

Dell™ 1201MP Projector

Owner's Manual

Notes, Notices, and Cautions



NOTE: A NOTE indicates important information that helps you make better use of your projector.



NOTICE: A NOTICE indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.



CAUTION: A CAUTION indicates a potential for property damage, personal injury, or death.

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Model 1201MP

February 2007

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Contents

| | | |
|----------|---|-----------|
| 1 | Your Dell™ Projector | |
| | About Your Projector | 6 |
| 2 | Connecting Your Projector | |
| | Connecting to a Computer | 8 |
| | Connecting a DVD Player, Set Top Box, VCR, or TV | 8 |
| | Connecting With a Component Cable | 8 |
| | Connecting With an S-Video Cable | 9 |
| | Connecting With a Composite Cable | 9 |
| | Connecting to a Wired RS232 Remote Control | 10 |
| | Connecting to a Computer | 10 |
| | Connecting to a Commercial RS232 Control Box | 10 |
| 3 | Using Your Projector | |
| | Turning Your Projector On | 11 |
| | Turning Your Projector Off | 11 |
| | Adjusting the Projected Image | 12 |
| | Raising the Projector Height | 12 |
| | Lowering the Projector Height | 12 |
| | Adjusting Projection Image Size | 13 |

| | |
|---|-----------|
| Adjusting the Projector Zoom and Focus | 14 |
| Password Security | 14 |
| Using the Control Panel | 16 |
| Using the Remote Control | 17 |
| Using the On-Screen Display | 18 |
| Main Menu | 19 |
| All Images Menu | 19 |
| Computer Image Menu | 20 |
| Video Image Menu | 21 |
| Audio Menu | 21 |
| Management Menu | 22 |
| Language Menu | 24 |
| Test Pattern Menu | 24 |
| Factory Reset Menu | 24 |

4 Troubleshooting Your Projector

| | |
|------------------------------------|-----------|
| Changing the Lamp | 28 |
|------------------------------------|-----------|

5 Specifications

Contacting Dell

Glossary

Your Dell™ Projector

Your projector comes with all the items shown below. Ensure that you have all the items, and contact Dell if anything is missing. For more information see, "Contacting Dell".

Package Contents

Power cable (1.8m)



Remote control



Carrying Case



VGA cable (D-sub to D-sub) (1.8m)



Batteries



Documentation



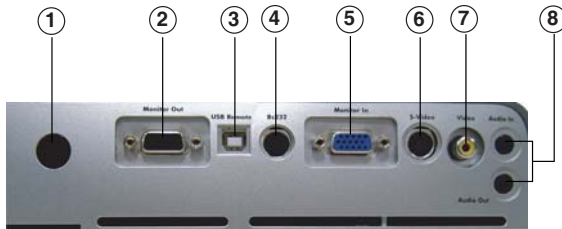
About Your Projector



| | |
|---|-------------------------|
| 1 | Control panel |
| 2 | Zoom tab |
| 3 | Focus ring |
| 4 | Lens |
| 5 | Remote control receiver |
| 6 | Elevator button |

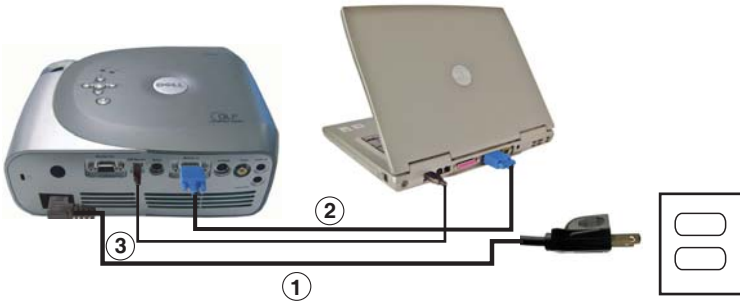
2

Connecting Your Projector



| | |
|---|--------------------------------|
| 1 | IR receiver |
| 2 | VGA out (monitor loop-through) |
| 3 | USB connector |
| 4 | RS232 connector |
| 5 | VGA in (D-sub) connector |
| 6 | S-video connector |
| 7 | Composite video connector |
| 8 | Audio input connector |

Connecting to a Computer



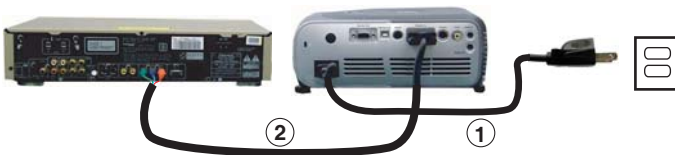
| | |
|---|------------------|
| 1 | Power cord |
| 2 | VGA to VGA cable |
| 3 | USB to USB cable |



NOTE: The USB cable must be connected if you want to use the Next Page and Previous Page features on the remote control.

Connecting a DVD Player, Set Top Box, VCR, or TV

Connecting With a Component Cable



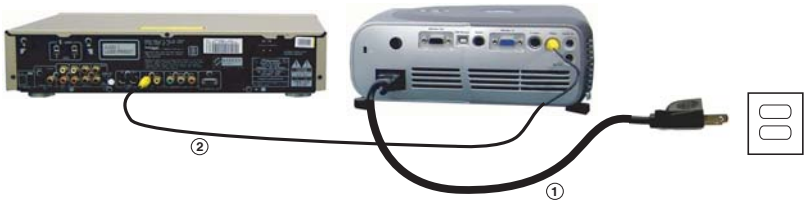
| | |
|---|-------------------------------|
| 1 | Power cord |
| 2 | D-sub to HDTV/Component cable |

Connecting With an S-Video Cable



| | |
|---|---------------|
| 1 | Power cord |
| 2 | S-video cable |

Connecting With a Composite Cable



| | |
|---|-----------------------|
| 1 | Power cord |
| 2 | Composite video cable |

Connecting to a Wired RS232 Remote Control



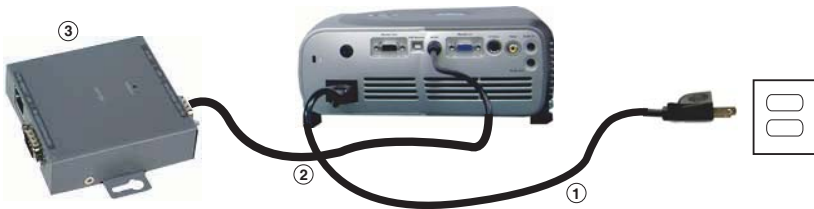
NOTE: The RS232 cable is not provided by Dell. Consult a professional installer for the cable and RS232 remote control software.

Connecting to a Computer



| | |
|---|-------------|
| 1 | Power cord |
| 2 | RS232 cable |


Connecting to a Commercial RS232 Control Box




| | |
|---|------------------------------|
| 1 | Power cord |
| 2 | RS232 cable |
| 3 | Commercial RS232 control box |

Using Your Projector

Turning Your Projector On

 **NOTE:** Turn on the projector before you turn on the source (computer, notebook, DVD, etc.). The Power button light blinks green until pressed.


- 1 Remove the lens cap.
- 2 Connect the power cord and appropriate cables. For information about connecting the projector, see "Connecting Your Projector" on page 7.
- 3 Press the Power button (see "About Your Projector" on page 6 to locate the Power button). The Dell logo displays for 30 seconds.
- 4 Turn on your source (computer, DVD player, etc.). The projector automatically detects your source.

 **NOTE:** Allow the projector some time to search for the source.


If the "Searching..." message appears on the screen, ensure that the appropriate cables are securely connected.

If you have multiple sources connected to the projector, press the **Source** button on the remote control or control panel to select the desired source.

Turning Your Projector Off

 **NOTICE:** Unplug the projector after properly shutting down as explained in the following procedure.

- 1 Press the Power button twice. The cooling fan continues to operate for 90 seconds.
- 2 Disconnect the power cord from the electrical outlet and the projector.

 **NOTE:** If you press the Power button while the projector is running, the following message appears:

"⏻ Press Power button to Turn Off Projector.
Projector must cool down for 90 seconds before unplugging or restarting." The message disappears in 5 seconds or you can press any button on the control panel to erase it.

Adjusting the Projected Image

Raising the Projector Height

- 1 Press the elevator button.
- 2 Raise the projector to the desired display angle, and then release the button to lock the elevator foot into position.
- 3 Use the tilt adjustment wheel to fine-tune the display angle; if necessary, press the side elevator buttons to raise the rear side of the projector to the desired display angle.

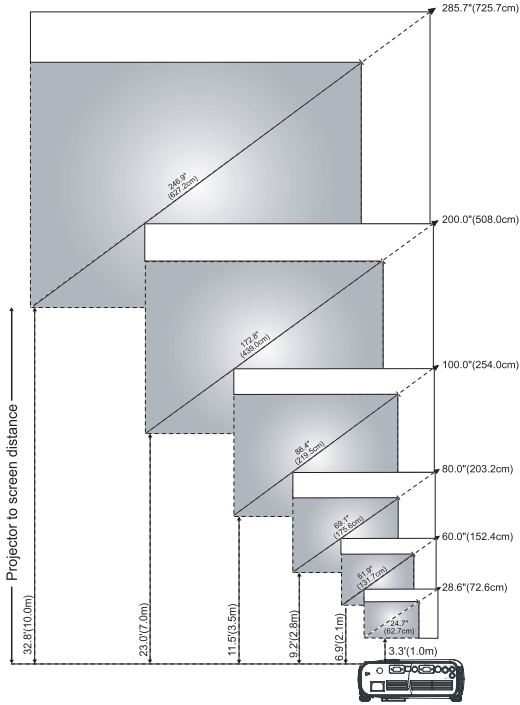
Lowering the Projector Height

- 1 Press the elevator button.
- 2 Lower the projector, and then release the button to lock the elevator foot into position.



| | |
|---|-----------------------|
| 1 | Elevator button |
| 2 | Elevator foot |
| 3 | Tilt adjustment wheel |

Adjusting Projection Image Size



| | | | | | | | |
|-------------------|------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|
| Screen (Diagonal) | Max. | 28.6" (72.6cm) | 60.0"(152.4cm) | 80.0"(203.2cm) | 100.0"(254.0cm) | 200.0"(508.0cm) | 285.7"(725.7cm) |
| | Min. | 24.7"(62.7cm) | 51.9"(131.7cm) | 69.1"(175.6cm) | 86.4"(219.5cm) | 172.8"(439.0cm) | 246.9"(627.2cm) |
| Screen size (WxH) | Max. | 22.9"x17.1" | 48.0"x36.0" | 64.0"x48.0" | 80.0"x60.0" | 160.0"x120.0" | 228.6"x171.4" |
| | | 58.1cmx43.5cm | 121.9cmx91.4cm | 162.6cmx121.9cm | 203.2cmx152.4cm | 406.4cmx304.8cm | 580.6cmx435.4cm |
| | Min. | 19.8"x14.8" | 41.5"x31.1" | 55.3"x41.5" | 69.1"x51.9" | 138.3"x103.7" | 197.5"x148.1" |
| | | 50.2cmx37.6cm | 105.4cmx79.0cm | 140.5cmx105.4cm | 175.6cmx131.7cm | 351.2cmx263.4cm | 501.7cmx376.3cm |
| Distance | | 3.3ft (1.0m) | 6.9ft (2.1m) | 9.2ft (2.8m) | 11.5ft (3.5m) | 23ft (7.0m) | 32.8ft (10.0m) |

*This graph is for user reference only.

Adjusting the Projector Zoom and Focus

CAUTION: To avoid damaging the projector, ensure that the zoom lens and elevator foot are fully retracted before moving the projector or placing the projector in its carrying case.

- 1 Rotate the zoom tab to zoom in and out.
- 2 Rotate the focus ring until the image is clear. The projector focuses at distances from 3.3ft to 32.8ft (1m to 10m).



| | |
|---|------------|
| 1 | Zoom tab |
| 2 | Focus ring |

Password Security

Protect your projector and restrict access to it with the **Password Security** feature. This security utility enables you to impose a variety of access restrictions to protect your privacy and stop others from tampering with your projector. This means that the projector cannot be used if it is taken without authorization, and thus serves as a theft-prevention feature.


When Password Protect is enabled (On), a Password Protect screen requesting you to enter a password will be displayed when the power plug is inserted into the electrical outlet and the power for the projector is first turned on.

By default, this function is disabled. You can enable this feature using the Password menu. Refer to section in this manual titled "Management Menu-Password" for further details. This password security feature is activated the next time you turn on the projector.

If you enable this feature, you have to enter the projector's password after you turn on the projector:

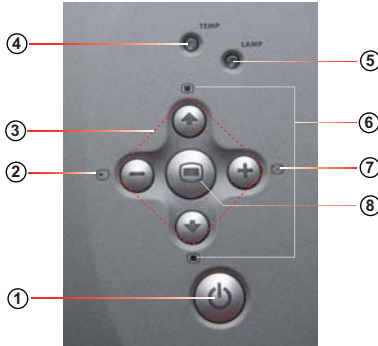






- 1 First time password input request:
 - a Use the directional keys to enter the password.
 - b Press the Menu button to confirm.
 - c If the password verification is successful, you can resume with accessing the projector's functions and its utilities.
You are allowed three attempts to enter the correct password. After the three invalid attempts, the projector automatically turns off.

 **NOTE:** If you forget your password, contact Dell. For more information see, "Contacting Dell".

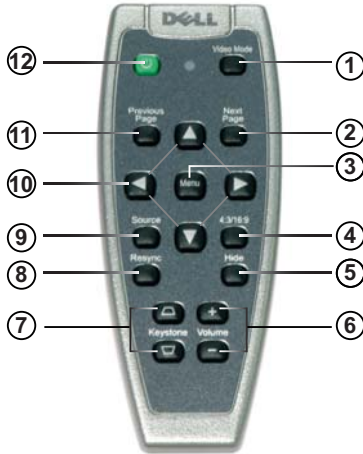


Using the Control Panel




| | | |
|---|-----------------------|---|
| 1 | Power | Turn the projector on and off. For more information, see "Turning Your Projector On" on page 11 and "Turning Your Projector Off" on page 11. |
| 2 | Source | Press to toggle through Analog RGB, Composite, Component-i, S-video, and Analog YPbPr sources when multiple sources are connected to the projector. |
| 3 | Four Directional Keys | The four directional keys     can be used to toggle through the tabs in the OSD. |
| 4 | TEMP warning light | <ul style="list-style-type: none"> • A solid orange TEMP light indicates that the projector has overheated. The display automatically shuts down. Turn the display on again after the projector cools down. If the problem persists, contact Dell. • A blinking orange Temp light indicates that a projector fan has failed and the projector automatically shuts down. If this problem persists, contact Dell. |
| 5 | LAMP warning light | If the Lamp light is solid orange, replace the lamp. |
| 6 | Keystone adjustment | If your image is not perpendicular to the screen, then it does not appear square. Press to adjust image distortion caused by tilting the projector. (± 16 degrees) |
| 7 | Resync | Press to synchronize the projector to the input source. Resync does not operate if the on-screen display (OSD) is displayed. |
| 8 | Menu | Press to activate the OSD. Use the directional keys and the Menu button to navigate through the OSD. |

Using the Remote Control



| | | |
|---|---------------------|---|
| 1 | Video Mode | Press once to show the current display mode. Press the button again to toggle between PC , Movie , sRGB , or User mode. |
| 2 | Next Page | Press to move to the next page. |
| 3 | Menu | Press to activate the on-screen display (OSD). Use the directional keys and the Menu button to navigate through the OSD. |
| 4 | 4:3/16:9 | Press to switch the aspect ratio: 1:1, 16:9, 4:3. |
| 5 | Hide button | Press to hide the image, press again to display the image. |
| 6 | Volume +/- | Press to increase (+) or decrease (-) the volume or toggle through the OSD tabs. |
| 7 | Keystone adjustment | If your image is not perpendicular to the screen, then it does not appear square. Press to adjust image distortion caused by tilting the projector (± 16 degrees). |

| | | |
|----|------------------|---|
| 8 | Resync | Press to synchronize the projector to the input source. Resync does not operate if the OSD is displayed. |
| 9 | Source | Press to toggle through Analog RGB, Composite, Component-i, S-video, and Analog YPbPr sources when multiple sources are connected to the projector. |
| 10 | Directional keys | Use the ▲ or ▼ button to select OSD items, use the ◀ or ▶ button to make adjustments. |
| 11 | Previous Page | Press to go to the previous page.  NOTE: The USB cable must be connected to use this function. |
| 12 | Power | Turn the projector on and off. For more information, see "Turning Your Projector On" on page 11 and "Turning Your Projector Off" on page 11. |

Using the On-Screen Display

The projector has a multi-language On-Screen Display (OSD) that can be displayed with or without an input source present.

In the Main Menu, press the ◀ or ▶ button on the control panel or the ▲ or ▼ button on the remote control to navigate through the tabs. Press the Ⓜ button on the control panel or the Menu button on the remote control to select a submenu.

In the submenus, press the ◀ or ▶ button on the control panel or the ▲ or ▼ button on the remote control to make a selection. When an item is selected, the color changes to dark gray. Use the – or + button on the control panel or the ◀ or ▶ button on the remote control to make adjustments to a setting.

To exit the OSD, go to the Exit tab and press the Ⓜ button on the control panel or the Menu button on the remote control.

Main Menu



All Images Menu



BRIGHTNESS—Use the \ominus or \oplus button on the control panel or the \blacktriangleleft or \blacktriangleright button on the remote control to adjust the brightness of the image.

CONTRAST—Use the \ominus or \oplus button on the control panel or the \blacktriangleleft or \blacktriangleright button on the remote control to adjust the degree of difference between the brightest and darkest parts of the picture. Adjusting the contrast changes the amount of black and white in the image.

COLOR TEMP—Adjust the color temperature. The screen appears bluer at higher temperatures. The screen appears redder at lower temperatures.

User mode activates the values in the color setting menu.

COLOR SETTING—Manually adjust red, green, and blue color.

KEystone—Adjust the image distortion caused by tilting the projector (± 16 degrees).

AUTO KEystone—Select **Yes** to enable the auto correction for vertical image distortion caused by tilting the projector. To manually adjust the keystone, press the ⊖ button on the control panel or the Menu button on the remote control.

SEMI-AUTO KEYSTONE—Press the  button on the control panel or the Menu button on the remote control to activate the Semi-Auto Keystone correction for image distortion.

ASPECT RATIO—Select an aspect ratio to adjust how the image appears.

- 1:1 — The input source displays without scaling.
Use 1:1 aspect ratio if you are using one of the following:
 - VGA cable and the computer has a resolution less than XGA (1024 x 768)
 - Component cable (576p/480i/480p)
 - S-Video cable
 - Composite cable
- 16:9 — The input source scales to fit the width of the screen.
- 4:3 — The input source scales to fit the screen.
Use 16:9 or 4:3 if you are using one of the following:
 - Computer resolution greater than XGA
 - Component cable (1080i or 720p)

VIDEO MODE—Select a mode to optimize the display image based on how the projector is being used: **Movie**, **PC**, **sRGB** (provides more accurate color representation), and **User** (set your preferred settings). If you adjust the settings for **White Intensity** or **Degamma**, the projector automatically switches to **User**.

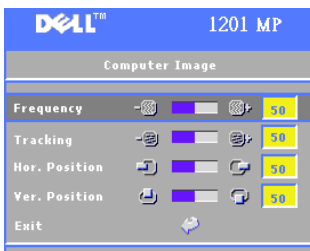
WHITE INTENSITY—Select 0 to maximize the color reproduction and 10 to maximize the brightness.

DEGAMMA—Adjust between 1 and 6 to change the color performance of the display. The default setting is 0.

Computer Image Menu



NOTE: This menu is only available when a computer is connected.



FREQUENCY—Change the display data clock frequency to match the frequency of your computer graphics card. If you see a vertical flickering bar, use Frequency control to minimize the bars. This is a coarse adjustment.

TRACKING—Synchronize the phase of the display signal with the graphics card. If you experience an unstable or flickering image, use **Tracking** to correct it. This is a fine adjustment.




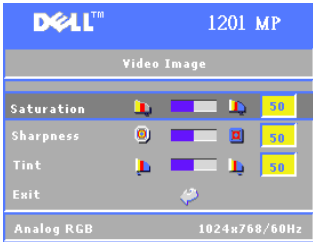
NOTE: Adjust **Frequency** first and then **Tracking**.

HOR. POSITION—Press the \ominus button on the control panel or the \blacktriangleleft button on the remote control to adjust the horizontal position of the image to the left and press the \oplus button on the control panel or the \blacktriangleright button on the remote control to adjust the horizontal position of the image to the right.

VER. POSITION—Press the \ominus button on the control panel or the \blacktriangleleft button on the remote control to adjust the vertical position of the image downward and press the \oplus button on the control panel or the \blacktriangleright button on the remote control to adjust the vertical position of the image upward.

Video Image Menu

 **NOTE:** This menu is only available when an S-video or composite video source is connected.



SATURATION—Press the \ominus button on the control panel or the \blacktriangleleft button on the remote control to decrease the amount of color in the image and press the \oplus button on the control panel or the \blacktriangleright button on the remote control to increase the amount of color in the image.

SHARPNESS—Press the \ominus button on the control panel or the \blacktriangleleft button on the remote control to decrease the sharpness and press the \oplus button on

the control panel or the \blacktriangleright button on the remote control to increase the sharpness.

TINT—Press the \ominus button on the control panel or the \blacktriangleleft button on the remote control to increase the amount of green in the image and press the \oplus button on the control panel or the \blacktriangleright button on the remote control to increase the amount of red in the image.

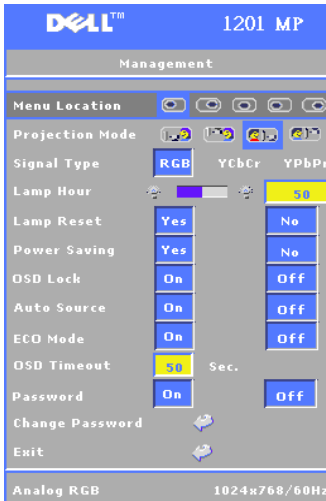
Audio Menu



VOLUME—Press the \ominus button on the control panel or the - button on the remote control to decrease the volume and press the \oplus button on the control panel or the + button on the remote control to increase the volume.

MUTE—Allows to mute the volume.

Management Menu



MENU LOCATION—Select the location of the OSD on the screen.

PROJECTION MODE—Select how the image appears:

- Front Projection-Desktop (the default).
- Rear Projection-Desktop — The projector reverses the image so you can project from behind a translucent screen.
- Front Projection-Ceiling Mount — The projector turns the image upside down for ceiling-mounted projection.
- Rear Projection-Ceiling Mount — The projector reverses and turns the image upside down. You can project from behind a translucent screen with a ceiling-mounted projection.

SIGNAL TYPE—Manually select the signal type (RGB, YCbCr, or YPbPr).

LAMP HOUR—Displays the operating hours since the last timer reset.

LAMP RESET—After you install a new lamp, select **Yes** to reset the lamp timer.

POWER SAVING—Select **Yes** to set the power saving delay period. The delay period is the amount of time you want the projector to wait without signal input. After that set time, the projector enters power saving mode and turns off the lamp. The projector turns back on when it detects an input signal or you press the **Power** button. After two hours, the projector turns off and you need to press the **Power** button to turn the projector on.

OSD LOCK—Select **On** to enable the **OSD Lock** for hiding the OSD menu. To display OSD menu, press the button on the control panel or the Menu button on the remote control for 15 seconds.

AUTO SOURCE—Select **On** (the default) to auto detect the available input signals. When the projector is on and you press **Source**, it automatically finds the next available input signal. Select **Off** to lock the current input signal. When **Off** is selected and you press **Source**, you select which input signal you want to use.


ECO MODE—Select **On** to use the projector at a lower power level (150 Watts), which may provide longer lamp life, quieter operating, and dimmer luminance output on the screen. Select **Off** to operate at normal power level (200 Watts).

OSD TIMEOUT—Use this function to set the duration OSD menu stay active (at idle state).

PASSWORD—Select **On** to enable you to impose a variety of access restrictions to protect your privacy and stop others from tampering with your projector.

- a Press the ◀ button to select **On**.
 - If this setting is set to **Off**, the **Change Password** feature will be disabled.
- b Set your password with the directional keys and press the Menu button to confirm.




 **NOTE:** To disable the Password setting, you must enter the correct password. If the password verification is successful, the Password can be set to **Off**.

CHANGE PASSWORD—Use this function to modify the password to your preference.

- a Enter your current password with the directional keys.
- b Set your new password.
- c Verify your new password.
- d Press the Menu button to confirm.



 **NOTE:** The current Password can only be reset if the Password setting is set to **Off**.

Language Menu



Press the \uparrow or \downarrow button on the control panel or the \blacktriangle or \blacktriangledown button on the remote control to select the preferred language for the OSD.

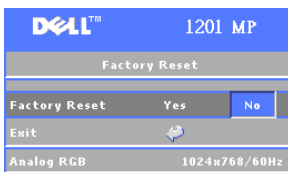
Press the \odot on the control panel or the Menu button on the remote control to confirm the language selection.

Test Pattern Menu



Press the \odot button on the control panel or the Menu button on the remote control to display the test pattern chart. Use this function to adjust the focus of the projected screen. Use the \ominus or \oplus button on the control panel or the \blacktriangleleft or \blacktriangleright button on the remote control to exit from this mode.




Factory Reset Menu








Select **Yes** to reset the projector to its factory default settings. Reset items include both computer image and video image settings.

Troubleshooting Your Projector

If you experience problems with your projector, see the following troubleshooting tips. If the problem persists, contact Dell. For more information see, "Contacting Dell."

| Problem | Possible Solution |
|---|---|
| <p data-bbox="168 610 420 667">No image appears on the screen</p>  | <ul data-bbox="473 610 953 792" style="list-style-type: none"> • Ensure that the lens cap is removed and the projector is turned on. • Ensure that the external graphics port is enabled. If you are using a Dell portable computer, press  . For other computers, see respective documentation. <p data-bbox="473 805 915 862">NOTE: Allow the projector some time to search for the source.</p> <ul data-bbox="473 878 953 1094" style="list-style-type: none"> • Ensure that all the cables are securely connected. See "Connecting Your Projector" on page 7. • Ensure that the pins of the connectors are not bent or broken. • Ensure that the lamp is securely installed (see "Changing the Lamp" on page 28). |

| Problem <i>(continued)</i> | Possible Solution <i>(continued)</i> |
|---|--|
| <p>Partial, scrolling, or incorrectly displayed image</p>  | <ol style="list-style-type: none"> 1 Press the Resync button on the remote control or the control panel. 2 If you are using a Dell portable computer, set the resolution of the computer to XGA (1024 x 768): <ol style="list-style-type: none"> a Right-click the unused portion of your Windows desktop, click Properties and then select Settings tab. b Verify the setting is 1024 x 768 pixels for the external monitor port. c Press  . <p>If you experience difficulty in changing resolutions or your monitor freezes, restart all the equipment and the projector.</p> <p>If you are not using a Dell portable, see related documentation.</p> |
| <p>The screen does not display your presentation</p> | <p>If you are using a Dell portable computer, press  .</p> |
| <p>Image is unstable or flickering</p> | <p>Adjust the tracking in the OSD Computer Image tab.</p> |
| <p>Image has vertical flickering bar</p> | <p>Adjust the frequency in the OSD Computer Image tab.</p> |
| <p>Image color is not correct</p> | <ul style="list-style-type: none"> • If your graphic card output signal appears green, and you would like to display VGA at 60Hz signal, please go into the OSD select Management, select Signal Type, and then select RGB. |
| <p>Image is out of focus</p> | <ol style="list-style-type: none"> 1 Adjust the focus ring on the projector lens. 2 Ensure that the projection screen is within the required distance from the projector (3.3ft [1m] to 32.8ft [10m]). |

| Problem (continued) | Possible Solution (continued) |
|--|---|
| The image is stretched when displaying a 16:9 DVD | The projector automatically detects 16:9 DVD and adjusts the aspect ratio to full screen with a 4:3 (letter-box) default setting. If the image is still stretched, adjust the aspect ratio as follows: <ul style="list-style-type: none"> • If you are playing a 16:9 DVD, select 4:3 aspect ratio type on your DVD player (if capable). • If you cannot select 4:3 aspect ratio type on your DVD player, select 4:3 aspect ratio in the All Images menu in the OSD. |
| Image is reversed | Select Management from the OSD and adjust the projection mode. |
| Lamp is burned out or makes a popping sound | When the lamp reaches its end of life, it may burn out and may make a loud popping sound. If this occurs, the projector does not turn back on, and displays Lamp Defective in the LCD display until the lamp is replaced. To replace the lamp, see "Changing the Lamp" on page 28. |
| The remote control is not operating smoothly or in very limited range | The battery may be low. If so, replace it with 2 new AAA batteries. |
| OSD display window does not appear on the screen after pressing the Menu button on the remote control or on the control panel | Try the following procedures: <ol style="list-style-type: none"> 1 Press the Menu button on the remote control or on the control panel for 15 seconds until OSD pops up. 2 Select Management from the OSD. 3 Set OSD Lock to "Off". |

LAMP & TEMP indicator information

| | |
|--------------------------------------|--|
| LAMP light is solid orange | If the Lamp light is solid orange, replace the lamp. |
| TEMP light is solid orange | The projector has overheated. The display automatically shuts down. Turn the display on again after the projector cools down. If the problem persists, contact Dell. |
| TEMP light is blinking orange | A projector fan has failed and the projector automatically shuts down. If this problem persists, contact Dell. |

Changing the Lamp

Replace the lamp when the message "Lamp is approaching the end of its useful life in full power operation. Replacement suggested!" appears on the screen. If this problem persists after replacing the lamp, contact Dell. For more information see, "Contacting Dell".



CAUTION: The lamp becomes very hot when in use. Do not attempt to replace the lamp until the projector has been allowed to cool down for at least 30 minutes.

- 1 Turn off the projector and disconnect the power cord.
- 2 Let the projector cool for at least 30 minutes.
- 3 Loosen the two screws that secure the lamp cover and remove the cover.



CAUTION: If the lamp has shattered, be careful as the broken pieces are sharp and can cause injury. Remove all broken pieces from the projector and dispose or recycle according to state, local or federal law. Go to www.dell.com/hg for additional information.

- 4 Loosen the two screws that secure the lamp.



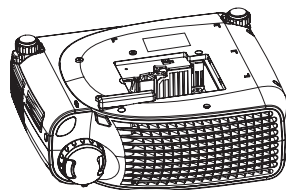
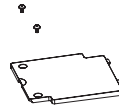
CAUTION: Do not touch the bulb or the lamp glass at any time. Projector lamps are very fragile and may shatter if touched.

- 5 Pull up the lamp by its metal handle.



NOTE: Dell may require that lamps replaced under warranty be returned to Dell.

- 6 Replace with the new lamp.
- 7 Tighten the two screws that secure the lamp.
- 8 Place the lamp cover and tighten the two screws.
- 9 Reset the lamp usage time by selecting Yes for Lamp Reset icon in the OSD Management tab (refer to Management Menu in *Owner's Manual*).



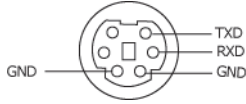
CAUTION: (Hg) LAMP(S) INSIDE THIS PRODUCT CONTAIN MERCURY AND MUST BE RECYCLED OR DISPOSED OF ACCORDING TO LOCAL, STATE OR FEDERAL LAWS. FOR MORE INFORMATION, CONTACT THE ELECTRONIC INDUSTRIES ALLIANCE AT WWW.EIAE.ORG. FOR LAMP SPECIFIC DISPOSAL INFORMATION, CHECK WWW.LAMPRECYCLE.ORG.

Specifications

| | |
|------------------------|--|
| Light Valve | Single-chip DLP™ DDR (double data rate) technology |
| Brightness | 2000 ANSI Lumens (Max) |
| Contrast Ratio | 2100:1 Typical (Full On/Full Off) |
| Uniformity | 80% Typical (Japan Standard - JBMA) |
| Lamp | 200-watt user-replaceable UHP 2500-hour lamp (up to 3000 hours in eco mode) |
| Number of Pixels | 800 x 600 (SVGA) |
| Displayable Color | 16.7M colors |
| Color Wheel Speed | 100~127.5Hz (2X) |
| Projection Lens | F/2.4-2.58, f=19~21.9mm with 1.15x manual zoom lens |
| Projection Screen Size | 28.57-285.7 inches (diagonal) |
| Projection Distance | 3.3~32.8 ft (1m~10m) |
| Video Compatibility | NTSC, NTSC 4.43, PAL, PAL-M, PAL-N, SECAM, and HDTV (1080i, 720P, 576i/P, 480i/P) compatibility Composite video, Component video and S-video capability |
| H. Frequency | 31kHz-79kHz (Analog) |
| V. Frequency | 50Hz-85Hz (Analog) |
| Power Supply | Universal 100-240V AC 50-60Hz with PFC input |
| Power Consumption | 250 Watts full power (typical), 200 Watts in eco mode |

| | |
|------------------------|---|
| Audio | 1 speaker, 2 Watts RMS |
| Noise Level | 36dB(A) Full-on mode, 33dB(A) Eco-mode |
| Weight | 2.24kg (4.94 lbs) |
| Dimensions (W x H x D) | External 9.9 x 3.96 x 8.4 ± 0.04 inches (251 x 101 x 213 ± 1mm) |
| Environmental | Operating temperature: 5°C–35°C (41°F–95°F) Humidity: 80% maximum Storage temperature: –20°C to 60°C (–4°F to 140°F) Humidity: 80% maximum |
| Regulatory | FCC, CE, VCCI, UL, cUL, Nemko-GS, ICES-003, MIC, C-Tick, GOST, CCC, Safety Mark, NOM, SABS, PSE-Circle, EK |
| I/O Connectors | Power: AC power input socket Computer input: one D-sub for analog/component, HDTV input signals Computer output: one 15-pin D-sub Video input: one composite video RCA and one S-video USB input: one USB connector Audio input: one phone jack (diameter 3.5mm) One mini-DIN RS232 for wired remote projector control from PC |

RS232 Pin Assignment



RS232 Protocol

- Communication Settings

| Connection settings | Value |
|---------------------|-------|
| Baud Rate: | 19200 |
| Data Bits: | 8 |
| Parity | None |
| Stop Bits | 1 |

- Control command Syntax (From PC to Projector)

[H][AC][SoP][CRC][ID][SoM][COMMAND]

- Example: power on the projector

Enter the following code: 0xBE 0xEF 0x10 0x05 0x00 0xC6 0xFF 0x11 0x11 0x01 0x00 0x01



NOTE: Send least significant bytes first.

- Control Commands List

| Control Commands List | Address Code (BYTE) | Size of the Payload (WORD) | CRC16 for the entire packet (WORD) | MsG ID (WORD) | MsG size (WORD) | Command code (BYTE) | Command Description |
|-----------------------|---------------------|----------------------------|------------------------------------|---------------|-----------------|---------------------|---|
| 0xfefc | 0x10 | 0x0005 | 0xffc6 | 0x1111 | 0x0001 | 0x01 | Power on |
| | | | 0xbf7c | | | 0x02 | Menu |
| | | | 0x7e07 | | | 0x03 | Up |
| | | | 0x3fc5 | | | 0x04 | Down |
| | | | 0xfe05 | | | 0x05 | Left |
| | | | 0xbe04 | | | 0x06 | Right |
| | | | 0x7fc4 | | | 0x07 | Resync |
| | | | 0x3fc0 | | | 0x08 | Source |
| | | | 0xfe00 | | | 0x09 | Volume + |
| | | | 0xbe01 | | | 0x0a | Volume- |
| | | | 0xffc3 | | | 0x0d | Mute |
| | | | 0x7e02 | | | 0x0f | Hide |
| | | | 0x3fca | | | 0x10 | Video Mode |
| | | | 0x7fcb | | | 0x13 | V. Keystone Up |
| | | | 0x3e09 | | | 0x14 | V. Keystone Down |
| | | | 0x7e08 | | | 0x17 | Aspect ratio (4:3/16:9) |
| | | | 0x3e0c | | | 0x18 | Power OFF |
| | | | 0xffcc | | | 0x19 | Source-VGA |
| | | | 0xbfcd | | | 0x1a | Source-VGA YPbPr (480p/576p/720p/1080i) |
| | | | 0x7e0d | | | 0x1b | Source-VGA YCbCr (480i/576i) |
| | | | 0xbe1f | | | 0x22 | Source-S-Video |
| | | | 0x7fdf | | | 0x23 | Source-Composite |
| | | | 0xbfda | | | 0x2a | ECO Mode ON |
| | | | 0x7e19 | | | 0x2b | ECO Mode OFF |
| | | | 0x3fdb | | | 0x2c | Auto Source ON |
| | | | 0xfe1b | | | 0x2d | Auto Source OFF |
| | | | 0xbe1a | | | 0x2e | Factory Reset |
| | | | 0x7fda | | | 0x2f | Lamp Hour |
| | | | 0x3e12 | | | 0x30 | Firmware Version |
| | | | 0x7e46 | | | 0xff | System Status |

Compatibility Modes

| Mode | Resolution | (ANALOG) | |
|------------|------------|-------------------|--------------------|
| | | V. Frequency (Hz) | H. Frequency (KHz) |
| VGA | 640x350 | 70 | 31.5 |
| VGA | 640x350 | 85 | 37.9 |
| VGA | 640x400 | 85 | 37.9 |
| VGA | 640x480 | 60 | 31.5 |
| VGA | 640x480 | 72 | 37.9 |
| VGA | 640x480 | 75 | 37.5 |
| VGA | 640x480 | 85 | 43.3 |
| VGA | 720x400 | 70 | 31.5 |
| VGA | 720x400 | 85 | 37.9 |
| SVGA | 800x600 | 56 | 35.2 |
| SVGA | 800x600 | 60 | 37.9 |
| SVGA | 800x600 | 72 | 48.1 |
| SVGA | 800x600 | 75 | 46.9 |
| SVGA | 800x600 | 85 | 53.7 |
| XGA | 1024x768 | 43.4 | 35.5 |
| XGA | 1024x768 | 60 | 48.4 |
| XGA | 1024x768 | 70 | 56.5 |
| XGA | 1024x768 | 75 | 60.0 |
| XGA | 1024x768 | 85 | 68.7 |
| SXGA | 1280x1024 | 60 | 63.98 |
| SXGA+ | 1400x1050 | 60 | 63.98 |
| MAC LC13" | 640x480 | 66.66 | 34.98 |
| MAC II 13" | 640x480 | 66.68 | 35 |
| MAC 16" | 832x624 | 74.55 | 49.725 |
| MAC 19" | 1024x768 | 75 | 60.24 |
| MAC | 1152x870 | 75.06 | 68.68 |
| MAC G4 | 640x480 | 60 | 31.35 |
| MAC G4 | 640x480 | 120 | 68.03 |
| IMac DV | 640x480 | 117 | 60 |
| IMac DV | 800x600 | 95 | 60 |
| IMac DV | 1024x768 | 75 | 60 |
| IMac DV | 1152x870 | 75 | 68.49 |
| IMac DV | 1280x960 | 75 | 75 |

Contacting Dell

You can contact Dell through the Internet and by phone:

- For support through the web, go to support.dell.com.
- For worldwide support through the web, use the **Choose A Country/Region** menu near the bottom of the page, or see the web addresses listed in the following table.
- For support by e-mail, see the e-mail addresses listed in the following table.



NOTE: Toll-free numbers are for use within the country for which they are listed.



NOTE: In certain countries, support specific to Dell™ XPS™ computers is available at a separate telephone number listed for participating countries. If you do not see a telephone number listed that is specific for XPS computers, you may contact Dell through the support number listed and your call will be routed appropriately.

- For support by phone, use the phone numbers and codes provided in the following table. If you need assistance in determining which codes to use, contact a local or an international operator.



NOTE: The contact information provided was deemed correct at the time that this document went to print and is subject to change.

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|---|--|
| Anguilla | Online Support | www.dell.com/ai |
| | E-mail Address | la-techsupport@dell.com |
| | Technical Support, Customer Service, Sales | toll-free: 800-335-0031 |
| Antigua and Barbuda | Online Support | www.dell.com.ag |
| | Technical Support, Customer Service, Sales | la-techsupport@dell.com 1-800-805-5924 |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|---|--|
| Aomen Country Code: 853 | Technical Support | toll-free: 0800-105 |
| | Customer Service (Xiamen, China) | 34 160 910 |
| | Transaction Sales (Xiamen, China) | 29 693 115 |
| Argentina (Buenos Aires) International Access Code: 00 Country Code: 54 City Code: 11 | Online Support | www.dell.com.ar |
| | E-mail for Desktops and Portables | la-techsupport@dell.com |
| | E-mail for Servers and EMC® Storage Products | la_enterprise@dell.com |
| | Customer Service | toll-free: 0-800-444-0730 |
| | Technical Support – Dell PowerApp™, Dell PowerEdge™, Dell PowerConnect™, and Dell PowerVault™ | toll-free: 0-800-222-0154 |
| | Technical Support Services | toll-free: 0-800-444-0724 |
| | Sales | 0-810-444-3355 |
| Aruba | Online Support | www.dell.com.aw la-techsupport@dell.com |
| | Technical Support, Customer Service, Sales | toll-free: 800-1578 |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|---|--|
| Australia (Sydney) | Online Support | support.ap.dell.com |
| International Access Code: 0011 | | support.ap.dell.com/contactus |
| Country Code: 61 | Technical Support | |
| City Code: 2 | Technical Support for XPS computers only | toll-free: 1300 790 877 |
| | Home and Home Office | toll-free: 1300-655-533 |
| | Medium and Large Business | toll-free: 1800-633-559 |
| | Small Business, Education, Local Government | toll-free: 1800-060-889 |
| | Customer Service | toll-free: 1300-662-196 |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|---|---|--|
| Austria (Vienna) International Access Code: 900 Country Code: 43 City Code: 1 | Online Support | support.euro.dell.com tech_support_central_europe @dell.com |
| | Technical Support for XPS computers only | 08 20 24 05 30 81 |
| | Home/Small Business Sales | 08 20 24 05 30 00 |
| | Home/Small Business Fax | 08 20 24 05 30 49 |
| | Home/Small Business Customer Service | 08 20 24 05 30 14 |
| | Home/Small Business Support | 08 20 24 05 30 17 |
| | Preferred Accounts/Corporate Customer Service | 08 20 24 05 30 16 |
| | Preferred Accounts/Corporate Support | 08 20 24 05 30 17 |
| | Switchboard | 08 20 24 05 30 00 |
| | Bahamas | Online Support |
| Technical Support, Customer Service, Sales | | toll-free: 1-866-874-3038 |
| Barbados | Online Support | www.dell.com/bb la-techsupport@dell.com |
| | Technical Support, Customer Service, Sales | 1-800-534-3142 |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|---|--|
| Belgium (Brussels) | Online Support | support.euro.dell.com |
| International Access Code: 00 | Technical Support for XPS computers only | 02 481 92 96 |
| Country Code: 32 | General Support | 02 481 92 88 |
| City Code: 2 | General Support Fax | 02 481 92 95 |
| | Customer Service | 02 713 15 65 |
| | Corporate Sales | 02 481 91 00 |
| | Fax | 02 481 92 99 |
| | Switchboard | 02 481 91 00 |
| Bermuda | Online Support | www.dell.com/bm la-techsupport@dell.com |
| | Technical Support, Customer Service, Sales | 1-877-890-0751 |
| Bolivia | Online Support | www.dell.com/bo la-techsupport@dell.com |
| | Technical Support, Customer Service, Sales | toll-free: 800-10-0238 |
| Brazil | Online Support | www.dell.com/br |
| International Access Code: 00 | | BR_TechSupport@dell.com |
| Country Code: 55 | Customer Service and Tech Support | 0800 970 3355 |
| City Code: 51 | Technical Support Fax | 51 2104 5470 |
| | Customer Service Fax | 51 2104 5480 |
| | Sales | 0800 970 3390 |
| British Virgin Islands | Technical Support, Customer Service, Sales | toll-free: 1-866-278-6820 |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|---|--|
| Brunei Country Code: 673 | Technical Support (Penang, Malaysia) | 604 633 4966 |
| | Customer Service (Penang, Malaysia) | 604 633 3101 or toll-free: 801 1012 |
| | Transaction Sales (Penang, Malaysia) | 604 633 3101 or toll-free: 801 1012 |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|---|--|
| Canada (North York, Ontario) | Online Order Status | www.dell.ca/ostatus |
| | Online Support | support.ca.dell.com |
| International Access Code: 011 | AutoTech (automated Hardware and Warranty Support) | toll-free: 1-800-247-9362 |
| | Customer Service | |
| | Home/Home Office | toll-free: 1-800-847-4096 |
| | Small Business | toll-free: 1-800-906-3355 |
| | Medium/Large Business, Government, Education | toll-free: 1-800-387-5757 |
| | Hardware Warranty Phone Support | |
| | XPS Computers Only | toll-free: 1-866-398-8977 |
| | Computers for Home/Home Office | toll-free: 1-800-847-4096 |
| | Computers for Small/Medium/Large Business, Government | toll-free: 1-800-387-5757 |
| | Printers, Projectors, Televisions, Handheld, Digital Jukebox, and Wireless | 1-877-335-5767 |
| | Sales | |
| | Home and Home Office Sales | toll-free: 1-800-999-3355 |
| | Small Business | toll-free: 1-800-387-5752 |
| Medium/Large Business, Government | toll-free: 1-800-387-5755 | |
| Spare Parts and Extended Service | 1 866 440 3355 | |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|---|--|
| Cayman Islands | Online Support Technical Support, Customer Service, Sales | la-techsupport@dell.com 1-877-262-5415 |
| Chile (Santiago) Country Code: 56 City Code: 2 | Online Support Sales and Customer Support | www.dell.com/cl la-techsupport@dell.com toll-free: 1230-020-3397 or 800-20-1385 |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|---|--|
| China (Xiamen) Country Code: 86 City Code: 592 | Online Support | support.dell.com.cn |
| | Technical Support E-mail | support.dell.com.cn/email |
| | Customer Service E-mail | customer_cn@dell.com |
| | Technical Support Fax | 592 818 1350 |
| | Technical Support – XPS computers only | toll-free: 800 858 0540 |
| | Technical Support – Dell™ Dimension™ and Dell Inspiron™ | toll-free: 800 858 2969 |
| | Technical Support – Dell OptiPlex™, Dell Latitude™, and Dell Precision™ | toll-free: 800 858 0950 |
| | Technical Support – Servers and Storage | toll-free: 800 858 0960 |
| | Technical Support – Projectors, PDAs, Switches, Routers, etc. | toll-free: 800 858 2920 |
| | Technical Support – Printers | toll-free: 800 858 2311 |
| | Customer Service | toll-free: 800 858 2060 |
| | Customer Service Fax | 592 818 1308 |
| | Home and Small Business | toll-free: 800 858 2222 |
| | Preferred Accounts Division | toll-free: 800 858 2557 |
| | Large Corporate Accounts GCP | toll-free: 800 858 2055 |
| | Large Corporate Accounts Key Accounts | toll-free: 800 858 2628 |
| Large Corporate Accounts North | toll-free: 800 858 2999 | |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|---|--|
| Colombia | Online Support | www.dell.com/co la-techsupport@dell.com |
| | Technical Support, Customer Service, Sales | 01-800-915-4755 |
| Costa Rica | Online Support | www.dell.com/cr la-techsupport@dell.com |
| | Technical Support, Customer Service, Sales | 0800-012-0231 |
| Czech Republic (Prague) | Online Support | support.euro.dell.com czech_dell@dell.com |
| International Access Code: 00 | Technical Support | 22537 2727 |
| Country Code: 420 | Customer Service | 22537 2707 |
| | Fax | 22537 2714 |
| | Technical Fax | 22537 2728 |
| | Switchboard | 22537 2711 |
| Denmark (Copenhagen) | Online Support | support.euro.dell.com |
| International Access Code: 00 | Technical Support for XPS computers only | 7010 0074 |
| | Technical Support | 7023 0182 |
| Country Code: 45 | Customer Service – Relational | 7023 0184 |
| | Home/Small Business Customer Service | 3287 5505 |
| | Switchboard – Relational | 3287 1200 |
| | Switchboard Fax – Relational | 3287 1201 |
| | Switchboard – Home/Small Business | 3287 5000 |
| | Switchboard Fax – Home/Small Business | 3287 5001 |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|---|---|--|
| Dominica | Online Support | www.dell.com/dm la-techsupport@dell.com |
| | Technical Support, Customer Service, Sales | toll-free: 1-866-278-6821 |
| Dominican Republic | Online Support | www.dell.com/do la-techsupport@dell.com |
| | Technical Support, Customer Service, Sales | 1-800-156-1588 |
| Ecuador | Online Support | www.dell.com/ec la-techsupport@dell.com |
| | Technical Support, Customer Service, Sales (calling from Quito) | toll-free: 999-119-877-655-3355 |
| | Technical Support, Customer Service, Sales (calling from Guayaquil) | toll-free: 1800-999-119-877- 655-3355 |
| El Salvador | Online Support | www.dell.com/sv la-techsupport@dell.com |
| | Technical Support, Customer Service, Sales | 800-6132 |
| Finland (Helsinki) International Access Code: 990 Country Code: 358 City Code: 9 | Online Support | support.euro.dell.com fi_support@dell.com |
| | Technical Support | 0207 533 555 |
| | Customer Service | 0207 533 538 |
| | Switchboard | 0207 533 533 |
| | Fax | 0207 533 530 |
| | Sales under 500 employees | 0207 533 540 |
| | Sales over 500 employees | 0207 533 533 |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|---|--|
| France (Paris) (Montpellier) International Access Code: 00 Country Code: 33 City Codes: (1) (4) | Online Support | support.euro.dell.com |
| | Technical Support for XPS computers only | 0825 387 129 |
| | Home and Small Business | |
| | Technical Support | 0825 387 270 |
| | Customer Service | 0825 823 833 |
| | Switchboard | 0825 004 700 |
| | Switchboard (calls from outside of France) | 04 99 75 40 00 |
| | Sales | 0825 004 700 |
| | Fax | 0825 004 701 |
| | Fax (calls from outside of France) | 04 99 75 40 01 |
| | Corporate | |
| | Technical Support | 0825 004 719 |
| | Customer Service | 0825 338 339 |
| | Switchboard | 01 55 94 71 00 |
| | Sales | 01 55 94 71 00 |
| Fax | 01 55 94 71 01 | |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|--|--|
| Germany (Frankfurt) International Access Code: 00 Country Code: 49 City Code: 69 | Online Support | support.euro.dell.com |
| | | tech_support_central_europe@dell.com |
| | Technical Support for XPS computers only | 069 9792 7222 |
| | Technical Support | 069 9792-7200 |
| | Home/Small Business Customer Service | 0180-5-224400 |
| | Global Segment Customer Service | 069 9792-7320 |
| | Preferred Accounts Customer Service | 069 9792-7320 |
| | Large Accounts Customer Service | 069 9792-7320 |
| | Public Accounts Customer Service | 069 9792-7320 |
| | Switchboard | 069 9792-7000 |
| Greece International Access Code: 00 Country Code: 30 | Online Support | support.euro.dell.com |
| | Technical Support | 00800-44 14 95 18 |
| | Gold Service Technical Support | 00800-44 14 00 83 |
| | Switchboard | 2108129810 |
| | Gold Service Switchboard | 2108129811 |
| | Sales | 2108129800 |
| | Fax | 2108129812 |
| Grenada | Online Support | www.dell.com/gd la-techsupport@dell.com |
| | Technical Support, Customer Service, Sales | toll-free: 1-866-540-3355 |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|---|--|
| Guatemala | Online Support | www.dell.com/gt la-techsupport@dell.com |
| | Technical Support, Customer Service, Sales | 1-800-999-0136 |
| Guyana | Online Support | la-techsupport@dell.com |
| | Technical Support, Customer Service, Sales | toll-free: 1-877-270-4609 |
| Hong Kong International Access Code: 001 Country Code: 852 | Online Support | support.ap.dell.com support.dell.com.cn/email |
| | Technical Support – XPS computers only | 00852-3416 6923 |
| | Technical Support – Dimension and Inspiron | 00852-2969 3188 |
| | Technical Support – OptiPlex, Latitude, and Dell Precision | 00852-2969 3191 |
| | Technical Support – Servers and Storage | 00852-2969 3196 |
| | Technical Support – Projectors, PDAs, Switches, Routers, etc. | 00852-3416 0906 |
| | Customer Service | 00852-3416 0910 |
| | Large Corporate Accounts | 00852-3416 0907 |
| | Global Customer Programs | 00852-3416 0908 |
| | Medium Business Division | 00852-3416 0912 |
| Home and Small Business Division | 00852-2969 3105 | |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|--|---|
| India | Online Support | support.ap.dell.com |
| | Portable and Desktop Support | |
| | Desktop Support E-mail | india_support_desktop@dell.com |
| | Portable Support E-mail | india_support_notebook@dell.com |
| | Phone Numbers | 080-25068032 or 080-25068034 or your city STD code + 60003355 or toll-free: 1-800-425-8045 |
| | Server Support | |
| | E-mail | india_support_Server@dell.com |
| | Phone Numbers | 080-25068032 or 080-25068034 or your city STD code + 60003355 or toll-free: 1800 425 8045 |
| | Gold Support Only | |
| | E-mail | eec_ap@dell.com |
| | Phone Numbers | 080-25068033 or your city STD code + 60003355 or toll-free: 1-800-425-9045 |
| | XPS Support Only | |
| E-mail | Indiaxps_AP@dell.com | |
| Phone Numbers | 080-25068066 or toll-free: 1-800-425-2066 | |
| Customer Service | | |
| Home and Small Business | India_care_HSB@dell.com toll-free: 1800-4254051 | |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|--|--|
| Ireland (Cherrywood) | Online Support | support.euro.dell.com dell_direct_support@dell.com |
| International Access Code: 00 | Technical Support | |
| Country Code: 353 | XPS computers only | 1850 200 722 |
| City Code: 1 | Business computers | 1850 543 543 |
| | Home computers | 1850 543 543 |
| | At Home Support | 1850 200 889 |
| | Sales | |
| | Home | 1850 333 200 |
| | Small Business | 1850 664 656 |
| | Medium Business | 1850 200 646 |
| | Large Business | 1850 200 646 |
| | Sales E-mail | Dell_IRL_Outlet@dell.com |
| | Customer Service | |
| | Home and Small Business | 01 204 4014 |
| | Business (greater than 200 employees) | 1850 200 982 |
| | General | |
| | Fax/Sales Fax | 01 204 0103 |
| | Switchboard | 01 204 4444 |
| | U.K. Customer Service (dial within U.K. only) | 0870 906 0010 |
| | Corporate Customer Service (dial within U.K. only) | 0870 907 4499 |
| | U.K. Sales (dial within U.K. only) | 0870 907 4000 |

| Country (City) | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers |
|---|---|---|
| International Access Code Country Code City Code | | Web and E-mail Address |
| Italy (Milan) | Online Support | support.euro.dell.com |
| International Access Code: 00 | Home and Small Business | |
| Country Code: 39 | Technical Support | 02 577 826 90 |
| City Code: 02 | Customer Service | 02 696 821 14 |
| | Fax | 02 696 821 13 |
| | Switchboard | 02 696 821 12 |
| | Corporate | |
| | Technical Support | 02 577 826 90 |
| | Customer Service | 02 577 825 55 |
| | Fax | 02 575 035 30 |
| | Switchboard | 02 577 821 |
| Jamaica | Online Support | la-techsupport@dell.com |
| | Technical Support, Customer Service, Sales (dial from within Jamaica only) | 1-800-440-9205 |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|---|--|
| Japan (Kawasaki) | Online Support | support.jp.dell.com |
| International Access Code: 001 | Technical Support – XPS computers only | toll-free: 0120-937-786 |
| Country Code: 81 City Code: 44 | Technical Support outside of Japan – XPS computers only | 81-44-520-1235 |
| | Technical Support – Dimension and Inspiron | toll-free: 0120-198-226 |
| | Technical Support outside of Japan – Dimension and Inspiron | 81-44-520-1435 |
| | Technical Support – Dell Precision, OptiPlex, and Latitude | toll-free: 0120-198-433 |
| | Technical Support outside of Japan – Dell Precision, OptiPlex, and Latitude | 81-44-556-3894 |
| | Technical Support – Dell PowerApp, Dell PowerEdge, Dell PowerConnect, and Dell PowerVault | toll-free: 0120-198-498 |
| | Technical Support outside of Japan – PowerApp, PowerEdge, PowerConnect, and PowerVault | 81-44-556-4162 |
| | Technical Support – Projectors, PDAs, Printers, Routers | toll-free: 0120-981-690 |
| | Technical Support outside of Japan – Projectors, PDAs, Printers, Routers | 81-44-556-3468 |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|--|--|
| Korea (Seoul) | Online Support | support.ap.dell.com |
| International Access Code: 001 | Technical Support for XPS computers only | toll-free: 080-999-0283 |
| Country Code: 82 | Technical Support, Customer Service | toll-free: 080-200-3800 |
| City Code: 2 | Technical Support – Dimension, PDA, Electronics, and Accessories | toll-free: 080-200-3801 |
| | Sales | toll-free: 080-200-3600 |
| | Fax | 2194-6202 |
| | Switchboard | 2194-6000 |
| Latin America | Customer Technical Support (Austin, Texas, U.S.A.) | 512 728-4093 |
| | Customer Service (Austin, Texas, U.S.A.) | 512 728-3619 |
| | Fax (Technical Support and Customer Service) (Austin, Texas, U.S.A.) | 512 728-3883 |
| | Sales (Austin, Texas, U.S.A.) | 512 728-4397 |
| | Sales Fax (Austin, Texas, U.S.A.) | 512 728-4600 or 512 728-3772 |
| Luxembourg | Online Support | support.euro.dell.com |
| International Access Code: 00 | Support | 342 08 08 075 |
| Country Code: 352 | Home/Small Business Sales | +32 (0)2 713 15 96 |
| | Corporate Sales | 26 25 77 81 |
| | Customer Service | +32 (0)2 481 91 19 |
| | Fax | 26 25 77 82 |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|---|--|
| Malaysia (Penang) | Online Support | support.ap.dell.com |
| International Access Code: 00 | Technical Support – XPS computers only | toll-free: 1 800 885 784 |
| Country Code: 60 City Code: 4 | Technical Support – Dell Precision, OptiPlex, and Latitude | toll-free: 1 800 880 193 |
| | Technical Support – Dimension, Inspiron, and Electronics and Accessories | toll-free: 1 800 881 306 |
| | Technical Support – PowerApp, PowerEdge, PowerConnect, and PowerVault | toll-free: 1800 881 386 |
| | Customer Service | toll-free: 1800 881 306 (option 6) |
| | Transaction Sales | toll-free: 1 800 888 202 |
| | Corporate Sales | toll-free: 1 800 888 213 |
| Mexico | Online Support | www.dell.com/mx |
| International Access Code: 00 | | la-techsupport@dell.com |
| Country Code: 52 | Technical Support | 001-866-563-4425 |
| | Sales | 50-81-8800 or 001-800-888-3355 |
| | Customer Service | 001-877-384-8979 or 001-877-269-3383 |
| | Main | 50-81-8800 or 001-800-888-3355 or 001-866-851-1754 |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|---|---|--|
| Montserrat | Online Support | la-techsupport@dell.com |
| | Technical Support, Customer Service, Sales | toll-free: 1-866-278-6822 |
| Netherlands Antilles | Online Support | la-techsupport@dell.com |
| | Technical Support, Customer Service, Sales | 001-800-882-1519 |
| Netherlands (Amsterdam) International Access Code: 00 Country Code: 31 City Code: 20 | Online Support | support.euro.dell.com |
| | Technical Support for XPS computers only | 020 674 45 94 |
| | Technical Support | 020 674 45 00 |
| | Technical Support Fax | 020 674 47 66 |
| | Home/Small Business Customer Service | 020 674 42 00 |
| | Relational Customer Service | 020 674 4325 |
| | Home/Small Business Sales | 020 674 55 00 |
| | Relational Sales | 020 674 50 00 |
| | Home/Small Business Sales Fax | 020 674 47 75 |
| | Relational Sales Fax | 020 674 47 50 |
| New Zealand | Online Support | support.ap.dell.com |
| | International Access Code: 00 | support.ap.dell.com/contactus |
| | Country Code: 64 | toll-free: 0800 335 540 |
| | Technical Support, Customer Service, Sales | 0800 441 567 |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|---|--|
| Nicaragua | Online Support | www.dell.com/ni la-techsupport@dell.com |
| | Technical Support, Customer Service, Sales | 001-800-220-1377 |
| Norway (Lysaker) | Online Support | support.euro.dell.com |
| International Access Code: 00 | Technical Support for XPS computers only | 815 35 043 |
| Country Code: 47 | Technical Support | 671 16882 |
| | Relational Customer Service | 671 17575 |
| | Home/Small Business Customer Service | 23162298 |
| | Switchboard | 671 16800 |
| | Fax Switchboard | 671 16865 |
| Panama | Online Support | www.dell.com/pa la-techsupport@dell.com |
| | Technical Support, Customer Service, Sales | 011-800-507-1264 |
| Peru | Online Support | www.dell.com/pe la-techsupport@dell.com |
| | Technical Support, Customer Service, Sales | 0800-50-669 |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|---|---|--|
| Poland (Warsaw) International Access Code: 011 Country Code: 48 City Code: 22 | Online Support | support.euro.dell.com |
| | | pl_support_tech@dell.com |
| | Customer Service Phone | 57 95 700 |
| | Customer Service | 57 95 999 |
| | Sales | 57 95 999 |
| | Customer Service Fax | 57 95 806 |
| | Reception Desk Fax | 57 95 998 |
| | Switchboard | 57 95 999 |
| Portugal International Access Code: 00 Country Code: 351 | Online Support | support.euro.dell.com |
| | Technical Support | 707200149 |
| | Customer Service | 800 300 413 |
| | Sales | 800 300 410 or 800 300 411 or 800 300 412 or 21 422 07 10 |
| | Fax | 21 424 01 12 |
| Puerto Rico | Online Support | www.dell.com/pr la-techsupport@dell.com |
| | Technical Support | toll-free: 1-866-390-4695 or 1-866-851-1760 |
| | Customer Service and Sales | 1-877-537-3355 |
| St. Kitts and Nevis | Online Support | www.dell.com/kn la-techsupport@dell.com |
| | Technical Support, Customer Service, Sales | toll-free: 1-866-540-3355 |
| St. Lucia | Online Support | www.dell.com/lc la-techsupport@dell.com |
| | Technical Support, Customer Service, Sales | toll-free: 1-866-464-4352 |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|---|--|
| St. Vincent and the Grenadines | Online Support | www.dell.com/vc |
| | Technical Support, Customer Service, Sales | la-techsupport@dell.com |
| | | toll-free: 1-866-464-4353 |
| Singapore (Singapore) International Access Code: 005 Country Code: 65 | NOTE: The phone numbers in this section should be called from within Singapore or Malaysia only. | |
| | Online Support | support.ap.dell.com |
| | Technical Support – XPS computers only | toll-free: 1800 394 7464 |
| | Technical Support – Dimension, Inspiron, and Electronics and Accessories | toll-free: 1 800 394 7430 |
| | Technical Support – OptiPlex, Latitude, and Dell Precision | toll-free: 1 800 394 7488 |
| | Technical Support – PowerApp, PowerEdge, PowerConnect, and PowerVault | toll-free: 1 800 394 7478 |
| | Customer Service | toll-free: 1 800 394 7430 (option 6) |
| | Transaction Sales | toll-free: 1 800 394 7412 |
| | Corporate Sales | toll-free: 1 800 394 7419 |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|---|--|
| Slovakia (Prague) International Access Code: 00 Country Code: 421 | Online Support | support.euro.dell.com |
| | | czech_dell@dell.com |
| | Technical Support | 02 5441 5727 |
| | Customer Service | 420 22537 2707 |
| | Fax | 02 5441 8328 |
| | Tech Fax | 02 5441 8328 |
| | Switchboard (Sales) | 02 5441 7585 |
| South Africa (Johannesburg) International Access Code: 09/091 Country Code: 27 City Code: 11 | Online Support | support.euro.dell.com |
| | | dell_za_support@dell.com |
| | Gold Queue | 011 709 7713 |
| | Technical Support | 011 709 7710 |
| | Customer Service | 011 709 7707 |
| | Sales | 011 709 7700 |
| | Fax | 011 706 0495 |
| | Switchboard | 011 709 7700 |
| Southeast Asian and Pacific Countries | Technical Support, Customer Service, and Sales (Penang, Malaysia) | 604 633 4810 |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|---|--|
| Spain (Madrid) | Online Support | support.euro.dell.com |
| International Access Code: 00 | Home and Small Business | |
| Country Code: 34 | Technical Support | 902 100 130 |
| City Code: 91 | Customer Service | 902 118 540 |
| | Sales | 902 118 541 |
| | Switchboard | 902 118 541 |
| | Fax | 902 118 539 |
| | Corporate | |
| | Technical Support | 902 100 130 |
| | Customer Service | 902 115 236 |
| | Switchboard | 91 722 92 00 |
| | Fax | 91 722 95 83 |
| Sweden (Upplands Vasby) | Online Support | support.euro.dell.com |
| International Access Code: 00 | Technical Support for XPS computers only | 77 134 03 40 |
| Country Code: 46 | Technical Support | 08 590 05 199 |
| City Code: 8 | Relational Customer Service | 08 590 05 642 |
| | Home/Small Business Customer Service | 08 587 70 527 |
| | Employee Purchase Program (EPP) Support | 020 140 14 44 |
| | Technical Support Fax | 08 590 05 594 |
| | Sales | 08 587 705 81 |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|---|--|
| Switzerland (Geneva) | Online Support | support.euro.dell.com Tech_support_central_Europe @dell.com |
| International Access Code: 00 | Technical Support for XPS computers only | 0848 338 857 |
| Country Code: 41 | Technical Support – Home and Small Business | 0844 811 411 |
| City Code: 22 | Technical Support – Corporate | 0844 822 844 |
| | Customer Service – Home and Small Business | 0848 802 202 |
| | Customer Service – Corporate | 0848 821 721 |
| | Main | 0848 335 599 |
| | Fax | 022 799 01 90 |
| | Sales | 022 799 01 01 |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|--|--|
| Taiwan International Access Code: 002 Country Code: 886 | Online Support | support.ap.dell.com |
| | | support.dell.com.cn/email |
| | Technical Support – XPS computers only | toll-free: 0080 186 3085 |
| | Technical Support – OptiPlex, Latitude, Inspiron, Dimension, and Electronics and Accessories | toll-free: 0080 186 1011 |
| | Technical Support – Servers and Storage | toll-free: 0080 160 1256 |
| | Customer Service | toll-free: 0080 160 1250 (option 5) |
| | Transaction Sales Corporate Sales | toll-free: 0080 165 1228 toll-free: 0080 165 1227 |
| Thailand International Access Code: 001 Country Code: 66 | Online Support | support.ap.dell.com |
| | Technical Support (OptiPlex, Latitude, and Dell Precision) | toll-free: 1800 0060 07 |
| | Technical Support (PowerApp, PowerEdge, PowerConnect, and PowerVault) | toll-free: 1800 0600 09 |
| | Customer Service | toll-free: 1800 006 007 (option 7) |
| | Corporate Sales | toll-free: 1800 006 009 |
| | Transaction Sales | toll-free: 1800 006 006 |
| Trinidad/Tobago | Online Support | www.dell.com/tt la-techsupport@dell.com |
| | Technical Support, Customer Service, Sales | toll-free: 1-888-799-5908 |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|---|--|
| Turks and Caicos Islands | Online Support Technical Support, Customer Service, Sales | www.dell.com/tc la-techsupport@dell.com toll-free: 1-877-441-4735 |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|--|--|
| U.K. (Bracknell) | Online Support | support.euro.dell.com |
| International Access Code: 00 | | dell_direct_support@dell.com |
| Country Code: 44 | Customer Service Online | support.euro.dell.com/uk/en/ECare/form/home.asp |
| City Code: 1344 | Sales | |
| | Home and Small Business Sales | 0870 907 4000 |
| | Corporate/Public Sector Sales | 01344 860 456 |
| | Customer Service | |
| | Home and Small Business | 0870 906 0010 |
| | Corporate | 01344 373 185 |
| | Preferred Accounts (500–5000 employees) | 0870 906 0010 |
| | Global Accounts | 01344 373 186 |
| | Central Government | 01344 373 193 |
| | Local Government & Education | 01344 373 199 |
| | Health | 01344 373 194 |
| | Technical Support | |
| | XPS Computers Only | 0870 366 4180 |
| | Corporate/Preferred Accounts/PCA (1000+ employees) | 0870 908 0500 |
| | Other Dell Products | 0870 353 0800 |
| | General | |
| | Home and Small Business Fax | 0870 907 4006 |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|---|--|
| Uruguay | Online Support | www.dell.com/uy la-techsupport@dell.com toll-free: 000-413-598-2521 |
| | Technical Support, Customer Service, Sales | |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|---|---|--|
| U.S.A. (Austin, Texas) International Access Code: 011 Country Code: 1 | Dell Services for the Deaf, Hard-of-Hearing, or Speech-Impaired | toll-free: 1-877-DELLTTY (1-877-335-5889) |
| | Fax | toll-free: 1-800-727-8320 |
| | Technical Support | support.dell.com |
| | XPS | toll-free: 1-800-232-8544 |
| | Home and Home Office | toll-free: 1-800-624-9896 |
| | Portable and Desktop AutoTech | toll-free: 1-800-247-9362 |
| | Small Business | toll-free: 1-800-456-3355 |
| | Medium and Large Business | toll-free: 1-877-671-3355 |
| | State and Local Government | toll-free: 1-800-981-3355 |
| | Federal Government | toll-free: 1-800-727-1100 |
| | Healthcare | toll-free: 1-800-274-1550 |
| | K-12 Education | toll-free: 1-888-977-3355 |
| | Higher Education | toll-free: 1-800-274-7799 |
| | Printers, Projectors, PDAs, and MP3 Players | toll-free: 1-877-459-7298 |
| | Customer Service | toll-free: 1-800-624-9897 |
| | Automated Order Status | toll-free: 1-800-433-9014 |
| | Small Business | toll-free: 1-800-456-3355 |
| | Medium and Large Business | toll-free: 1-877-671-3355 |
| | State and Local Government | toll-free: 1-800-981-3355 |
| | Federal Government | toll-free: 1-800-727-1100 |
| | Healthcare | toll-free: 1-800-274-1550 |
| | K-12 Education | toll-free: 1-888-977-3355 |
| | Higher Education | toll-free: 1-800-274-7799 |

| Country (City) International Access Code Country Code City Code | Service Type | Area Codes, Local Numbers, and Toll-Free Numbers Web and E-mail Address |
|--|---|--|
| U.S. Virgin Islands | Online Support | www.dell.com/vi la-techsupport@dell.com |
| | Technical Support, Customer Service, Sales | toll-free: 1-877-702-4360 |
| Venezuela | Online Support | www.dell.com/ve la-techsupport@dell.com |
| | Technical Support, Customer Service, Sales | 0800-100-4752 |

Glossary

ANSI Lumens—A standard for measuring light output, used for comparing projectors.

Aspect Ratio—The most popular aspect ratio is 4:3 (4 by 3). Early television and computer video formats are in a 4:3 aspect ratio, which means that the width of the image is 4/3 times the height.

Backlit (Backlight)—Refers to a remote control, or a projector control panel, that has buttons and controls that are illuminated.

Bandwidth—The number of cycles per second (Hertz) expressing the difference between the lower and upper limiting frequencies of a frequency band; also, the width of a band of frequencies.

Brightness—The amount of light emitting from a display or projection display or projection device. The brightness of projector is measured by ANSI lumens.

Color Temperature—A method of measuring the whiteness of a light source. Metal halide lamps have a higher temperature compared to halogen or incandescent lights.

Component Video—A method of delivering quality video in a format that contains all the components of the original image. These components are referred to as luma and chroma and are defined as Y'Pb'Pr' for analog component and Y'Cb'Cr' for digital component. Component video is available on DVD players and projectors.

Composite Video—The combined picture signal, including vertical and horizontal blanking and synchronizing signals.

Compression—A function that deletes resolution lines from the image to fit in the display area.

Compressed SVGA—To project an 800x600 image to a VGA projector, the original 800x600 signal must be compressed down. The data displays all the information with only two thirds of the pixels (307,000 vs 480,000). The resulting image is SVGA page size but sacrifices some of the image quality. If you are using an SVGA computers, connecting VGA to a VGA projector provide better results.

Compressed SXGA—Found on XGA projectors, compressed SXGA handling allows these projectors to handle up to 1280x1024 SXGA resolution.

Compressed XGA—Found on SVGA projectors, compressed XGA handling allows these projectors to handle 1024x768 XGA resolution.

Contrast Ratio—Range of light and dark values in a picture, or the ratio between their maximum and minimum values. There are two methods used by the projection industry to measure the ratio:

- 1 *Full On/Off* — measures the ratio of the light output of an all white image (full on) and the light output of an all black (full off) image.
- 2 *ANSI* — measures a pattern of 16 alternating black and white rectangles. The average light output from the white rectangles is divided by the average light output of the black rectangles to determine the ANSI contrast ratio.

Full On/Off contrast is always a larger number than ANSI contrast for the same projector.

dB—decibel—A unit used to express relative difference in power or intensity, usually between two acoustic or electric signals, equal to ten times the common logarithm of the ratio of the two levels.

Diagonal Screen—A method of measuring the size of a screen or a projected image. It measures from one corner to the opposite corner. A 9ft high, 12ft wide, screen has a diagonal of 15ft. This document assumes that the diagonal dimensions are for the traditional 4:3 ratio of a computer image as per the example above.

DLP—Digital Light Processing — Reflective display technology developed by Texas Instruments, using small manipulated mirrors. Light passes through a color filter is sent to the DLP mirrors which arrange the RGB colors into a picture projected onto screen, also known as DMD.

DMD—DMD — Digital Micro-mirror Device — Each DMD consists of thousands of tilting, microscopic aluminum alloy mirrors mounted on a hidden yoke.

DVI—Digital Visual Interface — Defines the digital interface between digital devices such as projectors and personal computers. For devices that support DVI, a digital to digital connection can be made that eliminates the conversion to analog and thereby delivers an unblemished image.

Focal Length—The distance from the surface of a lens to its focal point.

Frequency—It is the rate of repetition in cycles per seconds of electrical signals. Measured in Hz.

Hz—Frequency of an alternating signal. See Frequency.

Keystone Correction—Device that will correct an image of the distortion (usually a wide-top narrow-bottom effect) of a projected image caused by improper projector to screen angle.

Laser Pointer—A small pen or cigar-sized pointer, that contains a small battery powered laser, which can project a small, red (typically), high intensity beam of light that is immediately very visible on the screen.

Maximum Distance—The distance from a screen the projector can be to cast an image that is useable (bright enough) in a fully darkened room.

Maximum Image Size—The largest image a projector can throw in a darkened room. This is usually limited by focal range of the optics.

Metal Halide Lamp—The type of lamp used in many medium and all high end portable projectors. These lamps typically have a "half-life" of 1000-2000 hours. That is they slowly lose intensity (brightness) as they are used, and at the "half-life" point, they are half as bright as when new. These lamps output a very "hot" temperature light, similar to mercury vapor lamps used in street lights. Their whites are extremely white (with a slight bluish cast) and make a halogen lamp's whites look very yellowish by comparison.

Minimum Distance—The closest position that a projector can focus an image onto a screen.

NTSC—The United States broadcast standard for video and broadcasting.

PAL—A European and international broadcast standard for video and broadcasting. Higher resolution than NTSC.

Power Zoom—A zoom lens with the zoom in and out controlled by a motor, usually adjusted from the projector's control panel and also the remote control.

Reverse Image—Feature that allows you to flip the image horizontally. When used in a normal forward projection environment text, graphics, etc, are backwards. Reverse image is used for rear projection.

RGB—Red, Green, Blue — typically used to describe a monitor that requires separate signals for each of the three colors.

S-Video—A video transmission standard that uses a 4 pin mini-DIN connector to send video information on two signal wires called luminance (brightness, Y) and chrominance (color, C). S-Video is also referred to as Y/C.

SECAM—A French and international broadcast standard for video and broadcasting. Higher resolution than NTSC.

SVGA—Super Video Graphics Array — 800 x 600 pixels count.

SXGA—Super Ultra Graphics Array, — 1280 x 1024 pixels count.

UXGA—Ultra Extended Graphics Array — 1600 x 1200 pixels count.

VGA—Video Graphics Array — 640 x 480 pixels count.

XGA—Extra Video Graphics Array — 1024 x 768 pixels count.

Zoom Lens—Lens with a variable focal length that allows operator to move the view in or out making the image smaller or larger.

Zoom Lens Ratio—Is the ratio between the smallest and largest image a lens can project from a fixed distance. For example, a 1.4:1 zoom lens ratio means that a 10-foot image without zoom would be a 14-foot image with full zoom.

Index

A

- Adjusting Projection Image Size, 28
- Adjusting the Projected Image, 12
 - Adjusting the Projector Height, 12
 - lower the projector
 - Elevator button, 12
 - Elevator foot, 12
 - Tilt adjustment wheel, 12
- Adjusting the Projector Zoom and Focus, 14
 - Focus ring, 14
 - Zoom tab, 14

C

- Changing the Lamp, 28
- Connecting the Projector
 - Commercial RS232 control box, 10
 - Composite video cable, 9
 - Connecting with component cable, 8
 - Connecting with composite cable, 9
 - Connection with Commercial RS232 control box, 10
 - Connection with PC, 10
 - D-sub to D-sub cable, 8

- D-sub to HDTV/Component cable, 8
- Installation for wired RS232 remote control, 10
- Power cord, 8-10
- Professional Installation Options, 9
- RS232 cable, 10
- S-video cable, 9
- To Computer, 8
- USB to USB cable, 8

Connection Ports

- Audio input connector, 7
- Composite video connector, 7
- IR Receiver, 7
- RS232 connector, 7
- S-video connector, 7
- USB connector, 7
- VGA in (D-sub) connector, 7
- VGA Out (monitor loop-through), 7

Control Panel, 16

D

- Dell
 - contacting, 35

M

- Main Unit, 6
 - Control panel, 6
 - Elevator button, 6
 - Focus ring, 6
 - Lens, 6
 - Zoom tab, 6

O

- On-Screen Display, 18
 - All Images, 19
 - Degamma, 21
 - White Intensity, 21
 - Audio, 21
 - Computer Image, 20
 - Frequency, 20
 - Tracking, 20
 - Language, 24
 - Management, 22
 - Video Image, 21

P

- Powering On/Off the Projector
 - Powering Off the Projector, 11
 - Powering On the Projector, 11

R

- Remote Control, 6, 17
- RS232 Pin Assignment
 - RS232 Protocol, 31
 - Communication Settings, 31

- Control Command Syntax, 31
- Control Commands List, 32

S

Specifications

- Audio, 30
- Brightness, 29
- Color Wheel Speed, 29
- Compatibility Modes, 33
- Contrast Ratio, 29
- Dimensions, 30
- Displayable Color, 29
- Environmental, 30
- H. Frequency, 29
- I/O Connectors, 30
- Lamp, 29
- Light Valve, 29
- Noise Level, 30
- Number of Pixels, 29
- Power Consumption, 29
- Power Supply, 29
- Projection Distance, 29
- Projection Lens, 29
- Projection Screen Size, 29
- Regulatory, 30
- RS232 Pin Assignment, 31
- Uniformity, 29
- V. Frequency, 29
- Video Compatibility, 29
- Weight, 30

support

- contacting Dell, 35

T

- Troubleshooting, 25
 - contact Dell, 25
 - remote control, 27

