Troubleshooting Guide

HP t5335 Thin Clients

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Troubleshooting Guide

HP t5335 Thin Clients

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About This Book

⚠ **WARNING!** Text set off in this manner indicates that failure to follow directions could result in bodily harm or loss of life.

△ **CAUTION:** Text set off in this manner indicates that failure to follow directions could result in damage to equipment or loss of information.

NOTE: Text set off in this manner provides important supplemental information.

Table of contents

1 Product Description

The following features are common to all HP thin clients:

- no hard drives or diskette drives
- 5-minute hardware setup time
- central deployment and management using HP Management Solutions

The t5335 thin client offers the following features:

- Marvell Dove processor
- DDR3 (512MB memory down) @800MHz
- Audio Codec: ALC261 (RealTek)
- DVI-I (DVI to VGA adapter)
- MPEG-2, MPEG-4 / DivX, WMV9/VC-1, AVS and H.264
- 64MB Video Frame Buffer
- Storage solution: 512MB down Through SATA interface
- Marvell MAC with Marvell PHY (10/100/1000Mb)
- VESA mounts - Quick Release support
- Kensington Lock slot
- I/O ports: DVI-I, 2 front USB, 2 rear USB, 10/100/1000 Mb RJ-45, front mic in, front audio line out

Operating systems

The t5335 thin client uses HP ThinPro.

Product features

For more information, http://www.hp.com and search for your specific thin client model to find the model-specific QuickSpecs.

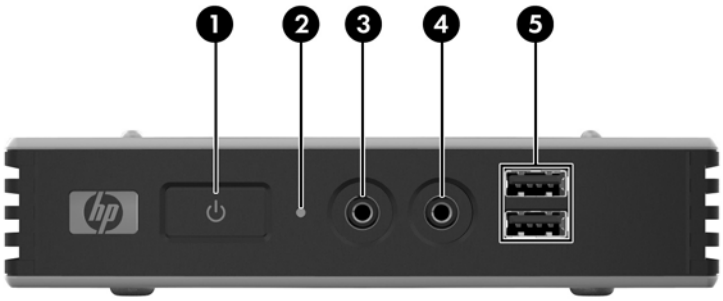
Serial Number Location

Every thin client includes a unique serial number located as shown in the following illustration.

Figure 1-1 Serial number location

Front Panel Components

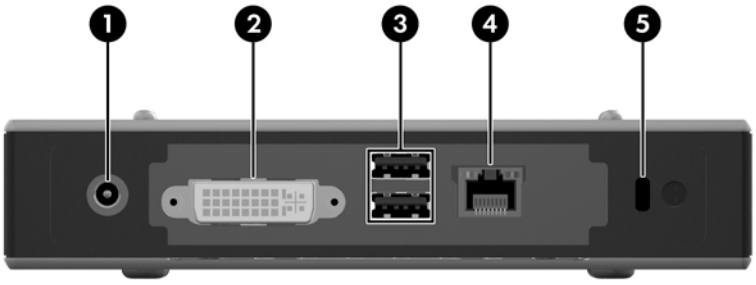
Figure 1-2 Front panel components



(1)	Power button	(4)	Line-out (headphone) audio connector
(2)	Flash activity LED	(5)	Universal serial bus (USB) connectors (2)
(3)	Line-in (microphone) connector		

Rear Panel Components

Figure 1-3 Rear panel components



(1)	Power connector	(4)	Ethernet RJ-45 connector
(2)	DVI-I connector	(5)	Cable lock slot
(3)	Universal serial bus (USB) connectors (2)		

2 Diagnostics and Troubleshooting

LEDs

Table 2-1 Power and IDE Flash Activity LEDs

LED	Status
Power LED Off	When the unit is plugged into the wall socket and the Power LED is off, the unit is powered off. However, the network can trigger a Wake On LAN event in order to perform management functions.
Power LED On	Displays during boot sequence and while the unit is on. During boot sequence, hardware initialization is processed and startup tests are performed on the following: • Processor initialization • Memory detection and initialization **NOTE:** If one of the tests fails, the unit will simply stop, but the LED will stay on. There are no messages sent to video for any of these failed tests.
NOTE: The network LEDs are located inside the RJ-45 connector on the top, rear panel of the thin client. The LEDs are visible when the connector is installed. Amber light indicates 100-MB speed connection and green lght means 1-GB speed connection.	
IDE LED is Off	When the unit is powered on and the flash activity light is off, then there is no access to the system flash.
IDE LED blinks Green	Indicates the system is accessing the internal IDE flash.

Power-On Sequence

At power-on, the flash boot block code initializes the hardware to a known state, then performs basic power-on diagnostic tests to determine the integrity of the hardware. Initialization performs the following functions:

1. Initializes CPU and memory controller.
2. Initializes and configures all PCI devices.
3. Initializes USB devices to a known state.
4. The unit boots the operating system.

Beep Codes

uBoot provides some feedback during startup according to the following table. If the system cannot start up due to a catastrophic error (such as no RAM), no beep sounds; return the unit for service. If the system can start up but encounters some other catastrophic error (such as the SATA flash is unreadable), 3 beeps are played; return the unit for service. In normal operation, the system 1 beep should sound. If the system encounters a recoverable error such as the SATA flash is corrupted, 2 beeps sound to indicate the user should reflash the unit.

Number of Beeps	Action
0	Return for service.
1	Normal operation.
2	Reflash the unit.
3	Return for service.

Troubleshooting

Basic Troubleshooting

If the thin client is experiencing operating problems or will not power on, review the following items.

Table 2-2 Power-On Troubleshooting

Issue	Procedures
The thin client unit is experiencing operating problems.	Ensure that the following connectors are securely plugged into the thin client unit: • Power connector • Keyboard • Mouse • Network RJ-45 connector • Monitor
The thin client unit does not power on.	1. Verify that the power supply is good by installing it on a known working unit and testing it. If the power supply does not work on the test unit, replace the power supply. 2. If the unit does not work properly with the replaced power supply, have the unit serviced.
The thin client unit powers on and displays a splash screen, but does not connect to the server.	1. Verify that the network is operating and the network cable is working properly. 2. Verify that the unit is communicating with the server by having the System Administrator ping the unit from the server: ◦ If the thin client pings back, then the signal was accepted and the unit is working. This indicates a configuration issue. ◦ If the thin client does not ping back and the thin client does not connect to the server, re-image the unit.
No link or activity on the network RJ-45 LEDs or the LEDs do not illuminate blinking green after powering on the thin client unit. (The network LEDs are located inside the RJ-45 connector on the top, rear panel of the thin client. Indicator lights are visible when the connector is installed.)	1. Verify that the network is not down. 2. Make sure the RJ-45 cable is good by installing the RJ-45 cable onto a known working device—if a network signal is detected then the cable is good. 3. Verify the power supply is good by replacing the power cable to the unit with a known working power supply cable and testing it. 4. If network LEDs still do not light and you know the power supply is good, then re-image the unit. 5. If network LEDs still do not light, run the IP configuration procedure. 6. If network LEDs still do not light, have the unit serviced.

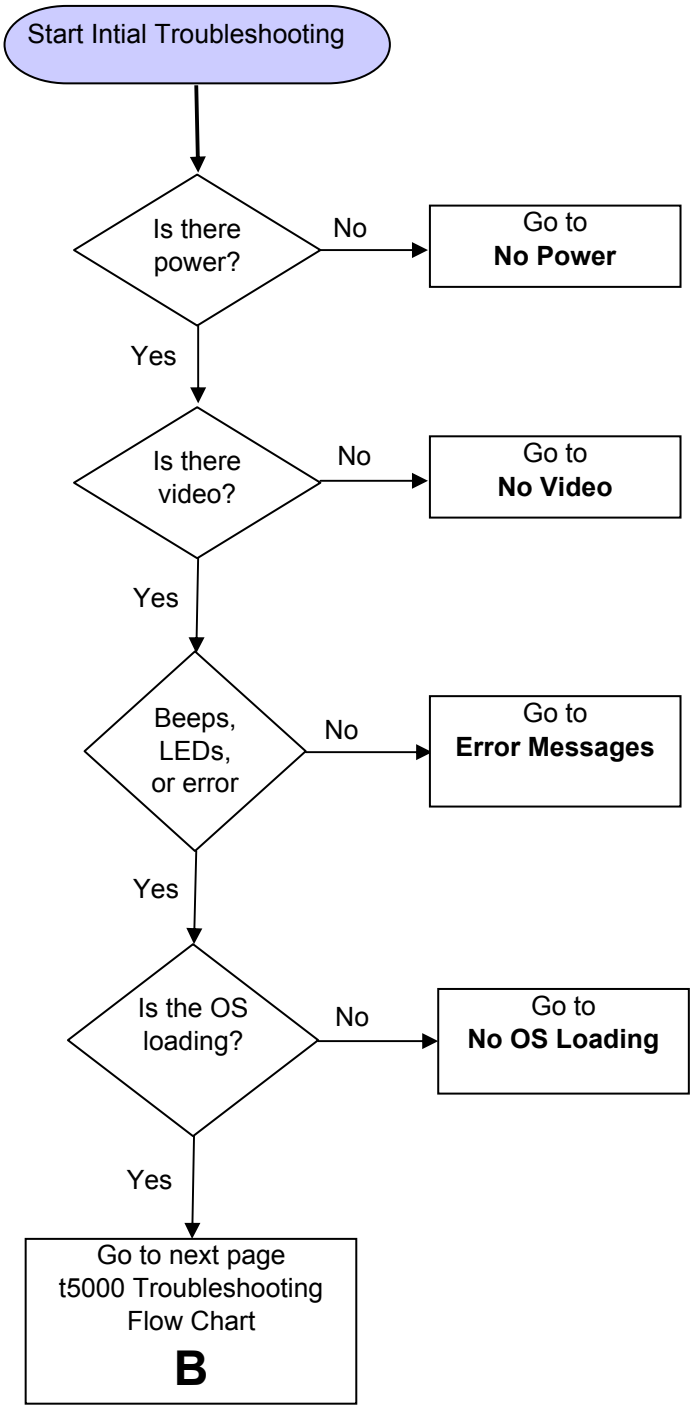
Table 2-2 Power-On Troubleshooting (continued)

A newly connected unknown USB peripheral does not respond or USB peripherals connected prior to the newly connected USB peripheral will not complete their device actions.	An unknown USB peripheral may be connected and disconnected to a running platform as long as you do not reboot the system. If problems occur, disconnect the unknown USB peripheral and reboot the platform.
Video does not display.	1. Verify that the monitor brightness is set to a readable level. 2. Verify the monitor is good by connecting it to a known working computer and ensure its front LED turns green (assuming the monitor is Energy Star compliant). If the monitor is defective, replace it with a working monitor and repeat testing. 3. Re-image the thin client unit and power on the monitor again. 4. Test the thin client unit on a known working monitor. If the monitor does not display video, replace the thin client unit.

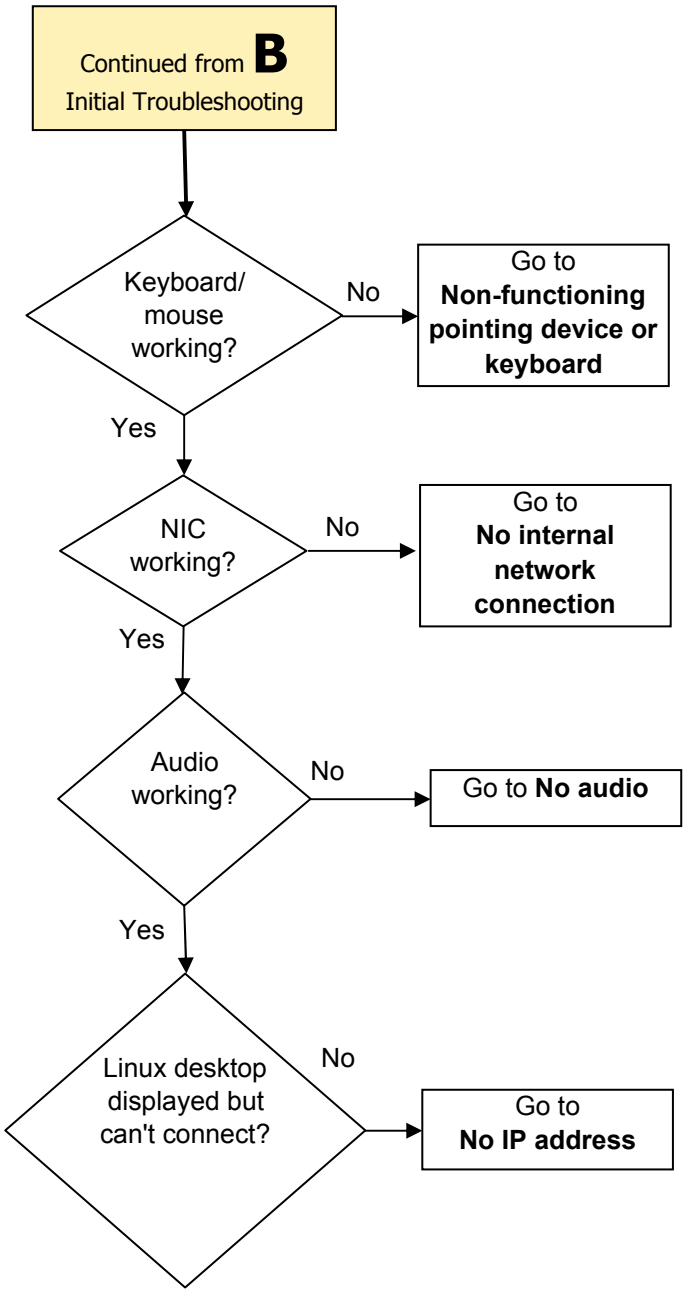
Troubleshooting Flowcharts

NOTE: uBoot does not display any error messages. Beep codes are listed in Beep Codes on page 5.

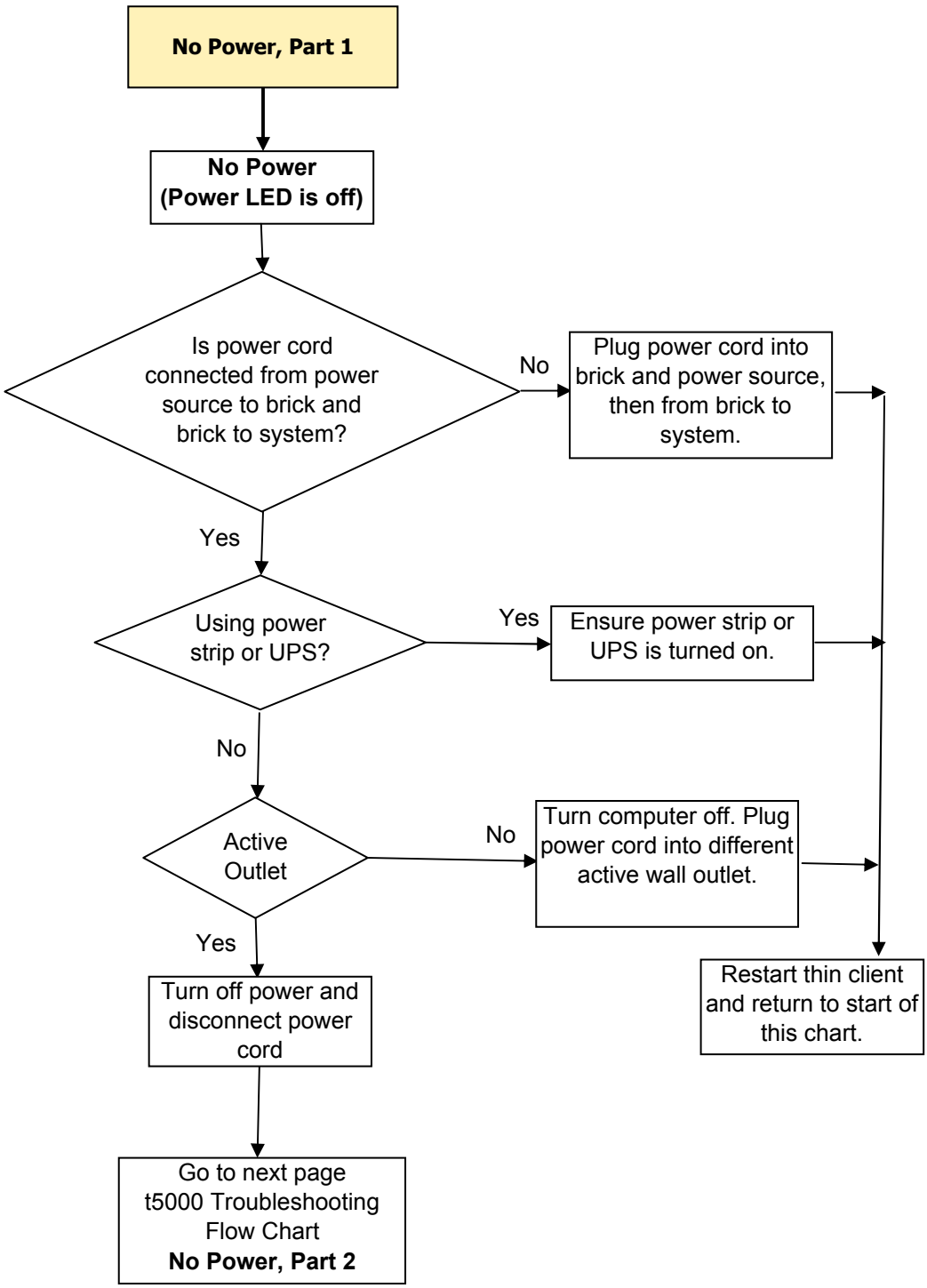
Initial Troubleshooting



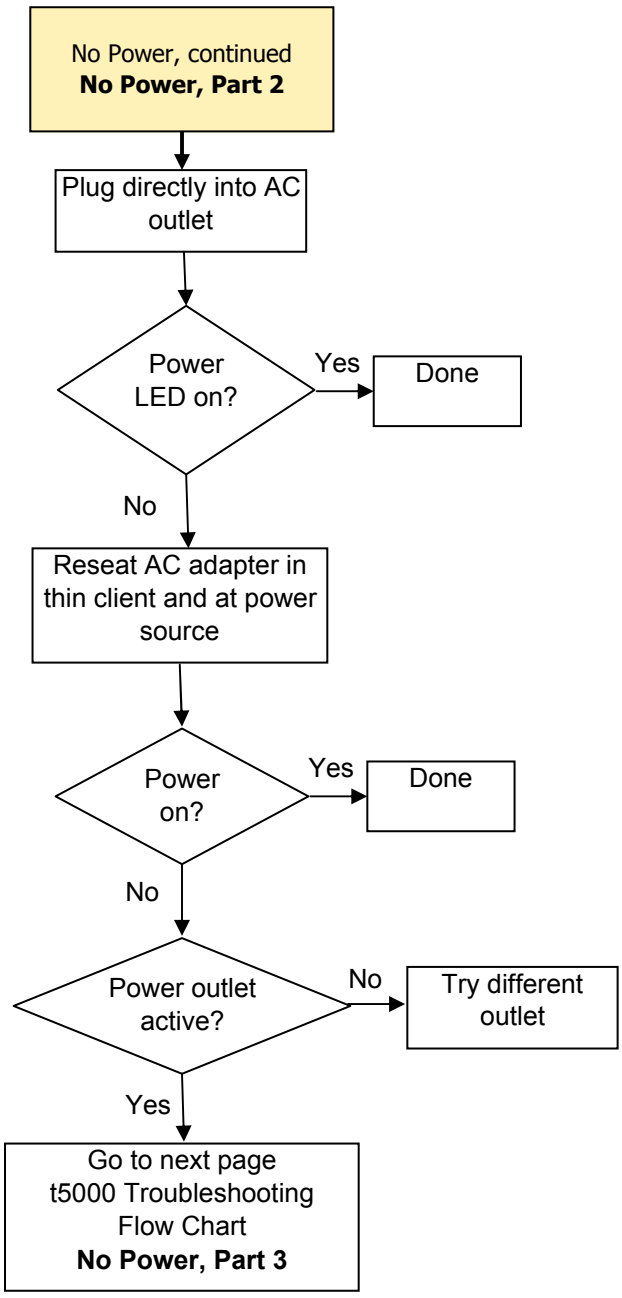
Initial Troubleshooting Part 2



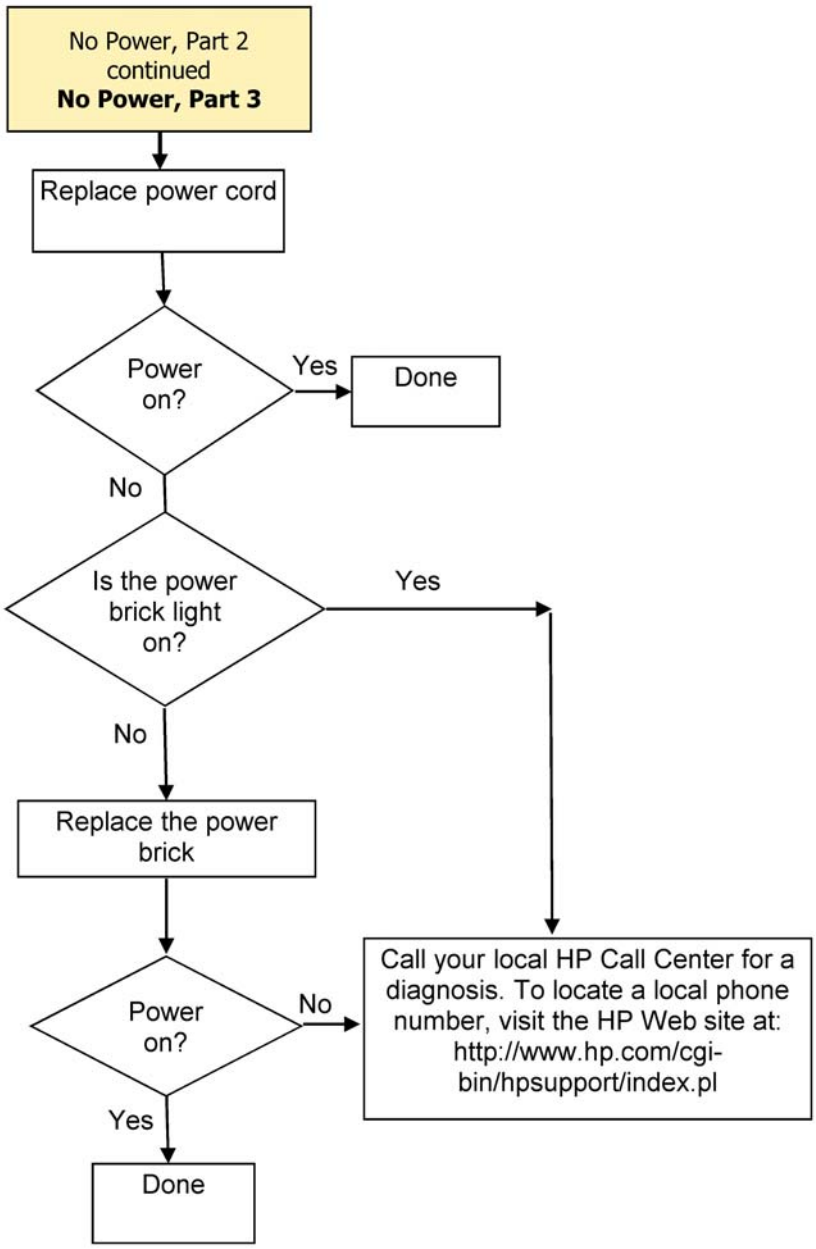
No Power, Part 1



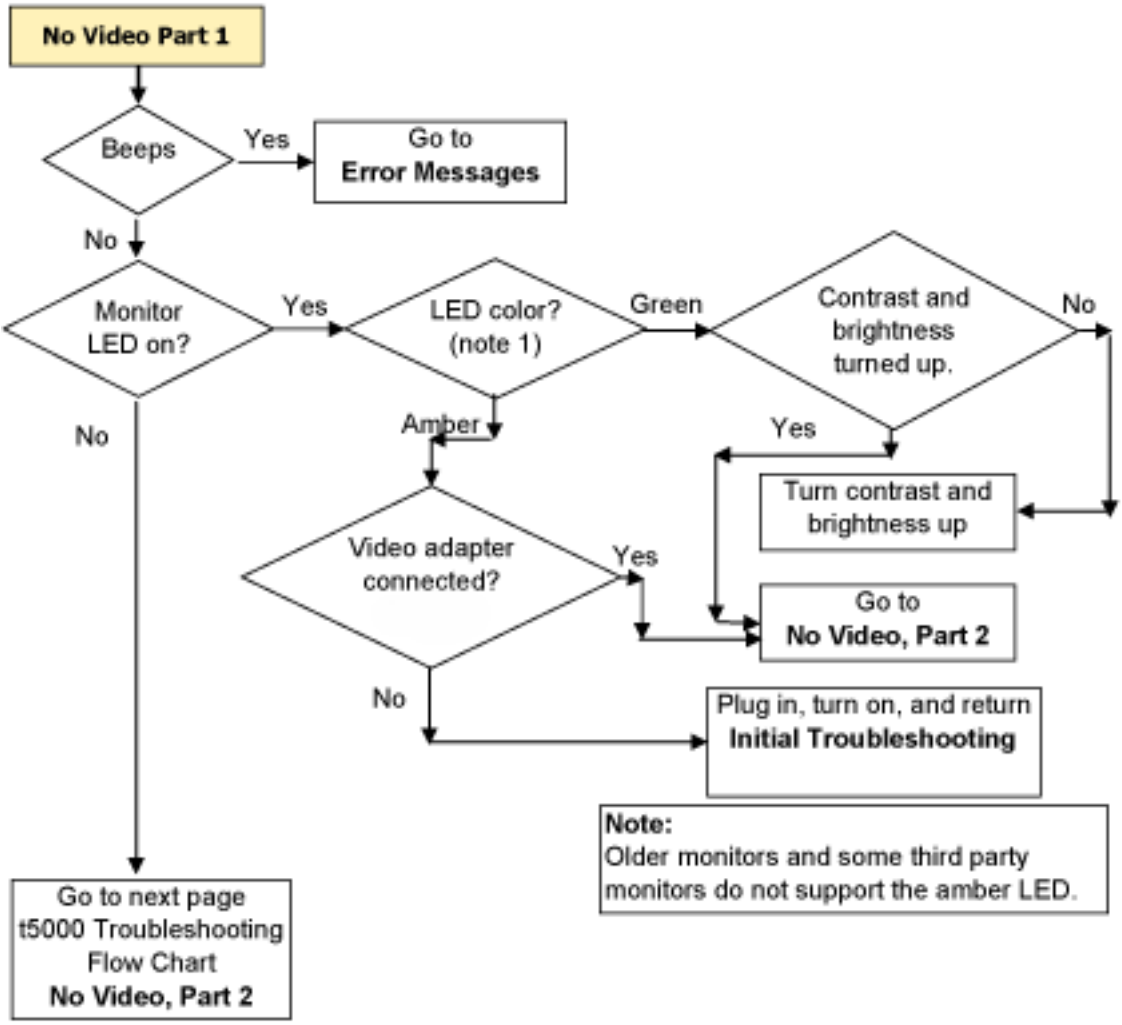
No Power, Part 2



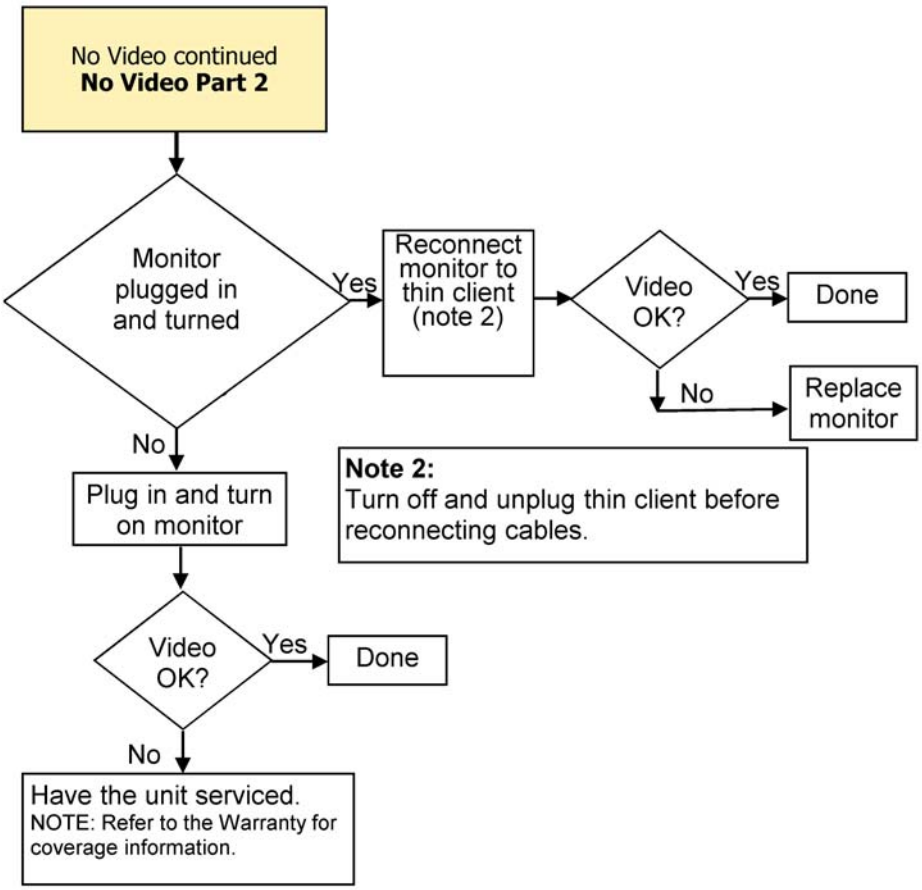
No Power, Part 3



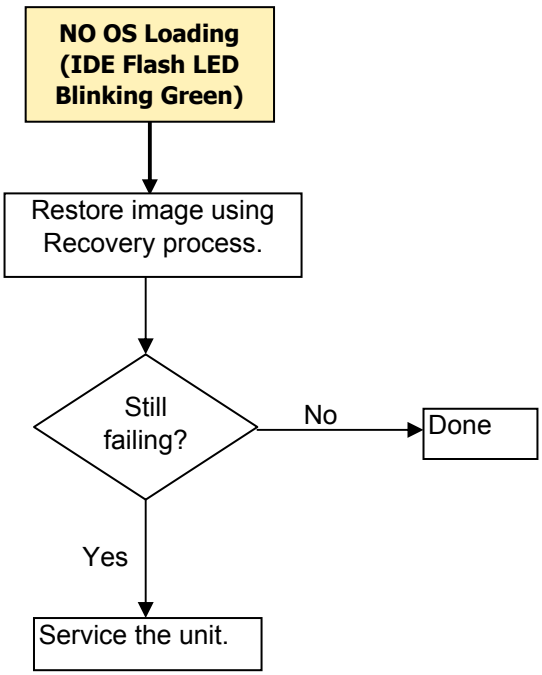
No Video, Part 1



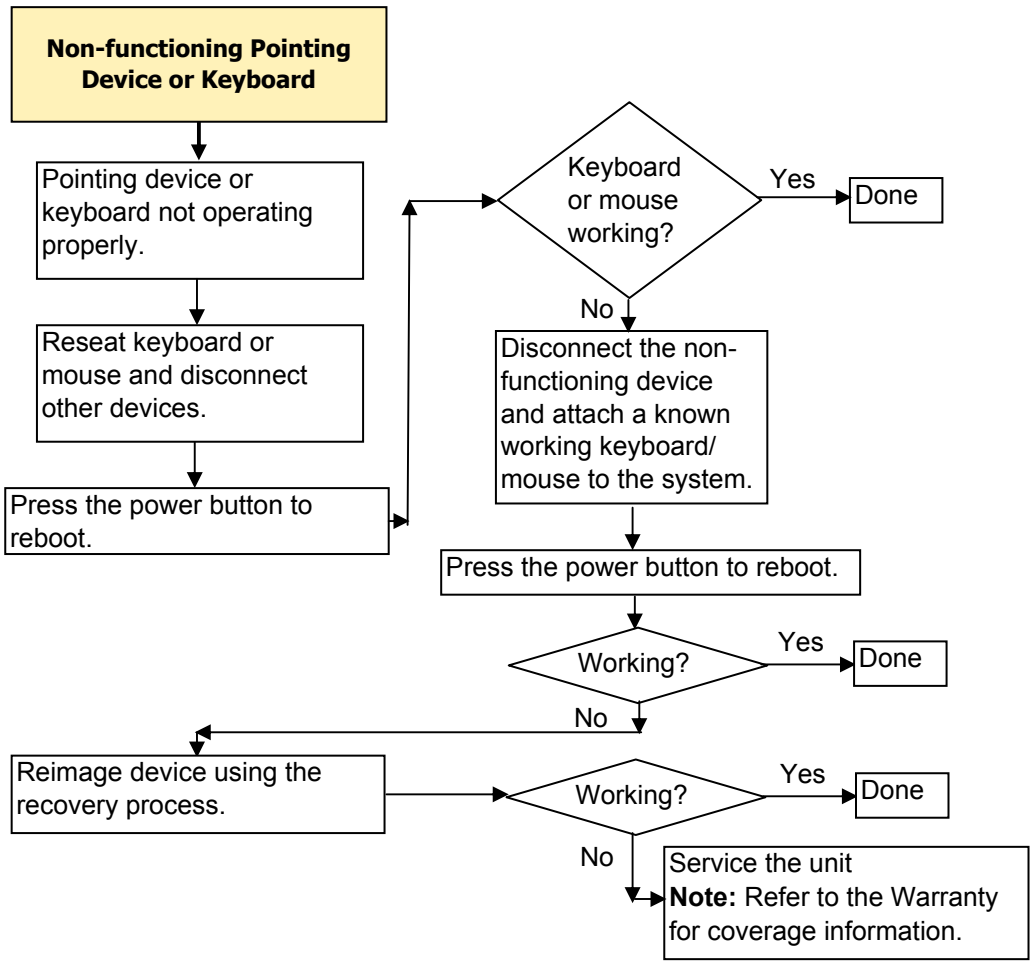
No Video, Part 2



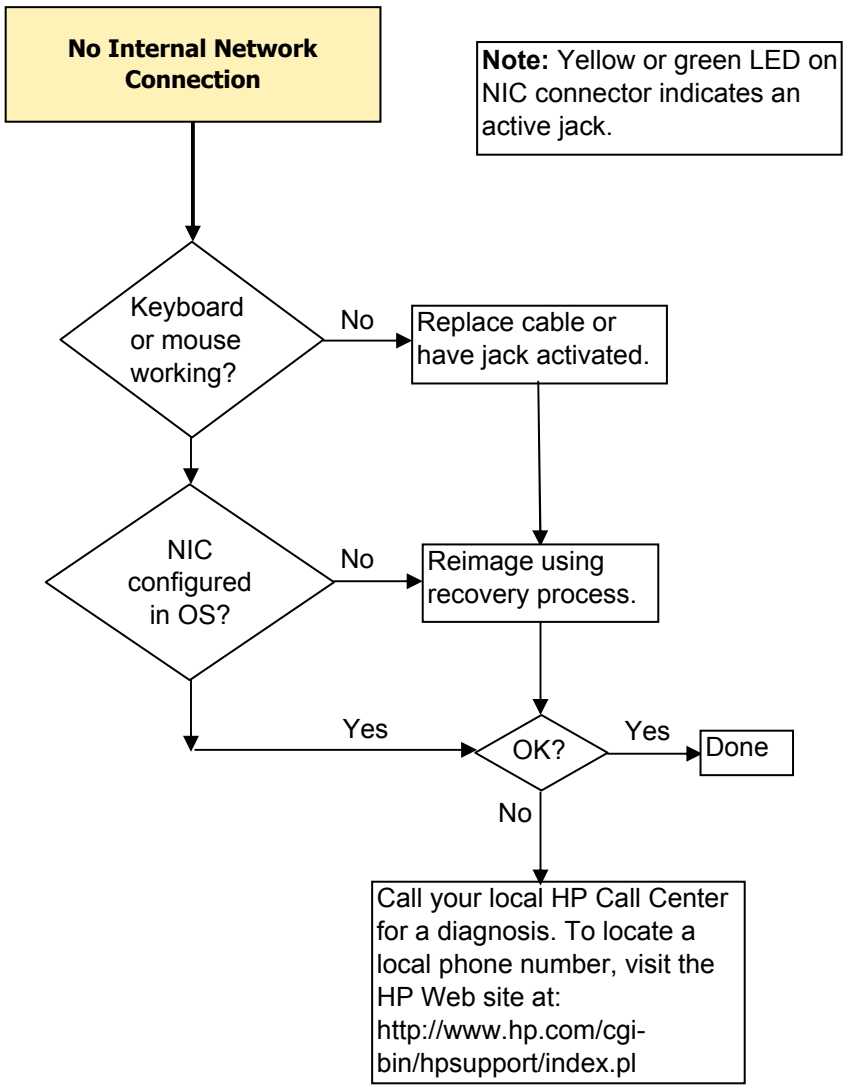
No OS Loading



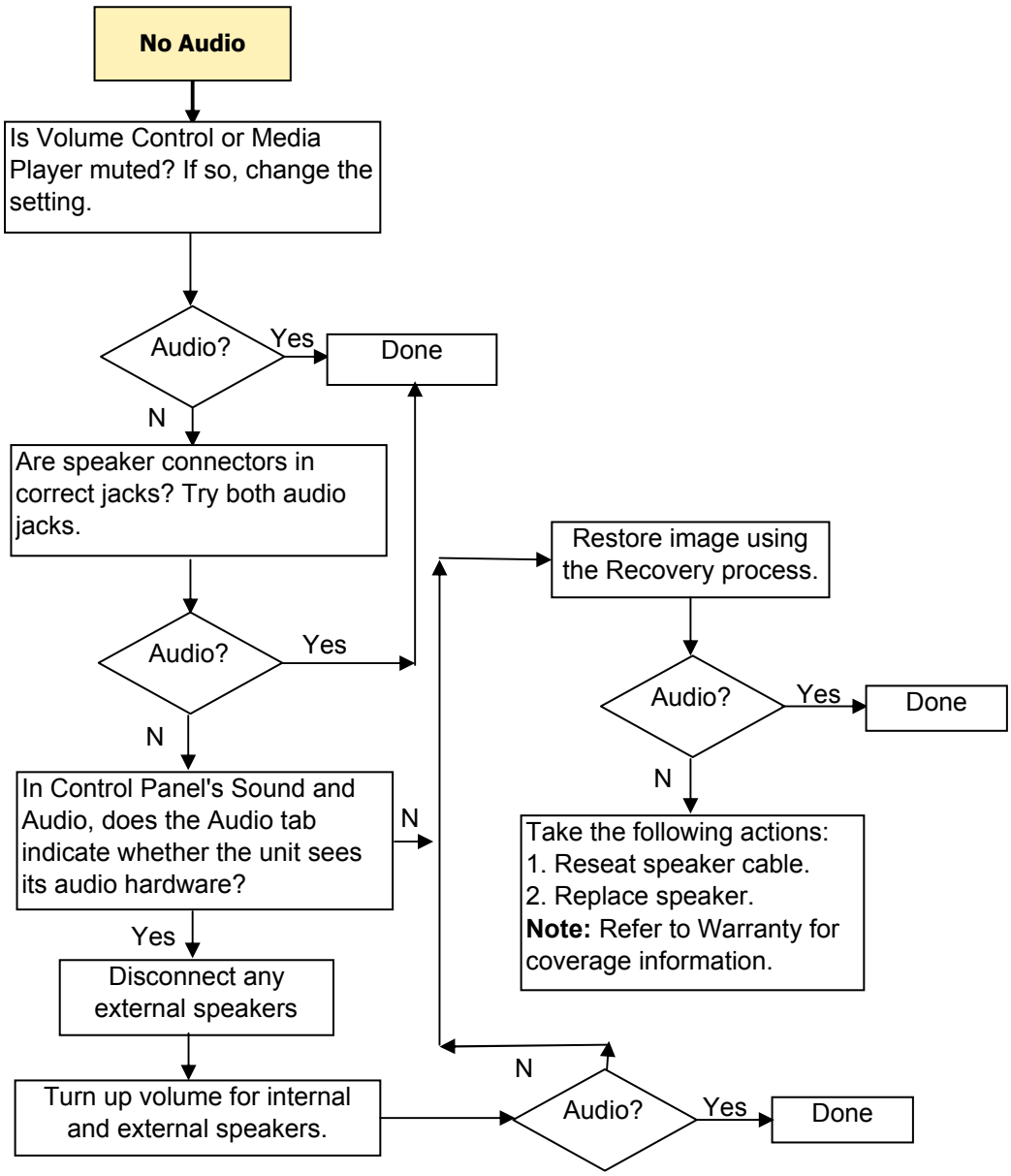
Non-Functioning Pointing Device or Keyboard



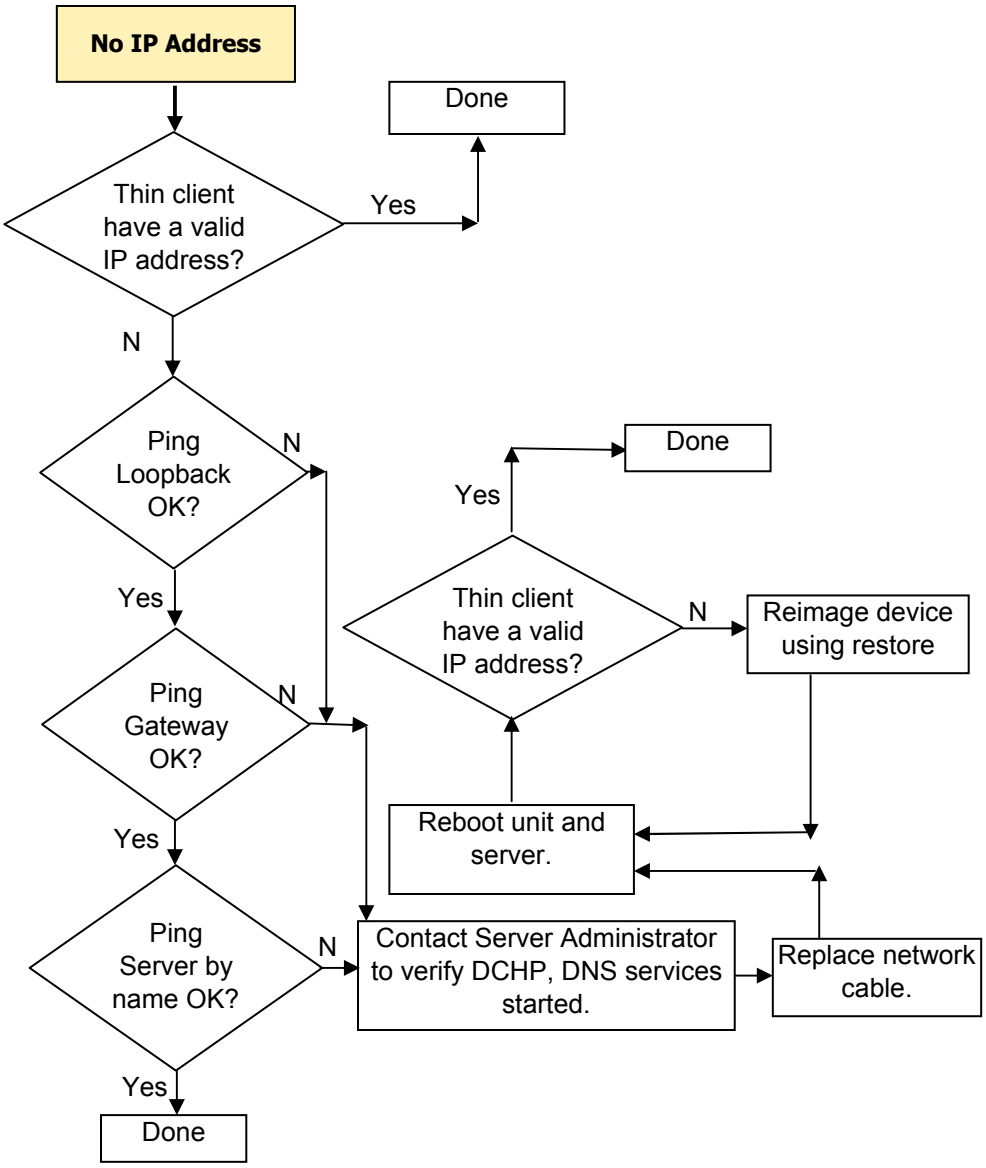
No Internal Network Connection



No Audio


No Audio
Is Volume Control or Media Player muted? If so, change the setting.
Audio?
Yes
Done
N
Are speaker connectors in correct jacks? Try both audio jacks.
Audio?
Yes
N
In Control Panel's Sound and Audio, does the Audio tab indicate whether the unit sees its audio hardware?
N
Yes
Disconnect any external speakers
Turn up volume for internal and external speakers.
N
Audio?
Yes
Done
Restore image using the Recovery process.
Audio?
Yes
Done
N
Take the following actions:
1. Reseat speaker cable.
2. Replace speaker.
Note: Refer to Warranty for coverage information.

No IP Address



If none of above corrects the issue, service the unit.
Note: Refer to the Warranty for coverage information.

3 Restoring the Flash Image

Creating a Bootable USB Flash Drive

To create a bootable USB flash drive for purposes of reflashing or restoring the software image on the onboard flash, see the HP ThinPro Administrator's Guide, section **HP ThinState Utility > Manage the ThinPro Image > Capture HP ThinPro Image to a Bootable USB Flash Drive**.

NOTE: During the restore process, the thin client flash drive is reformatted and all data is erased before the system image is copied to it. To prevent loss of data, be sure to save any user-created data from the flash drive. Restoring the software image may take approximately five minutes.

Booting from a USB Flash Drive

To boot the USB flash drive created in the previous section:

1. Power off the unit.
2. Insert the ThinState drive into one of the USB slots on the thin client.
3. Press and release the power button, and then quickly press and release the power button again.
4. After about 15 seconds, the unit beeps and a dialog is displayed verifying that you wish to re-image the device.

NOTE: Some USB flash drives may not work. If the unit does not boot from the USB flash drive, try removing all other USB devices and insert the USB flash drive into one of the rear USB ports. If the unit still does not boot from the USB flash drive, try a different flash drive.

4 Bootloader

The t5335 does not use a BIOS; instead, the t5335 uses a bootloader named uBoot. uBoot allows you to configure a limited number of parameters.

uBoot does not have an F10 setup menu. To configure the following settings, boot the unit to ThinPro. You must be in administrator mode to configure these settings. Navigate to **Control Panel > Setup > ThinPro Configuration**, and then select the **System** tab.

You can set the following parameters:

- Asset Location
- Asset Number
- Enable/disable Wake-on LAN

NOTE: To enter Wake-on LAN mode, you must gracefully shutdown from Linux by either selecting **Poweroff** from the user interface or by pressing the power button.

Restoring a Corrupt uBoot

If uBoot on the thin client is corrupt, the unit will not boot. The unit must be sent back for repair.

Updating uBoot

To update uBoot:

1. Create a ThinState key as described in Restoring the Flash Image on page 20.
2. Insert the key into a computer.
3. Edit the file settings.ini to set useQuickImageMode to 0.
4. Save the file.
5. Copy the new uBoot binary to the uBoot directory on the USB drive.
6. Safely remove the USB drive from the computer
7. Boot the ThinState USB drive as described in Booting from a USB Flash Drive on page 20.
8. After about 15 seconds, the unit beeps and a menu is displayed.
9. Type **4** to enter “Update uBoot Mode” and follow the on-screen prompts.

△ **CAUTION:** Do not turn off power or attempt to reboot the computer during the upgrade process.

A Specifications

Table A-1 HP t5335 Thin Client

Dimensions		
Width (side to side)	160 mm	6.3 in.
Height (top to bottom)	32 mm	1.3 in
Depth (front to back)	123 mm	4.8 in.
Approximate Weight	490 g	17.3 oz
Temperature Range (fanless design)*		
Operating**	10° to 35° C	50° to 95° F
(max. rate of change is 10° C per hour or 18° F per hour)		
Nonoperating	-30° to 60° C	-22° to 140° F
(max. rate of change is 20° C per hour or 36° F per hour)		
*Specifications are at sea level with altitude derating of 1° C/300 m (1.8° F/1000ft) to a maximum of 3 Km (10,000 ft), with no direct, sustained sunlight. Upper limit may be limited by the type and number of options installed.	** The operating temperature range when the thin client is attached to a flat panel using the HP Quick Release is 50° to 95° F (10° to 35° C).	
Relative Humidity (non-condensing)		
Operating	10–90%	10–90%
(max. wet bulb temperature is 28° C or 84.2° F)		
Nonoperating	5–95%	5–95%
(max. wet bulb temperature is 38.7° C or 101.6° F)		
Maximum Altitude (unpressurized)		
Operating	3048 m	10,000 ft
(max. allowed rate of change is 457 m per minute or 1500 ft per minute)		
Nonoperating	9144 m	30,000 ft
(max. allowed rate of change is 457 m per minute or 1500 ft per minute)		

Table A-1 HP t5335 Thin Client (continued)

Power Supply		
Operating Input Voltage Range	100–240 VAC	100–240 VAC
Rated Line Frequency	50–60 Hz	50–60 Hz
Power Output (maximum)	36 W	36 W
Rated Output Current (maximum)	3 A	3 A
Output Voltage	+12 V DC	+12 V DC

B Electrostatic Discharge

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.

Preventing Electrostatic Damage

To prevent electrostatic damage, observe the following precautions:

- 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

There are several methods 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 Thin Client chassis. Wrist straps are flexible straps of 1 megohm +/- 10 percent resistance in the ground cords. To provide proper grounding, wear the strap snug against the skin.
- Use heelstraps, toestraps, or bootstraps 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, contact an HP authorized dealer, reseller, or service provider.

NOTE: For more information about static electricity, contact an HP authorized dealer, reseller, or service provider.

Index