

Illustrated Parts & Service Map

HP Compaq 8200 Elite Business PC Ultra Slim Desktop



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Key Specifications

Processor Type	Intel® Core i7, i5, i3
RAM Type	DDR3 SDRAM SODIMM
Maximum RAM	8 GB
Expansion Slots (Low profile)	<ul style="list-style-type: none"> • mini-PCI express • MXM
Chipset	Intel Q67 Express
Graphics Adapter	Integrated Intel HD graphics
Bays	<ul style="list-style-type: none"> • (1) optical drive • (1) internal 2.5-inch hard drive • (1) Secure Digital Card Reader
I/O Interfaces	Front: (4) USB, microphone, headphone Rear: (6) USB, PS/2 keyboard and mouse, line in, line out, VGA, DisplayPort v1.1a, RJ-45
Preinstalled Operating Systems	<ul style="list-style-type: none"> • Windows® Vista • Windows 7 • FreeDOS

Spare Parts



System Unit

1	Access panel	646816-001
2	Stand	612496-001
3	Front bezel	646817-001
*	AC adapter, 180W	613766-001
*	AC adapter, 135W	648964-001
*	Bezel blank, Jack Black	593230-001

* Not shown



Cable and accessory

1	Optical drive cable/connector	605163-001
*	Adapter, DisplayPort to VGA	603250-001
*	Adapter, DisplayPort to DVI	484156-001
*	Adapter, DisplayPort to HDMI	617450-001
*	DisplayPort cable	487562-001

* Not shown

Keyboards (not illustrated)

PS/2, Basic	537745-xx1		
USB, Basic	537746-xx1		
USB Mini (-001, -121 only)	535873-xxx		
Washable	613125-xxx		
Smartcard	631411-xx4		
Arabic	-17x	LA Spanish[b]	-16x
Belgian[b]	-18x	Norwegian[b]	-09x
Brazilian Portuguese[b]	-20x	People's Republic of China[a]	-AAx
Bulgaria [c]	-26x	Portuguese	-13x
Czech	-22x	Romanian [c]	-27x
Danish[b]	-08x	Russian	-25x
Finnish[a]	-35x	Saudi Arabia	-DEx
French[b]	-05x	Slovakian	-23x
French Canadian	-12x	South Korea[a]	-KDx
German[b]	-04x	Spanish[b]	-07x
Greek[b]	-15x	Swedish[b]	-10x
Hebrew	-BBx	Swiss	-11x
Hungarian	-21x	Taiwanese[b]	-ABx
International[b]	-37x	Thai[b]	-28x
International English[b]	-L3x	Turkish	-14x
Italian[b]	-06x	U.S.	-00x
Japanese[b]	-29x	U.K.[b]	-03x

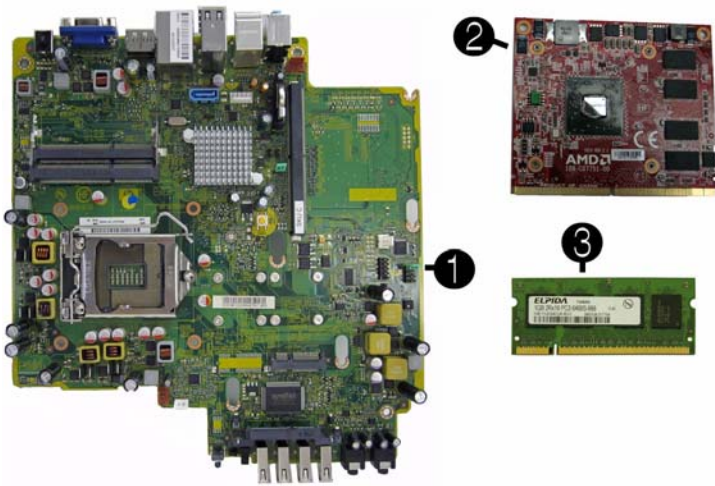
[a] not for 537745
[b] not for 613125

[c] not for 631411



Mass Storage Devices

1	DVD-ROM drive	608394-001
*	DVD±RW and CD-RW Super Multi Double-Layer Combo Drive with LightScribe. This kit also includes the drive bracket.	595115-001
*	Blu-ray BD-RW SuperMulti DL Drive with LightScribe	646810-001
*	320 GB, 7200 RPM hard drive, Self-Encrypting Drive (SED)	634824-001
*	320 GB, 7200 RPM hard drive	639135-001
*	250 GB, 7200 RPM hard drive	608746-001
2	160 GB, 7200 RPM hard drive	608745-001
*	160 GB Solid State Drive (SSD)	646809-001
*	80 GB Solid State Drive (SSD)	607817-001



Standard and Optional Boards

System boards with thermal grease, alcohol pad, and CPU socket cover		
1	System board	611836-001
*	System board, does not include Trusted Platform Module (TPM)	649743-001
Optional boards		
2	ATI Radeon HD5450M graphics card, 512 MB (without plate)	646812-001
*	802.11a/b/g/n WLAN card	631954-001
*	HP TV tuner Kit (includes hardware)	613990-001
Memory modules (PC3-10600, CL9)		
*	4 GB	646801-001
*	2 GB	646800-001
3	1 GB	646808-001
Intel Core i7 processors (include thermal material)		
*	2600S, 2.8 GHz, 8-MB L3 cache, 65W	638419-001
Intel Core i5 processors (include thermal material)		
*	2500S, 2.7 GHz, 6-MB L3 cache, 65W	638420-001
*	2400S, 2.5 GHz, 6-MB L3 cache, 65W	640953-001
Intel Core i3 processors (include thermal material)		
*	2120, 3.3 GHz, 3-MB L3 cache, 65W	638629-001
*	2100, 3.1 GHz, 3-MB L3 cache, 65W	638628-001

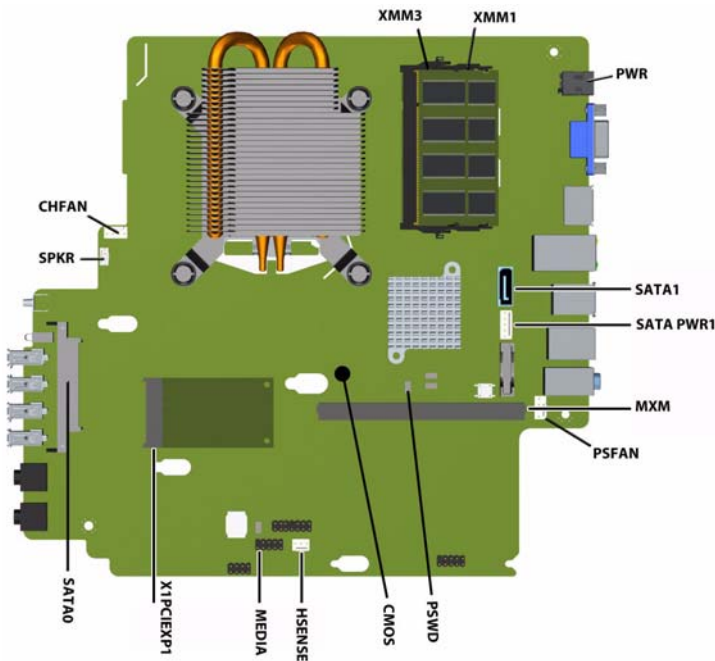
* Not shown

Miscellaneous Parts

1	Heatsink - processor (includes thermal material)	587456-001
2	Heat sink - MXM graphics card (includes thermal material)	646807-001
*	Heatsink - UMA graphics card (includes thermal material)	625256-001
3	Chassis fan, rear	605155-001
4	Card reader assembly	593235-001
5	Internal speaker - 20mm x 27mm	647447-001
6	Front I/O panel	587458-001
7	Rear port cover	646818-001
8	Chassis fan, front	646813-001
*	Optical drive rail (green plastic piece on drive)	594219-001
*	Hood sensor	638816-001
*	Grommet, hard drive	594220-001
*	USB powered speakers	571536-001
*	Mouse, PS2, optical, jack black	537748-001
*	Mouse, USB, BFR-PVC	590270-001
*	Mouse, washable	619580-001
*	Mouse, optical, jack black	444740-001
*	Mouse, laser, jack black	570580-001
*	Clamp lock, includes universal cable (plate not included)	508987-001
*	WLAN antenna hardware kit	646811-001

*Not shown

System Board



System Board Connectors and Jumpers (position of some untitled components may vary in location)

XMM3	SODIMM 3	PSWD	Password header
XMM1	SODIMM 1	CMOS	CMOS button
ADAPTER	DC power input	HSENSE	Hood sensor connector
PWR	DC power connector	MEDIA	Media reader connector
SATA1	1st optical drive	X1PCIEXP1	Mini card connector
SATAPWR1	SATA power header	SATA0	1st HDD
MXM	Graphics card connector	SPKR	Speaker connector
PSFAN	Front fan connector	CHFAN	Chassis fan connector

Common POST Error Messages

Screen Message	Probable Cause	Recommended Action
101-Option ROM Error	1. System ROM checksum error. 2. Expansion board option ROM checksum	1. Verify ROM, reflash if required 2. Remove suspected card, reboot 3. Clear CMOS memory, reboot 4. Replace system board
103-System Board Failure	DMA, timers	1. Clear CMOS memory. 2. Remove expansion boards. 3. Replace system board.
164-Memory Size Error and 201-Memory Error	Incorrect memory configuration	1. Run Setup (F10). 2. Check DIMMs for proper seating, type, and HP compatibility. 3. Remove DIMMs singularly and reboot to isolate faulty DIMM. 4. Replace system board.
214-DIMM Configuration Warning	Populated DIMM configuration is not optimized	Rearrange the DIMMs so that each channel has the same amount of memory.
301-, 304-Keyboard error	Keyboard failure.	Check keyboard connection or keys. Check connector for bent or missing pins. Replace keyboard. If 304, possible system board problem.
501-Display Adapter Failure	Graphics display controller.	1. Reseat graphics card. 2. Clear CMOS. 3. Check monitor connection. 4. Replace graphics card.
1720-SMART Hard Drive Detects Imminent Failure	Hard drive is about to fail.	1. Determine if hard drive is giving correct error message. Enter Computer Setup and run the Drive Protection System test under Storage > DPS Self-test . 2. Apply hard drive firmware patch if applicable. 3. Back up contents and replace hard drive.

System Setup and Boot

Access the Setup Utility during the computer boot sequence by pressing the **Esc** key while “Press the ESC key for Startup Menu” message is displayed at the bottom of the screen, and then pressing the **F10** key. If you do not press **Esc** at the appropriate time, you must restart the computer and again press **Esc** when the monitor light turns green to access the utility.

Computer Setup Menu

Heading	Option/Description
File	<p>System Information - Lists the following main system specifications:</p> <ul style="list-style-type: none"> Product name SKU number (some models) Processor type/speed/stepping Cache size (L1/L2/L3) Installed memory size/speed/chan Integrated MAC Address System BIOS Chassis serial number Asset tracking number ME firmware version ME Management mode <p>About - Displays copyright notice.</p> <p>Set Time and Date - Allows you to set system time and date.</p> <p>Flash System ROM - Allows you to select a drive containing a new BIOS.</p> <p>Replicated Setup - Save to Rmvble Media and Restore from Rmvble Media</p> <p>Default Setup</p> <ul style="list-style-type: none"> Save Current Settings as Default Restore Factory Settings as Default <p>Apply Defaults and Exit - Applies the selected default settings and clears any established passwords.</p> <p>Ignore Changes and Exit - Exits Computer setup without saving changes.</p> <p>Save Changes and Exit - Saves changes to system configuration or default settings and exits Computer Setup.</p>
Storage	<p>Device Configuration - Lists all installed BIOS-controlled storage devices. The following options are available:</p> <ul style="list-style-type: none"> CD-ROM - Let you view drive size, model, firmware version, serial number, connector color. Hard Disk - Let you view drive size, model, firmware version, serial number, connector color, SMART. Also lets you set Translation Mode (Automatic, Bit-Shift, LBA Assisted, User, and Off). Diskette Drive - model and firmware version. SATA Defaults - lets you set Translation Mode (Automatic, Bit-Shift, LBA Assisted, User, and Off). eSATA port - Allows you to set a SATA port as an eSATA port for use with an external drive. SATA Emulation - IDE, RAID (not for USDT), or AHCI. Removable Media Boot - Enables/disables ability to boot the system from removable media. Max eSATA Speed - Allows you to choose 1.5 Gbps or 3.0 Gbps as the maximum eSATA speed. <p>DPS Self-Test - Allows you to execute self-tests on ATA hard drives.</p> <p>Boot Order - Allows you to specify boot order.</p> <ul style="list-style-type: none"> Shortcut to Temporarily Override Boot Order
Security	<p>Setup Password - Allows you to set and enable the setup (Admin) password.</p> <p>Power-On Password - Allows you to set and enable power-on password.</p> <p>Password Options - When any password exists allows you to lock legacy resources, enable/disable Setup Browse Mode, set password prompt, enable/disable network server mode, specify password requirement for warm boot, and set stringent passwords.</p> <p>Smart Cover (some models) - Allows you to lock/unlock cover lock and set status of cover removal sensor.</p> <p>Device Security - Allows you to set Device Available/Device Hidden for: embedded security devices, serial and parallel ports, system audio, network controller, and SATA ports.</p> <p>USB Security - Allows you to set Device Available/Device Hidden for front USB ports 1-4, rear USB ports 1-6, accessory USB ports 1-4.</p> <p>Slot Security - Allows you to disable any PCI or PCI Express slot.</p> <p>Network Boot - Enables/disables boot from OS (NIC models only).</p> <p>System IDs - Allows you to set Asset tag, Ownership tag, Chassis serial number or UUID, and keyboard locale setting.</p> <p>System Security (some models) - Allows you to enable/disable:</p> <ul style="list-style-type: none"> Data Execution Prevention (enable/disable) Virtualization Technology (VTx) (enable/disable) Virtualization Technology Directed I/O (VTD) (enable/disable) Intel TXT (LT) (enable/disable) Embedded Security Device Support (enable/disable) OS management of Embedded Security Device (enable/disable) Reset of Embedded Security Device through OS (enable/disable) <p>DriveLock Security - Allows you to assign or modify a master or user password for hard drives.</p>
Power	<p>OS Power Management - Allows you to enable/disable Runtime Power Management, Idle Power Savings, Unique Sleep State Blink Rates.</p> <p>Hardware Power Management - Allows you to enable/disable SATA bus power management and S5 maximum power savings.</p> <p>Thermal - Allows you to control minimum fan speed.</p>
Advanced	<p>Power-On Options - Allows you to set:</p> <ul style="list-style-type: none"> POST mode-QuickBoot, FullBoot, Clear Memory, FullBoot every x days POST messages - Enable/disable Press the ESC key for Startup Menu - Enable/disable Option ROM prompt - Enable/disable After Power Loss - Off/on/previous state POST Delay - None, 5, 10, 15, or 20 seconds System Recovery Boot Support - Enable/disable Remote Wakeup Boot Source - Remote server/local hard drive Bypass F1 Prompt on Configuration Changes - Enable/disable <p>BIOS Power-On - Allows you to set the computer to turn on at a preset time.</p> <p>Onboard Devices - Allows you to set resources or disable Legacy devices.</p> <p>Bus Options (some models) - Allows you to enable/disable PCI SERR# Generation and PCI VGA palette snooping.</p> <p>Device Options - Allows you to set:</p> <ul style="list-style-type: none"> Turbo Mode - enable/disable Printer Mode - Bi-Directional, EPP & ECP, Output Only Num Lock State at Power-on - off/on Integrated Video - enable/disable Internal Speaker - enable/disable NIC Option ROM Download - enable/disable Multi-Processor - enable/disable Hyper-threading - enable/disable

Computer Setup Menu (continued)

Heading	Option/Description
Advanced (cont)	VGA Configuration - Displayed only if there are multiple PCI video adapters in the system. Allows you to specify which VGA controller will be the “boot” or primary VGA controller.
	<p>AMT Configuration - Allows you to set:</p> <ul style="list-style-type: none"> AMT-enable/disable functions of the embedded Management Engine (ME) such as Active Management Technology (AMT). Unconfigure AMT/ME-unconfigure any provisioned management settings for AMT. Watchdog Timer-set amount of time for a operating system and BIOS watchdog alert to be sent if the timers are not deactivated.

Password Security

Establishing a Setup or Power-On password:

- Turn on or restart the computer.
- As soon as the computer turns on, press the **Esc** key while “Press the ESC key for Startup Menu” message is displayed at the bottom of the screen.
- Press the **F10** key to enter Computer Setup.
- To establish Setup password, select **Security > Setup Password** and follow the instructions.
 - or -
 - To establish a Power-On password, select **Security > Power-On Password** and follow the instructions on the screen
- Before exiting, click **File > Save Changes and Exit**.

Changing a Setup or Power-On password:

- Turn on or restart the computer.

To change the Setup password, go to step 2.

To change the Power-on password, go to step 3.

- To change the Setup password, as soon as the computer turns on:
 - Press the **Esc** key while “Press the ESC key for Startup Menu” message is displayed.
 - Press the **F10** key to enter Computer Setup.
- When the key icon appears, type your current password, a slash (/) or alternate delimiter character, your new password, another slash (/) or alternate delimiter character, and your new password again as shown:

current password/new password/new password.

NOTE: Type the new password carefully since the characters do not appear on the screen.
- Press **Enter**.

The new password will take effect the next time the computer is restarted.

Deleting a Power-On or Setup password

- Turn on or restart the computer.

To delete the Setup password, go to step 2.

To delete the Power-On password, go to step 3.

- To change the Setup password, as soon as the computer turns on:
 - Press the **Esc** key while “Press the ESC key for Startup Menu” message is displayed.
 - Press the **F10** key to enter Computer Setup.
- When the key icon appears, type your current password followed by a slash (/) or alternate delimiter character as shown. Example: *currentpassword/*
- Press **Enter**.

Clearing CMOS

- Turn off the computer and disconnect the power cord from the power outlet.
- Remove the access panel.
- On the system board, press and hold the CMOS button for 5 seconds.
- Replace the chassis access panel and reconnect the power cord.
- Turn on the computer and allow it to start.

Diagnostic LEDs

LED	Color	LED Activity	State/Message
Power	Green	On	Computer on
Power	Green	1 blink every 2 seconds	Normal Suspend Mode
Power	Red	1 blink every second followed by a 2 second pause	CPU thermal shutdown
Power	Red	3 blinks, 1 blink every second followed by a 2 second pause	Processor not installed
Power	Red	4 blinks, 1 blink every second followed by a 2 second pause	Power failure (power supply overload)
Power	Red	5 blinks, 1 blink every second followed by a 2 second pause	Pre-video memory error
Power	Red	6 blinks, 1 blink every second followed by a 2 second pause	Pre-video graphics error
Power	Red	7 blinks, 1 blink every second followed by a 2 second pause	System board failure (ROM
Power	Red	8 blinks, 1 blink every second followed by a 2 second pause	Invalid ROM based on Checksum
Power	Red	9 blinks, 1 blink every second followed by a 2 second pause	System powers on but is unable to boot
Power	Red	10 blinks, 1 blink every second followed by a 2 second pause	Bad option card
Power	Red	11 blinks, 1 blink every second followed by a 2 second pause	Current processor does not support a feature previously enabled.
none	none	System does not power on and LEDs are not flashing	System unable to power on