HP V142 Rack Options Installation Guide

Intended audience

This document is for the person who installs racks and rack products. This procedure is performed only by trained personnel. HP assumes you are qualified in performing installations and trained in recognizing hazards in rack products.

Contents

About this guide

Rack options overview

This installation guide includes the instructions for installing rack option kits that are compatible with the HP V142 Rack.

For more information, see the *HP V142 Rack User Guide* on the HP website (http://www.hp.com/go/rackandpower).

Important safety information

⚠ **WARNING:** To reduce the risk of personal injury or damage to the equipment, be sure that:
- The rear leveling feet are extended to the floor.
- The full weight of the rack rests on the rear leveling feet and front stabilizer feet.

⚠ **WARNING:** To reduce the risk of personal injury or damage to the rack and equipment, the racks must be positioned and secured together according to these instructions. Failure to do so could result in an unstable installation.

⚠ **WARNING:** Components can be very heavy. To reduce the risk of personal injury or damage to the equipment:
- Remove all pluggable power supplies and modules to reduce the weight of the product before lifting it.
- Observe local occupational health and safety requirements and guidelines for manual material handling.
- Get help to lift and stabilize the product during installation or removal, especially when the product is not fastened to the rails. When the component weighs more than 22.5 kg (50 lb), at least two people must lift the component into the rack together. If the component is loaded into the rack above chest level, a third person must assist in aligning the rails while the other two support the component.
- Use caution when installing the component in or removing the component from the rack; it is unstable when not fastened to the rails.

Additional rack considerations

- Power—If a UPS is installed, do not exceed the output rating. Be sure to review the installation instructions provided with each component for important cautions and warnings.
- PDUs—Before installing other components, install the PDUs.
- Height—The height of the rack and of rack-mountable components is measured in U increments, where U = 4.5 cm (1.75 in). When you are configuring your rack installation, remember that the total U measurement of the components you want to install cannot exceed the stated U height of the rack.

- Keyboard—The rack keyboard requires installation of a 1U keyboard drawer rack option kit.
- Monitor—The monitor requires installation of a monitor/utility shelf rack option kit unless you are using a rack-mountable flat-panel monitor.
- Server console switch—If a console switch is configured, use the CPU-to-console switch cable included with the server. The standard distance between the console switch and the keyboard, monitor, and mouse can vary by 3-, 7-, 12-, 20-, and 40-ft lengths.

  > **NOTE:** National electrical regulations governing the installation of building wiring require that an appropriate cable, meeting fire-safety standards, must be used any time cabling is routed:
  > - Through an overhead drop-ceiling
  > - Under raised flooring
  > - From room to room
  > - From floor to floor
  >
  > Be sure that the cable jacket or sleeving is made of material that does not burn easily and does not exude toxic fumes when exposed to heat. Be sure that the cable you have selected is appropriate for your installation site. If you require a U.S. plenum-rated (CL2P) cable, contact your local HP authorized reseller to obtain any of the following options:
  > - 149363-B21-20-foot plenum cable
  > - 149364-B21-40-foot plenum cable

- Rack baying option kits—The number of baying kits needed to join a series of racks is one less than the number of racks in the suite. Each baying kit supplies parts to bay two cabinets on 600 mm (24 in) center line spacing.
- Side panels—Only one set of side panels is required for each row of bayed racks.
- Stabilizer kit—A stabilizer kit is either required or recommended, depending on your rack configuration.
  - Rack rows with four or more bayed together racks do not need a stabilizer installed.
  - Single racks or bays of less than four connected racks, must have a stabilizer installed.

Rack options

Ordering rack options

HP provides several rack option kits to complement or complete your rack solution. The following table lists a sample of the available rack option kits.

For information about ordering rack option kits, see the HP website (http://www.hp.com/go/rackandpower), or contact your nearest HP authorized reseller.

Rack option	Description
HP V142 Rack Side panel rack option kit	Encloses the sides of a rack
HP V142 Rack Stabilizer rack option kit	Increases the stability of free-standing racks
HP V142 Rack Ground bonding rack option kit	Reduces the level of electromagnetic emissions outside of the rack
HP V142 Rack Baying rack option kit	Joins multiple racks of the same series, height, and depth

Baying kit

About this device

The HP V142 Rack Baying kit enables you to connect multiple racks of the same series, height, and depth.

Kit contents

Item	Quantity
24-inch baying brackets	4
600-mm baying brackets	4
M5 self tapping screws	10

Extra hardware might be included for your convenience.

Required tools

- T-25 Torx driver

Installing the baying kit

⚠ **WARNING:** To reduce the risk of personal injury or damage to the rack and equipment, the racks must be positioned and secured together according to these instructions. Failure to do so could result in an unstable installation.
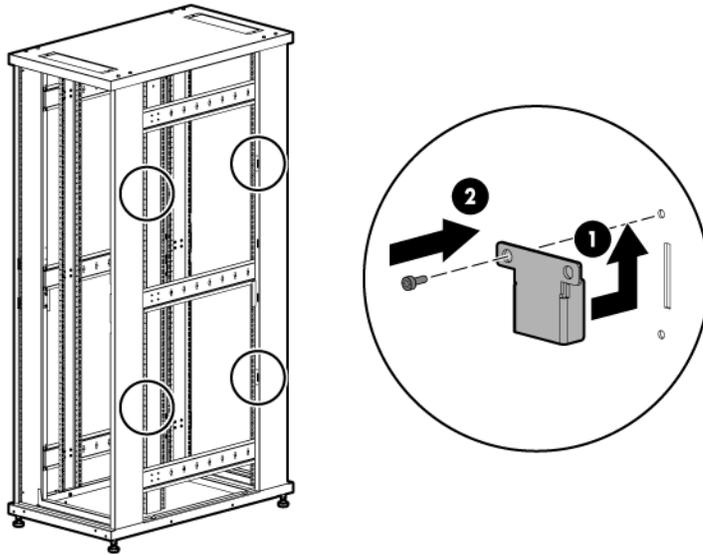
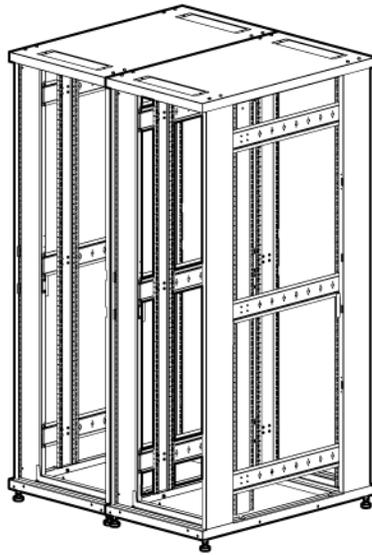**NOTE:** The appearance of the rack might vary depending on the model of the rack purchased.

1. Remove the side panels (if present between the racks).
2. Position the racks side by side, ensuring that the feet of the racks are on solid flooring (no cracks or openings).

3. Attach two baying brackets (either 24-inch or 600-mm depending on the floor layout) to the front and rear of each rack set using two screws in each bracket.

4. Bay any additional racks.

5. Attach side panels to each end of the bayed racks.

Installation is complete.

Ground Bonding kit

About this device

The HP V142 Rack Ground Bonding kit reduces the electromagnetic emissions outside the rack. These emissions are produced during normal operation of the electronic components within the rack. Typically, rack-mounted equipment must meet class A emissions levels, but you can reduce these levels even further. Use this kit to tie all the conductive structural components together with conductive cables, and then attach the kit to a ground bonding point on the AC power distribution device of the rack or the building ground.

Kit contents

Item	Quantity
15.24-cm (6-in) grounding straps	10
M6 ground washer	14
M6 ground nut	14

This kit might contain extra hardware for your convenience.
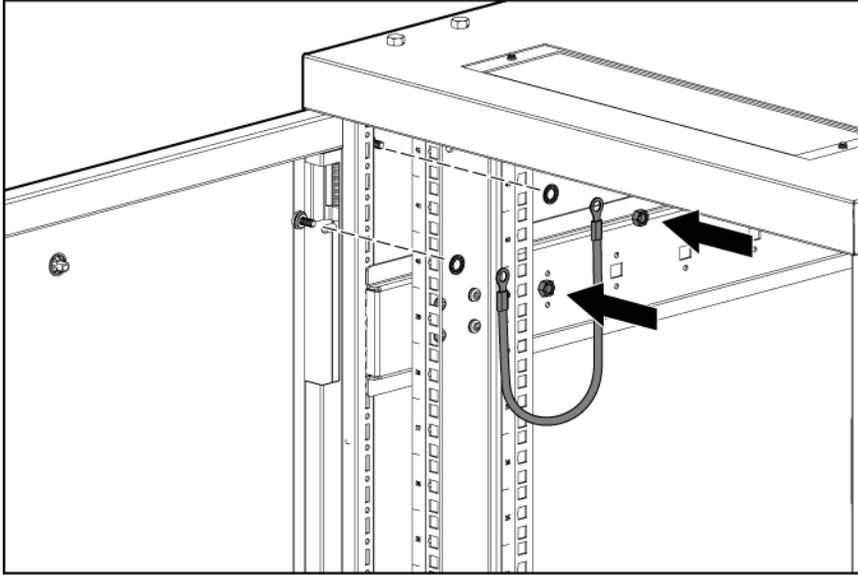
Required tools

- T-25 Torx driver
- M6-socket

Installing the Ground Bonding rack option kit on HP V142 Racks

Attach the grounding straps to the following locations:

From the front rack frame to the front door

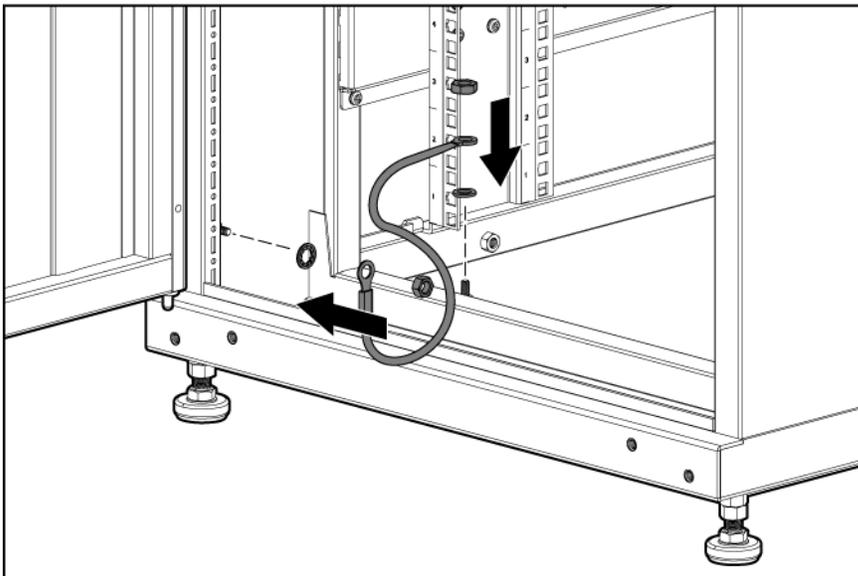1. Place one end of the grounding strap over the grounding lug on the front rack frame.

2. Place an M6 ground washer and an M6 ground nut over the grounding lug on the rack frame, and then tighten the ground nut.

3. Place the other end of the same grounding strap over the grounding lug on the front door.
4. Place an M6 ground washer and an M6 ground nut over the grounding lug on the front door, and then tighten the ground nut.
5. Repeat steps 1 through 4 to attach a grounding strap from the rear rack frame to the rear door.

From the rear rack frame to the rack base

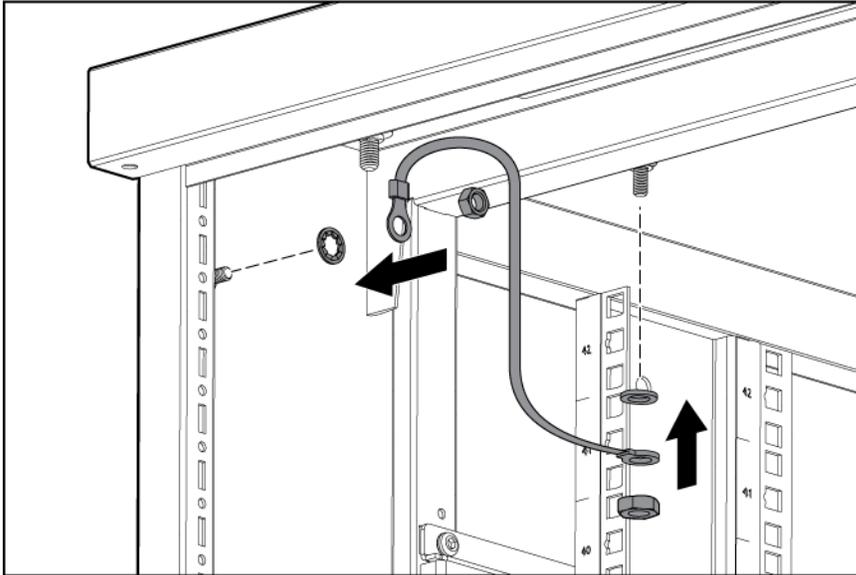1. Place one end of the grounding strap over the grounding lug on the rack frame.
2. Place an M6 ground washer and an M6 ground nut over the grounding lug on the rear rack frame, and then tighten the ground nut.

3. Place the other end of the same grounding strap over the grounding lug on the rack base.
4. Place an M6 ground washer and an M6 ground nut over the grounding lug on the rack base, and then tighten the ground nut.

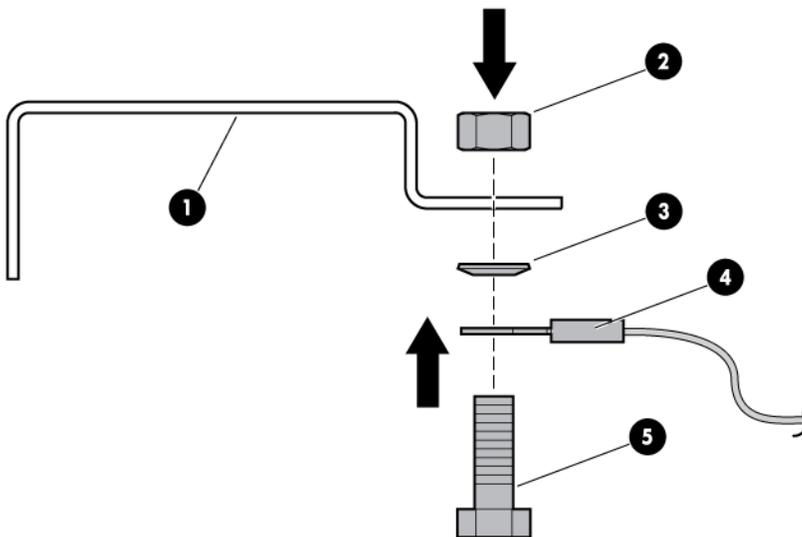**From the rear rack frame to the rack top:**

1. Place one end of the grounding strap over the grounding lug on the rear rack frame.
2. Place an M6 ground washer and an M6 ground nut over the grounding lug on the rack frame, and then tighten the ground nut.

3. Place the other end of the same grounding strap over the grounding lug on the top of the rack.
4. Place an M6 ground washer and an M6 ground nut over the grounding lug on the top of the rack, and then tighten the ground nut.
5. Repeat steps 1 through 4 to attach a grounding strap from the front rack frame to the rack top.

From the rack to a building facility
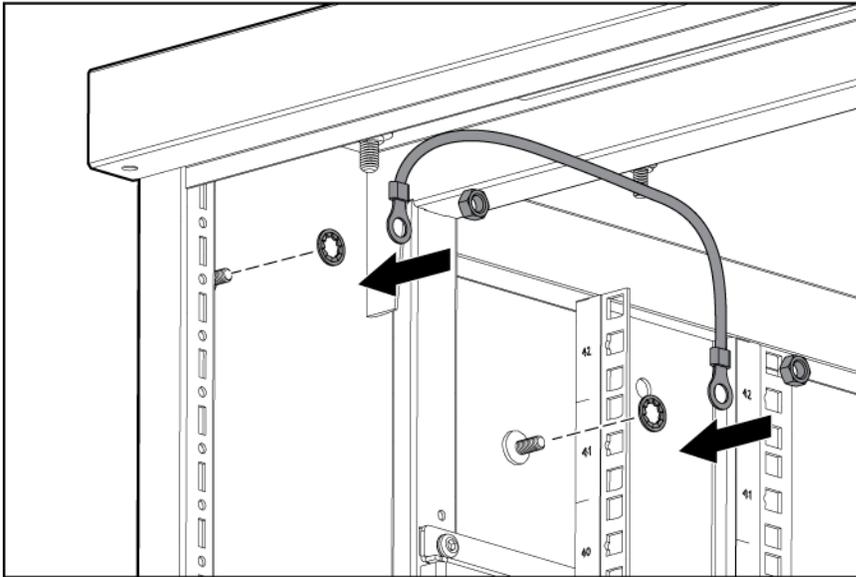
For assistance, contact your building supervisor.

Reference	Item
1	48.26-cm (19-in) mounting rail (the mounting hole is located at the top or bottom of the rail)
2	M6 ground nut

Reference	Item
3	M6 ground washer
4	Facility ground (not included with this kit)
5	M8 x 20 bolt

From the rack frame to the top side panel, if installed:

1. Place one end of the grounding strap over the grounding lug on the rack frame.

2. Place an M6 ground washer and an M6 ground nut over the grounding lug on the rack frame, and then tighten the ground nut.

3. Place the other end of the same grounding strap over the grounding lug on the top side panel.

4. Place an M6 ground washer and an M6 ground nut over the grounding lug on the top side panel, and then tighten the ground nut.

5. Repeat steps 1 through 4 for the other top side panel.

From the rack frame to the bottom side panel, if installed:

1. Place one end of the grounding strap over the grounding lug on the rack frame.

2. Place an M6 ground washer and an M6 ground nut over the grounding lug on the rack frame, and then tighten the ground nut.
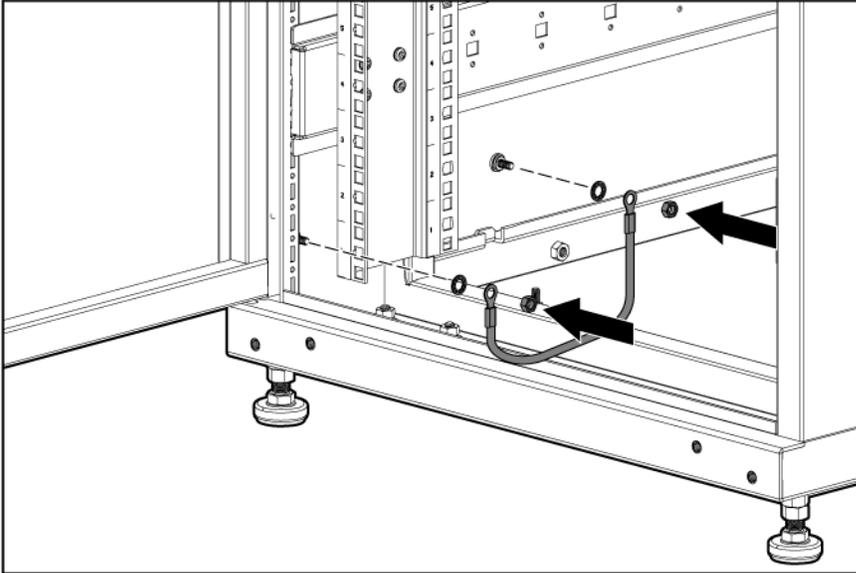

3. Place the other end of the same grounding strap over the grounding lug on the bottom side panel.

4. Place an M6 ground washer and an M6 ground nut over the grounding lug on the bottom side panel, and then tighten then ground nut.

5. Repeat steps 1 through 4 for the other bottom side panel.

HP V142 Rack Stabilizer kit

About this device

The HP V142 Rack Stabilizer kit provides stability and support and prevents possible tipping when you install, remove, or access equipment within the rack.

Kit contents

Item	Quantity
600-mm (23.62-in) Front stabilizer assembly	1
M8 x 20-mm bolt	5
M8 flat washer	5
M8 lock washer	5

This kit might contain extra hardware for your convenience.

Required tools

The following tools are required for installation:

- Ratchet with sockets
- Adjustable wrench

Installing the stabilizer
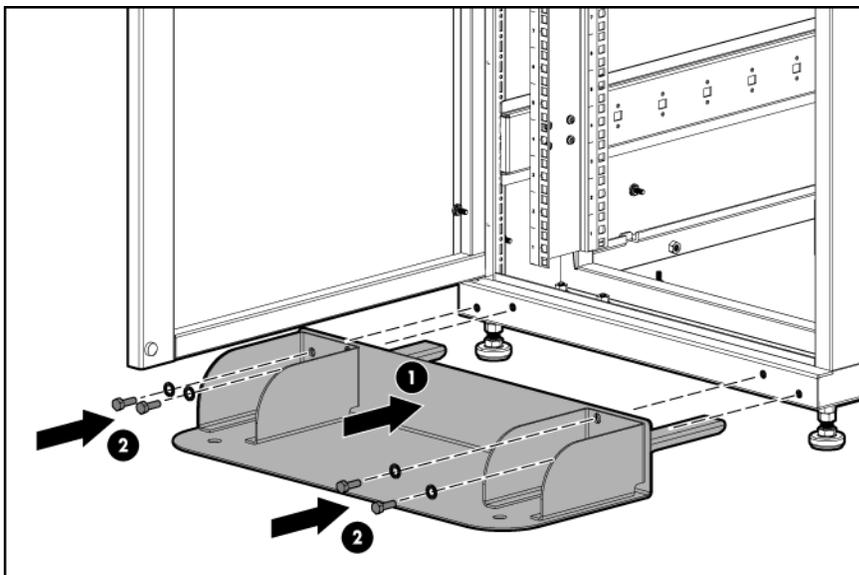
1. Align the front foot with the front base.

   NOTE: You might have to adjust the leveling feet to get proper alignment.

2. Insert and partially tighten four bolts with washers, securing the front foot to the front caster plate.

3. Tighten the bolts.

Installation is complete.

Side Panel kit

About this device

The HP V142 Rack Side Panel kit enables you to attach side panels to HP V142 Racks.

Kit contents

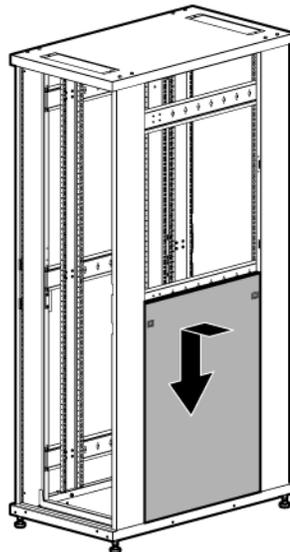| Item	Quantity
Top side panel	2
Bottom side panel	2
Key	2

This kit might contain extra hardware for your convenience.
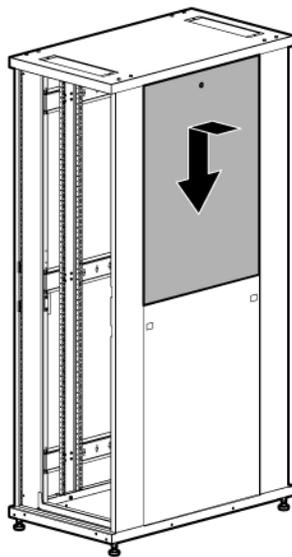
Required tools

No tools are required for this procedure.

Installing the side panels

1. Press the side panel latches and slide the bottom side panel into the rack.

2. Install the top side panel by locking the side panel lock, securing it to the rack.

3. Repeat steps 1 and 2 for the other side of the rack.

Installation is complete.

Electrostatic discharge

Preventing electrostatic discharge

To prevent damaging the system, be aware of the precautions you need to follow when setting up the system or handling parts. A discharge of static electricity from a finger or other conductor may damage system boards or other static-sensitive devices. This type of damage may reduce the life expectancy of the device.

To prevent electrostatic damage:

- Avoid hand contact by transporting and storing products in static-safe containers.
- Keep electrostatic-sensitive parts in their containers until they arrive at static-free workstations.
- Place parts on a grounded surface before removing them from their containers.
- Avoid touching pins, leads, or circuitry.
- Always be properly grounded when touching a static-sensitive component or assembly.

Grounding methods to prevent electrostatic discharge

Several methods are used for grounding. Use one or more of the following methods when handling or installing electrostatic-sensitive parts:

- Use a wrist strap connected by a ground cord to a grounded workstation or computer chassis. Wrist straps are flexible straps with a minimum of 1 megohm ±10 percent resistance in the ground cords. To provide proper ground, wear the strap snug against the skin.
- Use heel straps, toe straps, or boot straps at standing workstations. Wear the straps on both feet when standing on conductive floors or dissipating floor mats.
- Use conductive field service tools.
- Use a portable field service kit with a folding static-dissipating work mat.

If you do not have any of the suggested equipment for proper grounding, have an authorized reseller install the part.

For more information on static electricity or assistance with product installation, contact an authorized reseller.

Technical support

Before you contact HP

Be sure to have the following information available before you call HP:

- Technical support registration number (if applicable)
- Product serial number
- Product model name and number
- Product identification number
- Applicable error messages
- Add-on boards or hardware
- Third-party hardware or software
- Operating system type and revision level

HP contact information

For the name of the nearest HP authorized reseller:

- See the Contact HP worldwide (in English) webpage (http://welcome.hp.com/country/us/en/wwcontact.html).

For HP technical support:

- In the United States, for contact options see the Contact HP United States webpage (http://welcome.hp.com/country/us/en/contact_us.html). To contact HP by phone:
  - o Call 1-800-HP-INVENT (1-800-474-6836). This service is available 24 hours a day, 7 days a week. For continuous quality improvement, calls may be recorded or monitored.
  - o If you have purchased a Care Pack (service upgrade), call 1-800-633-3600. For more information about Care Packs, refer to the HP website (http://www.hp.com/hps).
- In other locations, see the Contact HP worldwide (in English) webpage (http://welcome.hp.com/country/us/en/wwcontact.html).

Acronyms and abbreviations

CPU

central processing unit

CRT

cathode-ray tube

KVM

keyboard, video, and mouse

PDU

power distribution unit

RKM

rackmount keyboard monitor

TMRA

recommended ambient operating temperature

UPS

uninterruptible power system