Illustrated Parts & Service Map

HP Compaq dx2300 and dx2308 Microtower Business PC

NOTE: The part numbers listed here may not be the most current information available. See http://partsurfer.hp.com for the most current spare parts listing.

Cables

1	SATA cable, 10-in. (use for HDD)	392307-001
1	SATA cable, 13-in. (use for 2nd ODD)	391738-001
1	SATA cable, 14-in. (use for 1st ODD)	391740-001
2	Diskette drive cable	392288-001
*	Front USB cable with mounting screw	436328-001
*	Power switch with cable and switch mounting bracket	416163-001
*	Second serial port cable	444656-001
*	DMS 59 to Dual VGA adapter	339257-001

*Not shown

Key Specifications

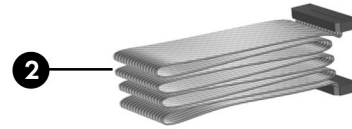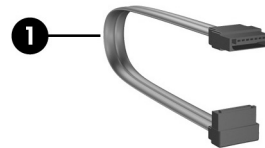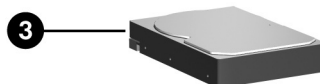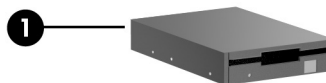|	
Processor Type:	Intel Celeron D, Intel Pentium 4, Intel Pentium D, and Intel Core 2 Duo
RAM Type:	DDR PC2-5300 non-ECC
Maximum RAM Supported:	2 GB
Expansion Bus:	PCI 2.3, PCI Express Gen 1
Graphics Adapter:	Integrated controller. PCI-Ex16 (max 75W).
Hard drive interface:	SATA 3.0 Gb/s
I/O Interfaces:	Serial (1), parallel (1), USB 2.0 (6), RJ-45 (1), front audio jacks (2), rear audio jacks (3), P/S2 (2), VGA (1), and serial (2 optional)

Spare Parts

Mass Storage Devices

1	Diskette drive, 3.5-inch, with mounting screws	392415-001
2	48X SATA CD-ROM drive	419635-001
*	52X SATA CD-ROM drive	419469-001
*	16X SATA DVD-ROM drive	419496-001
*	16X SATA DVD R/W drive	419498-001
*	48/32 SATA DVD-ROM/CD-RW drive	419497-001
3	80-GB\7200 RPM SATA hard drive, 3.0 Gb/s	440754-001
*	160-GB\7200 RPM SATA hard drive, 3.0 Gb/s	440499-001
*	250-GB\7200 RPM SATA hard drive, 3.0 Gb/s	440747-001
*	Media card reader	407187-001

*Not shown

System Unit

1	Front bezel without bezel blank (dx2300)	438609-001
*	Front bezel without bezel blank (dx2308 for China only)	445366-001
2	Access panel	440197-001
3	Chassis	not spared
4	Power supply, PFC, 250W	441390-001
*	Power supply, non-PFC, 250W	444813-001

*Not shown

Keyboards (not illustrated)

| PS/2, Basic | | 382925-xxx | |
USB, Basic		382926-xxx	
French Canadian	-121	PRC	-AA1
International	-B31	Taiwanese	-AB1
Korean (Hanguel)	-AD1	Thai	-281
LA Spanish	-161	U.S.	-001
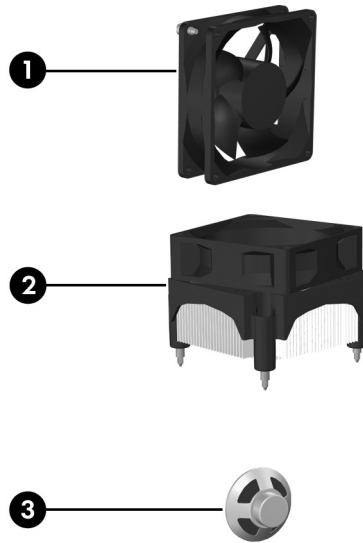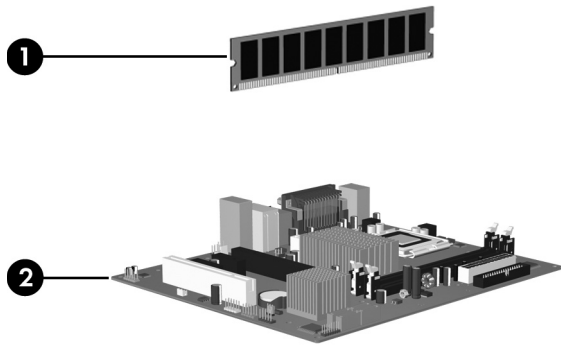
Standard and Optional Boards

	Memory modules, non-ECC, DDR2	
1	256 MB, PC2-5300, CL5	396519-001
*	512 MB, PC2-5300, CL5	396520-001
*	1 GB, PC2-5300, CL5	398038-001
	System Boards with thermal grease, alcohol pad, and CPU socket cover	
2	Standard board	441388-001
	Intel Celeron D processors with alcohol pad and thermal grease	
*	■#331, 256K cache, 2.66 GHz, 533 MHz FSB	391940-001
*	■#336, 256K cache, 2.8 GHz, 533 MHz FSB	391941-001
*	▲#347, 512K cache, 3.06 GHz, 533 MHz FSB	440809-001
*	▲#352, 512K cache, 3.2 GHz, 533 MHz FSB	433507-001
*	▲#356HE, 512K cache, 3.33 GHz, 533 MHz FSB	433508-001
*	▲#356, 512K cache, 3.33 GHz, 533 MHz FSB	433508-001
*	▲#360, 512K cache, 3.46 GHz, 533 MHz FSB	434758-001
	Intel Pentium 4 HT processors with alcohol pad and thermal grease	
*	■#531, 1MB cache, 3.0 GHz, 800 MHz FSB	394642-001
*	■#541, 1MB cache, 3.2 GHz, 800 MHz FSB	433860-001
*	▲#631, 2MB cache, 3.0 GHz, 800 MHz FSB	418937-001
*	▲#641, 2MB cache, 3.2 GHz, 800 MHz FSB	418938-001
*	▲#651, 2MB cache, 3.4 GHz, 800 MHz FSB	418939-001
*	■#661, 2MB cache, 3.6 GHz, 800 MHz FSB	418942-001
	Intel Pentium D processors with alcohol pad and thermal grease	
*	■#915, 2x2MB cache, 2.8 GHz, 800 MHz FSB	444583-001
*	■#925HE, 2x2MB cache, 3.0 GHz, 800 MHz FSB	433516-001
*	■#925, 2x2MB cache, 3.0 GHz, 800 MHz FSB	444466-001
*	■#935, 2x2MB cache, 3.2 GHz, 800 MHz FSB	440995-001
*	■#945, 2x2MB cache, 3.4 GHz, 800 MHz FSB	433890-001
	Intel Core 2 Duo processors with alcohol pad and thermal grease	
*	▲#E4300HE, 2 MB cache, 1.80 GHz, 800/1066 MHz FSB	444050-001
*	▲#E4300, 2 MB cache, 1.80 GHz, 800/1066 MHz FSB	444050-001
*	▲#E6300HE, 2 MB cache, 1.86 GHz, 800/1066 MHz FSB	444051-001
*	▲#E6300, 2 MB cache, 1.86 GHz, 800/1066 MHz FSB	444051-001
*	▲#E6400, 2 MB cache, 2.13 GHz, 800/1066 MHz FSB	444052-001
*	▲#E6600, 2 x 4 MB cache, 2.40 GHz, 1066 MHz FSB	418949-001
*	▲#E6700, 2 x 4 MB cache, 2.66 GHz, 1066 MHz FSB	418950-001
	Other boards	
*	ATI Radeon X1300Pro, 256 MB, PCIe, with DVI-I and S-Video output	413023-001
*	Dual head graphics, 256 MB, PCI-E	432747-001
*	802.11 Wireless LAN adapter	391866-001
*	802.11 Wireless LAN adapter, NA	391866-002
*	Standard 1394 PCI card with 2 external and 1 internal ports	393308-001
*	Gigabit NIC, PCI-E card	398754-001
*	Agere International 56K Modem, FH	398661-001
*	DVI-I to VGA graphics adapter	202997-001
*	PCIE DH-TV Graphics, FH, 256MB	232747-001

* *Not shown*
▲ *Use with Standard Heatsink 441446-001*
■ *Use with Performance Heatsink 441391-001*

Miscellaneous Parts

	Miscellaneous parts kit, includes:	410717-001
*	3.5" Diskette drive bezel (414218-001)	
*	3.5" Bezel blank (414219-001)	
*	5.25" Bezel blank (166775-004)	
*	#6-32 x .187 Taptite, hitop screw with serrations (6 ea) (192308-003)	
*	#6-32 x .187 Taptite, hitop screw with serrations (6 ea) (192308-001)	
*	#6-32 x .250 Taptite, hitop screw with captive flat washer (2 ea) (114399-067)	
*	M3 x 5 mm Taptite hitop screw with serrations (4 ea) (247348-001)	
*	M5 x 12mm Plastite screw with flat, countersunk head (247481-002)	
1	Chassis fan with mounting screws	438741-001
2	■Heatsink (Performance) with alcohol pad and factory-applied thermal grease	441391-001
*	▲Heatsink (Standard) with alcohol pad and factory-applied thermal grease	441446-001
3	Internal speaker	438607-001
*	Mouse, PS2, optical	417966-001
*	Mouse, PS2, scroll type	390937-001
*	Mouse, optical	390938-001
*	Battery, real-time clock	153099-001
*	Foot (4 ea)	336445-001
*	DVI-I to VGA adapter	202997-001

*Not shown
▲ *See Processors for applicability*
■ *See Processors for applicability*

Power Supply Cable Connection to:	Designation
System board, 24-pin	P1
CPU power, 4-pin	P2
Not used	P3
Not used	P4
1st SATA hard drive	P6
2nd SATA hard drive	P5
Diskette drive	P7
1st optical drive	P9
2nd optical drive	P8

System Board
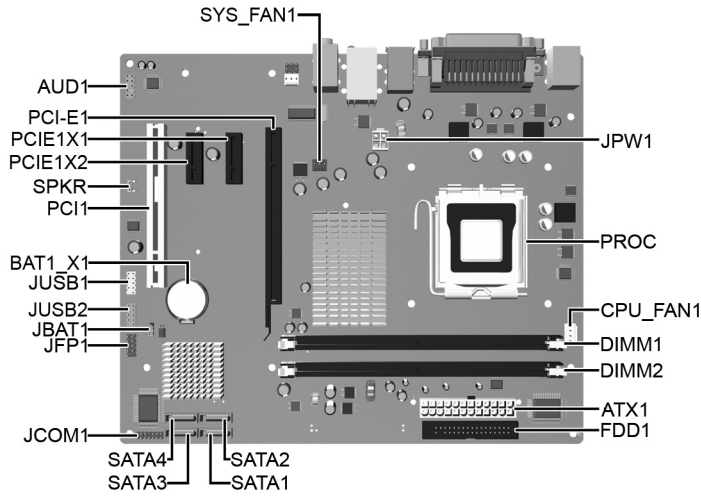
System Board Connectors and Jumpers (position of some untitled components may vary in location)			
ATX1	Main 24-pin power	JUSB2	Media Card Reader
AUD1	Front audio	PCI1	PCI
BAT1_X1	Battery	PCI- E1	PCI E x16 card
CPU_FAN1	Heatsink fan	PCI E1X1	PCI-E x1 card
DIMM1	Memory module	PCIE 1X2	PCI-E x1 card
DIMM2	Memory module	PROC	Microprocessor
FDD1	Diskette drive	SATA1	Serial ATA, 1st hard drive
JBAT1	CMOS	SATA2	Serial ATA, 1st ODD or 2nd hard drive if no ODD
JCOM1	2nd serial port	SATA3	Serial ATA, 2nd hard drive if ODD present
JFP1	Power switch/LED	SATA4	Serial ATA, 2nd ODD
JPW1	Aux power (4-pin)	SPKR	Speaker
JUSB1	Front USB	SYS_FAN1	Chassis fan

System Setup and Boot

Basic system information regarding system information, setup, power management, hardware, and passwords is maintained in the Setup Utility held in the system ROM. The Setup Utility is accessed by pressing the F10 key when prompted (on screen) to do so during the boot sequence. If the screen prompt opportunity is missed, a restart will be necessary.

Computer Setup Menu

Heading	Option / Description	
System Information	Lists the following main system specifications:	
	• Product Name • SKU Number • Processor Type • Processor Speed • System ROM • Cache Size	• Memory Size • Integrated MAC • UUID • System Serial # • Asset Tracking Number
Main	Date (mm/dd/yyyy)	Allows you to set system date.
	Time (hh/mm/ss)	Allows you to set system time.
	SATA Port 1, 2, 3, and 4	Allows you to run HDD self-tests, auto detect HDD size and head, set extended IDE drive details, set access mode, and view information about the device(s)
	Onboard FDC Controller	Disable/enable
	Drive A	Allows you to set to None or 1.4M, 3.5 in.
	Halt On	Allows you to set POST error behavior to: all errors, no errors, all but keyboard, all but diskette, or all but diskette/keyboard.
	POST Delay	Allows you to set POST delay to 0, 5, 10, 15, or 30 seconds
Advanced	Execute Disable Bit	Disable/enable hardware DEP function.
	MAX DVMT Allocation	Specify size of DVMT/system memory to allocate for video memory. Settings: 64MB, 128MB, 224 MB.
	Init Display First	Allows you to set primary display device to PCI slot, OnChip VGA, or PCIEx.
	Onboard HD Audio	Disable/enable
	OnChip USB Controller	Disable/enable
	USB Legacy Support	Disable/enable (USB keyboard, mouse, and flash media).
	Onboard LAN	Disable/enable
	Onboard LAN Boot ROM	Disable/enable
	Onboard Serial Port 1 or 2	Allows you to select: Disabled, 3F8/IRQ4, 2F8/IRQ3, 3E8/IRQ4, or 2E8/IRQ3.
	Onboard Parallel Port	Allows you to select: Disabled, 378/IRQ7, 278/IRQ5, or 3BC/IRQ7.

Heading	Option / Description	
Advanced (continued)	Parallel Port Mode	Allows you to select: SPP, EPP, ECP, ECP + EPP, or Normal.
	After AC Power Loss	Allows you to select power loss behavior to On, Off, or Last state.
	Wake on PCI Device from S5	Disable/enable
	RTC Alarm Resume	Disable/enable
	Date (of Month)	If RTC Alarm is enabled, allows you to select day of month to resumption (0 = every day).
	Resume Time (hh:mm:ss)	If RTC Alarm enabled, allows you to select time to resume.
Boot	Device Boot Disabling	Allows you to restrict a device from booting the unit. May disable: none, USB, Internal ODD, Internal FDD, or USB+ODD+FDD
	F9 Boot Menu	Disable/enable
	Removable Device Boot Seq.	Allows you to specify the order of attached removable devices. The first drive in the order has priority and is recognized as drive A.
	Hard Disk Boot Seq.	Allows you to specify the order of attached hard drive devices (USB HDD, USB2 Drive Key, or USB flash media). The first attached drive in the order has priority and is recognized as drive C.
	Optical Drive Boot Seq.	Allows you to specify the order in which attached optical drives (including USB ODD) are checked for a bootable operating system image.
	Network Boot Seq.	Allows you to specify the order in which network devices (including UP NIC cards) are checked for a bootable operating system image.
	First, Second, Third, and Fourth Boot Device	Allows you to specify which devices will boot in which sequence or to disable any of the four: removable, hard disk, CD-ROM, network, or disabled.
	Set Supervisor Password	Allows you to establish a password to enter Computer Setup
	Set User Password	Allows you to establish a password to enter the computer (must have Supervisor password established)
	Security Option	Allows you to set security option to Setup or System so that the password is required each time the system boots or only when entering Computer Setup.
	BIOS Write Protection	Enable to prevent BIOS from being updated.
PC Health Status	System Fan Fail Check	Disable/enable
	Smart Fan Function	Disable/enable
	Current CPU Temperature	View only
	Current System Temp	View only
	Current CPU Fan Speed	View only
	Current System Fan Speed	View only
	Vcore	View only
	12V	View only
	5V	View only
	VCC (V)	View only
	VBAT (V)	View only
	5VSB (V)	View only
Action Choices	Save & Exit Setup	Allows you to save current settings and exit Computer Setup.
	Exit Without Saving	Allows you to exit Computer Setup without saving changes.
	Load Optimized defaults	Allows you to reset Computer Setup to factory defaults.

System Hardware Interrupts

IRQ	System Function	IRQ	System Function
0	Timer Interrupt	8	Real-Time Clock
1	Keyboard	9	Unused
2	Interrupt Controller Cascade	10	Unused, available for PCI
3	Serial Port (COM B)	11	Unused, available for PCI
4	Serial Port (COM A)	12	Mouse
5	Unused, available for PCI	13	Coprocessor
6	Diskette Drive	14	Primary ATA (IDE) Controller
7	Parallel Port (LPT 1)	15	Secondary ATA (IDE) Controller

Failsafe Boot Block ROM

The computer comes with a reprogrammable flash system ROM (read only memory). To upgrade the ROM, download the latest ROM BIOS image from the HP Web site (www.hp.com) and follow the online GUI/instructions.

Your system ROM includes a Failsafe Boot Block that is protected during the flash process and allows the computer to be restarted in the unlikely event of an unsuccessful ROM flash. If the system detects an invalid system ROM during the boot sequence, the Failsafe Boot Block attempts to locate a valid BIOS image on removable media. To recover from the Boot Block recovery mode complete the following steps:

Boot Block Recovery

1. Remove any bootable media from the computer and turn off power.
2. Insert a flash drive or CD containing the ROM BIOS.
3. Turn on power to the system.
4. The system will automatically flash the ROM. After a successful flash, the system will either automatically restart or prompt the user to unplug the unit, wait 5 seconds, reattach the power cord, and then press the power button.

Password Security

Establishing a Supervisor Password:

1. Turn on or restart the computer. If you are in Windows, click **Start > Shut Down > Restart**.
2. As soon as the computer is turned on, press F10 when the monitor light turns green to enter Computer Setup. Press Enter to bypass the title screen, if necessary. If you do not press F10 when prompted, a restart will be necessary.
3. Select **Boot > Setup Supervisor Password** and follow the instructions on the screen.
4. Before exiting, click **File > Save and Exit Setup**.

Establishing a User Password:

1. Turn on or restart the computer. If you are in Windows, click **Start > Shut Down > Restart**.
2. As soon as the computer is turned on, press F10 when the monitor light turns green to enter Computer Setup. Press Enter to bypass the title screen, if necessary. If you do not press F10 when prompted, a restart will be necessary.
3. Select **Boot > Set User Password** and follow the instructions on the screen.
Before exiting, click **File > Save and Exit Setup**.

Changing a Password:

1. Turn on or restart the computer. If you are in Windows, click **Start > Shut Down > Restart**.
2. As soon as the computer is turned on, press F10 when the monitor light turns green to enter Computer Setup.
3. When the key icon appears, type your current password.
4. Select **Boot > Set Supervisor (or user) Password.**
5. Enter the new password (or nothing for no password) in the key icon and press **Enter.**

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

Deleting a Password

1. Turn on or restart the computer. If you are in Windows, click **Start> Shut Down > Restart**.
2. As soon as the computer is turned on, press F10 when the monitor light turns green to enter Computer Setup.
3. When the key icon appears, type your current password.
4. Select **Boot > Set Supervisor (or user) Password.**
5. Enter nothing for no password in the key icon and press **Enter.**

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

Diagnostic Functions

Diagnostic functions are provided by the Setup Utility (in system ROM) and by Insight Diagnostics. Insight Diagnostics provides detailed system information including:

- Processor type and speed
- Memory amount, mapping, and integrity
- Hardware peripheral availability/settings
- Hard drive type, space used/available
- System identification, asset tracking

Insight Diagnostics may be found on the *Documentation and Diagnostics* CD that shipped with the computer. The tool may also be downloaded from the hp Web site using the following procedure:

1. Go to www.hp.com
2. Click the **Software and Download driver** link.
3. Enter the product number (for example, dx2250) in the text box and press the **Enter** key.
4. Select the specific product.
5. Select the OS.
6. Click the **Diagnostics** link.
7. Select **HP Insight Diagnostics Offline Edition**.
8. Select the proper language and click **Download**.

Error Conditions and Messages

Feature	Purpose	How It Is Established
Floppy drive controller	Prevents the transfer of data to or from the floppy drive.	Setup Utilities
Device Boot Disabling	Prevents booting from and or all of these devices: Internal or external USB, Internal ODD, or Internal FDD.	Setup Utilities
Security Option	Prevents use of computer until password is entered. Can apply to both initial startup and restart.	Setup Utilities
BIOS Write Protect	Restricts ability to change ROM BIOS without approval.	Setup Utilities.
USB Controller	Allows you to disable or enable all USB devices.	Setup Utilities

Diagnostic LEDs

LED	Color	LED Activity	State/Message
Power	Green	On	Computer on
Power	Green	1 blink every 2 seconds	Suspend to RAM (some models)
Power	Green	1 blink every second	CPU thermal shutdown
Power	Green	5 blinks, 1 blink every second followed by 1 short beep	Pre-video memory error
Power	Green	6 blinks, 1 blink every second followed by a 1 long and 2 short beeps	Pre-video graphics error
Power	Green	8 blinks, 1 blink every second followed by 2 short beeps	Invalid ROM based on Checksum with FDD installed
Power	Green	8 blinks, 1 blink every second followed by 2 short beeps and hurried beeps	Invalid ROM based on Checksum without FDD installed
none	none	System does not power on and LEDs are not flashing	System unable to power on

Clearing CMOS

1. Turn off the computer and any external devices, disconnect the power cord from the power outlet, and remove the access panel.
2. Locate jumper JBAT1 and move the jumper from pins 2-3 to pins 1-2.
3. Leave the jumper on pins 1-2 for 5 seconds then, move the jumper back to pins 2-3.
4. Replace the access panel and connect the power cord to the power outlet.
5. Turn on the computer, allow it to start.