

***lenovo***

**D156 Wide** Flat Panel Monitor  
User's Guide



# Product numbers

4415-AB1

4423-AB1

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

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## Safety information

**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 peèitajte 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 přeètète pŕuèku bezpeènostnèh 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.

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.

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## Chapter 1. Getting started

This User's Guide contains detailed information on the 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*
- *Analog Interface Cable - Attached to monitor*

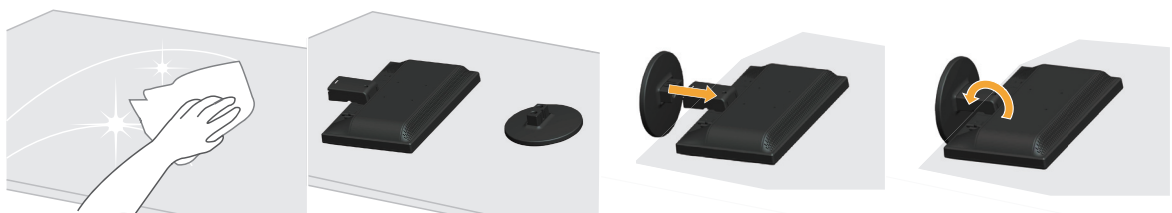


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### Attaching the base and handling your monitor

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.



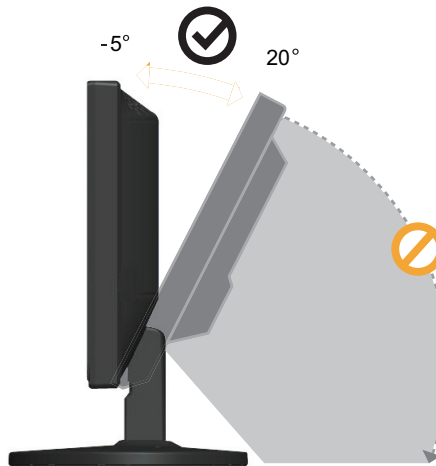
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## Product overview

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 on how to set up your monitor.

### Connecting and turning on your monitor

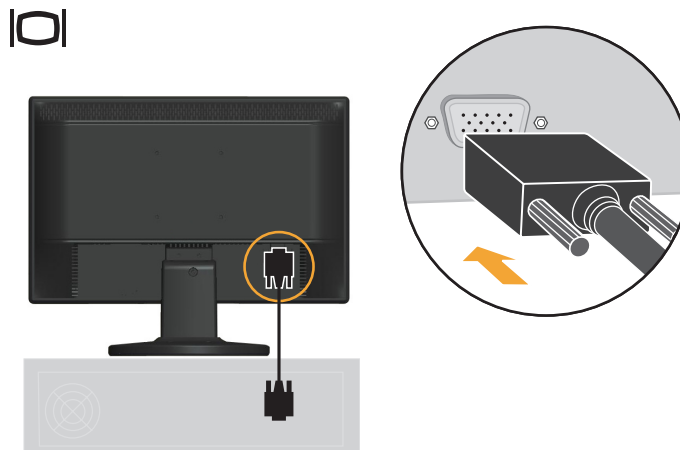
**Note:** Be sure to read the Safety Information located in the *Monitor Safety, Troubleshooting, and Warranty Guide* before carrying out this procedure.

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

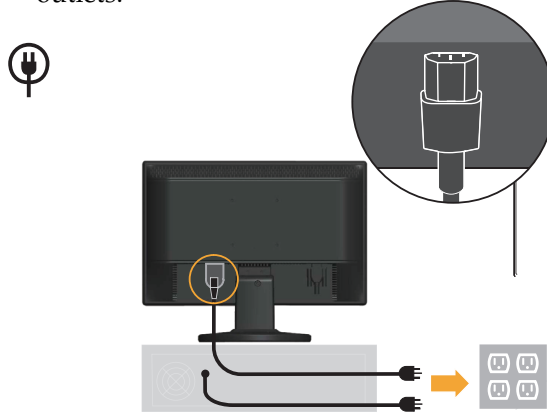


2. Connect the analog signal cable to the video port on the back of the computer.

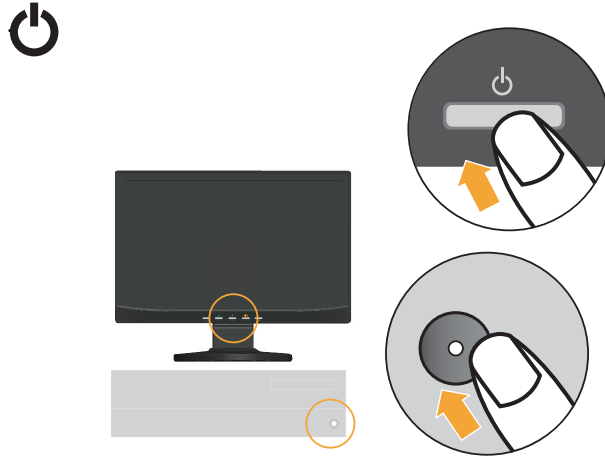
**Note:** One end of the signal cable is already pre-attached to your monitor.



3. 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 3-4 .

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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.lenovo.com/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.

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## Adjusting your monitor image



This section describes the user control features for adjusting your monitor image.

### Using the direct access controls

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

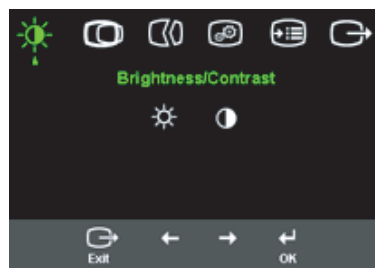
**Note:** The direct access controls are grey.

Table 2-1. Direct access controls

| Icon  | Control     | Description                             |
|---|-------------|---|
|  | Image Setup | Activates automatic image adjustment.   |
|  | Brightness  | Direct access to Brightness adjustment. |

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

To adjust the settings, the user controls can be viewed through the OSD.



To use the controls:

1. Press  $\leftarrow$  to open the main OSD menu.
2. Use  $\leftarrow$  or  $\rightarrow$  to move among the icons. Select an icon and press  $\leftarrow$  to access that function. If there is a sub-menu, you can move between options using  $\leftarrow$  or  $\rightarrow$ , then press  $\leftarrow$  to select that function. Use  $\leftarrow$  or  $\rightarrow$  to make adjustments. Press  $\leftarrow$  to save.
3. Press  $\rightarrow$  to move backwards through the sub-menus and exit from the OSD.
4. Press and hold  $\leftarrow$  for 10 seconds to lock the OSD. This will prevent accidental adjustments to the OSD. Press and hold  $\leftarrow$  for 10 seconds to unlock the OSD and allow adjustments to the OSD.
5. Enables DDC/CI by default. Use OSD Exit Key, Press and hold the  $\rightarrow$  buttons for 10 seconds to disable / enable DDC/CI function. The words "DDC/CI disable" shows on the screen.

Table 2-2. OSD functions




























| OSD Icon on Main Menu  | Submenu  | Description   | Controls and Adjustments (Analog)  |  |
|--|--|---|--|--|
| <br>Brightness/<br>Contrast | <br>Brightness          | Adjusts overall brightness  | <br>← | <br>→ |
|  | <br>Contrast            | Adjusts difference between light and dark areas   | <br>← | <br>→ |
| <br>Image Position          | <br>Horizontal Position | Moves the image left or right.  | <br>← | <br>→ |
|  | <br>Vertical Position   | Moves the image up or down.   | <br>← | <br>→ |
| <br>Image Setup             | <br>Automatic           | Automatically optimizes the image.  |  |  |
|  | <br>Manual              | Manually optimizes the image. See "Manual image setup" on page 3-4. <ul style="list-style-type: none"> <li>• Clock</li> <li>• Phase</li> <li>• Save</li> </ul>  |  |  |
| <br>Image Properties      | <br>Color             | Adjusts intensity of red, green, and blue. <p>Preset mode</p> <ul style="list-style-type: none"> <li>• Default</li> <li>• sRGB</li> <li>• Reddish</li> <li>• Bluish</li> </ul> <p>Custom</p> <ul style="list-style-type: none"> <li>• Red: Increases or decreases the saturation of 'red' in the image.</li> <li>• Green: Increases or decreases the saturation of 'green' in the image.</li> <li>• Blue: Increases or decreases the saturation of 'blue' in the image.</li> <li>• Save: Saves the custom color choices.</li> </ul> |  |  |

Table 2-2. OSD functions

| OSD Icon on Main Menu  | Submenu  | Description   |
|--|--|---|
| <br>Options | <br>Information     | Shows resolution, refresh rate, and product details.<br><b>Note:</b> This screen does not allow any changes to the settings.  |
|  | <br>Menu Language   | This section lists the languages supported by your monitor.<br><b>Note:</b> The language chosen only affects the language of the OSD. It has no effect on any software running on the computer.   |
|  | <br>Menu Position   | Menu position adjusts menu location on the screen.<br>Default:<br>Default returns the menu position to the default settings.<br>Custom: <ul style="list-style-type: none"> <li>• Horizontal: Changes the horizontal position of the OSD.</li> <li>• Vertical: Changes the vertical position of the OSD.</li> <li>• Save</li> </ul>  |
|  | <br>Reset         | <ul style="list-style-type: none"> <li>• Cancel</li> <li>• Reset</li> </ul> Resets monitor to the original factory settings.  |
|  | <br>Accessibility | Controls button and menu settings for accessibility preferences. <ul style="list-style-type: none"> <li> Button repeat rate:<br/>Select ← or → to change.               <ul style="list-style-type: none"> <li>• Off</li> <li>• Default</li> <li>• Slow</li> </ul> </li> <li> Menu time out: Sets the length of time the OSD will remain active after the last time a button is pressed.</li> </ul> |

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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 1366 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*

| Addressability | Refresh rate |
|----------------|--------------|
| NTSC VGA       | 60Hz         |
| PAL VGA        | 50Hz         |
| 640 x 350      | 70Hz         |
| 640 x 480      | 60Hz         |
| 640 x 480      | 72Hz         |
| 640 x 480      | 75Hz         |
| 800 x 600      | 60Hz         |
| 800 x 600      | 75Hz         |
| 1024 x 768     | 60Hz         |
| 1024 x 768     | 70Hz         |
| 1024 x 768     | 75Hz         |
| 1360 x 768     | 60Hz         |
| 1366 x 768     | 60Hz         |

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## 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              | green           | Normal |  |             |
| Standby/Suspend | 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  |  | 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.

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## Detaching the monitor stand

To detach the base by pressing the button.



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## 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

|  |                           |  |
|--|---------------------------|--|
| Dimensions   | Height                    | 295.454 mm (12.1685 in.)   |
|  | Depth                     | 189.667 mm (7.4671 in.)  |
|  | Width                     | 374.046 mm (14.7262 in.)   |
| 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            | 193.536 mm (7.6 in.)   |
|  | Maximum width             | 344.232 mm (13.6 in.)  |
|  | Pixel pitch               | 0.252 mm (0.01 in.) (V)  |
| Power input  | Supply voltage            | 90-264VAC (100~240VAC+/-10%)   |
|  | Max supply current        | 1.5 A  |
| Power consumption<br><b>Note:</b> Power consumption figures are for the monitor and the power supply combined. | Normal operation          | < 28 W   |
|  | Standby/Suspend           | < 2W   |
|  | Off                       | < 1W at 100Vac & 240Vac  |
| Video input (Analog)   | Input signal              | Analog Direct Drive, 75 ohm 0.7 V  |
|  | Horizontal addressability | 1366 pixels (max)  |
|  | Vertical addressability   | 768 lines (max)  |
|  | Clock frequency           | 86 MHz   |

**Table 3-1. Monitor specifications**

|  |                      |                                      |
|--|----------------------|--------------------------------------|
| Communications   | VESA DDC             |                                      |
| Supported Display Modes<br>(VESA Standard modes<br>between noted ranges) | Horizontal frequency | 30 kHz - 60 kHz(Pixel clock <135MHz) |
|  | Vertical frequency   | 50 Hz - 75 Hz(Pixel clock <135MHz)   |
|  | Native Resolution    | 1366 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)        |
| 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 "Out of Range" are shown on the screen, and the power indicator is flashing green. | The system is set to a display mode which is not supported by the monitor.   | <p>If you are replacing an old monitor, reconnect it and adjust the display mode to within the specified range for your new monitor.</p> <p>If using a Windows system, restart the system in safe mode, then select a supported display mode for your computer.</p> <p>If these options do not work, contact the Support Center.</p> | "Selecting a supported display mode" on page 2-6     |
| 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 |
| Screen is blank and power indicator is steady amber or flashing green                        | 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 2-7         |









Table 3-2. Troubleshooting

| Problem   | Possible cause  | Suggested action   | Reference  |
|---|---|--|--|
| 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 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: 1366 x 768 at 60 Hz.                      | "Adjusting your monitor image" on page 2-3<br><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 2-6                       |
|   |   | 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.

- Press  at the bottom of the monitor to open the OSD menu.
- Use  or  to select  and press  to access.
- 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.
- When the image no longer looks distorted, save the Clock and Phase adjustments.
- Press  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.

### 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 **LEN D156 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 1366 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**, 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 **Drivers** tab.
10. Open the **Hardware Update Wizard** window by clicking on **Update Driver**, 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**  
(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 **LEN D156 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 1366 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 side of the display bezel 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 D156Wide

*Table 3-3. List of service parts*

| <b>RELEASE</b> | <b>DESCRIPTION</b>                          | <b>M/T</b>    | <b>MODEL</b> | <b>COLOR</b>      | <b>GEOGRAPHY</b> |
|----------------|---|---------------|--------------|-------------------|------------------|
| 45J7678        | D156wide FRU monitor                        | 4415,<br>4423 | AB1          | Business<br>Black | WORLDWIDE        |
| 45J7679        | D156wide FRU Stand                          | 4415,<br>4423 | AB1          | Business<br>Black | WORLDWIDE        |
| 30R5139        | D156wide FRU Signal<br>cable (Analog, 1.8m) | 4415,<br>4423 | AB1          | Business<br>Black | WORLDWIDE        |

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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 the product. Refer to your Lenovo Statement of Limited Warranty for a full explanation of Lenovo warranty terms.

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### Online technical support

Online technical support is available during the life of your product through the Lenovo Support Web site at <http://www.lenovo.com/think/support>.

During the warranty period, assistance for replacement or exchange of defective components is available. In addition, if your option is installed in a Lenovo computer, you might be entitled to service at your location. Your 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 withdrawn or made available for a fee, at Lenovo's discretion, 90 days after the option has been withdrawn from marketing. Additional support offerings, including step-by-step installation assistance, are available for a nominal fee.

To assist the technical support representative, have available as much of the following information as possible:

- Option name
- Option number
- Proof of purchase
- Computer manufacturer, model, serial number, and manual
- Exact wording of the error message (if any)
- Description of the problem
- Hardware and software configuration information for your system

If possible, be at your computer. Your technical support representative might want to walk you through the problem during the call.

### Worldwide telephone list

Phone numbers are subject to change without notice. For the most current phone numbers, go to <http://www.lenovo.com/think/support> and click **Support phone list**.

| Country or Region | Telephone Number   |
|-------------------|--|
| Africa            | Africa: +44 (0)1475-555-055<br>South Africa: +27-11-3028888 and 0800110756<br>Central Africa: Contact your Lenovo Service provider |
| Argentina         | 0800-666-0011 (Spanish)  |
| Australia         | 131-426 (English)  |

| Country or Region        | Telephone Number   |
|--------------------------|--|
| Austria                  | Up and running support: 01-24592-5901<br>Warranty service and support: 01-211-454-610<br>(German)  |
| Belgium                  | Up and running support: 02-210-9820 (Dutch)<br>Up and running support: 02-210-9800 (French)<br>Warranty service and support: 02-225-3611 (Dutch, French)           |
| Bolivia                  | 0800-0189 (Spanish)  |
| Brazil                   | Sao Paulo region: (11) 3889-8986<br>Toll free outside Sao Paulo region: 0800-7014-815<br>(Brazilian Portuguese)  |
| Canada                   | 1-800-565-3344 (English, French)<br>In Toronto only call: 416-383-3344   |
| Chile                    | 800-224-488 (Spanish)  |
| China                    | 800-810-1818 (Mandarin)  |
| China (Hong Kong S.A.R.) | Home PC: 852-2825-7799<br>Commercial PC: 852-8205-0333<br>ThinkPad and WorkPad: 852-2825-6580<br>(Cantonese, English, Putonghua)                                   |
| Colombia                 | 1-800-912-3021 (Spanish)   |
| Costa Rica               | 284-3911 (Spanish)   |
| Croatia                  | 0800-0426  |
| Cyprus                   | +357-22-841100   |
| Czech Republic           | +420-2-7213-1316   |
| Denmark                  | Up and running support: 4520-8200<br>Warranty service and support: 7010-5150<br>(Danish)   |
| Dominican Republic       | 566-4755<br>566-5161 ext. 8201<br>Toll Free within the Dominican Republic: 1-200-1929<br>(Spanish)   |
| Ecuador                  | 1-800-426911 (Spanish)   |
| El Salvador              | 250-5696 (Spanish)   |
| Estonia                  | +386-61-1796-699   |
| Finland                  | Up and running support: 09-459-6960<br>Warranty service and support: +358-800-1-4260<br>(Finnish)  |
| France                   | Up and running support: 0238-557-450<br>Warranty service and support (hardware): 0810-631-213<br>Warranty service and support (software): 0810-631-020<br>(French) |
| Germany                  | Up and running support: 07032-15-49201<br>Warranty service and support: 01805-25-35-58<br>(German)   |
| Greece                   | +30-210-680-1700   |
| Guatemala                | 335-8490 (Spanish)   |
| Honduras                 | Tegucigalpa & San Pedro Sula: 232-4222<br>San Pedro Sula: 552-2234<br>(Spanish)  |

| Country or Region | Telephone Number   |
|-------------------|--|
| Hungary           | +36-1-382-5720   |
| India             | 1600-44-6666<br>Alternate Toll Free: +91-80-2678-8940<br>(English)   |
| Indonesia         | 800-140-3555<br>+62-21-251-2955<br>(English, Bahasa, Indonesian)   |
| Ireland           | Up and running support: 01-815-9202<br>Warranty service and support: 01-881-1444<br>(English)  |
| Italy             | Up and running support: 02-7031-6101<br>Warranty service and support: +39-800-820094<br>(Italian)  |
| Japan             | Desktop:<br>Toll free: 0120-887-870<br>For International: +81-46-266-4724<br><br>ThinkPad:<br>Toll free: 0120-887-874<br>For International: +81-46-266-4724<br><br>Both of 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 ask for "English support please," and your call will be transferred to an English speaking operator.<br><br>PC Software:<br>0120-558-695<br>Overseas calls: +81-44-200-8666<br>(Japanese) |
| Korea             | 1588-5801 (Korean)   |
| Latvia            | +386-61-1796-699   |
| Lithuania         | +386-61-1796-699   |
| Luxembourg        | +352-298-977-5063 (French)   |
| Malaysia          | 1800-88-8558 (English, Bahasa, Melayu)   |
| Malta             | +356-23-4175   |
| Mexico            | 001-866-434-2080 (Spanish)   |
| Middle East       | +44 (0)1475-555-055  |
| Netherlands       | +31-20-514-5770 (Dutch)  |
| New Zealand       | 0800-446-149 (English)   |
| Nicaragua         | 255-6658 (Spanish)   |
| Norway            | Up and running support: 6681-1100<br>Warranty service and support: 8152-1550<br>(Norwegian)  |
| Panama            | 206-6047 (Spanish)   |
| Peru              | 0-800-50-866 (Spanish)   |
| Philippines       | 1800-1888-1426<br>+63-2-995-8420<br>(English, Filipino)  |

| Country or Region  | Telephone Number   |
|--------------------|--|
| Poland             | +48-22-878-6999  |
| Portugal           | +351-21-892-7147 (Portuguese)  |
| Romania            | +4-021-224-4015  |
| Russian Federation | +7-095-940-2000 (Russian)  |
| Singapore          | 1800-3172-888 (English, Bahasa, Melayu)  |
| Slovakia           | +421-2-4954-1217   |
| Slovenia           | +386-1-4796-699  |
| Spain              | 91-714-7983<br>91-397-6503<br>(Spanish)  |
| Sri Lanka          | +94-11-2448-442 (English)  |
| Sweden             | Up and running support: 08-477-4420<br>Warranty service and support: 077-117-1040<br>(Swedish)   |
| Switzerland        | Up and running support: 058-333-0900<br>Warranty service and support: 0800-55-54-54<br>(German, French, Italian)   |
| Taiwan             | 886-2-8723-9799 (Mandarin)   |
| Thailand           | 1-800-299-229 (Thai)   |
| Turkey             | 00800-4463-2041<br>(Turkish)   |
| United Kingdom     | Up and running support: 01475-555-055<br>Warranty service and support (hardware): 08705-500-900<br>Warranty service and support (software): 08457-151-516<br>(English) |
| United States      | 1-800-426-7378<br>(English)  |
| Uruguay            | 000-411-005-6649 (Spanish)   |
| Venezuela          | 0-800-100-2011 (Spanish)   |
| Vietnam            | For northern area and Hanoi: 84-4-8436675<br>For southern area and Ho Chi Minh City: 84-8-829-5160<br>(English, Vietnamese)  |

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