**Note:** On LCD monitors, unlike CRTs, a faster refresh rate does not improve display quality. Lenovo recommends using either 1360 x 768 at a refresh rate of 60 Hz, or 640 x 480 at a refresh rate of 60 Hz.

## Installing the monitor driver in Windows 2000

To use the Plug and Play feature in Windows 2000, files should be loaded from the *Reference and Driver CD*.

**Note:** This section must be completed before continuing with the Windows 2000 automatic image setup.

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 the system to boot into Windows 2000.
4. Open the **Display Properties** window by clicking **Start** → **Settings** → **Control Panel**, select/enter into the **Display** control panel.
5. Click the **Settings** tab.
6. Click the **Advanced** button.
7. Click the **Monitor** tab.
8. Click the **Properties** button.
9. Click the **Drivers** tab.
10. Open the **Upgrade Device Driver Wizard** window by clicking on **Update Driver**, and then click **Next**.
11. Select **“Display a list of the known drivers for this device so that I can choose a specific driver”** option, and then click **Next**.
12. Click the **Have Disk** button. Click on the **Browse** button and navigate to the following directory:  
**X:\Monitor Drivers\Windows XP & Windows 2000**  
(where **X** is the drive letter designator for the CD-ROM drive).
13. Select the **"LEN113F.inf"** file and click the **Open** button. Click on the **OK** button.
14. Select **Lenovo D154 Wide** and click **Next**. The files will be copied from the CD to your hard disk drive.
15. Close all open windows and remove the CD.
16. Restart the system. The system will automatically select the maximum refresh rate and corresponding Color Matching Profiles.

**Note:** On LCD monitors, unlike CRTs, a faster refresh rate does not improve display quality. Lenovo recommends using either 1360 x 768 at a refresh rate of 60 Hz, or 640 x 480 at a refresh rate of 60 Hz.

## Getting further help

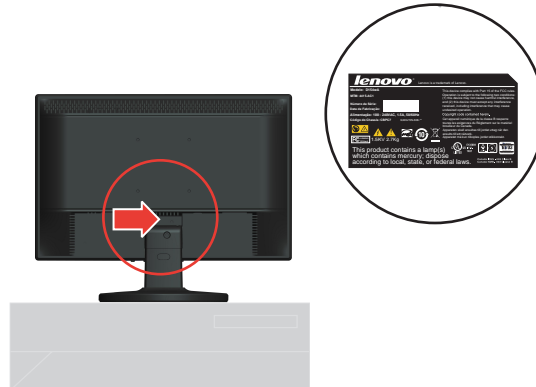
If you still can't solve your problem, please contact the Lenovo Support Center. For more information on contacting the Customer Support Center, please see Appendix A, "Service and Support," on page A-1.



## Service information

### Product numbers

The product number for your monitor is located on the back cover as shown below.



### 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 or power management.
- Physical damage to covers, bezel, base and cables.
- Scratches or punctures on monitor screens.

## Service parts

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

*Table 3-3. List of service parts 4415-AC1*

| RELEASE | DESCRIPTION           | M/T  | MODEL | COLOR | GEOGRAPHY |
|---------|-----------------------|------|-------|-------|-----------|
| 45J7660 | D154 FRU Monitor      | 4415 | AC1   | Black | LA        |
| 45J7661 | D154 FRU signal cable | 4415 | AC1   | Black | LA        |
| 45J7662 | D154 FRU Stand        | 4415 | AC1   | Black | LA        |

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## Appendix A. Service and Support

The following information describes the technical support that is available for your product, during the warranty period or throughout the life of your product. Refer to the Lenovo Limited Warranty for a full explanation of Lenovo warranty terms.

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### Registering your option

Register to receive product service and support updates, as well as free and discounted computer accessories and content. Go to:  
<http://www.lenovo.com/register>

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### Online technical support

Online technical support is available during the lifetime of a product at:  
<http://www.lenovo.com/support>

Product replacement assistance or exchange of defective components also is available during the warranty period. In addition, if your option is installed in a Lenovo computer, you might be entitled to service at your location. A Lenovo technical support representative can help you determine the best alternative.

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### Telephone technical support

Installation and configuration support through the Customer Support Center will be available until 90 days after the option has been withdrawn from marketing. After that time, the support is cancelled, or made available for a fee, at Lenovo's discretion. Additional support is also available for a nominal fee.

Before contacting a Lenovo technical support representative, please have the following information available: option name and number, proof of purchase, computer manufacturer, model, serial number and manual, the exact wording of any error message, description of the problem, and the hardware and software configuration information for your system.

Your technical support representative might want to walk you through the problem while you are at your computer during the call.

Telephone numbers are subject to change without notice. The most up-to-date telephone list for Lenovo Support is always available at:

<http://www.lenovo.com/support/phone>

| Country or Region | Telephone Number  |
|-------------------|---|
| Africa            | Africa: +44 (0)1475-555-055<br>South Africa: +27-11-3028888 and 0800110756<br>Central Africa: Contact the nearest Lenovo Business Partner |
| Argentina         | 0800-666-0011 (Spanish)   |
| Australia         | 131-426 (English)   |
| Austria           | Warranty service and support: 01-211-454-610 (German)   |
| Belgium           | Warranty service and support: 02-225-3611 (Dutch, French)   |
| Bolivia           | 0800-10-0189 (Spanish)  |

| Country or Region           | Telephone Number   |
|-----------------------------|--|
| Brazil                      | Sao Paulo region: (11) 3889-8986<br>Outside Sao Paulo region: 0800-701-4815<br>(Brazilian Portuguese)                      |
| Brunei                      | 801-1041 (English, Bahasa Melayu)  |
| Canada                      | Toronto: 416-383-3344<br>Outside Toronto: 1-800-565-3344<br>(English, French)  |
| Chile                       | Toll Free: 188-800-442-488<br>800-361-213<br>(Spanish)   |
| China                       | 86-10-58851110<br>800-990-8888<br>(Mandarin)   |
| China<br>(Hong Kong S.A.R.) | ThinkCentre® Commercial PC: 8205-0333<br>Multimedia Home PC: 800-938-228<br>(Cantonese, English, Mandarin)                 |
| China<br>(Macau S.A.R.)     | ThinkCentre Commercial PC: 795-9892<br>Multimedia Home PC: 0800-336<br>(Cantonese, English, Mandarin)                      |
| Colombia                    | 1-800-912-3021 (Spanish)   |
| Costa Rica                  | 0-800-011-1029 (Spanish)   |
| Croatia                     | 0800-0426  |
| Cyprus                      | +357-22-841100   |
| Czech Republic              | +420-2-7213-1316   |
| Denmark                     | Warranty service and support: 7010-5150 (Danish)   |
| Dominican Republic          | 1-866-434-2080 (Spanish)   |
| Ecuador                     | 1-800-426911 (Spanish)   |
| Egypt                       | +202-35362525  |
| El Salvador                 | 800-6264 (Spanish)   |
| Estonia                     | +372 6776793<br>+372 66 00 800   |
| Finland                     | Warranty service and support: +358-800-1-4260 (Finnish)  |
| France                      | Warranty service and support (hardware): 0810-631-213<br>Warranty service and support (software): 0810-631-020<br>(French) |
| Germany                     | Warranty service and support: 01805 004618 (German)  |
| Greece                      | +30-210-680-1700   |
| Guatemala                   | 1800-624-0051 (Spanish)  |
| Honduras                    | Tegucigalpa: 232-4222<br>San Pedro Sula: 552-2234<br>(Spanish)   |
| Hungary                     | +36-1-382-5716<br>+36-1-382-5720<br>(English, Hungarian)   |
| India                       | 1800-425-2666<br>+91-80-2535-9182<br>(English)   |

| Country or Region | Telephone Number  |
|-------------------|---|
| Indonesia         | 021 5238 823<br>Local number only: 001-803-606-282<br>DID (Direct Inward Dialing): +603 8315 6859<br>(English, Bahasa Indonesia)  |
| Ireland           | Warranty service and support: 01-881-1444 (English)   |
| Israel            | Givat Shmuel Service Center: +972-3-531-3900<br>(Hebrew, English)   |
| Italy             | Warranty service and support: +39-800-820094 (Italian)  |
| Japan             | Toll Free: 0120-20-5550<br>International: +81-46-266-4716<br><br>The above numbers will be answered with a Japanese language voice prompt. For telephone support in English, please wait for the Japanese voice prompt to end, and an operator will answer. Please say "English support please," and your call will be transferred to an English-speaking operator.<br><br>PC software: 0120-558-695<br>Overseas calls: +81-44-200-8666<br>(Japanese) |
| Korea             | 1588-6782 (Korean)  |
| Latvia            | +371 7070360  |
| Lithuania         | +370 5 278 66 00  |
| Luxembourg        | +352-360-385-343 (French)   |
| Malaysia          | Local number only: 1800-88-1889<br>DID: +603 8315 6855<br>(English, Bahasa Melayu)  |
| Malta             | +35621445566  |
| Mexico            | 001-866-434-2080 (Spanish)  |
| Middle East       | +44 (0)1475-555-055   |
| Netherlands       | +31-20-514-5770 (Dutch)   |
| New Zealand       | 0800-733-222 (English)  |
| Nicaragua         | 001-800-220-1830 (Spanish)  |
| Norway            | Warranty service and support: 8152-1550 (Norwegian)   |
| Panama            | Lenovo Customer Support Center: 001-866-434-2080 (Toll Free)<br>206-6047<br>(Spanish)   |
| Peru              | 0-800-50-866 (Spanish)  |
| Philippines       | 1800-1601-0033 (English, Filipino)  |
| Poland            | +48-22-878-6999 (Polski)  |
| Portugal          | +351-21-892-7046 (Portuguese)   |
| Romania           | +4-021-224-4015   |
| Russia            | Moscow: +7-(495)-258-6300<br>Toll Free: +8-800-200-6300<br>(Russian)  |
| Singapore         | Local number only: 800-6011-343<br>DID: +603 8315 6859 (English)  |
| Slovakia          | +421-2-4954-5555  |

| Country or Region | Telephone Number  |
|-------------------|---|
| Slovenia          | +386-1-200-50-60 (Slovenian)  |
| Spain             | 91-714-7983<br>0901-100-000<br>(Spanish)  |
| Sri Lanka         | +9411 2493547<br>+9411 2493548<br>(English)   |
| Sweden            | Warranty service and support: 077-117-1040 (Swedish)  |
| Switzerland       | Warranty service and support: 0800-55-54-54<br>(German, French, Italian)  |
| Taiwan            | 886-2-8723-9799<br>0800-000-700<br>(Mandarin)   |
| Thailand          | Local number only: 1-800-060-066<br>66 2273 4088<br>DID: +603 8315 6857 (Thai, English)   |
| Turkey            | 00800-4463-2041 (Turkish)   |
| United Kingdom    | Standard warranty support: 08705-500-900 (English)  |
| United States     | 1-800-426-7378 (English)  |
| Uruguay           | 000-411-005-6649 (Spanish)  |
| Venezuela         | 0-800-100-2011 (Spanish)  |
| Vietnam           | For Northern Area and Hanoi City:<br>844 3 946 2000 or 844 3 942 6457<br>For Southern Area and Ho Chi Minh City:<br>848 3 829 5160 or 844 3 942 6457<br>(Vietnamese, English) |

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