Dell 1U Rackmount LED Console
User's Guide

Notes, Cautions, and Warnings

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

CAUTION: A CAUTION indicates potential damage to hardware or loss of data if instructions are not followed.

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

590-1135-501A

Model FPM185

September 2012

Contents

1

Overview

The Dell 1U Rackmount LED Console is designed from the latest flat-panel monitor technology and provides a performance-oriented product with no mercury. This product uses a D-Sub 15-pin VGA connector and can support 28 VESA modes, VESA DPMS power management and plug-and-play function. Its design conserves rack space compared to a traditional CRT monitor. In addition, the flat-panel monitor consumes less power.

Rackmount LED Console Contents

The LED console includes the following items:

- One 1U Rackmount LED Console
- One pair of Dell ReadyRails™ II slide rails
- One pair of Rack Travel Locks
- Quick Installation Guide
- Safety and Regulatory Guide
- CD

Figure 1.1. 1U Rackmount LED Console Contents

2

Installation

Installing into the Rack

This section provides instructions for installing the Dell 1U Rackmount LED Console Tray in a four-post rack cabinet. The pullout tray assembly features a keyboard with touchpad and a flat-panel monitor that rotates up from the console tray for use. An attached cable-management arm routes the monitor, power, USB and keyboard/touchpad cables to the back of the rack. The monitor's power supply is installed on the console tray.

Install the console tray using Dell ReadyRails™ II slide rails in any system manufacturer's rack cabinets.

For removal instructions, see "Removal from the Rack" on page 23

📝 **NOTE:** 1U of free rack space is required to mount the 1U Rackmount LED Console Tray.

To install tool-less rails:

1   Position the left and right rail end pieces labeled FRONT facing inward, and orient each end piece to seat in the holes on the front side of the vertical rack flanges.

2   Align each end piece in the bottom and top holes of the desired U spaces until the latch clicks into place.

3   Engage the back end of the rail until it fully seats on the vertical rack flange and the latch clicks into place.

Figure 2.1. Installing Tool-less Rails
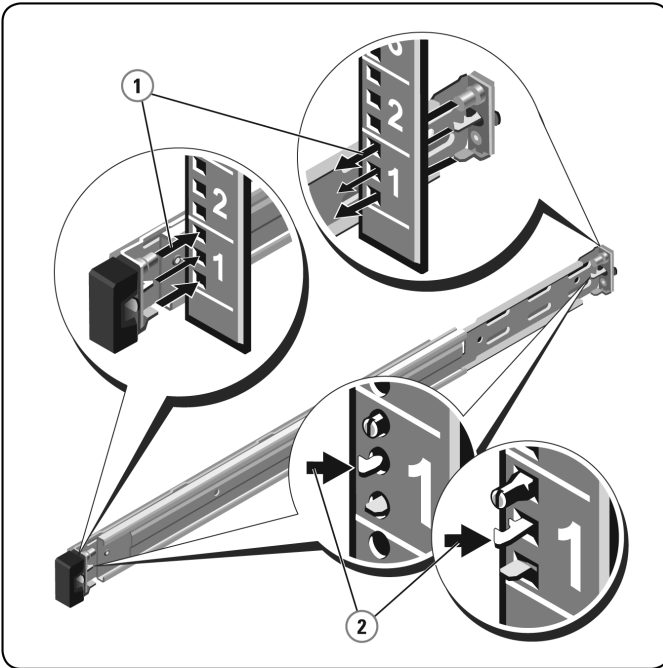
Preparing to install tooled rails:
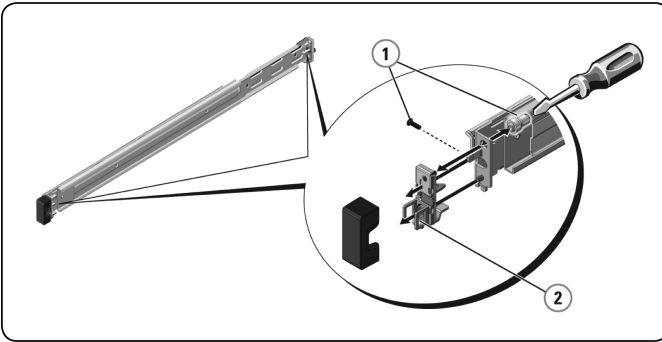
1   Remove the screw from the front mounting bracket using a torx-head screwdriver, then remove the pins from the front and rear mounting brackets using a flat-tipped screwdriver.

2   Pull and rotate the rail latch subassemblies to remove them from the mounting brackets.
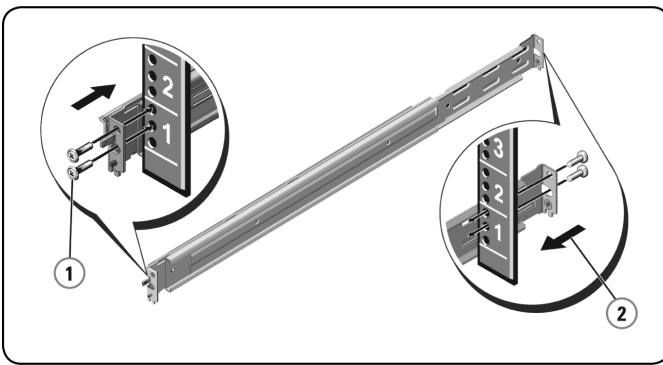
Figure 2.2. Preparing to Install Tooled Rails

Installing tooled rails:

1   Attach the left and right mounting rails to the front vertical rack flanges using two pairs of screws.

2   Slide the left and right back brackets forward against the rear vertical rack flanges and attach them using two pairs of screws.

Figure 2.3. Installing Tooled Rails

To install the console tray:

> 📝 **NOTE:** Ensure that the system is properly supported until the chassis rail members are inserted into the slide rails on both sides.

1 Pull the sliding rails out of the rack until they are fully extended.

2 Align and insert the ends of the chassis rail members into the ends of the rails.

3 Push the system inward until the chassis rail members are fully inserted.

4 Pull and push the console tray in and out of the rack until it slides smoothly within the rack.

Figure 2.4. Installing the Console Tray
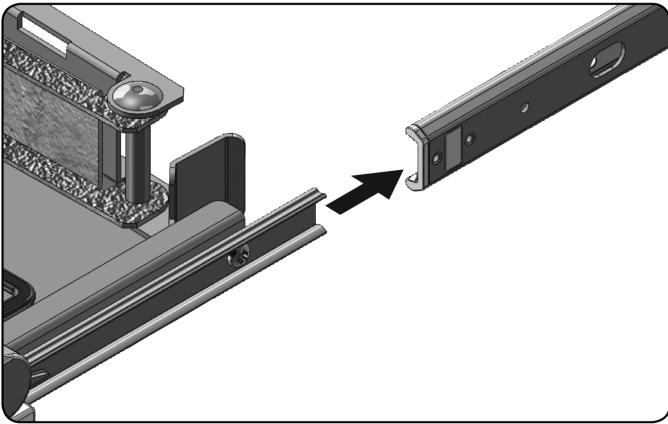
To install the cable management arm (CMA):

1   From the back of the rack, cut the zip tie that secures the CMA to the back of the tray.

2   Swing the free end of the CMA out to the bracket on the end of the left stationary rail.

3   Attach the CMA to the bracket with the captive screw on the end of the arm.

Figure 2.5. Installing the Cable Management Arm
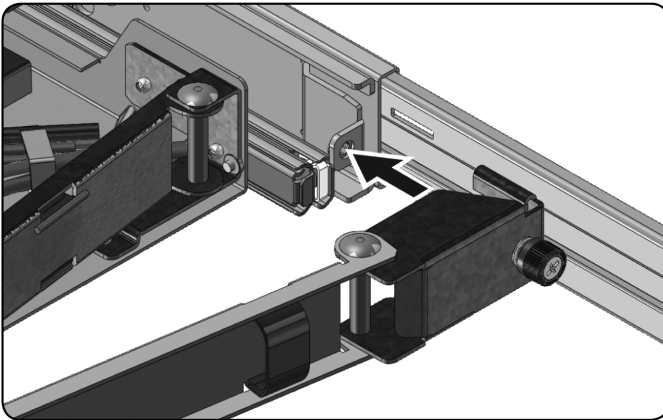
To thread the cables to the back of the rack:

1   Gently thread the cables through the cable channel on the CMA, then
     secure the cables to the slide rail, ensuring they aren't pulled too tight.

Figure 2.6. Threading the Cables

3

Operating the Console Tray

NOTE: This console tray features a capacitive touch screen interface. Touch the LED located below a desired icon. Power is its own icon.

Features

This product has the following features.

Table 3.1: Features

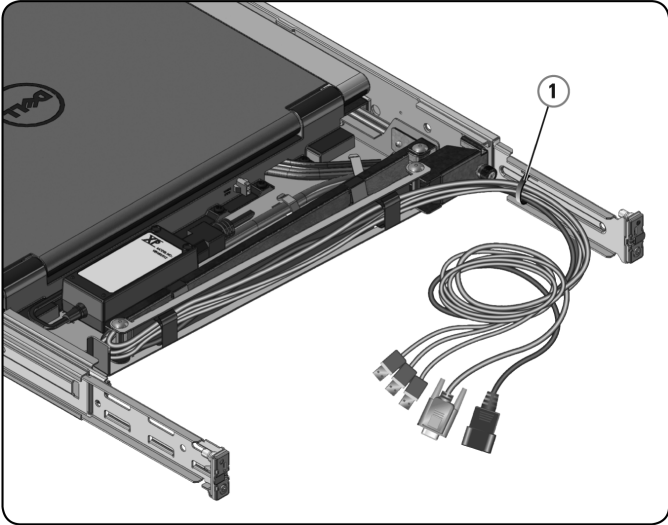| Feature	Description
Optimal resolution and refresh	1366 x 768 at 60 Hz
Screen type	Active Matrix Thin Film Transistor (TFT) Liquid Crystal Display (LCD)
Display active area	409.8 mm x 230.4 mm (13.3 inches x 10.64 inches)
Physical size (width x depth x height)	358.5 mm x 17.5 mm x 296.5 mm (14.1 inches x 0.689 inches x 11.67 inches)
Weight (LCD panel only)	2.0 kg (4.41 lbs)

Power Management Modes

If you have a VESA DPMS compliant display card or software installed in your system, the monitor can automatically reduce its power consumption when not

in use. If input from the keyboard, mouse or other input devices is detected, the monitor will automatically wake up, unless stowed. The following table shows the power consumption and signals for this automatic power saving feature.

Table 3.2: Power Management Modes

VESA Mode	Video	H-sync	V-sync	Power Used	LED Color
On	Active	Yes	Yes	Maximum 20W	Full bright <blue>
Stowed Position	Blanked	No	Yes	<0.5W	Amber
Sleep mode	Blanked	Yes	No	<0.5W	Amber
Active-off	Blanked	No	No	<0.5W	Amber
DC power off	NA	NA	NA	0W	Dark

Table 3.3: Signal Connector (15-pin D-sub Connector)

Pin No.	Signal
1	Red Video
2	Green Video
3	Blue Video
4	NC
5	Logic Ground
6	Red Video Ground

Pin No.	Signal
7	Green Video Ground
8	Blue Video Ground
9	VCC
10	Identify VGA Cable Connection
11	NC
12	SDA (DDC1/2B)
13	Horizontal Sync
14	Vertical Sync
15	SCL (DDC2B)

Setting up the monitor

To set up the flat-panel monitor:

1   Ensure the monitor has been connected to an AC power source.

2   Pull the monitor tray out.

3   Hold the monitor by its handle and rotate it to a maximum 110-degree angle.

✐ **NOTE:** Use the tray's handle to push and pull the tray in the rack.

4   The first time the unit is connected to power, you must touch the power icon to turn it on. After the first time, the unit will turn on when opened.

✐ **NOTE:** If power is completely disconnected, the console tray will default into Active-Off mode.

Power Management System

The flat-panel monitor complies with the VESA DPMS (version 11) power management standard. The VESA DPMS proposal provides four phases of power saving modes by detecting horizontal or vertical sync signals.

The LED indicator color will be amber when the monitor is in power-saving mode.

Using the Front Panel

Use the icons on the front of the monitor to adjust the image settings.

Table 3.4: Front Panel Controls Descriptons

Icon	Mode	Description
●●●	Preset Modes Select	Touch this icon to select image modes on your monitor.
☼	Brightness/Contrast	Touch this icon for direct access to the brightness and contrast menu.
⊡	Auto Adjust	Touch this icon to automatically adjust the monitor.
◼	OSD Menu	Touch this icon to open the On-Screen Display (OSD).
✕	Exit	Touch this icon to exit the OSD Menu.

Icon	Mode	Description
☆	Personalize	Touch this icon to customize the monitor with your personal settings.
⏻	Power	Touch this icon to turn the monitor's power off and on. When the LED is blue, the monitor is on and fully functional. When the LED is amber, the monitor is in power-save mode.

Using the OSD Menu

The flat-panel monitor features an On-Screen Display (OSD). To access the OSD's main menu, press the OSD Menu icon on the front panel of the monitor. Use the function icons to scroll through the menu and make changes to the selected menu items.

Table 3.5: Function Icon Descriptions

Icon	Function	Description
∧	Up arrow	Scroll up in the menu
∨	Down arrow	Scroll down in the menu
✓	Checkmark	Accept change
✗	Exit	Exit the OSD menu.

Icon	Function	Description
↩	Return	Return to the previous menu.
→	Right arrow	Once you've selected an item from the menu, click the right arrow to access its parameters.
< >	Toggle	Switch between selections.
≡	Sliders	When adjusting color settings, you can use the sliders.

NOTE: If you change the settings and then proceed to another menu or exit the OSD menu, the monitor automatically saves the changes.

Brightness/Contrast

Click the up arrow to increase the brightness or contrast and click the down arrow to decrease the brightness or contrast. The range is from 0-100 for both the brightness and contrast.

Auto Adjust

Click the checkmark to automatically adjust the screen to optimize the display settings. In most cases, the Auto Adjust produces the best image for your configuration.

Input Source

Click the checkmark to scan for available input signals.

NOTE: VGA is the only input signal supported.

Color Settings

You can set the image mode and color format under the Color Settings menu.

Preset Modes

From this menu, you can select Standard, Warm, Cool and Custom color modes. If you select the Custom color mode, it brings up RGB scales from 1-100.

Reset Color Settings

Returns the color settings to the factory default.

Display Settings

You can adjust the image under the Display Settings menu.

Wide Mode

Set the image ratio as 1:1, Aspect or Full Screen.

> **NOTE:** Wide Mode adjustment is not required at the optimal preset resolution of 1366 x 768.

Horizontal Position

Click the up and down arrows to adjust the image left and right.

Vertical Position

Click the up and down arrows to adjust the image up and down.

Sharpness

Click the up and down arrows to adjust the sharpness, making the image look softer or sharper.

Pixel Clock and Phase

The Pixel Clock and Phase settings allow you to adjust the monitor. Click the up and down arrows to adjust the image quality. Use Pixel Clock to set coarse settings, and Phase to set fine settings.

Display Info

Displays the monitor's current settings.

Reset Display Settings

Select this option to restore settings to the factory default.

Other Settings

From the Other Settings menu, you can adjust the OSD settings.

Language

Select which language the OSD uses.

Menu Transparency

From this menu, you can adjust the OSD background from opaque to transparent.

Menu Timer

Use the up and down arrows to select the number of seconds, in five-second increments, the OSD will remain active after the last time you touch a button.

Menu Lock

From this menu, you can control user access to adjustments. When set to Lock, no user adjustments are allowed. To unlock, hold the **X (Exit)** button on the front panel of the monitor for 15 seconds.

> **NOTE:** Menu Lock can also be activated by holding the **X (Exit)** button on the front panel of the monitor for 15 seconds.

DDC/CI

DDC/CI (Display Data Channel/Command Interface) allows your monitor parameters (brightness, color balance, etc.) to be adjustable via software on your computer. Enable this feature for best user experience and optimum performance of your monitor.

LCD Conditioning

If an image appears to be stuck on the monitor, enable LCD Conditioning to help eliminate any image retention. Using the LCD Conditioning feature may

take several hours. You can safely stop the LCD Conditioning by turning the monitor off.

NOTE: The LCD Conditioning feature does not remove burn-in.

Factory Reset

Resets all OSD settings to the factory default.

Personalize

There are three shortcut keys on the front panel of the monitor. From the Personalize menu, you can assign a control menu to a shortcut key for quick access.

USB 3.0

This device has two USB 3.0 compliant pass-through ports, which provide faster data transmission between your console and connected USB devices. However, if you are using USB 1.1 or 2.0 targets, the maximum speed will be limited to those devices' thresholds. See the following table.

Table 3.6: USB Maximum Speed Chart

Device/Target	USB 1.1 Target	USB 2.0 Target	USB 3.0 Target
USB 1.1 Device	12 megabits per second	12 megabits per second	12 megabits per second
USB 2.0 Device	12 megabits per second	480 megabits per second	480 megabits per second
USB 3.0 Device	12 megabits per second	480 megabits per second	4.8 gigabits per second

NOTE: The device is limited to 900 mA with a USB 3.0 target and 500 mA with a USB 2.0 target.

Keyboard

Your keyboard provides sets of keys to perform various functions:

- Alphanumeric keys for typing letters, numbers, punctuation, and symbols.

- Control keys for performing certain actions: <Ctrl>, <Alt>, <Esc>, and the Windows logo key.

- Function keys, labeled <F1>,< F2>, <F3>, and so on, for performing specific tasks.

- Navigation keys for moving the cursor around in documents or windows: <Home>, <End>, <Page Up>, <Page Down>, <Delete>, <Insert > and arrow keys

- Numeric keypad of numbers grouped together like those on an adding machine.

- The keyboard is limited to four key combination shortcuts or commands.

Table 3.7: General Windows® Keyboard Shortcuts

Shortcut	Description
<Ctrl><Shift><Esc>	Opens the Task Manager window.
<F2>	Renames the selected item.
<F3>	Searches for a file or folder.
<F4>	Displays the Address bar list in Windows Explorer.
<F5>	Refreshes the active window.
<F6>	Cycles through screen elements in a window or on the desktop.

Shortcut	Description
<F10>	Activates the menu bar in the active program.
<Ctrl><c>	Copies a selected item.
<Ctrl><x>	Cuts a selected item.
<Ctrl><v>	Pastes a selected item.
<Ctrl><z>	Undoes an action.
<Ctrl><a>	Selects all items in a document or window.
<Ctrl><F4>	Closes the active window (in programs that allow you to have multiple documents open simultaneously).
<Ctrl><Alt><Tab>	Uses the arrow keys to switch between open items.
<Alt><Tab>	Switches between open items.
<Alt><Esc>	Cycles through items in the order in which they were opened.
<Delete>	Deletes a selected item and move it to the Recycle Bin.
<Shift><Delete>	Deletes the selected item without moving it to the Recycle Bin first.
<Ctrl> and right-arrow key	Moves the cursor to the beginning of the next word.

Shortcut	Description
<Ctrl> and left-arrow key	Moves the cursor to the beginning of the previous word.
<Ctrl> and down-arrow key	Moves the cursor to the beginning of the next paragraph.
<Ctrl> and up-arrow key	Moves the cursor to the beginning of the previous paragraph.
<Ctrl><Shift> with an arrow key	Selects a block of text.
<Shift> with any arrow key	Selects more than one item in a window or on the desktop, or select text within a document.
Windows logo key and <m>	Minimizes all open windows.
Windows logo key and <Shift><m>	Restores all minimized windows. This key combination functions as a toggle to restore minimized windows following the use of the Windows logo key and <m> combination.
Windows logo key and <e>	Starts Windows Explorer.
Windows logo key and <r>	Opens the Run dialog box.
Windows logo key and <f>	Opens the Search Results dialog box.
Windows logo key and <Ctrl><f>	Opens the Search Results-Computer dialog box (if the computer is connected to a network).
Windows logo key and <Pause>	Opens the System Properties dialog box.

Touch Pad

You can use your finger for touch input to move the cursor or select objects on the screen:

- To move the cursor, lightly slide your finger over the touch pad.
- To select an object, lightly tap once on the surface of the touch pad or use your thumb to press the left touch-pad button.
- To select and move (or drag) an object, position the cursor on the object and tap twice on the touch pad. On the second tap, leave your finger on the touch pad and move the selected object by sliding your finger over the surface.
- To double-click an object, position the cursor on the object and tap twice on the touch pad or use your thumb to press the left touch pad button twice.

To clean the touch pad:

1 Using a dry, lint-free cloth, wipe gently across the surface of the touch pad.

4

Removal from the Rack

This section provides instructions for removing the Dell 1U Rackmount LED console tray from a four-post rack cabinet.

To remove the console tray from the rack:

1   From the back of the rack, unscrew the captive screw from the Cable
    Management Arm (CMA) to remove it from the rail.

2   Pull the console tray out until the slide rails are in a fully extended position.

3   Press the blue tabs on each side of the console tray.

4   While pressing the tabs in Step 2, slide the console tray out of the rack.

Figure 4.1. Removing the Console Tray From the Rack
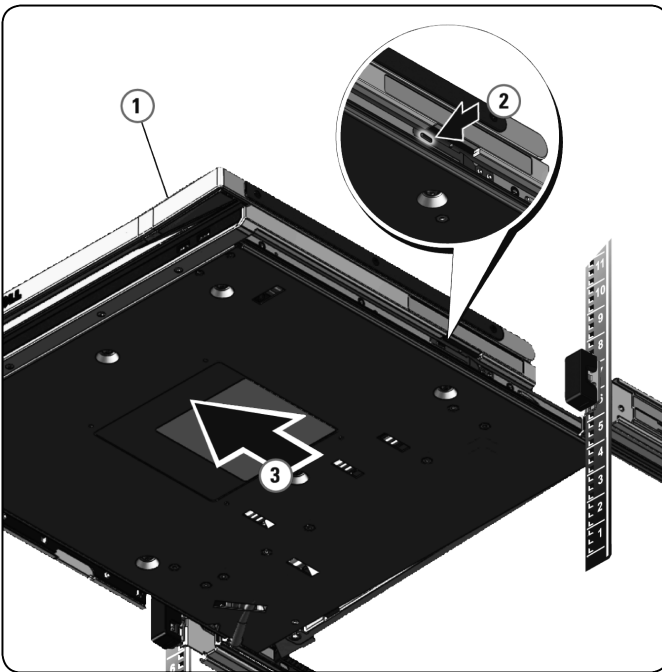
To remove tool-less rails:

1   At the front of the rack, pull the blue tab to release the lock.

2   Repeat at the back of the rack and slide the rail out of the rack.

Figure 4.2. Removing Tool-less Rails
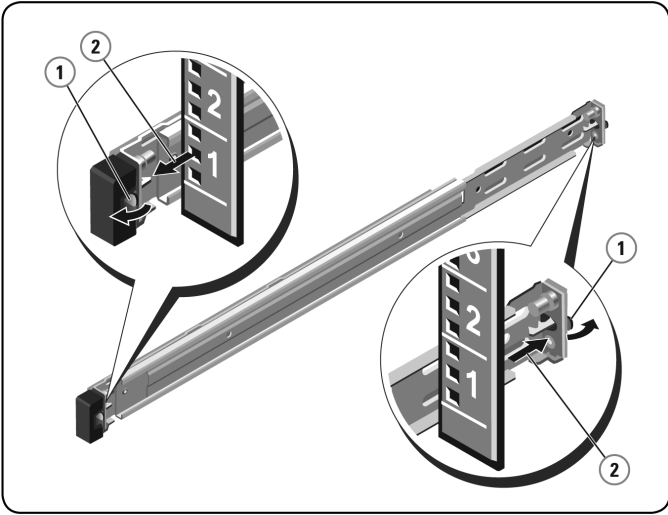
To remove tooled rails:

1   Unscrew the two pairs of screws to detach the left and right brackets from the front vertical rack flanges.

2   Unscrew the two pairs of screws to detach the left and right mounting rails from the rear vertical rack flanges.

Figure 4.3. Removing Tooled Rails

Appendix A: Safety Precautions

Use the following safety guidelines to help ensure your own personal safety and to help protect your system and working environment from potential damage.

⚠ **CAUTION: The power supplies in your system may produce high voltages and energy hazards, which can cause bodily harm. Only trained service technicians are authorized to remove the covers and access any of the components inside the system.**

This document pertains only to the Dell 1U Rackmount LED Console Tray. You should also read and follow the additional safety instructions.
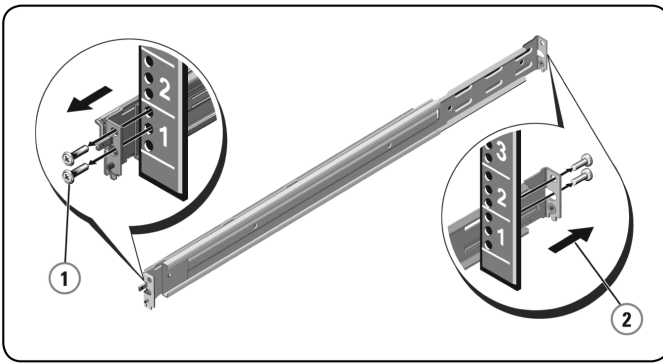
• Dell Remote 1U Rackmount LED Console Tray Quick Installation Guide

• Dell Safety, Environmental and Regulatory Guide.

General

• Observe and follow service markings.

• Do not service any product except as explained in your system documentation.

• Opening or removing covers that are marked with the triangular symbol with a lightning bolt may expose you to electrical shock.

• Components inside these compartments should be serviced only by a trained service technician.

• Do not attempt to open this product unless you have proper service personnel documentation.

If any of the following conditions occur, unplug the product from the electrical outlet and replace the part or contact your trained service provider:

   - The power cable, extension cable, or plug is damaged.

- An object has fallen into the product.

- The product has been exposed to water.

- The product has been dropped or damaged.

- The product does not operate correctly when you follow the operating instructions.

- Keep your system away from radiators and heat sources. Also, do not block cooling vents.

- Do not spill food or liquids on your system components, and never operate the product in a wet environment. If the system gets wet, see the appropriate section in your troubleshooting guide or contact your trained service provider.

- Use the product only with approved equipment.

- Allow the product to cool before removing covers or touching internal components.

- Operate the product only from the type of external power source indicated on the electrical ratings label. If you are not sure of the type of power source required, consult your service provider or local power company.

NOTE: To help avoid damaging your system, be sure the voltage selection switch (if provided) on the power supply is set for the voltage that most closely matches the AC power available in your location. Also be sure that your monitor and attached devices are electrically rated to operate.

- Be sure that your monitor and attached devices are electrically rated to operate with the power available in your location.

- The console tray has custom connectors for the power supply. Be sure you use only the power supply supplied with the console tray.

- Use only power cables provided with this product.

- To help prevent electric shock, plug the system and peripheral power cables into properly grounded electrical outlets. These cables are equipped with three-prong plugs to help ensure proper grounding. Do not use adaptor plugs or remove the grounding prong from a cable.

- Observe extension cable and power strip ratings. Make sure that the total ampere rating of all products plugged into the power strip does not exceed 80 percent of the ampere ratings limit for the power strip.

- To help protect your system from sudden, transient increases and decreases in electrical power, use a surge suppressor, line conditioner, or uninterruptible power supply (UPS).

- Position system cables and power cables carefully. Route cables so that they cannot be stepped on or tripped over. Be sure that nothing rests on any cables.

- Do not modify power cables or plugs. Consult a licensed electrician or your power company for site modifications. Always follow your local/national wiring rules.

Appendix B: Timing

Table 4.1: Supported Timing

Resolution	Horizontal Frequency and Polarity	Vertical Frequency and Polarity	Pixel Clock	Scan Type	Horizontal Sync	Vertical Sync
640 x 480 @ 60 Hz	31.469 kHz Negative	59.940 Hz Negative	25.175 MHz 39.72 ns	Non-interlaced	3.813 us 96 dots	.064 ms 2 lines
640 x 480 @ 75 Hz	37.5 kHz Negative	75 Hz Negative	31.5 MHz 31.75 ns	Non-interlaced	2.032 us 64 dots	.08 ms 3 lines
800 x 600 @ 60 Hz	37.879 kHz Positive	60.317 Hz Positive	40 MHz 25 ns	Non-interlaced	3.2 us 128 dots	.106 ms 4 lines
800 x 600 @ 75 Hz	46.875 kHz Positive	75 Hz Positive	49.5 MHz 20.2 ns	Non-interlaced	1.616 us 80 dots	.064 ms 3 lines
1024 x 768 @ 60 Hz	43.363 kHz Negative	60.004 Hz Negative	65 MHz 15.38 ns	Non-interlaced	2.092 us 136 dots	.124 ms 6 lines
1024 x 768 @ 75 Hz	60.023 kHz Positive	75.029 Hz Positive	78.75 MHz 12.7 ns	Non-interlaced	1.219 us 96 dots	.05 ms 3 lines
1152 x 864 @ 60 Hz	54.348 kHz Positive	60.053 Hz Positive	80 MHz 12.5 ns	Non-interlaced	1.2 us 96 dots	.055 ms 3 lines
1152 x 864 @ 75 Hz	67.5 kHz Positive	75 Hz Positive	108 MHz 9.26 ns	Non-interlaced	1.185 us 128 dots	.044 ms 3 lines
1366 x 768 @ 60 Hz	47.712 kHz Positive	60.015 Hz Positive	85.5 MHz 11.7 ns	Non-interlaced	1.31 us 112 dots	.126 ms 6 lines
1366 x 768 @ 75 Hz	60.15 kHz Positive	75 Hz Positive	110.195 MHz 9.07 ns	Non-interlaced	1.307 us 144 dots	.049 ms 3 lines

Resolution	Horizontal Frequency and Polarity	Vertical Frequency and Polarity	Pixel Clock	Scan Type	Horizontal Sync	Vertical Sync
1280 x 800 @ 60 Hz	49.702 kHz Negative	59.81 Hz Positive	83.5 MHz 11.98 ns	Non-interlaced	1.533 us 128 dots	.121 ms 6 lines
1280 x 800 @ 75 Hz	62.795 kHz Negative	74.934 Hz Positive	106.5 MHz 9.39 ns	Non-interlaced	1.202 us 128 dots	.096 ms 6 lines
1280 x 1024 @ 60 Hz	63.981 kHz Positive	60.02 Hz Positive	108 MHz 9.26 ns	Non-interlaced	1.037 us 112 dots	.047 ms 3 lines
1280 x 1024 @ 75 Hz	79.976 kHz Positive	75.025 Hz Positive	135 MHz 7.41 ns	Non-interlaced	1.067 us 144 dots	.038 ms 3 lines
1140 x 900 @ 60 Hz	55.935 kHz Negative	59.877 Hz Positive	106.5 MHz 9.39 ns	Non-interlaced	1.427 us 152 dots	.107 ms 6 lines
1140 x 900 @75 Hz	70.635 kHz Negative	74.984 Hz Positive	136.75 MHz 7.31 ns	Non-interlaced	1.112 us 152 dots	.085 ms 6 lines

Appendix C: Technical Support

Our Technical Support staff is ready to assist you with any installation or operating issues you encounter with your Dell product. If an issue should develop, follow the steps below for the fastest possible service.

To resolve an issue:

1   Check the pertinent section of this manual to see if the issue can be resolved by following the procedures outlined.

2   Check our web site at dell.com/support to search the knowledge base or use the on-line service request.

3   Call the Dell Technical Support location nearest you.