Troubleshooting Guide

HP Compaq Business Desktops
dx2700/dx2708 Microtowers and
dx2700 Small Form Factor Models

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This guide provides helpful hints and solutions for troubleshooting
the above products as well as scenarios for possible hardware and
software problems.

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.

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Computer Diagnostic Features

HP Insight Diagnostics

✎ HP Insight Diagnostics is included on CD with some computer models only.

The HP Insight Diagnostics utility allows you to view information about the hardware configuration of the computer and perform hardware diagnostic tests on the subsystems of the computer. The utility simplifies the process of effectively identifying, diagnosing, and isolating hardware issues.

The Survey tab is displayed when you invoke HP Insight Diagnostics. This tab shows the current configuration of the computer. From the Survey tab, there is access to several categories of information about the computer. Other tabs provide additional information, including diagnostic test options and test results. The information in each screen of the utility can be saved as an html file and stored on a diskette or USB HP Drive Key.

Use HP Insight Diagnostics to determine if all the devices installed on the computer are recognized by the system and functioning properly. Running tests is optional but recommended after installing or connecting a new device.

You should run tests, save the test results, and print them so that you have printed reports available before placing a call to the Customer Support Center.

✎ Third party devices may not be detected by HP Insight Diagnostics.

Accessing HP Insight Diagnostics

You must boot to the *Library* CD, as described in the steps below, to access HP Insight Diagnostics.

1. While the computer is on, insert the *Library* CD into an optical drive on the computer.

2. Shut down the operating system and turn off the computer.

3. Turn on the computer. The system will boot to the CD.

✎ If the system does not boot to the CD in the optical drive, you may need to change the boot order in the Computer Setup (F10) utility so that the system attempts to boot to the optical drive before booting to the hard drive. Refer to the *Computer Setup (F10) Utility Guide* on the *Library* CD for more information.

4. When prompted, press the **Y** key if you want to operate in Safe mode or any other key if you want to operate in Regular mode.

✎ Regular mode is the default mode if no keys are pressed within the specified time frame. If the screen remains blank after pressing any key other than **Y**, try rebooting and select safe mode when prompted.

5. Select the appropriate language and click **Continue**.

✎ It is recommended that you accept the assigned default keyboard for your language unless you want to test your specific keyboard.

6. In the End User License Agreement page, click **Agree** if you agree with the terms. The HP Insight Diagnostics utility launches with the Survey tab displayed.

Survey Tab

The **Survey** tab displays important system configuration information. In the **View** section on the left side of the screen, you can select the **Summary** view to see limited configuration data or select the **Advanced** view to see all the data in the selected category. Regardless of whether you choose **Advanced** or **Summary**, the following categories of information are available on the **Survey** tab:

All—Gives a listing of all categories of information about the computer.

Overview—Gives you a listing of general information about the computer.

Architecture—Provides system BIOS and PCI device information.

Asset Control—Shows asset tag, system serial number, and processor information.

Communication—Shows information about the computer parallel (LPT) and serial (COM) port settings, plus USB and network controller information.

Graphics—Shows information about the graphics controller of the computer.

Input Devices—Shows information about the keyboard, mouse, and other input devices connected to the computer.

Memory—Shows information about all memory in the computer. This includes memory slots on the system board and any memory modules installed.

Miscellaneous—Shows information obtained from the computer configuration memory (CMOS), system management BIOS data, system board data, and diagnostics component information.

Storage—Shows information about storage media connected to the computer. This list includes all fixed disks, diskette drives, and optical drives.

System—Shows information about the system board, processor, chassis, and BIOS, plus internal speaker and PCI bus information.

Test Tab

The Test tab allows you to choose various parts of the system to test. You can also choose the type of test and testing mode.

There are two test modes to choose from:

■ **Interactive Mode**—Provides maximum control over the testing process. The diagnostic software will prompt you for input during tests that require your interaction. You may also determine whether the test passed or failed.

■ **Unattended Mode**—Does not display prompts and requires no interaction. If errors are found, they are displayed when testing is complete.

There are three types of tests to choose from:

■ **Quick Test**—Provides a predetermined script where a sample of each hardware component is exercised and requires no user intervention in either Unattended or Interactive mode.

■ **Complete Test**—Provides a predetermined script where each hardware component is fully tested. There are more tests available in the Interactive mode, but these require user intervention.

■ **Custom Test**—Provides the most flexibility in controlling the testing of a system. The Custom Test mode allows you to specifically select which devices, tests, and test parameters are run.

To begin testing:

1. Select the Test tab.

2. On the left side of the tab, select the **Type of Test** to perform (**Quick**, **Complete**, or **Custom**).

3. On the left side of the tab, select the **Test Mode** (**Interactive** or **Unattended**).

4. Select the device to be tested from the drop-down list.

5. Choose how you want the test to be executed, either **Number of Loops** or **Total Test Time**. When choosing to run the test over a specified number of loops, enter the number of loops to perform. If you desire to have the diagnostic test for a specified time period, enter the amount of time in minutes.

6. Click **Begin Testing** to start the test. The Status tab, which allows you to monitor the progress of the test, is automatically displayed during the testing process. When the test is complete, the Status tab shows whether the device passed or failed.

7. If errors are found, go to the Log tab and click the **Error Log** to display more detailed information and recommended actions.

Status Tab

The Status tab displays the status of the selected tests. The type of test executed (**Quick**, **Complete**, or **Custom**) is also displayed. The main progress bar displays the percent complete of the current set of tests. While testing is in progress, a **Cancel Testing** button is displayed for use if you want to cancel the test.

After testing has completed, the **Cancel Testing** button is replaced with a **Retest** button. The **Retest** button will retest the last set of tests executed. This enables you to re-run the set of tests without having to re-enter the data in the Test tab.

The Status tab also shows:

■ The devices being tested

■ The tests that are running

■ The overall elapsed time

■ The individual elapsed test times

■ The condition status of each test

Log Tab

The Log tab contains two logs, a **Test Log** and an **Error Log**, each of which can be selected from the left side of the tab.

The **Test Log** displays all tests that have been executed, the number of times of execution, the number of times the test failed, and the time it took to complete the test. The **Clear Test Log** button will clear the contents of the **Test Log**.

The **Error Log** displays the tests for devices that have failed during the diagnostic testing and includes the following columns of information.

■ The **Description** section describes the error that the diagnostic test found.

■ The **Recommended Repair** will give a recommended action that should be performed to resolve the failed hardware.

■ The **Failed Count** is the number of times the test has failed.

■ The **Error Code** provides a numerical code for the failure. The error codes are defined in the Help tab.

■ The **Clear Error Log** button will clear the contents of the Error Log.

Saving and Printing Information in HP Insight Diagnostics

You can save the information displayed in the HP Insight Diagnostics Status and Log tabs to a diskette. You can not save to the hard drive. The system will automatically create an html file that has the same appearance as the information displayed on the screen.

1. Insert a diskette.

2. Click **Save** in the upper right corner of the tab.

3. Select **Save to the floppy**.

4. Enter a file name in the **File Name** box and click the **Save** button. An html file will be saved to the inserted diskette.

5. Print the information from the storage device used to save it.

✎ To exit HP Insight Diagnostics, click Exit in the upper right corner of the screen then remove the *Library* CD from the optical drive.

Downloading the Latest Version of HP Insight Diagnostics

1. Go to www.hp.com.

2. Click the **Software & Driver Downloads** link.

3. Click the **Download drivers and software** radio button.

4. Enter your product number (for example, dx2100) in the text box and press the **Enter** key.

5. Select your specific computer model

6. Select your OS.

7. Click the **Diagnostic** link.

8. Locate **HP Insight Diagnostics** and click **Download**.

✎ The download includes instructions on how to create the bootable CD.

2

Troubleshooting

Safety and Comfort

⚠ **WARNING:** Misuse of the computer or failure to establish a safe and comfortable work environment may result in discomfort or serious injury. Refer to the *Safety & Comfort Guide* on the *Library* CD and available at www.hp.com/ergo for more information on choosing a workspace and creating a safe and comfortable work environment.

Before You Call for Technical Support

If you are having problems with the computer, try the appropriate solutions below to try to isolate the exact problem before calling for technical support.

■ Run the diagnostics utility. Refer to Chapter 1, "Computer Diagnostic Features" for more information.

■ Run the Drive Protection System (DPS) Self-Test in Computer Setup. Refer to the *Computer Setup (F10) Utility Guide* on the *Library* CD for more information.

✎ The Drive Protection System (DPS) Self-Test software is available on some models only.

■ Check the Power LED on the front of the computer to see if it is flashing. The flashing lights are error codes that will help you diagnose the problem. Refer to "Interpreting Diagnostic Lights and Audible Codes" to interpret the codes.

■ If the screen is blank, plug the monitor into a different video port on the computer if one is available. Or, change out the monitor with a monitor that you know is functioning properly.

■ If you are working on a network, plug another computer with a different cable into the network connection. There may be a problem with the network plug or cable.

■ If you recently added new hardware, remove the hardware and see if the computer functions properly.

■ If you recently installed new software, uninstall the software and see if the computer functions properly.

■ Boot the computer to the Safe Mode to see if it will boot without all of the drivers loaded. When booting the operating system, use "Last Known Configuration."

■ Refer to the comprehensive online technical support at www.hp.com/support.

■ Refer to "Helpful Hints" in this guide for more general suggestions.

■ Run the *Restore Plus!* CD to restore the original operating system and factory-installed software.

$\triangle$ **CAUTION:** Running the *Restore Plus!* CD will erase all data on the hard drive.

To assist you in resolving problems online, HP Instant Support Professional Edition provides you with self-solve diagnostics. If you need to contact HP support, use HP Instant Support Professional Edition's online chat feature. Access HP Instant Support Professional Edition at: www.hp.com/go/ispe.

Access the Business Support Center (BSC) at www.hp.com/go/bizsupport for the latest online support information, software and drivers, proactive notification, and worldwide community of peers and HP experts.

If it becomes necessary to call for technical assistance, be prepared to do the following to ensure that your service call is handled properly:

■ Be in front of your computer when you call.

■ Write down the computer serial number and product ID number, and the monitor serial number before calling.

■ Spend time troubleshooting the problem with the service technician.

■ Remove any hardware that was recently added to your system.

■ Remove any software that was recently installed.

■ Run the *Restore Plus!* CD.

⚠ **CAUTION:** Running the *Restore Plus!* CD will erase all data on the hard drive.

✎ For sales information and warranty upgrades (HP Care Pack Services), call your local authorized service provider or dealer.

Helpful Hints

If you encounter problems with the computer, monitor, or software, see the following list of general suggestions before taking further action:

■ Check that the computer and monitor are plugged into a working electrical outlet.

■ Check to see that the computer is turned on and the green power light is on.

■ Check to see that the monitor is turned on and the green monitor light is on.

■ Turn up the brightness and contrast controls of the monitor if the monitor is dim.

■ Press and hold any key. If the system beeps, the keyboard should be operating correctly.

■ Check all cable connections for loose connections or incorrect connections.

■ Wake the computer by pressing any key on the keyboard or pressing the power button. If the system remains in standby mode, shut down the computer by pressing and holding the power button for at least four seconds then press the power button again to restart the computer. If the system will not shut down, unplug the power cord, wait a few seconds, then plug it in again. The

computer will restart if automatic start on power loss is set in Computer Setup. If it does not restart, press the power button to start the computer.

■ Reconfigure the computer after installing a non–plug and play expansion board or other option. See "Solving Hardware Installation Problems" for instructions.

■ Be sure that all the needed device drivers have been installed. For example, if you are using a printer, you need a driver for that model printer.

■ Remove all bootable media (diskette, CD, or USB device) from the system before turning it on.

■ If you have installed an operating system other than the factory-installed operating system, check to be sure that it is supported on the system.

■ If the system has multiple video sources* installed and a single monitor, the monitor must be plugged into the monitor connector on the source selected as the primary VGA adapter. During boot, the other monitor connectors are disabled and if the monitor is connected into these ports, the monitor will not function.

⚠ **CAUTION:** When the computer is plugged into an AC power source, there is always voltage applied to the system board. You must disconnect the power cord from the power source before opening the computer to prevent system board or component damage.

* dx2060 default video sources sequence: PCI, embedded;
   dx2180 default video sources sequence: PCI-Express adapters, PCI, embedded

Solving General Problems

You may be able to easily resolve the minor problems described in this section. If a problem persists and you are unable to resolve it yourself or if you feel uncomfortable about performing the operation, contact your HP authorized reseller or service provider.

Problem	Cause	Solution
Computer will not turn on.	Cables to the external power source are unplugged.	Ensure that cables connecting the computer to the external power source are plugged in properly and the wall outlet is active.
	Voltage selector switch* on the rear of the computer chassis is not switched to the correct voltage (115V or 230V).	Select the proper AC voltage using the slide switch.
	A defective PCI card has been installed.	Remove any expansion board that was just installed.
	Drive data or power supply cables may not be properly connected.	Reseat drive data and power supply cables.
	The unit temperature was exceeded. The fan may be blocked.	1. Unit is in an exceedingly hot environment. Let it cool down. 2. Ensure that computer air vents are not blocked and the internal fan is running. 3. Contact an HP authorized reseller or service provider.
Computer appears locked up and will not turn off when the power button is pressed.	Software control of the power switch is not functional.	1. Press and hold the power button for at least four seconds until the computer turns off. 2. Disconnect the power cord from the electrical outlet.

* Applicable for non China version.

Problem	Cause	Solution
Computer will not respond to USB keyboard or mouse.	Computer is in **standby** mode.	Press the power button to resume from **standby** mode.
	Keyboard or mouse is not connected to computer.	Connect keyboard and mouse cables to computer.
	System has locked up.	Restart the computer.

⚠ **CAUTION:** When attempting to resume from **standby** mode, do not hold down the power button for more than four seconds. Otherwise, the computer will shut down and you will lose any unsaved data.

Problem	Cause	Solution
Computer date and time display is incorrect.	RTC (real-time clock) battery may need to be replaced. ✎ MConnecting the computer to a live AC outlet prolongs the life of the RTC battery.	First, reset the Date and Time Properties in the **Control Panel** (Computer Setup can also be used to update the RTC date and time). If the problem persists, replace the RTC battery. See the *Hardware Reference Guide* on the *Library* CD for instructions on installing a new battery.
Cursor will not move using the arrow keys on the keypad.	The **Num Lock** key may be on.	Press the **Num Lock** key. The Num Lock light should not be on if you want to use the arrow keys. The **Num Lock** key can be disabled (or enabled) in Computer Setup.
Poor performance is experienced.	Processor is hot.	1. Ensure airflow to the computer is not blocked. Leave a 4-inch (10.2-cm) clearance on all vented sides of the computer and monitor to permit required airflow. 2. Ensure fans are connected and working properly (some fans only operate when needed). 3. Ensure the processor heatsink is installed properly.

Problem	Cause	Solution
Poor performance is experienced *(continued)*.	Hard drive is full.	Transfer data from the hard drive to create more space on the hard drive.
	Low on memory.	Add more memory.
	Hard drive is fragmented.	Defragment hard drive.
	Program previously accessed did not release reserved memory back to the system.	Restart the computer.
	Virus resident on the hard drive.	Run the virus protection program.
	Too many applications running.	1. Close unnecessary applications to free up memory. 2. Add more memory.
	Some software applications, especially games, are stressful on the graphics subsystem.	1. Lower the display resolution for the current application or consult the documentation that came with the application for suggestions on how to improve performance by adjusting parameters in the application. 2. Add more memory. 3. Upgrade the graphics solution.
	Cause unknown.	Restart the computer.
Blank screen (no video).	Monitor is not turned on and the monitor light is not on.	Turn on the monitor and check that the monitor light is on.
	The cable connections are not correct.	Check the cable connection from the monitor to the computer and to the electrical outlet.

Problem	Cause	Solution
Blank screen (no video) *(continued)*.	You may have a screen blanking utility installed or energy saver features are enabled.	Press any key or click the mouse button and, if set, type your password.
	Computer is in **standby** mode.	Press the power button to resume from **standby** mode.

⚠ **CAUTION:** When attempting to resume from **standby** mode, do not hold down the power button for more than four seconds. Otherwise, the computer will shut down and you will lose any unsaved data.

	You are using a fixed-sync monitor and it will not sync at the resolution chosen.	Be sure that the monitor can accept the same horizontal scan rate as the resolution chosen.
	The VGA/BNC selector switch on the monitor (some models) is not properly set.	Set the selector switch to agree with the cable connection.
	Bad monitor.	Try a different monitor.
Power LED is flashing and computer will not start.	Initernal error has occurred and the computer is flashing a code.	Refer to "Interpreting Diagnostic Lights and Audible Codes" to interpret the error code.

Solving Hardware Installation Problems

You may need to reconfigure the computer when you add or remove hardware, such as an additional drive or expansion card. If you install a plug and play device, Windows XP Home/Professional will automatically recognize the device and configure the computer. If you install a non–plug and play device, you must reconfigure the computer after completing installation of the new hardware. In Windows XP Home/Professional, use the **Add Hardware Wizard** and follow the instructions that appear on the screen.

Problem	Cause	Solution
A new device is not recognized as part of the system.	Device is not seated or connected properly.	Ensure that the device is properly and securely connected and that pins in the connector are not bent down.
	Cable(s) of new external device are loose or power cables are unplugged.	Ensure that all cables are properly and securely connected and that pins in the cable or connector are not bent down.
	Power switch of new external device is not turned on.	Turn off the computer, turn on the external device, then turn on the computer to integrate the device with the computer system.
	When the system advised you of changes to the configuration, you did not accept them.	Reboot the computer and follow the instructions for accepting the changes.
	A plug and play board may not automatically configure when added if the default configuration conflicts with other devices.	Use Windows XP Device Manager to deselect the automatic settings for the board and choose a basic configuration that does not cause a resource conflict. You can also use Computer Setup to reconfigure or disable devices to resolve the resource conflict.

Problem	Cause	Solution
Computer will not start.	Wrong memory modules were used in the upgrade or memory modules were installed in the wrong location.	1. Review the documentation that came with the system to determine if you are using the correct memory modules and to verify the proper installation.
		2. Observe the beeps and LED lights on the front of the computer. See "Interpreting Diagnostic Lights and Audible Codes" to determine possible causes.
		3. If you still cannot resolve the issue, contact Customer Support.

Interpreting Diagnostic Lights and Audible Codes

This section covers the front panel LED codes as well as the audible codes that may occur before or during POST that do not necessarily have an error code or text message associated with them.

✎ If you see flashing LEDs on a PS/2 keyboard, look for flashing LEDs on the front panel of the computer and refer to the following table to determine the front panel LED codes.

✎ Recommended actions in the following table are listed in the order in which they should be performed.

✎ Replace the system board or power supply only as the last resort.

Diagnostic Front Panel LEDs and Audible Codes

Activity	Beeps	Possible Cause	Recommended Action
Green Power LED On.	None	Computer on.	None
Green Power LED flashes every two seconds.	None	Computer in Suspend to RAM mode (some models only) or normal Suspend mode.	Not support wake up by mouse/keyboard. Should be Press Power button.
CPU Fan weak (RPM < 1000) or not turning, Display Warning message and Long Beep for 5 sec and shut down. System Fan weak (RPM < 1000) or not turning, Display Warning message and Long Beep for 5 sec and shut down.	2	Processor thermal protection activated: A fan may be blocked or not turning. OR The heatsink/fan assembly is not properly attached to the processor.	1. Ensure that the computer air vents are not blocked and the processor cooling fan is running. 2. Open hood, press power button, and see if the processor fan spins. If the processor fan is not spinning, make sure the fan's cable is plugged onto the system board header. Ensure the fan is fully/properly seated or installed. 3. If fan is plugged in and seated properly, but is not spinning, then replace processor fan. 4. Reseat processor heatsink and verify that the fan assembly is properly attached. 5. Contact an authorized reseller or service provider.
Red Power LED flashes five times, one every second, followed by a 2 second pause. Also 5 simultaneous beeps will be heard.	5	Pre-video memory error.	1. Reseat DIMMs. Power on the system. 2. Replace DIMMs one at a time to isolate the faulty module. 3. Replace third-party memory with HP memory. 4. Replace the system board.

Diagnostic Front Panel LEDs and Audible Codes *(Continued)*

Activity	Beeps	Possible Cause	Recommended Action
Red Power LED flashes 6 times, one every second, followed by a 2 second pause. Also 6 simultaneous beeps will be heard.	6	Pre-video graphics error.	For systems with a graphics card: 1. Reseat the graphics card. Power on the system. 2. Replace the graphics card. 3. Replace the system board. For systems with integrated graphics, replace the system board.
Red Power LED flashes 8 times, one every second, followed by a 2 second pause. Also 8 simultaneous beeps will be heard.	8	Invalid ROM based on bad checksum.	1. Reflash the system ROM with the latest BIOS image. 2. Replace the system board.
Inclining beeps when password entered.	Rapid incline	Incorrect password entered.	Enter the correct password.
Declining beeps when password entered.	Rapid decline	Correct password entered.	No action required.

Diagnostic Front Panel LEDs and Audible Codes *(Continued)*

Activity	Beeps	Possible Cause	Recommended Action
System does not power on and LEDs are not flashing.	None	System unable to power on.	Press and hold the power button for less than 4 seconds. If the hard drive LED turns green, then: 1. Check that the voltage selector, located on the rear of the power supply, is set to the appropriate voltage*. Proper voltage setting depends on your region. 2. Remove the expansion cards one at a time until the 5V_aux light on the system board turns on. 3. Replace the system board. OR Press and hold the power button for less than 4 seconds. If the hard drive LED does not turn green then: 1. Check that the unit is plugged into a working AC outlet. 2. Open hood and check that the power button harness is properly connected to the system board. 3. Check that both power supply cables are properly connected to the system board. 4. Check to see if the 5V_aux light on the system board is turned on. If it is turned on, then replace the power button harness. 5. If the 5V_aux light on the system board is not turned on, then replace the power supply. 6. Replace the system board.

* Applicable for non China version.

Diagnostic Front Panel LEDs and Audible Codes *(Continued)*

Activity	Beeps	Possible Cause	Recommended Action
System gives an error message stating that "Error 912 - computer cover or side panel has been removed. Make sure that any system access was authorized and press F1 to continue".	Continuous beep for 5 seconds	The chassis side cover is open or would have been removed after previous power on.	1. Make sure that the Chassis side cover is closed if not fix it as directed in the assembling guide. 2. Ensure that any system access was authorized, check all the hardware ensuring that no hardware has been changed or removed. Then enter the BIOS setup by pressing F10 then select Hardware Monitor setup and enable the Reset Case Open Status. 3. Refer to the F10 Utility Guide for its functionality and any further issues. 4. For maximum security, be sure to establish a setup password. The setup password prevents unauthorized access to the Computer Setup utility.

Restoring the Software

The Windows operating system and software can be restored to the original state that they were when you purchased the computer by using the *Restore Plus!* CD. See the documentation included with the *Restore Plus!* CD for complete instructions on using this feature.

✎ In the event that you lose power during the initial operating system installation process, use the *Restore Plus!* CD to install the operating system.

Contacting Customer Support

For help and service, contact an authorized reseller or dealer. To locate a reseller or dealer near you, visit www.hp.com.

✎ If you take the computer to an authorized reseller, dealer, or service provider for service, remember to provide the setup and power-on passwords if they are set.

✎ Refer to the number listed in the warranty or in the *Worldwide Telephone Numbers Guide* on the *Library* CD for technical assistance.