IBM

IBM iLV300 Value Data/Video Projector

User's Guide

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User's Guide

> **Note:** Before using this information and the product it supports, read the information in Appendix D, "Warranty information", Appendix E, "European Union warranty information", and Appendix F, "Notices".

Safety

Before installing this product, read the Safety Information.

مج، يجب قراءة   دات السلامة

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 zariadenia si pečítaje Bezpečnostné predpisy.

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」。

Contents

Preface

The IBM® iLV300 Value Data/Video Projector can be used for both business presentations and home entertainment and is easy to connect, use, and maintain.

In addition to this user's guide, your option package contains the following:
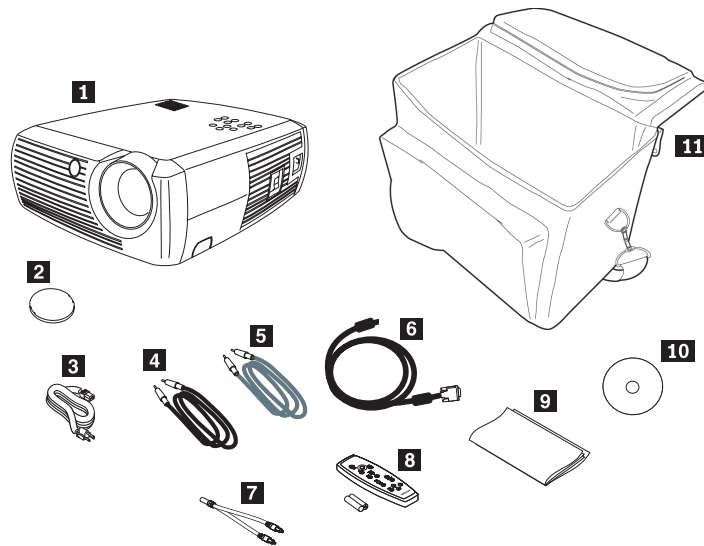
Figure 1. Standard Accessories

1 Projector with lamp housing included
2 Lens cap
3 Power cord
4 Audio cable
5 S-video cable
6 Computer cable
7 Audio adapter
8 Remote control and batteries
9 Quick start manual
10 User's guide and installation CD
11 Projector case

If any of the items listed above are missing or damaged, contact your place of purchase. Be sure to retain your proof of purchase; it might be required to receive warranty service.

For information on optional accessories for your projector, go to the http://www.ibm.com/pc/support/ IBM Web site.

Registering your option

Thank you for purchasing this IBM product. Take a few moments to register your product and provide us with information that will help IBM 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 http://www.ibm.com/pc/register/ IBM Web site.

IBM 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.

Chapter 1. Introduction

The IBM iLV300 Value Data/Video Projector has native SVGA 800x600 resolution and is compatible with a wide variety of computers and video devices, including:

- IBM-compatible computers, including laptops.
- Most standard VCRs, DVD players (progressive and interlaced), HDTV sources (1080i, 1035i, and 720P HDTV formats), TV and satellite tuners, camcorders, video games, and laser disc players.
- Apple Macintosh and PowerBook computers.

Figure 1-1, Figure 1-2, and Figure 1-3 identify the projector features.
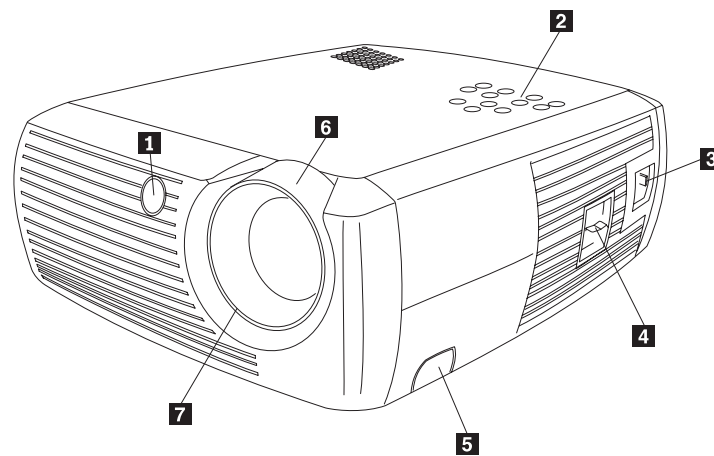
1 Remote control receiver (IR)
2 Keypad
3 Power cord connector
4 Power switch
5 Adjustable foot release
6 Zoom (thick ring)
7 Focus (thin ring)

Figure 1-1. Front angle of projector
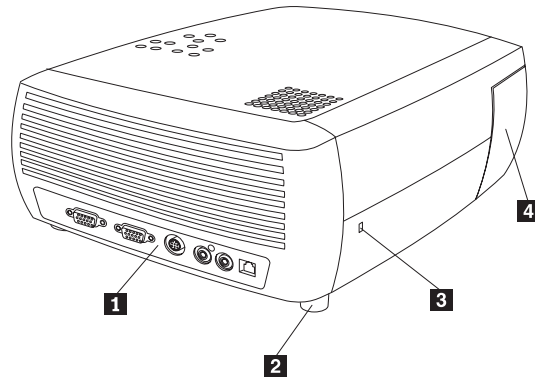
1 Connector panel
2 Adjustable foot
3 Security lock
4 Lamp housing door

Figure 1-2. Back angle of projector
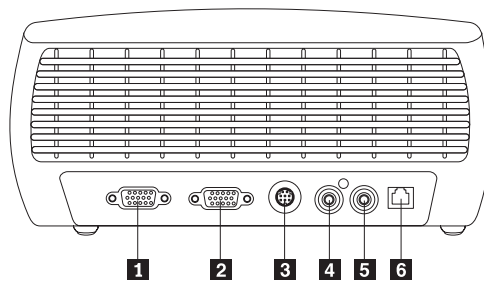
1 Monitor
2 Computer
3 S-video
4 Composite video
5 Audio
6 USB

Figure 1-3. Connectors on back of projector

Chapter 2. Setting up the projector

This chapter provides information on positioning the projector, connecting a computer source, using the projector with Windows® 98, and displaying and adjusting a computer source image.

Note: You can use your projector with Presentation Director to plan and give presentations with confidence. You can ensure that your computer and display will not turn off or go blank during a presentation, be sure your graphics and text will be as crisp and clear, and save important display settings for future presentations with the same equipment. For additional information on Presentation Director, go to the http://www.ibm.com/pc/support Web site and search on "Presentation Director."

Positioning the projector

To determine where to position the projector, consider the size and shape of your screen, the location of your power outlets, and the distance between the projector and the rest of your equipment. Following are some general guidelines:

- Position the projector on a flat surface at a right angle to the screen. The projector must be at least 4.9 feet (1.5 m) from the projection screen.
- Position the projector within 10 feet (3m) of your power source and within 6 feet (1.8m) of your video device (unless you purchase extension cables). To ensure adequate cable access, do not place the projector within 6 inches (.15m) of a wall or other object.
- Position the projector the desired distance from the screen. The distance from the lens of the projector to the screen, the zoom setting, and the video format determine the size of the projected image, as shown in Figure 2-1.
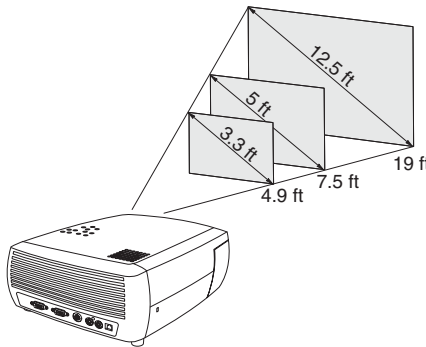
Figure 2-1. Projection distances

For more information about image sizes at different distances, see "Projected image size" on page 2-7.

- The image exits the projector at a given angle, as shown in Figure 2-2 on page 2-2. The image offset is 112.2% when the projector is in 4:3 default mode. This means that if you have an image 10 ft high, the bottom of the image will be 1.22 ft above the center of the lens.
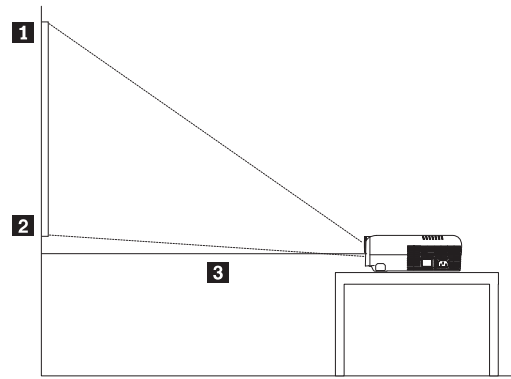
1 Top of image (10 ft high)
2 Bottom of image (1.22 ft above lens)
3 Lens center

Figure 2-2. Projection angle in 4:3 default mode

- This image offset is 124.7% when the projector is in 16:9 mode. This means that if you have an image 10 feet high, the bottom of the image will be 2.47 feet above the center of the lens. For additional information on 16:9 and 4:3 mode, see "Connecting a video device" on page 3-1.
- Do not place the projector on tablecloths or other soft coverings that may block the front or back vents.
- Do not place objects within 2 feet of the front of the projector.

Connecting a computer source

This section provides information on required and optional computer connections.

Required computer connections

To connect a computer source to the projector, complete the following procedure:

1. Connect one end of the computer cable to the dark blue **Computer In** connector on the projector, as shown in Figure 2-3.
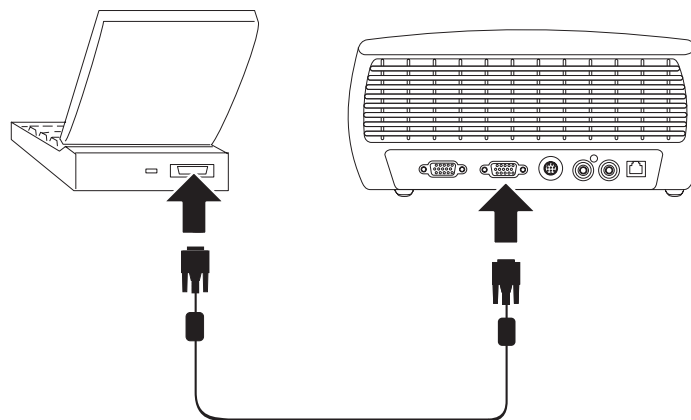
Figure 2-3. Connecting the projector to a computer

2. Connect the other end to the video port on your computer, as shown in Figure 2-3 on page 2-2. If you are using a desktop computer, you will need to disconnect the monitor cable from the computer video port first.

3. Connect the black power cord to the **Power** connector on the side of the projector and to your electrical outlet, as shown in Figure 2-4.

   Note: Only use the power cord that was shipped with the projector.
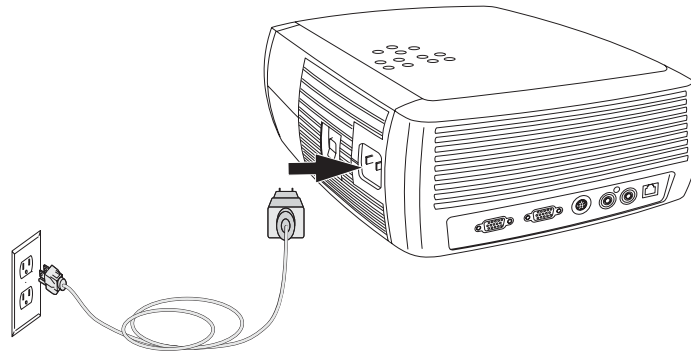
Figure 2-4. Connecting the projector to an electrical outlet

For more information on using the projector with a video device, see "Connecting a video device" on page 3-1.

Optional computer connections

To have sound with your presentation, connect the audio cable to your computer and to the **Audio In** connector on the projector, as shown in Figure 2-5.
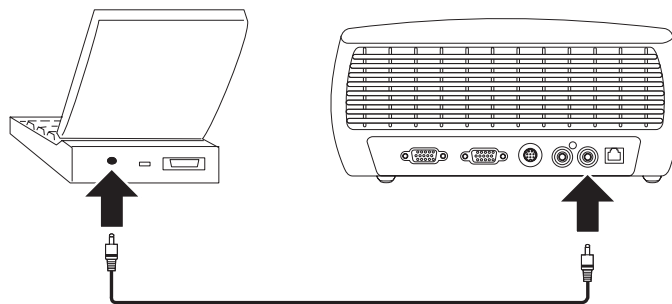
Figure 2-5. Connecting the audio cable

If you are using a desktop computer and want to see the image on your computer screen as well as on the projection screen, connect the monitor cable from your computer to the **Computer In** connector. Then, connect the computer monitor cable to the **Monitor Out** connector on the projector, as shown in Figure 2-6 on page 2-4.
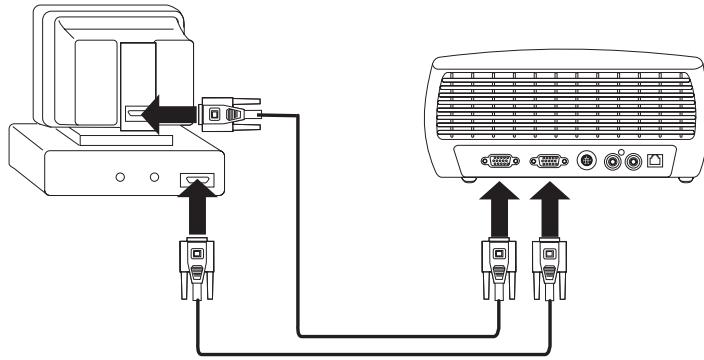
Figure 2-6. Connecting the monitor cables

To control your computer mouse using the projector remote control, connect the projector to the computer with a USB cable (not included), as shown in Figure 2-7. USB drivers must be installed to use the USB feature. For more information, see "Using the projector with Windows 98".
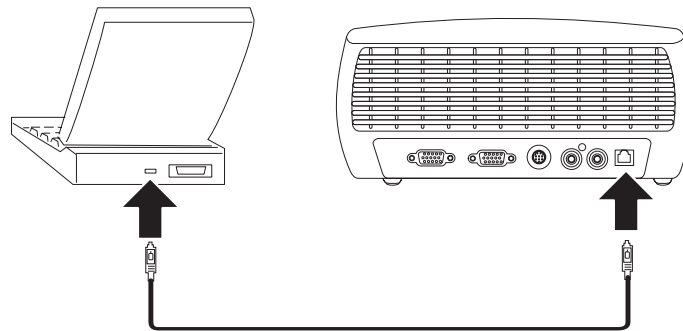
Figure 2-7. Connecting the projector and computer with a USB connector

Using the projector with Windows 98

The first time you connect a computer running Windows 98 to the projector, the computer recognizes the projector as "new hardware" and the Add New Hardware Wizard screen appears. To use the Wizard to load the correct driver (which was installed with your Windows operating system), complete the following procedure:

Note: If you are running Windows 2000 or Windows ME, skip these steps and continue with "Adjusting the image" on page 2-5. If you are running Windows 2000, Windows ME, and Windows XP and you connected the USB cable, the USB drivers are automatically installed.

1. After the Add New Hardware Wizard screen appears, click **Next** to begin searching for the driver.
2. Select **Search for the best driver**.
3. Click **Next**.
4. Uncheck any checked boxes, then click **Next**. Windows automatically locates the driver. If this driver has been removed, reload the driver using your Windows operating system CD.
5. When Windows finds the driver, click **Next** to install the driver.

If you are running Windows 98 and you connected the USB cable, the **Add New Hardware Wizard** appears again. Drivers must be installed to use the USB functionality. The Wizard launches three times:

- The first time it detects a USB Composite Device.
- The second time a USB Human Interface Device (for the keyboard).
- The third time it detects a USB Human Interface Device (for the mouse).

Displaying a computer source image

To display a computer source, complete the following procedure:

1. Remove the lens cap.
2. Toggle the power switch on the side of the projector to the on position.

   The LED flashes green and the fans start to run. When the lamp comes on, the start up screen displays and the LED is steady green. It can take a minute for the image to achieve full brightness.
3. Turn on your computer.

   The computer image should appear on the projection screen. If it does not, press the Computer button on the projector keypad.

   If your computer has Windows 98 as its operating system, see "Using the projector with Windows 98" on page 2-4 regarding the driver setup process.
4. Make sure your laptop external video port is active.

   Many laptops do not automatically turn on their external video port when a projector is connected. Usually a key combination like FN + F7 is used to turn the external display on and off. Refer to your laptop documentation to learn your laptop's key combination.

Adjusting the image

To adjust the image, complete the following procedure:

1. Adjust the height of the projector, if necessary, by pressing the release button to extend the foot, as shown in Figure 2-8.
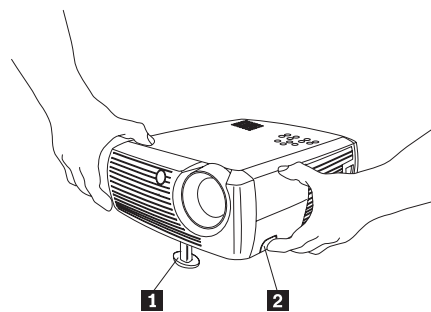
1 Elevator foot
2 Release button

Figure 2-8. Adjusting the height of the projector

2. If necessary, rotate the leveling foot located at the rear of the projector, as shown in Figure 2-9 on page 2-6.

> **Note:** Avoid placing your hands near the hot exhaust vent in front of the projector.
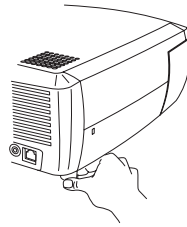
Figure 2-9. Rotating leveling foot

3. Position the projector the desired distance from the screen at a 90° angle to the screen. See Table 2-1 on page 2-7 for a listing of screen sizes and distances.

4. Adjust the zoom or focus on the projector.
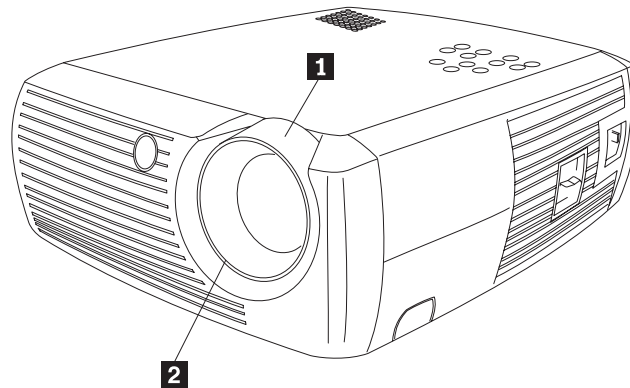
1 Zoom (thick ring)
2 Focus (thin ring)

Figure 2-10. Zoom and focus

5. If the image is not square, adjust the keystone using the buttons on the keypad.
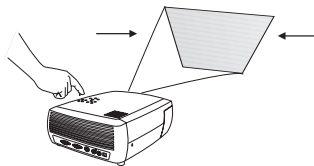
Figure 2-11. Adjusting the keystone

Press the top Keystone button to reduce the upper part of the image, and press the bottom Keystone button to reduce the lower part. Figure 2-12 on page 2-7 shows an illustration of the Keystone buttons on the projector keypad.
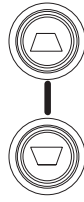
Figure 2-12. Keystone buttons

6. Press the menu button (see Figure 2-13) to adjust the Contrast or Brightness in the Picture menu. See "Picture menu" on page 5-2 for help with these menu adjustments.

Figure 2-13. Menu button

Projected image size

Table 2-1 provides details on the projected image size.

Table 2-1. Range of distance to the screen for a given screen size

Diagonal screen size (inches/m)	Image width (inches/m)	Maximum distance to screen (feet/m)	Minimum distance to screen (feet/m)
40/1	32/0.8	5.8/1.8	4.9/1.5
50/1.3	40/1	7.8/2.4	6.5/2.0
60/1.5	48/1.2	8.8/2.7	7.5/2.3
100/2.5	80/2	14.6/4.5	12.4/3.8
150/3.8	120/3.1	22.6/6.9	19.03/5.8
200/5.1	160/4.1	30.5/9.3	25.2/7.7

Chapter 3. Using the projector with a video device

This chapter provides information on using the Value Data/Video Projector with a video device.

Connecting a video device

You can connect VCRs, DVD players, camcorders, digital cameras, video games, HDTV receivers, and TV tuners to the projector. There is also an audio input. You can connect the audio directly to the projector to get sound from the onboard speaker, or you can connect it to your stereo's receiver to get sound from your own speakers.

Before connecting your projector, you should decide which aspect ratio you want to use. Aspect ratio is the ratio of the image width to image height. TV screens are usually 4:3, which is the default for this projector. HDTV and most DVDs are 16:9. If you are projecting onto a screen, the size and shape of the screen may answer this question for you. If you are projecting onto a blank wall, you do not have the screen size restriction. What you plan to project will also help you choose between 4:3 and 16:9. Most regular TV shows are 4:3, while most movies are 16:9.

If you select 4:3 and play TV, the image will fill the screen. If you select 16:9 and play HDTV, the image will fill the screen. However, if you select 4:3 and play a 16:9 DVD, the image may be compressed horizontally or have black bars along the top and bottom. If you select 16:9 and play regular TV, the image may be stretched horizontally or have black bars along the sides. This is shown in Figure 3-1. You can make this selection later using the onscreen menus (see "Picture menu" on page 5-2), but for now you just need to know which format you will use most often.
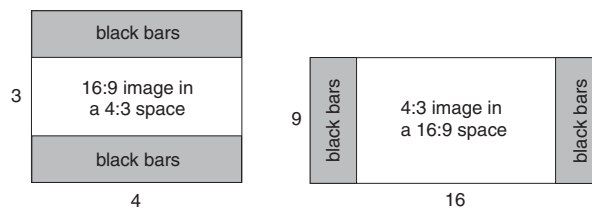
Figure 3-1. Image sizes

You can connect the projector to most video devices that can output video. You cannot directly connect the coaxial cable that enters your house from a cable or satellite company, the signal must pass through a tuner first. Examples of tuners are digital cable boxes, VCRs, digital video recorders, and satellite TV boxes. Basically, any device that can change channels is considered a tuner.

Video connections

The next step is to figure out what type of connectors/output the equipment you want to connect has. If there is more than one output, select the one with the highest quality. Component video has the best quality, followed by S-video, then composite video.

If you are connecting the projector to HDTV, the projector's computer connector should be used.

Keep in mind that HDTV and progressive sources can only be handled through the projector's VGA connector. The optional component to S-video adapter does not function with progressive sources. With progressive sources, the component video connector requires the optional component to VESA adapter.

Here is a list of possible input signals and the connectors that should be connected to the projector:

Input signal	Connector	Connector label on projector
Standard Broadcast TV (not HDTV), via cable, digital cable, satellite TV, DVD, VCR, DirectTV	Composition S-video Component video	Video In S-video S-video (via the optional Component to S-video adapter
HDTV, Progressive DVD, Progressive Video Game	VGA Component video	Computer In Component video (via the optional Component to VESA adapter)
Video Camera, Video Game	Composite video S-video	Video In S-video

Video device connections

This section provides instructions for using different video device connections.

Composite video connection

For a composite video connection, follow Figure 3-2 and the procedure below:
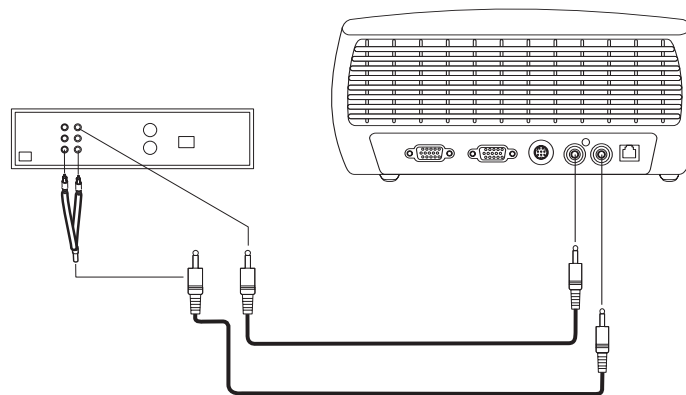
Figure 3-2. Composite video connection

1. Plug the video cable's connector (sold separately) into the video-out connector on your video device.
2. Plug the other video cable's connector into the yellow **Video In** connector on the projector.
3. Plug the included audio adapter's white connector into the left audio out connector on your video device.
4. Plug the audio adapter's red connector into the right audio out connector on the video device.

5. Plug the included audio cable into the black connector on the audio adapter.

6. Plug the other end of the audio cable into the blue **Audio In** connector on the projector.

S-video connection

If your video device uses a round, four-prong S-video connector, plug an S-video cable (included) into the **S-video** connector on your video device and into the S-video connector on the projector, as shown in Figure 3-3. Use the audio adapter as described in "Composite video connection" on page 3-2.

Keep in mind that S-video delivers higher quality video output than composite, but not as high quality video output as component.
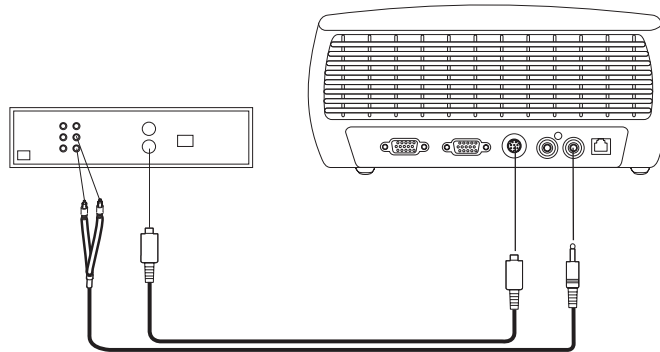
Figure 3-3. S-video connection

Component video connection

If your video device has component connectors, use the optional Component to S-video adapter or the optional Component to VESA adapter (for HD and progressive sources). Plug the component cable into the video device. Plug the other end of the component cable into the adapter and plug the adapter into the projector's **S-video** (for S-video) or **Computer in** (for VESA) connector. Use the audio adapter as described in "Composite video connection" on page 3-2.

Component connection offers the highest quality video output.

VGA connection

If your video device has a 15-pin VGA output, plug one end of the included computer cable to the VGA connector on your video source. This connector may be labeled "To Monitor" on the video source. Plug the other end of the cable into the **Computer In** connector on the projector, as shown in Figure 3-4 on page 3-4.
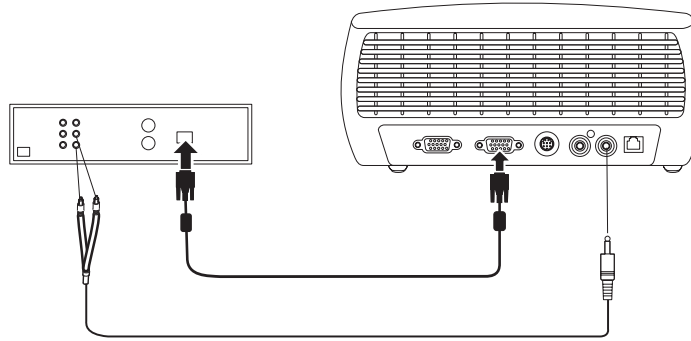
Figure 3-4. VGA connection

Use the audio adapter as described in "Composite video connection" on page 3-2.

Connect the power cord to the **Power** connector on the side of the projector and to your electrical outlet.

Note: Always use the power cord that shipped with the projector.

Displaying video

To display the video, complete the following procedure:
1. Remove the lens cap.
2. Toggle the Power switch on the side of the projector to the On position.
3. The LED flashes green and the fans start to run. When the lamp comes on, the start-up screen is displayed and the LED is steady green. It can take a minute for the image to achieve full brightness.
4. Plug in and turn on your video device.
5. The video device image should appear on the projection screen. If it does not, press the **Video** button on the keypad.

Adjusting the image

To adjust the image, complete the following procedure:
1. Adjust the height of the projector by pressing the release button to extend the foot, as shown in Figure 2-8 on page 2-5.
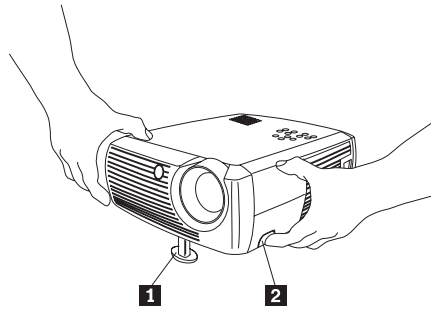
1 Elevator foot
2 Release button

Figure 3-5. Adjusting the height of the projector

2. If necessary, rotate the leveling foot located at the rear of the projector, as shown in Figure 2-9 on page 2-6.

    Note: Avoid placing your hands near the hot exhaust vent in front of the projector.
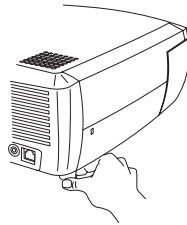
Figure 3-6. Rotating leveling foot

3. Position the projector the desired distance from the screen at a 90° angle to the screen. See "Projected image size" on page 2-7 for a table listing screen sizes and distances to the screen.
4. Adjust the zoom and focus.
5. If the image is not square, adjust the keystone using the buttons on the keypad. Press the top Keystone button to reduce the upper part of the image, and press the bottom Keystone button to reduce the lower part. Figure 3-7 shows an illustration of the Keystone buttons on the projector keypad.

Figure 3-7. Keystone buttons

6. Adjust the volume on the keypad or remote. Figure 3-8 on page 3-6 shows an illustration of the Volume buttons on the projector keypad and remote.

Figure 3-8. Volume buttons

7. Press the Menu button (shown in Figure 3-9) to adjust the Contrast, Brightness, Color, Tint, or Aspect Ratio in the Picture menu. See "Picture menu" on page 5-2 for help with the menus and these adjustments. For Aspect Ratio, keep in mind that DVD players must be configured for 16:9 in order to view the highest quality image.

Figure 3-9. Menu button

Chapter 4. Using the projector features

This chapter provides information on using the remote control, audio, keypad buttons, and other projector features.

Note: You can use your projector with Presentation Director to plan and give presentations with confidence. You can ensure that your computer and display will not turn off or go blank during a presentation, be sure your graphics and text will be as crisp and clear, and save important display settings for future presentations with the same equipment. For additional information on Presentation Director, go to the http://www.ibm.com/pc/support Web site and search on ″Presentation Director.″

Using the remote control

The remote uses two provided AAA batteries. They are easily installed by sliding the cover off the back of the remote, aligning the + and - ends of the batteries, sliding them into place, and then replacing the cover.

Figure 4-1 on page 4-2 provides an illustration of the remote.
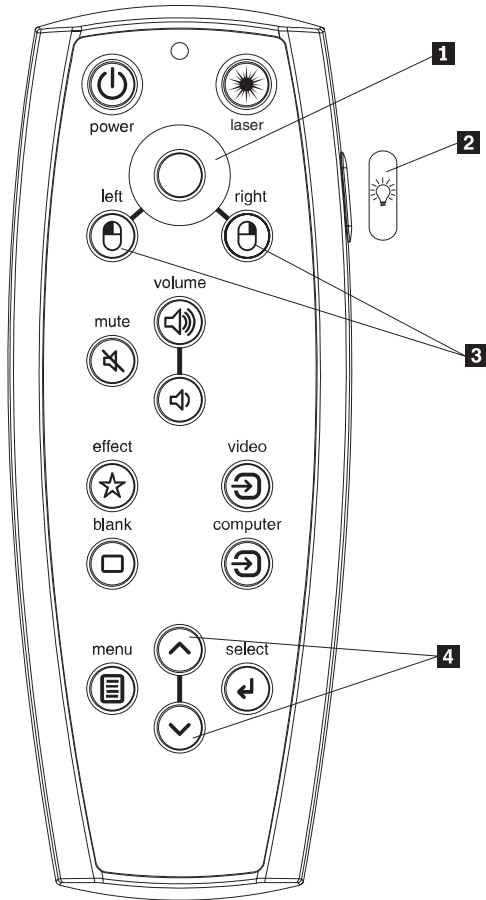
1 Cursor control
2 Backlight button
3 Mouse buttons
4 Navigation buttons

Figure 4-1. Projector remote

> **Attention:**
> When replacing the batteries, be aware that using batteries other than the
> type provided with the projector may risk severe damage to the remote.
> When disposing of the batteries, be sure to do so in an environmentally
> proper manner.

Caution

To reduce the risk of injury to the eyes, do not look directly into the remote control laser light and do not point the laser light into anyone's eyes. The remote control is equipped with a Class II laser that emits radiation.

To operate the remote control, point the remote at the projection screen or at the projector (not at the computer). The range of optimum operation is about 15 feet (4.5m).

To use the laser pointer, press and hold the Laser button. The laser turns off when the button is released, or times out after two (2) minutes of continuous operation.

Pressing the remote's power button when the projector's power toggle switch is in the Off position does not cause the projector to power up. You need to put the projector's power toggle switch in the On position to use the remote to power on the projector.

When the projector is running, you can press the remote's Power button to place the projector in the Off state and power it off. For more information, see "Shutting down the projector" on page 4-7.

Left and right remote mouse buttons are used to mimic the actions of the left and right mouse buttons on your computer. Mouse cursor movement is managed via the remote's cursor control. Connect a USB cable to the USB connector on the computer and to the projector to use these buttons and control your computer's mouse. When you do this for the first time, the Add New Hardware wizard may appear. See "Using the projector with Windows 98" on page 2-4 for details on loading the correct USB drivers.

Press the remote's Menu button to open the projector's menu system. Use the arrow buttons to navigate, and the Select button to select features and adjust values in the menus. See Chapter 5, "Using the menus", on page 5-1 for more information on the menus.

The remote also has Volume and Mute buttons to control the sound, a backlight button to light the remote's buttons in the dark, and Video and Computer buttons to switch between sources.

Two presentation-specific features are also provided. Use the Blank button to display a blank screen instead of the current slide (you can choose which color is displayed, see "Settings menu" on page 5-5); use the Effect button to invoke a user-definable action, such as freeze, zoom or change your aspect ratio for viewing DVDs (see "Settings menu" on page 5-5) to learn to program this button).

If you are displaying presentations in Microsoft® PowerPoint, you can use the remote's mouse buttons to navigate through your presentation while in Slide Show mode. To configure PowerPoint for this Choose **Options** from the PowerPoint Tools menu, click the **View** tab, de-select the **Popup Menu on Right Mouse Click** option in the Slide Show section, then click **OK**. After that, when you are in

PowerPoint Slide Show mode, a left click advances to the next slide and a right click returns to the previous slide (other PowerPoint modes are not affected).

Troubleshooting the remote

- Make sure the batteries are installed in the proper orientation and are not dead.
- Make sure you are pointing the remote at the projector or the screen, not the computer, and are within the remote range of 15 feet (4.5m). For best results, point the remote at the screen.
- If you are trying to control your computer's mouse, make sure the USB cable is connected. If using a USB cable, make sure the correct drivers are installed.

Using the audio

To use the projector's speaker:

1. Connect your source to the **Audio In** connector on the projector, as shown in Figure 4-2.
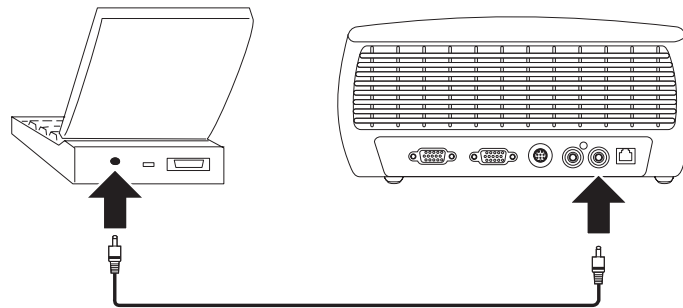
Figure 4-2. Connecting the audio cable

See "Video device connections" on page 3-2 for information on using the audio adapter.

2. To adjust the volume, press the Volume buttons (shown in Figure 4-3) on the keypad or remote.

Figure 4-3. Volume buttons

3. To mute the sound, press the **Mute** button on the remote.

Troubleshooting audio

If you do not hear the audio, check the following:

- Make sure the audio cable is connected.
- Make sure mute is not active (press the Mute button on the remote).
- Make sure the volume is turned up enough. Press the Volume button on the keypad or remote.
- Make sure the correct source is active.

- Adjust the audio source.
- If playing a video, make sure the playback has not been paused.

Using the keypad buttons

Following is an overview of the keypad button functions.
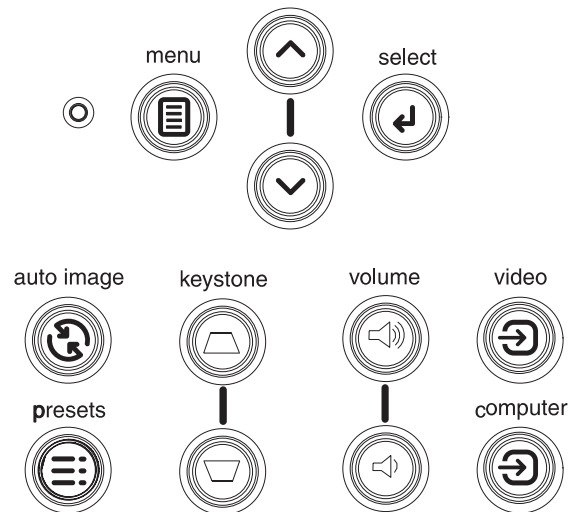
Figure 4-4. Keypad buttons

- **Menu**– Opens the on-screen menus (see Chapter 5, "Using the menus", on page 5-1).
- **Select**– Confirms choices made in the menus (see Chapter 5, "Using the menus", on page 5-1).
- **Up and Down arrows**– Navigates to and adjusts settings in the menus (see Chapter 5, "Using the menus", on page 5-1).
- **Auto Image**– Resets the projector to the source.
- **Presets**– Cycles through the available preset settings (see "Picture menu" on page 5-2).
- **Keystone**– Adjusts squareness of the image (see "Adjusting the image" on page 2-5).
- **Volume**– Adjusts sound (see "Using the audio" on page 4-4).
- **Video** and **Computer**– Changes the active source.

Optimizing computer images

After your computer is connected properly and the computer image is on the screen, you can optimize the image using the onscreen menus. For general information on using the menus, see Chapter 5, "Using the menus", on page 5-1.

- Adjust the Keystone, Contrast, Brightness, Color, or Tint in the Picture menu.
- Change the Aspect Ratio. Choose the option that best fits your input source.
- Adjust the Color Temperature in the Advanced menu.
- Adjust the phase, Tracking, or Horizontal or Vertical position in the Advanced menu.
- Once you have optimized the image for a particular source, you can save the settings using Presets. This allows you to quickly recall these settings later.

Presentation features

The following are presentation features provided. For more information, see Chapter 5, "Using the menus", on page 5-1.

- The Effect button on the remote allows you to assign various features to the button. The default effect is About, which displays information about the projector and current source. You can select among Blank, Mute, Aspect Ratio, Source, Auto Image, Freeze, Zoom, and About. For more information, see "Settings menu" on page 5-5. The freeze effect allows you to freeze the displayed image. This is useful if you want to make changes on your computer without your audience seeing them. The mask effect allows you to cover part of the image with a black curtain.

- The Blank button on the remote allows you to display a blank screen instead of the active source. For information on determining the color of this screen, see "Settings menu" on page 5-5.

- The Startup Logo option lets you change the default start up screen to a blank or default screen. For more information, see "Settings menu" on page 5-5.

- Two options, Power Save and Screen Save, are provided to automatically shut down the projector after several minutes of inactivity or display a black screen. This helps preserve lamp life. For more information, see "Settings menu" on page 5-5.

Optimizing video images

After your video device is connected properly and the image is on the screen, you can optimize the image using the onscreen menus. For general information on using the menus, see Chapter 5, "Using the menus", on page 5-1.

- Adjust the Keystone, Contrast, Brightness, Color, or Tint in the Picture menu.

- Change the Aspect Ratio. Choose the option that best fits your input source.

- The remote's Effect button allows you to assign various features to the button. The default effect is About, which displays information about the projector and current source. You can select among Blank, Mute, Aspect Ratio, Source, Auto Image, Freeze, Zoom, and About. See "Settings menu" on page 5-5 for details.

- Select a Sharpness setting. For more information, see "Advanced menu" on page 5-3.

- Use the Color Control to adjust the color gain. For more information, see "Advanced menu" on page 5-3.

- Adjust the Color Temperature. Select a listed warmth value. For more information, see "Advanced menu" on page 5-3.

- Turn on Overscan to remove noise on the edges of the image.

Customizing the projector

You can customize the projector for your specific setup and needs. See "Settings menu" on page 5-5 for details on these features.

- For rear projection, turn rear mode on in the **Settings > System** menu.

- For ceiling mounted projection, turn ceiling mode on in the **Settings > System** menu.

- Specify which source the projector checks first for active video during power-up.

- Specify the function of the Effect button on the remote.

- Turn the projector's display messages on and off.

- Turn on power saving features.
- Specify blank screen colors and start up logos.
- Specify the language viewed on the menus.
- Save settings for the active source as a preset.

Shutting down the projector

The projector automatically displays a black screen after no active source is detected for 30 minutes. This black screen helps preserve the life of the projector. The image returns when an active source is detected or a remote or keypad button is pressed.

Screen Save

You can make the black screen appear after a preset number of minutes by turning on the Screen Save feature in the Settings>System menu. See "Settings menu" on page 5-5.

Power Save

The projector also has a Power Save feature that automatically turns the lamp off after no active sources are detected and no user interaction with the projector is performed for 20 minutes. By default, this feature is off. See "Settings menu" on page 5-5.

Turning off the projector

You can turn the projector off simply by toggling the power switch to the off position.

You can also press the remote's Power button to place the projector in the Off state while it is running. When the Power button is pressed twice (once to start the power-down process and a second time to verify that you want to power the projector off), the lamp turns off and the LED blinks green for one minute while the fans continue to run to cool the lamp. While the LED is blinking green, the projector does not accept any keypad and remote control input.

When the lamp has cooled, the LED lights solid green and the fans slow down to minimal speed. To turn off the projector, toggle the power switch to the off position.

Note: Once the projector has been toggled off, you must wait for one minute before turning the projector on again. This allows the lamp to properly cool. However, if the remote was used to power the projector to the Off state you do not need to wait one minute to turn it on again.

Chapter 5. Using the menus

To open the menus, press the **Menu** button on the keypad or remote. (The menus automatically close after 60 seconds if no buttons are pressed.) The Main menu appears, as shown in Figure 5-1.
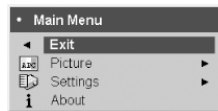
Figure 5-1. Main menu

Use the arrow buttons to move up and down to highlight the desired submenu, then press the **Select** button.
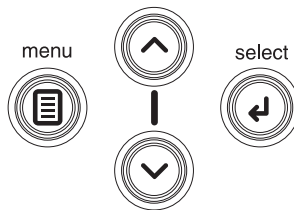
Figure 5-2. Navigation buttons

To change a menu setting, highlight it, press **Select**, then use the up and down arrow buttons to adjust the value, select an option using radio buttons, or turn the feature on or off using check boxes. Press **Select** to confirm your changes. Use the arrows to navigate to another setting. When your adjustments are complete, navigate to Exit, then press **Select** to go to the previous menu; press the **Menu** button at any time to close the menus.

Dots appears before the menu name. The number of dots indicate menu level, ranging from one (the Main menu) to four (the most nested menus).

The menus are grouped by usage:
- The Picture menu provides image adjustments.
- The Settings menu provides set-up type adjustments that are not changed often.
- The About menu provides a read-only display of information about the projector and source.

Certain menu items may not be visible or may be grayed depending upon a particular source being connected. For example, Sharpness is only available for video sources and is not visible when a computer source is active. Menu options are grayed out only if the source if selected but no signal is present. For example, if the projector is set to a video source but the source, such as a DVD player, is turned off video menu options are grayed out.

Picture menu

You can adjust the image through the Picture menu, shown in Figure 5-3.
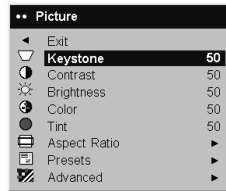
Figure 5-3. Picture menu

Following is a list of the picture options available through the Picture menu:

- **Keystone**: Adjusts the image vertically and makes a squarer image, as shown in Figure 5-4 and Figure 5-5. You can also adjust the keystone from the keypad.
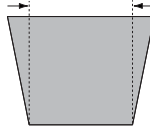
Figure 5-4. Increasing keystone
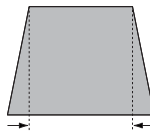
Figure 5-5. Decreasing keystone

- **Contrast**: Controls the degree of difference between the lightest and darkest parts of the picture and changes the amount of black and white in the image.
- **Brightness**: Changes the intensity of the image.
- **Color**: Adjusts a video image from black and white to fully saturated color. The color setting applies to video sources only.
- **Tint**: Adjusts the red-green color balance in the image of NTSC video images. The tint setting applies to NTSC video sources only.
- **Aspect Ratio**: Aspect ratio is the ratio of the image width to image height. The Aspect Ratio menu is shown in Figure 5-6 on page 5-3.
  - The default is **4:3**. TV screens are usually 4:3. HDTV and most DVDs are 16:9.
  - Select **Native** to see the unmodified input with no resizing by the projector.
  - Select **16:9** to watch enhanced widescreen DVDs.
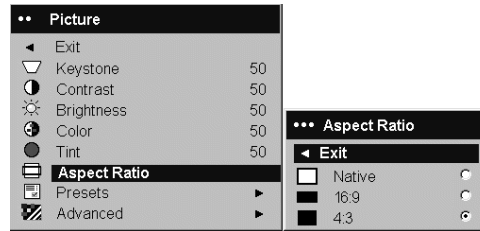
Figure 5-6. Aspect Ratio menu

For more information regarding Aspect Ratio, see "Connecting a video device" on page 3-1 and "Picture menu" on page 5-2.

- **Presets**: Presets are provided that optimize the projector for displaying computer presentations, photographs, film images, and video images. Film input is material originally captured on a film camera, like a movie; video input is material originally captured on a video camera, like a TV show or sporting event. You can use the preset as a starting point, then further customize the settings for each source. The settings you customize are saved in the preset for each source. To restore the factory default settings, choose Factory Reset in the **Settings>Service** menu. For more information, see "Settings menu" on page 5-5.

There is also a user-definable preset. To set a preset for the current source, adjust the image, select **Save Settings** in the Presets menu, choose one of the locations in the Save Settings menu, and exit out of the menu. You can recall these settings in the future by selecting the User 1 preset. (See Figure 5-7.)
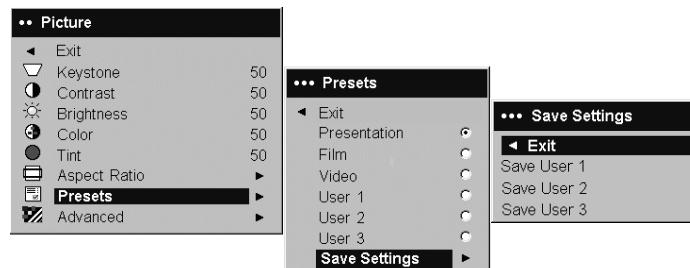
Figure 5-7. Presets and Save Settings menus

Advanced menu

- **Sharpness**: (This menu is only for video sources.) Changes the clarity of the edges of a video image. Select a sharpness setting from the Sharpness menu, shown in Figure 5-8.
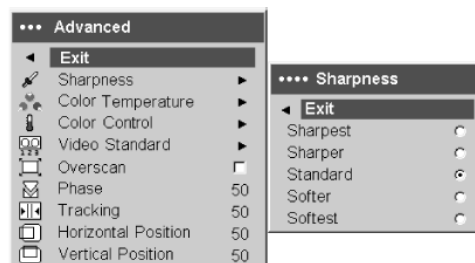
Figure 5-8. Sharpness menu

- **Color Temperature**: Changes the intensity of the colors. Select a relative warmth value from the Color Temperature menu, shown in Figure 5-9.
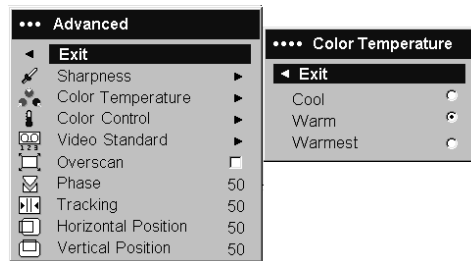
Figure 5-9. Color Temperature menu

- **Color Control**: Enables you to individually adjust the gain for the red, green, and blue colors, as shown in Figure 5-10.
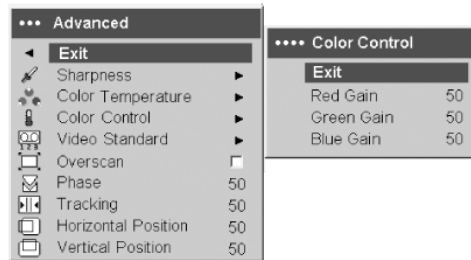
Figure 5-10. Color Control menu

- **Video Standard**: When the video standard is set to Auto, the projector attempts to automatically pick the video standard based on the input signal it receives. (The video standard options may vary depending on your region of the world. Figure 5-11 provides an example of the possible options.) If the projector is unable to detect the correct standard, the colors may not look right or the image may appear "torn." If this happens, manually select a video standard by selecting NTSC, PAL, or SECAM from the Video Standard menu.
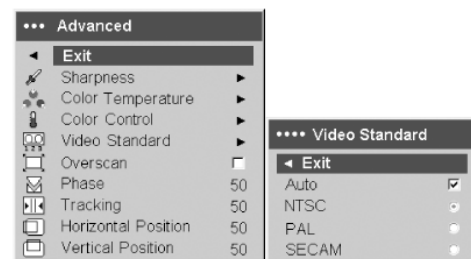
Figure 5-11. Video Standard menu

- **Overscan**: (This menu is only for video sources.) Removes noise around the video image.

The following options are only for computer sources:
- **Phase**: Adjusts the horizontal phase of a computer source.
- **Tracking**: Adjusts the vertical scan of a computer source.
- **Horizontal/Vertical Position**: Adjusts the position of a computer source.

Settings menu

The Settings menu provides set-up type adjustments that are not changed often. Following is a list of the setting options:

- **Audio**: Enables you to adjust the volume of the internal speaker. Adjustments can also be made from the projector keypad and the remote. The Audio menu is shown in Figure 5-12.
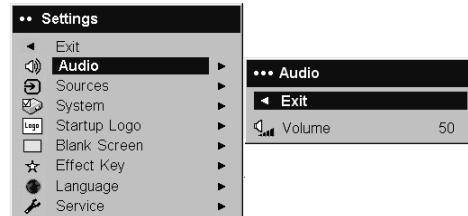
Figure 5-12. Audio menu

- **Sources**: **Power-up Source** determines which source the projector checks first for active video during power-up. Figure 5-13 shows the Sources and Power-up Source menus.
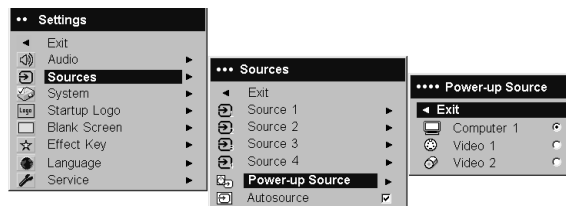
Figure 5-13. Sources and Power-up Source menus

When the **Autosource** feature is on, the projector automatically finds the active source, checking the **Power-up Source** first. The options are

- **Computer 1** (for a computer source)
- **Video 1** (for S-video connections)
- **Video 2** (for composite video connections)

When this feature is off, the projector defaults to the source selected in the Power-up Source menu. To display another source, you must manually select a source by pressing the **Computer** or **Video** button on the remote or keypad.

- **System**: Following are the settings from the System menu, shown in Figure 5-14.
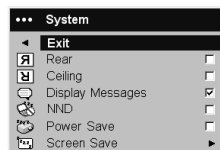
Figure 5-14. System menu

- **Rear** reverses the image so you can project from behind a translucent screen.
- **Ceiling** turns the image upside down for ceiling-mounted projection.
- **Display Messages** displays status messages (such as "Searching" or "Mute") in the lower-left corner of the screen.

– **NND** prevents your notebook computer from going into Screen Save mode if the USB cable is connected.

– **Power Save** automatically turns the lamp off after no signals are detected for 20 minutes. After an additional 10 minutes with no signal, the projector powers down and can be toggled off. If an active signal is received before the projector powers down, the image will be displayed. When **Power Save** is enabled, Screen Save is disabled.

– **Screen Save** automatically blanks the screen with a black color after no signals are detected for a preset number of minutes. The image returns when an active source is detected or a remote or keypad button is pressed. Figure 5-15 shows the Screen Save menu.
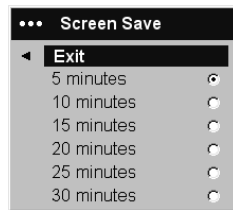
Figure 5-15. Screen Save menu

- **Startup Logo**: Enables you to display a blank screen instead of the default screen at startup, and when no source is detected. Figure 5-16 shows the Startup Logo menu.

Figure 5-16. Startup Logo menu

- **Blank Screen**: Determines what color is displayed when you press the Blank button on the remote. Figure 5-17 shows the Blank Screen menu.

Figure 5-17. Blank Screen menu

- **Effect Key**: Enables you to assign a different function to the Effect button on the remote by highlighting a function and pressing **Select**. Figure 5-18 on page 5-7 shows the Effect Key menu.

Figure 5-18. Effect Key menu

The functions listed on the Effect Key menu are:

– **Blank**: Displays an empty screen.

– **Mute**: Turns off all sound.

– **Aspect Ratio**: Toggles among 4:3, 16:9, and Native (see "Connecting a video device" on page 3-1 and "Picture menu" on page 5-2). Set as the Effect key, it can allow you to switch the Aspect Ratio for DVDs.

– **Source**: Cycles through available sources.

– **Auto Image**: Resets the projector to the source. For more information, see "Using the keypad buttons" on page 4-5.

– **Freeze**: Pauses the projected image.

– **Zoom**: Allows you to magnify part of the image. Press **Effect**, then press the left mouse button to zoom the image. Use the cursor control to pan the image while it is zoomed. Press the right mouse button to decrease the magnification. Press the **Effect** button to cancel zoom and return to normal magnification.

– **About**: The default effect. It opens a window with projector and source information.

• **Language**: Enables you to select a language for the onscreen display.

• **Service**: To use the Service features, highlight them and press **Select**. Figure 5-19 shows the Service menu.
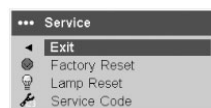
Figure 5-19. Service menu

The Service menu has the following settings:

– **Factory Reset**: Restores all settings to their default.

– **Lamp Reset**: Resets the lamp hours used counter in the About menu to zero. Do this only after changing the lamp.

– **Service Code**: Only used by authorized service personnel.

About menu

The About menu provides a read-only display of information about the projector and the active source. The default of the **Effect** button is to show the About menu. Figure 5-20 on page 5-8 shows the About menu.

About	
Lamp Hours Used	123
Active Source	Computer 1
Signal Format	1024x768 @ 72Hz
Version	2.1

Figure 5-20. About menu

Appendix A. Maintenance

This chapter provides information on projector maintenance.

Cleaning the lens

To clean the lens, complete the following procedure:

1. Apply a non-abrasive camera lens cleaner to a soft, dry cloth.

   Note: Avoid using an excessive amount of cleaner, and do not apply the cleaner directly to the lens. Abrasive cleaners, solvents or other harsh chemicals might scratch the lens.

2. Lightly wipe the cleaning cloth over the lens in a circular motion. If you do not intend to use the projector immediately, replace the lens cap.

Replacing the projection lamp

The lamp hours used timer in the About menu counts the number of hours the lamp has been in use. After 2,980 hours, the message "Change lamp" appears on the screen at startup. If the maximum lamp time of 3,000 hours is exceeded, the lamp will not light. In this case, after replacing the lamp you must reset the lamp hours by simultaneously pressing both Volume buttons on the keypad and holding them for 10 seconds.

Note: Use only a replacement lamp with the same type and rating as the original lamp. Contact your IBM representative for information.

To replace the projector lamp, complete the following procedure:

1. Turn off the projector, unplug the power cord, and allow the projector to cool.

   Attention
   Wait 30 minutes to allow the projector to cool thoroughly.

   ---

2. Turn the projector on its side so that the lamp door is facing you. Using a flat-blade screwdriver, gently pry the lamp door from the projector by placing the screwdriver blade into the space between the top of the lamp door and the projector.

3. Loosen the two captive screws that attach the lamp housing to the projector.

4. Detach the lamp connector from the projector by depressing the locking tab on the connector and lightly pulling it free, as shown in Figure A-1 on page A-2.

> **Attention:**
>
> - To avoid burns, allow the projector to cool for at least 30 minutes before you replace the lamp.
> - Do not drop the lamp housing or touch the glass bulb! The glass may shatter and cause injury.
> - Be extremely careful when removing the lamp housing. In the unlikely event that the bulb ruptures, small glass fragments may be generated. The lamp housing is designed to contain these fragments, but use caution when removing the lamp housing.
> - This product contains a Metal Arc Lamp which contains Mercury. Dispose of it as required by local ordinances and regulations.
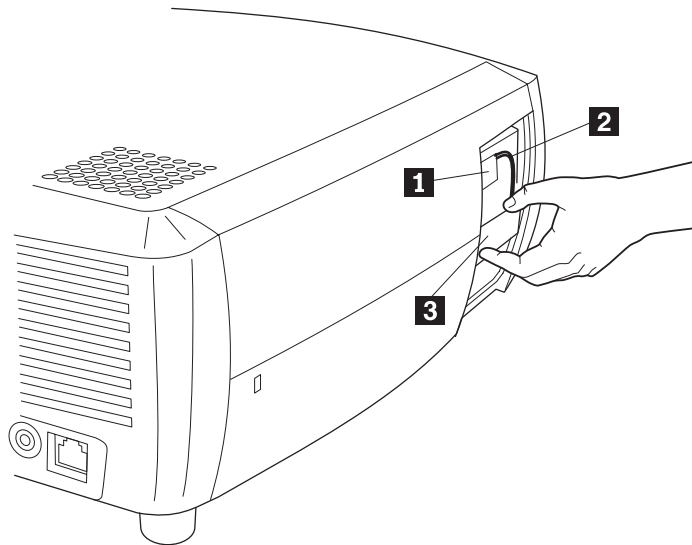
1 Lamp connector
2 Lamp cable
3 Lamp housing

Figure A-1. Removing the lamp
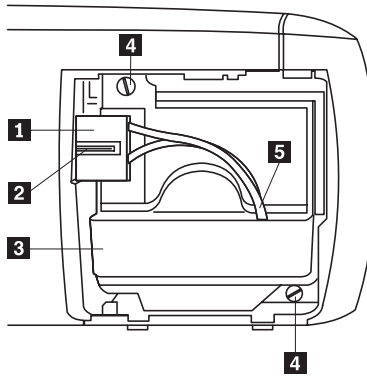
1 Connector
2 Locking tab
3 Lamp housing
4 Screws
5 Lamp cable

Figure A-2. Lamp housing parts

5. Carefully remove the lamp housing. Dispose of the lamp in an environmentally proper manner.
6. Install the new lamp housing and tighten the screws.
7. Re-attach the lamp connector to the projector. The locking tab should engage when the connector is fully plugged in.
8. Replace the lamp door.
9. Plug in the power cord and toggle the Power switch to turn the projector back on.
10. To reset the lamp hour timer, navigate to the **Settings>Service** menu and select **Lamp Reset**. For more information, see "Settings menu" on page 5-5.

Cleaning the lamp housing screens

In dirty or dusty environments, the two dust filter screens in the lamp housing can become clogged, causing high temperatures and premature lamp failure. Routine maintenance to remove dust from the screens lowers the lamp operating temperature and prolongs lamp life. To maximize lamp life you should clean the screen every 250 hours.

To clean the lamp housing screens:

1. Remove the lamp housing. Figure A-3 on page A-4 provides an illustration of the lamp housing.
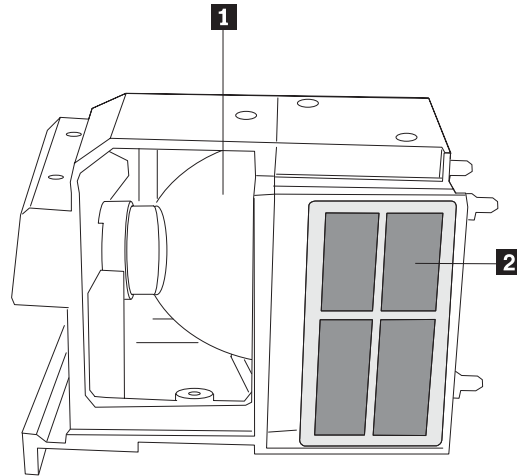
1 Lamp
2 Screen (located on each side of lamp housing)

Figure A-3. Lamp housing

2. Examine the dust filter screens on the lamp housing. If necessary, use a vacuum cleaner set on low power to clean the screens. Be careful not to disturb any internal components when cleaning the screens.
3. Replace the lamp housing and lamp door.

Using the security lock

The projector has a security lock for use with a PC Guardian Cable Lock System. Contact your IBM representative for more information on the PC Guardian Cable Lock System. Refer to the information that comes with the lock for instructions on how to use it.

Appendix B. Troubleshooting

The following table provides troubleshooting information for the projector. In some cases, more than one possible solution is provided. Try the solutions in the order they are presented. When the problem is solved, you can skip the additional solutions.

Table B-1. Troubleshooting

Problem	Solution
No start up screen.	• Plug the power cord into the left side of the projector. • Remove the lens cap. • Toggle the power switch.
Only the start up screen appears.	• Press the computer button. • Activate the laptop's external port. • Restart the laptop.
No computer image, just the words "Signal out of range."	• Press the **Auto Image** button on the keypad. • Set your computer's display resolution to the native resolution of the projector (Start>Settings>Control Panel>Display>Settings tab) and select 800x600, as shown in Figure B-1 *Figure B-1. Display Properties menu* • *For a laptop, turn on the dual display mode.*
The image is fuzzy or cropped.	• Set your computer's display resolution to the native resolution of the projector (Start>Settings>Control Panel>Display>Settings tab) and select 800x600 as shown in Figure B-1. • For a laptop, turn on the dual display mode.
The image is not centered on the screen.	• Move the projector, adjust the zoom, and adjust the height. • Adjust the horizontal or vertical position in the Picture>Advanced menu.
The image is not square.	Adjust the Keystone on the keypad.
The image is not sharp.	Adjust the sharpness (video sources only) in the Pictures>Advanced menu.

Table B-1. Troubleshooting (continued)

Problem	Solution
The image does not fit in the 4:3 or 16:9 screen.	Change the aspect ratio to 4:3 or 16:9 in the Picture>Aspect ratio menu.
The image is upside down.	Turn off "ceiling" in Settings>System menu.
The image is reversed to the left or right.	Turn off the rear in Settings>System menu.
The projected colors do not match the source.	Adjust the color, tint, color temperatures, brightness, and contrast in the menus.
The lamp will not turn on and the red LED is blinking.	• Make sure the vents are not blocked. • Turn off the projector and allow it to cool for a minute. • Check the lamp hours, by selecting Main>About. If the lamp hours are greater than 3,000, then the lamp must be replaced. For instructions on replacing the lamp, see "Replacing the projection lamp" on page A-1.
The "Change lamp" message appears at startup.	Check the lamp hours, by selecting Main>About. If the lamp hours are greater than 3,000, then the lamp must be replaced. For instructions on replacing the lamp, see "Replacing the projection lamp" on page A-1.

Projector LEDs

The LED on top of the projector indicates the state of the projector and can help you troubleshoot.

Table B-2. Projector LEDs

LED color	Meaning
solid green	The power switch has been toggled on and the software has initialized or the projector has been powered off via the remote.
blinking green	The power switch has been toggled on and the software is initializing, or the projector is powering down and the fans are running to cool the lamp.
blinking red	A fan or lamp failure has occurred. Make sure the vents are not blocked. Turn off the projector and wait one minute, then turn the projector on again. If the projector has been working for 3,000 hours or more, replace the lamp and reset the lamp timer. For instructions on replacing the lamp, see "Replacing the projection lamp" on page A-1. Contact IBM technical support if the problem persists.
solid red	An unidentifiable error. Please contact IBM technical support.

If the projector is not functioning properly and the LED is blinking red, see Table B-3 on page B-3 to determine a possible cause. There are two-second pauses between the blinking cycles. For more details on LED projector errors, contact your

IBM representative.

Table B-3. Red LED behavior and projector errors

Red LED behavior	Explanation
One blink	The lamp will not strike after five attempts. Check the lamp and lamp door installations for loose connections.
Two blinks	The lamp counter hours have exceeded lamp life hours. Replace the lamp and reset the lamp hours counter.
Three blinks	The projector has shut down. Check to see if the lamp door is open. If the lamp door is closed, toggle off the projector and wait one minute, then toggle the projector on again. If the lamp does not strike after one minute, replace the lamp. Contact IBM technical support for repair, if replacing the lamp does not solve the problem.
Four blinks	The fan has failed. Contact IBM technical support for repair or replacing the fan.
Five blinks	The projector is overheating. Check for a blocked air vent. Contact IBM technical support for repair if clearing the air vents does not solve the problem.

Appendix C. Specifications

Following are specifications for the IBM iLV300 Value Data/Video Projector.

Temperature	50° to 104° F (10° to 40° C) at sea level
(operating)	50° to 95° F (10° to 35° C) at 10,000 feet
(non-operating)	-4° to 140° F (-20° to 60° C)
Altitude (operating)	0 to 10,000 feet (3,048 meters)
Altitude (non-operating)	0 to 20,000 feet (6,096 meters)
Humidity (operating)	10% to 95% relative humidity, non-condensing
Humidity (non-operating)	10% to 90% relative humidity, non-condensing
Dimensions	12.5 x 9.8 x 4.49″ (318 x 249 x 114 mm)
Weight	6.8 lbs. (3.1 kg) unpacked
Optics (focus range)	4.9 to 32.8 feet (1.5 - 10 m)
Lamp type	150 - W DC SHP lamp
Input power requirements	100-120/200-240 3/2A 50/60Hz
Ceiling mount	UL tested/listed ceiling mount with minimum capacity of 34 lbs (15.5 kg)

Appendix D. Warranty information

This section contains the warranty period for your product, information about obtaining warranty service and support, and the IBM Statement of Limited Warranty.

Warranty period

Contact your place of purchase for warranty service information.

Machine - IBM iLV300 Value Data/Video Projector

Warranty period	Service delivery method
Projector - parts: 3 years, labor: 3 years	CCE (customer carry in or mail in)
Projector lamp - parts: 3 months	CCE (customer carry in or mail in)

For information on European Union legal rights under applicable national legislation governing the sale of consumer goods, see Appendix E, "European Union warranty information", on page E-1.

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 IBM Statement of Limited Warranty for a full explanation of IBM warranty terms.

Warranty information on the World Wide Web

The IBM Machine Warranties Web site at http://www.ibm.com/servers/support/machine_warranties/ contains a worldwide overview of the IBM Limited Warranty for IBM Machines, a glossary of terms used in the Statement of Limited Warranty, Frequently Asked Questions (FAQ), and links to Product Support Web pages. The IBM Statement of Limited Warranty is available from this Web site in 29 languages in Portable Document Format (PDF).

Online technical support

Online technical support is available during the life of your product through the Personal Computing Support Web site at http://www.ibm.com/pc/support/.

During the warranty period, assistance for replacement or exchange of defective components is available. In addition, if your IBM option is installed in an IBM computer, you might be entitled to service at your location. Your technical support representative can help you determine the best alternative.

Telephone technical support

Installation and configuration support through the IBM HelpCenter® will be withdrawn or made available for a fee, at IBM'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 (if IBM), 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.

For the support telephone number and support hours by country, refer to the following table. If the number for your country or region is not listed, contact your IBM reseller or IBM marketing representative. Response time may vary depending on the number and nature of the calls received.

Support 24 hours a day, 7 days a week	
Canada (Toronto only)	416-383-3344
Canada (all other)	1-800-565-3344
U.S.A. and Puerto Rico	1-800-772-2227
All other countries and regions	Go to http://www.ibm.com/pc/support/, and click **Support Phone List**.

IBM Statement of Limited Warranty Z125-4753-06 8/2000

Part 1 - General Terms

This Statement of Limited Warranty includes Part 1 - General Terms and Part 2 - Country-unique Terms. The terms of Part 2 replace or modify those of Part 1. The warranties provided by IBM in this Statement of Limited Warranty apply only to Machines you purchase for your use, and not for resale, from IBM or your reseller. The term "Machine" means an IBM machine, its features, conversions, upgrades, elements, or accessories, or any combination of them. The term "Machine" does not include any software programs, whether pre-loaded with the Machine, installed subsequently or otherwise. Unless IBM specifies otherwise, the following warranties apply only in the country where you acquire the Machine. Nothing in this Statement of Limited Warranty affects any statutory rights of consumers that cannot be waived or limited by contract. If you have any questions, contact IBM or your reseller.

The IBM Warranty for Machines: IBM warrants that each Machine 1) is free from defects in materials and workmanship and 2) conforms to IBM's Official Published Specifications ("Specifications"). The warranty period for a Machine is a specified, fixed period commencing on its Date of Installation. The date on your sales receipt is the Date of Installation unless IBM or your reseller informs you otherwise.

If a Machine does not function as warranted during the warranty period, and IBM or your reseller are unable to either 1) make it do so or 2) replace it with one that is at least functionally equivalent, you may return it to your place of purchase and your money will be refunded.

Extent of Warranty: The warranty does not cover the repair or exchange of a Machine resulting from misuse, accident, modification, unsuitable physical or operating environment, improper maintenance by you, or failure caused by a product for which IBM is not responsible. The warranty is voided by removal or alteration of Machine or parts identification labels.

THESE WARRANTIES ARE YOUR EXCLUSIVE WARRANTIES AND REPLACE ALL OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. THESE WARRANTIES GIVE YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM JURISDICTION TO JURISDICTION. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF EXPRESS OR IMPLIED WARRANTIES, SO THE ABOVE EXCLUSION OR LIMITATION MAY NOT APPLY TO YOU. IN THAT EVENT, SUCH WARRANTIES ARE LIMITED IN DURATION TO THE WARRANTY PERIOD. NO WARRANTIES APPLY AFTER THAT PERIOD.

Items Not Covered by Warranty: IBM does not warrant uninterrupted or error-free operation of a Machine. Any technical or other support provided for a Machine under warranty, such as assistance via telephone with "how-to" questions and those regarding Machine set-up and installation, will be provided **WITHOUT WARRANTIES OF ANY KIND.**

Warranty Service: To obtain warranty service for a Machine, contact IBM or your reseller. If you do not register your Machine with IBM, you may be required to present proof of purchase.

During the warranty period, IBM or your reseller, if approved by IBM to provide warranty service, provides without charge certain types of repair and exchange service to keep Machines in, or restore them to, conformance with their Specifications. IBM or your reseller will inform you of the available types of service for a Machine based on its country of installation. At its discretion, IBM or your reseller will 1) either repair or exchange the failing Machine and 2) provide the service either at your location or a service center. IBM or your reseller will also manage and install selected engineering changes that apply to the Machine.

Some parts of IBM Machines are designated as Customer Replaceable Units (called "CRUs"), e.g., keyboards, memory, or hard disk drives. IBM ships CRUs to you for replacement by you. You must return all defective CRUs to IBM within 30 days of your receipt of the replacement CRU. You are responsible for downloading designated Machine Code and Licensed Internal Code updates from an IBM Internet Web site or from other electronic media, and following the instructions that IBM provides.

When warranty service involves the exchange of a Machine or part, the item IBM or your reseller replaces becomes its property and the replacement becomes yours. You represent that all removed items are genuine and unaltered. The replacement may not be new, but will be in good working order and at least functionally equivalent to the item replaced. The replacement assumes the warranty service status of the replaced item. Many features, conversions, or upgrades involve the removal of parts and their return to IBM. A part that replaces a removed part will assume the warranty service status of the removed part.

Before IBM or your reseller exchanges a Machine or part, you agree to remove all features, parts, options, alterations, and attachments not under warranty service.

You also agree to
1. ensure that the Machine is free of any legal obligations or restrictions that prevent its exchange;
2. obtain authorization from the owner to have IBM or your reseller service a Machine that you do not own; and
3. where applicable, before service is provided:
    a. follow the problem determination, problem analysis, and service request procedures that IBM or your reseller provides;
    b. secure all programs, data, and funds contained in a Machine;
    c. provide IBM or your reseller with sufficient, free, and safe access to your facilities to permit them to fulfill their obligations; and
    d. inform IBM or your reseller of changes in a Machine's location.

IBM is responsible for loss of, or damage to, your Machine while it is 1) in IBM's possession or 2) in transit in those cases where IBM is responsible for the transportation charges.

Neither IBM nor your reseller is responsible for any of your confidential, proprietary or personal information contained in a Machine which you return to IBM or your reseller for any reason. You should remove all such information from the Machine prior to its return.

Limitation of Liability: Circumstances may arise where, because of a default on IBM's part or other liability, you are entitled to recover damages from IBM. In each such instance, regardless of the basis on which you are entitled to claim damages from IBM (including fundamental breach, negligence, misrepresentation, or other

contract or tort claim), except for any liability that cannot be waived or limited by applicable laws, IBM is liable for no more than

1. damages for bodily injury (including death) and damage to real property and tangible personal property; and

2. the amount of any other actual direct damages, up to the charges (if recurring, 12 months' charges apply) for the Machine that is subject of the claim. For purposes of this item, the term "Machine" includes Machine Code and Licensed Internal Code.

   This limit also applies to IBM's suppliers and your reseller. It is the maximum for which IBM, its suppliers, and your reseller are collectively responsible.

UNDER NO CIRCUMSTANCES IS IBM LIABLE FOR ANY OF THE FOLLOWING: 1) THIRD-PARTY CLAIMS AGAINST YOU FOR DAMAGES (OTHER THAN THOSE UNDER THE FIRST ITEM LISTED ABOVE); 2) LOSS OF, OR DAMAGE TO, YOUR RECORDS OR DATA; OR 3) SPECIAL, INCIDENTAL, OR INDIRECT DAMAGES OR FOR ANY ECONOMIC CONSEQUENTIAL DAMAGES, LOST PROFITS OR LOST SAVINGS, EVEN IF IBM, ITS SUPPLIERS OR YOUR RESELLER IS INFORMED OF THEIR POSSIBILITY. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

Governing Law

Governing Law: Both you and IBM consent to the application of the laws of the country in which you acquired the Machine to govern, interpret, and enforce all of your and IBM's rights, duties, and obligations arising from, or relating in any manner to, the subject matter of this Agreement, without regard to conflict of law principles.

Part 2 - Country-unique Terms

<u>AMERICAS</u>

BRAZIL

Governing Law: *The following is added after the first sentence:*
Any litigation arising from this Agreement will be settled exclusively by the court of Rio de Janeiro.

<u>NORTH AMERICA</u>

Warranty Service: *The following is added to this Section:*
To obtain warranty service from IBM in Canada or the United States, call
1-800-IBM-SERV (426-7378).

CANADA

Governing Law: *The following replaces "laws of the country in which you acquired the Machine" in the first sentence:*
laws in the Province of Ontario.

UNITED STATES

Governing Law: *The following replaces "laws of the country in which you acquired the Machine" in the first sentence:*
laws of the State of New York.

ASIA PACIFIC

AUSTRALIA

The IBM Warranty for Machines: *The following paragraph is added to this Section:*
The warranties specified in this Section are in addition to any rights you may have under the Trade Practices Act 1974 or other similar legislation and are only limited to the extent permitted by the applicable legislation.

Limitation of Liability: *The following is added to this Section:*
Where IBM is in breach of a condition or warranty implied by the Trade Practices Act 1974 or other similar legislation, IBM's liability is limited to the repair or replacement of the goods or the supply of equivalent goods. Where that condition or warranty relates to right to sell, quiet possession or clear title, or the goods are of a kind ordinarily acquired for personal, domestic or household use or consumption, then none of the limitations in this paragraph apply.

Governing Law: *The following replaces "laws of the country in which you acquired the Machine" in the first sentence:*
laws of the State or Territory.

CAMBODIA, LAOS, AND VIETNAM

Governing Law: *The following replaces "laws of the country in which you acquired the Machine" in the first sentence:*
laws of the State of New York.

The following is added to this Section:
Disputes and differences arising out of or in connection with this Agreement shall be finally settled by arbitration which shall be held in Singapore in accordance with the rules of the International Chamber of Commerce (ICC). The arbitrator or arbitrators designated in conformity with those rules shall have the power to rule on their own competence and on the validity of the Agreement to submit to arbitration. The arbitration award shall be final and binding for the parties without appeal and the arbitral award shall be in writing and set forth the findings of fact and the conclusions of law.

All proceedings shall be conducted, including all documents presented in such proceedings, in the English language. The number of arbitrators shall be three, with each side to the dispute being entitled to appoint one arbitrator.

The two arbitrators appointed by the parties shall appoint a third arbitrator before proceeding upon the reference. The third arbitrator shall act as chairman of the proceedings. Vacancies in the post of chairman shall be filled by the president of the ICC. Other vacancies shall be filled by the respective nominating party. Proceedings shall continue from the stage they were at when the vacancy occurred.

If one of the parties refuses or otherwise fails to appoint an arbitrator within 30 days of the date the other party appoints its, the first appointed arbitrator shall be the sole arbitrator, provided that the arbitrator was validly and properly appointed.

The English language version of this Agreement prevails over any other language version.

HONG KONG AND MACAU

Governing Law: *The following replaces "laws of the country in which you acquired the Machine" in the first sentence:*
laws of Hong Kong Special Administrative Region.

INDIA

Limitation of Liability: *The following replaces items 1 and 2 of this Section:*
1. liability for bodily injury (including death) or damage to real property and tangible personal property will be limited to that caused by IBM's negligence;
2. as to any other actual damage arising in any situation involving nonperformance by IBM pursuant to, or in any way related to the subject of this Statement of Limited Warranty, IBM's liability will be limited to the charge paid by you for the individual Machine that is the subject of the claim.

JAPAN

Governing Law: *The following sentence is added to this Section:*
Any doubts concerning this Agreement will be initially resolved between us in good faith and in accordance with the principle of mutual trust.

NEW ZEALAND

The IBM Warranty for Machines: *The following paragraph is added to this Section:*
The warranties specified in this Section are in addition to any rights you may have under the Consumer Guarantees Act 1993 or other legislation which cannot be excluded or limited. The Consumer Guarantees Act 1993 will not apply in respect of any goods which IBM provides, if you require the goods for the purposes of a business as defined in that Act.

Limitation of Liability: *The following is added to this Section:*
Where Machines are not acquired for the purposes of a business as defined in the Consumer Guarantees Act 1993, the limitations in this Section are subject to the limitations in that Act.

PEOPLE'S REPUBLIC OF CHINA (PRC)

Governing Law: *The following replaces this Section:*
Both you and IBM consent to the application of the laws of the State of New York (except when local law requires otherwise) to govern, interpret, and enforce all your and IBM's rights, duties, and obligations arising from, or relating in any manner to, the subject matter of this Agreement, without regard to conflict of law principles.

Any disputes arising from or in connection with this Agreement will first be resolved by friendly negotiations, failing which either of us has the right to submit the dispute to the China International Economic and Trade Arbitration Commission in Beijing, the PRC, for arbitration in accordance with its arbitration rules in force at the time. The arbitration tribunal will consist of three arbitrators. The language to be used therein will be English and Chinese. An arbitral award will be final and binding on all the parties, and will be enforceable under the Convention on the Recognition and Enforcement of Foreign Arbitral Awards (1958).

The arbitration fee will be borne by the losing party unless otherwise determined by the arbitral award.

During the course of arbitration, this Agreement will continue to be performed except for the part which the parties are disputing and which is undergoing arbitration.

EUROPE, MIDDLE EAST, AFRICA (EMEA)

THE FOLLOWING TERMS APPLY TO ALL EMEA COUNTRIES:
The terms of this Statement of Limited Warranty apply to Machines purchased from IBM or an IBM reseller.

Warranty Service: If you purchase an IBM Machine in Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland or United Kingdom, you may obtain warranty service for that Machine in any of those countries from either (1) an IBM reseller approved to perform warranty service or (2) from IBM. If you purchase an IBM Personal Computer Machine in Albania, Armenia, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Georgia, Hungary, Kazakhstan, Kirghizia, Federal Republic of Yugoslavia, Former Yugoslav Republic of Macedonia (FYROM), Moldova, Poland, Romania, Russia, Slovak Republic, Slovenia, or Ukraine, you may obtain warranty service for that Machine in any of those countries from either (1) an IBM reseller approved to perform warranty service or (2) from IBM.

If you purchase an IBM Machine in a Middle Eastern or African country, you may obtain warranty service for that Machine from the IBM entity within the country of purchase, if that IBM entity provides warranty service in that country, or from an IBM reseller, approved by IBM to perform warranty service on that Machine in that country. Warranty service in Africa is available within 50 kilometers of an IBM authorized service provider. You are responsible for transportation costs for Machines located outside 50 kilometers of an IBM authorized service provider.

Governing Law: The applicable laws that govern, interpret and enforce rights, duties, and obligations of each of us arising from, or relating in any manner to, the subject matter of this Statement, without regard to conflict of laws principles, as well as Country-unique terms and competent court for this Statement are those of the country in which the warranty service is being provided, except that in 1) Albania, Bosnia-Herzegovina, Bulgaria, Croatia, Hungary, Former Yugoslav Republic of Macedonia, Romania, Slovakia, Slovenia, Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan, the laws of Austria apply; 2) Estonia, Latvia, and Lithuania, the laws of Finland apply; 3) Algeria, Benin, Burkina Faso, Cameroon, Cape Verde, Central African Republic, Chad, Congo, Djibouti, Democratic Republic of Congo, Equatorial Guinea, France, Gabon, Gambia, Guinea, Guinea-Bissau, Ivory Coast, Lebanon, Mali, Mauritania, Morocco, Niger, Senegal, Togo, and Tunisia, this Agreement will be construed and the legal relations between the parties will be determined in accordance with the French laws and all disputes arising out of this Agreement or related to its violation or execution, including summary proceedings, will be settled exclusively by the Commercial Court of Paris; 4) Angola, Bahrain, Botswana, Burundi, Egypt, Eritrea, Ethiopia, Ghana, Jordan, Kenya, Kuwait, Liberia, Malawi, Malta, Mozambique, Nigeria, Oman, Pakistan, Qatar, Rwanda, Sao Tome, Saudi Arabia, Sierra Leone, Somalia, Tanzania, Uganda, United Arab Emirates, United Kingdom, West Bank/Gaza, Yemen, Zambia, and Zimbabwe, this Agreement will be governed by English Law and

disputes relating to it will be submitted to the exclusive jurisdiction of the English courts; and 5) in Greece, Israel, Italy, Portugal, and Spain any legal claim arising out of this Statement will be brought before, and finally settled by, the competent court of Athens, Tel Aviv, Milan, Lisbon, and Madrid, respectively.

THE FOLLOWING TERMS APPLY TO THE COUNTRY SPECIFIED:

AUSTRIA AND GERMANY

The IBM Warranty for Machines: *The following replaces the first sentence of the first paragraph of this Section:*
The warranty for an IBM Machine covers the functionality of the Machine for its normal use and the Machine's conformity to its Specifications.

The following paragraphs are added to this Section:

The minimum warranty period for Machines is six months. In case IBM or your reseller is unable to repair an IBM Machine, you can alternatively ask for a partial refund as far as justified by the reduced value of the unrepaired Machine or ask for a cancellation of the respective agreement for such Machine and get your money refunded.

Extent of Warranty: *The second paragraph does not apply.*

Warranty Service: *The following is added to this Section:*
During the warranty period, transportation for delivery of the failing Machine to IBM will be at IBM's expense.

Limitation of Liability: *The following paragraph is added to this Section:*
The limitations and exclusions specified in the Statement of Limited Warranty will not apply to damages caused by IBM with fraud or gross negligence and for express warranty.

The following sentence is added to the end of item 2:
IBM's liability under this item is limited to the violation of essential contractual terms in cases of ordinary negligence.

EGYPT

Limitation of Liability: *The following replaces item 2 in this Section:*
as to any other actual direct damages, IBM's liability will be limited to the total amount you paid for the Machine that is the subject of the claim. For purposes of this item, the term "Machine" includes Machine Code and Licensed Internal Code.

Applicability of suppliers and resellers (unchanged).

FRANCE

Limitation of Liability: *The following replaces the second sentence of the first paragraph of this Section:*
In such instances, regardless of the basis on which you are entitled to claim damages from IBM, IBM is liable for no more than: *(items 1 and 2 unchanged).*

IRELAND

Extent of Warranty: *The following is added to this Section:*
Except as expressly provided in these terms and conditions, all statutory conditions, including all warranties implied, but without prejudice to the generality of the foregoing all warranties implied by the Sale of Goods Act 1893 or the Sale of Goods and Supply of Services Act 1980 are hereby excluded.

Limitation of Liability: *The following replaces items one and two of the first paragraph of this Section:*
1. death or personal injury or physical damage to your real property solely caused by IBM's negligence; and
2. the amount of any other actual direct damages, up to 125 percent of the charges (if recurring, the 12 months' charges apply) for the Machine that is the subject of the claim or which otherwise gives rise to the claim.

Applicability of suppliers and resellers (unchanged).

The following paragraph is added at the end of this Section:
IBM's entire liability and your sole remedy, whether in contract or in tort, in respect of any default shall be limited to damages.

ITALY

Limitation of Liability: *The following replaces the second sentence in the first paragraph:*
In each such instance unless otherwise provided by mandatory law, IBM is liable for no more than:
1. *(unchanged)*
2. as to any other actual damage arising in all situations involving nonperformance by IBM pursuant to, or in any way related to the subject matter of this Statement of Warranty, IBM's liability, will be limited to the total amount you paid for the Machine that is the subject of the claim.
Applicability of suppliers and resellers (unchanged).

The following replaces the third paragraph of this Section:
Unless otherwise provided by mandatory law, IBM and your reseller are not liable for any of the following: *(items 1 and 2 unchanged)* 3) indirect damages, even if IBM or your reseller is informed of their possibility.

SOUTH AFRICA, NAMIBIA, BOTSWANA, LESOTHO AND SWAZILAND

Limitation of Liability: *The following is added to this Section:*
IBM's entire liability to you for actual damages arising in all situations involving nonperformance by IBM in respect of the subject matter of this Statement of Warranty will be limited to the charge paid by you for the individual Machine that is the subject of your claim from IBM.

UNITED KINGDOM

Limitation of Liability: *The following replaces items 1 and 2 of the first paragraph of this Section:*
1. death or personal injury or physical damage to your real property solely caused by IBM's negligence;
2. the amount of any other actual direct damages or loss, up to 125 percent of the charges (if recurring, the 12 months' charges apply) for the Machine that is the subject of the claim or which otherwise gives rise to the claim;

The following item is added to this paragraph:
3. breach of IBM's obligations implied by Section 12 of the Sale of Goods Act 1979 or Section 2 of the Supply of Goods and Services Act 1982.

Applicability of suppliers and resellers (unchanged).

The following is added to the end of this Section:
IBM's entire liability and your sole remedy, whether in contract or in tort, in respect of any default shall be limited to damages.

Appendix E. European Union warranty information

Consumers in the European Union have legal rights under applicable national legislation governing the sale of consumer goods. This legislation may apply to you if you purchased this product as a consumer (that is, as a natural person, and for personal use which is not related to your trade, business or profession). To obtain warranty service under this legislation, you will need to present the proof of purchase to IBM, together with an indication that you are a consumer.

Dans l'Union européenne, les consommateurs disposent de droits selon la loi en vigueur nationale régissant la vente de biens de consommation. Cette loi peut vous être applicable si vous avez acheté ce produit en tant que consommateur (c'est-à-dire, en tant que personne physique, et pour un usage privé qui n'a aucun rapport avec votre commerce, votre métier ou profession). Pour bénéficier du service prévu par la Garantie dans le cadre de cette loi, vous devez présenter la preuve d'achat correspondante à IBM, en lui indiquant que vous êtes un consommateur.

I consumatori dell'Unione Europea sono tutelati dalla legislazione nazionale che regola la vendita dei beni al consumatore. Tale legislazione può essere applicata se il prodotto è stato acquistato da un consumatore (vale a dire, una persona fisica e per uso personale non legato al commercio, all'azienda o alla professione svolta). Per ottenere il servizio di garanzia con questa legislazione, occorre presentare una prova di acquisto alla IBM, insieme con l'indicazione che il richiedente è un consumatore.

In der Europäischen Union haben die Verbraucher nach der geltenden nationalen Gesetzgebung Rechte hinsichtlich des Verbrauchsgüterkaufs. Diese Gesetzgebung kann für Sie gelten, wenn Sie dieses Produkt als Privatkunde erworben haben (d. h. als natürliche Person und für den persönlichen Gebrauch, der nicht mit Ihrem Gewerbe, Ihrem Unternehmen oder Ihrer beruflichen Tätigkeit zusammenhängt). Um unter dieser Gesetzgebung Garantieservice zu erhalten, müssen Sie IBM den Kaufnachweis zusammen mit einem Nachweis dafür, dass Sie Privatkunde sind, vorlegen.

Los consumidores de la Unión europea tienen derechos legales de acuerdo con la legislación nacional aplicable que regula la venta de bienes de consumo. Esta legislación puede aplicarse en su caso si ha adquirido este producto como un consumidor (es decir, como una persona natural y para uso personal que no esté relacionado con su comercio, negocio o profesión). Para obtener servicio de garantía de acuerdo con esta legislación, tendrá que presentar el justificante de compra a IBM, junto con información indicando que es un consumidor.

Na União Europeia, os consumidores gozam de direitos legais nos termos da legislação nacional aplicável que rege a venda de bens de consumo. Esta legislação poderá ser-lhe aplicável caso tenha adquirido este produto na qualidade de consumidor (ou seja, um indivíduo, para utilização pessoal, não relacionada com a sua actividade profissional, comercial ou negócio). Para obter serviço de garantia nos termos desta legislação, terá que apresentar a prova de compra à IBM, em conjunto com a indicação de que adquiriu o produto na qualidade de consumidor.

Forbrugere i EU har via gældende national lovgivning visse rettigheder i forbindelse med salg af forbrugsvarer. Denne lovgivning gælder muligvis for dig,

hvis du har anskaffet dette produkt som forbruger, dvs. som fysisk person og til personlig brug og ikke i forbindelse med dit fag, din forretning eller din profession. For at opnå garantiservice i henhold til denne lovgivning skal du vise kvitteringen for købet af produktet til IBM og angive, at du er forbruger.

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Electronic emission notices

Machine - IBM iLV300 Value Data/Video Projector

Federal Communications Commission (FCC) statement

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult an IBM authorized dealer or service representative for help.

Properly shielded and grounded cables and connectors must be used in order to meet FCC emission limits. Proper cables and connectors are available from IBM authorized dealers. IBM is not responsible for any radio or television interference caused by using other than recommended cables and connectors or by unauthorized changes or modifications to this equipment. Unauthorized changes or modifications could void the user's authority to operate the equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Responsible party:

International Business Machines Corporation
New Orchard Road
Armonk, NY 10504
Telephone: 1-919-543-2193

FC Tested To Comply
With FCC Standards
FOR HOME OR OFFICE USE

Industry Canada Class B emission compliance statement

This Class B digital apparatus complies with Canadian ICES-003.

Avis de conformite a la reglementation d'Industrie Canada

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

Deutsche EMV-Direktive (electromagnetische Verträglichkeit)

Zulassungbescheinigunglaut dem Deutschen Gesetz über die elektromagnetische Verträglichkeit von Geräten (EMVG) vom 30. August 1995 (bzw. der EMC EG Richtlinie 89/336):

Dieses Gerät ist berechtigt in Übereinstimmungmit dem Deutschen EMVG das EG-Konformitätszeichen - CE - zu führen. Verantwortlich für die Konformitätserklärung nach Paragraph 5 des EMVG ist die:

IBM Deutschland Informationssysteme GmbH, 70548 Stuttgart.

Informationen in Hinsicht EMVG Paragraph 3 Abs. (2) 2:

Das Gerät erfüllt die Schutzanforderungen nach EN 55024:1998 und EN 55022:1998 Klasse B.

EN 55022 Hinweis:

"Wird dieses Gerät in einer industriellen Umgebung betrieben (wie in EN 55022:B festgetlegt), dann kann es dabei eventuell gestört werden. In solch einem FA11 ist der Abstand bzw. die Abschirmungzu der industriellen Störquelle zu vergröβern."

Anmerkung:

Um die Einhaltung des EMVG sicherzustellen sind die Geräte, wie in den IBM Handbüchern angegeben, zu installieren und zu betreiben.

European Union - emission directive

This product is in conformity with the protection requirements of EU Council Directive 89/336/ECC on the approximation of the laws of the Member States relating to electromagnetic compatibility.

IBM can not accept responsibility for any failure to satisfy the protection requirements resulting from a non-recommended modification of the product, including the fitting of non-IBM option cards.

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

Union Européenne - Directive Conformité électromagnétique

Ce produit est conforme aux exigences de protection de la Directive 89/336/EEC du Conseil de l'UE sur le rapprochement des lois des États membres en matière de compatibilité électromagnétique.

IBM ne peut accepter aucune responsabilité pour le manquement aux exigences de protection résultant d'une modification non recommandée du produit, y compris l'installation de cartes autres que les cartes IBM.

Ce produit a été testé et il satisfait les conditions de l'équipement informatique de Classe B en vertu de Standard européen EN 55022. Les conditions pour l'équipement de Classe B ont été définies en fonction d'un contexte résidentiel ordinaire afin de fournir une protection raisonnable contre l'interférence d'appareils de communication autorisés.

Unione Europea - Directiva EMC (Conformidad électromagnética)

Este producto satisface los requisitos de protección del Consejo de la UE, Directiva 89/336/CEE en lo que a la legislatura de los Estados Miembros sobre compatibilidad electromagnética se refiere.

IBM no puede aceptar responsabilidad alguna si este producto deja de satisfacer dichos requisitos de protección como resultado de una modificación no recomendada del producto, incluyendo el ajuste de tarjetas de opción que no sean IBM.

Este producto ha sido probado y satisface los límites para Equipos Informáticos Clase B de conformidad con el Estándar Europeo EN 55022. Los límites para los equipos de Clase B se han establecido para entornos residenciales típicos a fin de proporcionar una protección razonable contra las interferencias con dispositivos de comunicación licenciados.

Union Europea - Normativa EMC

Questo prodotto è conforme alle normative di protezione ai sensi della Direttiva del Consiglio dell'Unione Europea 89/336/CEE sull'armonizzazione legislativa degli stati membri in materia di compatibilità elettromagnetica.

IBM non accetta responsabilità alcuna per la mancata conformità alle normative di protezione dovuta a modifiche non consigliate al prodotto, compresa l'installazione di schede e componenti di marca diversa da IBM.

Le prove effettuate sul presente prodotto hanno accertato che esso rientra nei limiti stabiliti per le le apparecchiature di informatica Classe B ai sensi del Norma Europea EN 55022. I limiti delle apparecchiature della Classe B sono stati stabiliti al fine di fornire ragionevole protezione da interferenze mediante dispositivi di comunicazione in concessione in ambienti residenziali tipici.

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