Illustrated Parts & Service Map

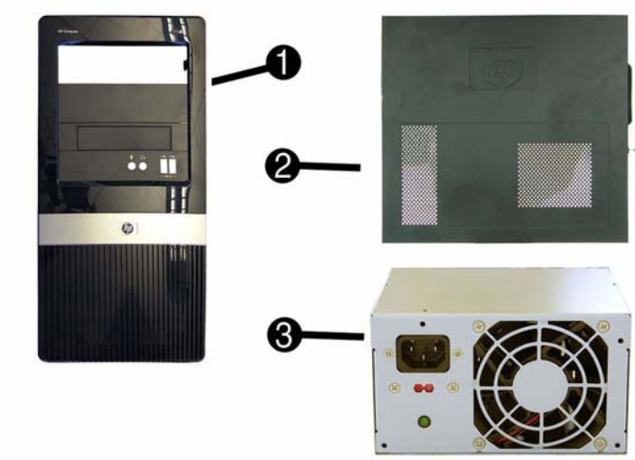
HP Compaq dx2420 Microtower Business PC

Document Number 571400-001. 1st Edition March 2009.

Key Specifications

Processor Type	Intel Core 2 Duo, Pentium Dual-Core 2, Celeron
RAM Type	DDR2-SDRAM DIMMs, PC2-6400 (800 MHz) non-ECC
Maximum RAM Supported	4 GB
Expansion Slots	• 1 PCIe-x16 • 2 PCIe-x1 • 1 PCI 2.3 (full height)
Graphics Adapter	Intel Graphics Media Accelerator (GMA)
Chipset	Intel G31 Express
Drive Support	• (2) 5.25-inch external bays • (1) 3.5-inch external bay • (2) 3.5-inch internal bays
I/O Interfaces	USB 2.0 (8 total, 2 internal), RJ-45, audio in, audio out, PS/2 ports (2), mic, VGA

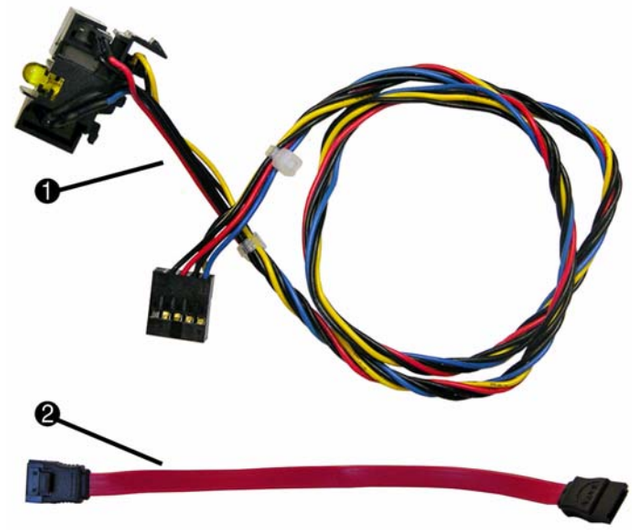
Spare Parts



System Unit

1	Front bezel	464575-001
2	Access panel	464597-001
3	Power supply, 300W, PFC	463317-001
3	Power supply, 300W, non-PFC	463318-001

** Not shown*



Cables

1	Power switch/LED cable assembly	464574-001
2	SATA cable, 6.5 inch, latch on end	448670-001
*	SATA cable, 10 inch, 2 straight ends	392307-001
*	SATA hard drive cable, 4 inch, latch on end	449283-001

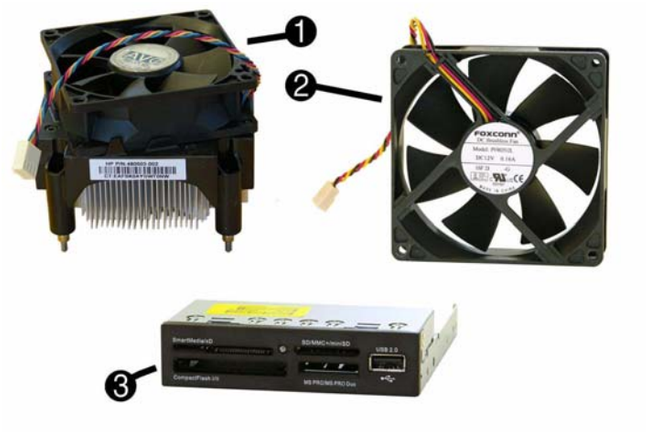
**Not shown*

Keyboards (not illustrated)

PS/2, Basic **USB, Basic**		**435302-xxx** **435382-xxx**	
Arabic	-171	International	-B31
Belgian	-181	Italian	-061
BHCSY	-B41	Norwegian	-091
Czech	-221	Portuguese	-131
Danish	-081	Romanian	-271
Finnish	-351	Russian	-251
French	-051	Slovakian	-231
French Arabic	-DE1	Spanish	-071
French Canadian	-121	Swedish	-101
German	-041	Swiss	-111
Greek	-151	Turkish “Q”	-141
Hebrew	-BB1	U.S.	-001
Hungarian	-211	U.K.	-031

Mass Storage Devices (not illustrated)

16X SATA DVD±RW and CD-RW drive with LightScribe	447310-001
16X SATA DVD-ROM drive	419496-001
500 GB SATA hard drive	457909-001
320 GB SATA hard drive	497731-001
250 GB, 7200-RPM SATA hard drive, 8-MB cache	449980-001
160 GB, 7200-RPM SATA hard drive, 8-MB cache	449979-001
80 GB, 7200-RPM SATA hard drive, 8-MB cache	449978-001

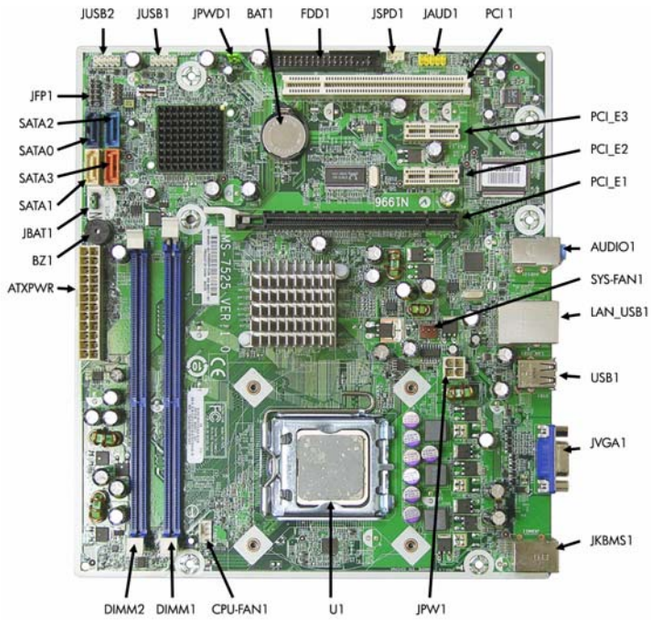


Miscellaneous Parts

1	Heatsink with fan, alcohol pad, and thermal grease	486445-001
2	Chassis fan	449207-001
3	Media card reader, 3.5-inch	480033-001
*	Backplate (for heatsink)	486446-001
*	Rubber foot (4 ea)	370708-001
*	Front I/O + USB assembly	448667-001
*	2-Button, USB, optical with scroll wheel	390938-001
*	Miscellaneous screw kit, includes: • M3 x 5mm hi top, taptite, (8 ea) (247348-001) • #6-32 x 1/4 Hi top, taptite, T15 (14 ea) (192308-001) • #6-32 x 5/16 Hi top, taptite, T15 (4 ea) (192308-002) • #6-32 x 3/16 Hi top, taptite, T15 (6 ea) (192308-003) • Countersunk, flat head plastite (8 ea) (247481-001) • Thumbscrew (2 ea) (368224-002) • #8 x5 /16 plastite, shoulder screw (4 ea) (334248-001) • #6-32 x 1/4 taptite, T15 (12 ea) (101517-067) • Screwlock, external tooth (2 ea) (106902-001) • #6-32 x 3/16 taptite, T15 (1 ea) (101517-066) • #8 x5 /16 plastite, T15 (1 ea) (334248-002) • #6-19 x 1/4 plastite, T15 (1 ea) (101346-067)	414180-001

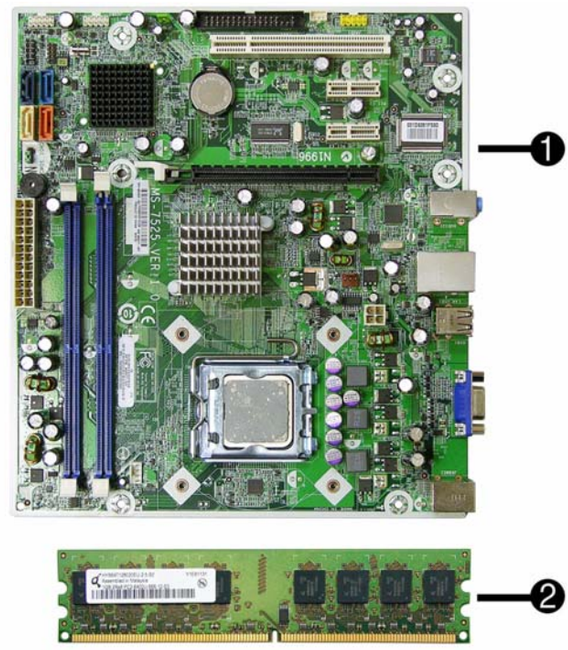
**Not shown*

System Board



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

ATXPWR	Main power	JPWD1	Password jumper
ATX12V	CPU power	JSPD1	SPDIF out
AUDIO1	Double stack audio connector	JUSB1	Front USB
BAT1	Real-time-clock battery	JUSB2	Media card reader
BZ1	Integrated speaker	JVGA1	VGA connector
CPU_FAN1	CPU fan	PCI 1	PCI slot 1
DIMM1 - DIMM2	Memory slots	PCI_E1	PCIe X16 slot
FDD1	Diskette drive	PCI_E2	PCIe X1, slot 2
LAN_USB1	RJ-45 over dual USB	PCI_E3	PCIe X1, slot 3
JAUD1	Front audio	SATA0 - SATA3	Optical drive connectors
JBAT1	CMOS jumper	SYS_FAN1	System fan
JFP1	Power button/LED	U1	Processor socket
JKBMS1	Double stack keyboard/mouse	USB1	Double stack USB



Standard and Optional Boards (not illustrated)

1	System board with thermal grease and alcohol pad	519699-001
Memory modules:		
2	1 GB, PC2-6400, CL6	418951-001
2	2 GB, PC2-6400, CL6	457624-001
Other boards:		
ATI HD X2400, PCIEx16, DMS-59 and TV outputs, 256MB graphics adapter (use with cable 463023-001)		462477-001
ATI Radeon HD4650 PCIe x16 graphics card, 512 MB		517518-001
NVidia GeForce GT130 PCIe x16 graphics card, 768 MB		518424-001
Adapter, PCI, serial/parallel		321722-001
Intel PRO/1000 PT Desktop NIC Adapter, PCIe 1.0		398754-001
Intel PRO/1000 CT Desktop NIC Adapter, PCIe 2.0		490367-001
Intel Celeron Processors with alcohol pad and thermal grease:		
450, 512-KB cache, 2.20 GHz		508256-001
440, 512-KB cache, 2.00 GHz		449166-001
430, 512-KB cache, 1.80 GHz		449165-001
Intel Celeron Dual-Core Processors with alcohol pad and thermal grease:		
E1500, 512-KB cache, 2.20 GHz		516899-001
E1400, 512-KB cache, 2.00 GHz		491574-001
E1200, 512-KB cache, 1.60 GHz		468589-001
Intel Core 2 Duo Processors with alcohol pad and thermal grease:		
E8600, 6-MB cache, 3.33 GHz		497732-001
E8500, 6-MB cache, 3.16 GHz		466170-001
E8400, 6-MB cache, 3.00 GHz		509554-001
E7500, 3-MB cache, 2.93 GHz		531988-001
E7400, 3-MB cache, 2.80 GHz		508255-001
E7300, 3-MB cache, 2.66 GHz		500134-001
E5400, 2-MB cache, 2.70 GHz		531989-001
E5300, 2-MB cache, 2.60 GHz		516900-001
E5200, 2-MB cache, 2.50 GHz		503382-001
Intel Pentium Dual-Core 2 Processor with alcohol pad and thermal grease:		
E2220, 1-MB cache, 2.40-GHz		480714-001

Setup Utility

Basic system information is maintained in the Setup Utility held in the system ROM, accessed by pressing the F10 key when prompted (on screen) during the boot sequence.

Computer Setup Menu

Heading	Option / Description	
Main	System Time	Allows you to set system time.
	System Date	Allows you to set system date.
	Language	Allows you to select the language.
	Floppy Diskette A	Allows you to set to Disabled, 1.44 MB 3.5", Not Installed.
	1st Drive 2nd drive 3rd Drive 4th Drive	Allow you to: view capacity, transfer mode, SATA speed, NCQ. Also allows you to run HDD self-test for selected channel: SMART status check, SMART short self test, SMART extended self test.
	System Information	Allows you to view installed memory, memory banks 1-4, BIOS revision, core version, model number, product number, asset tag (press **Enter** to change).
Advanced	CPU Type	View only.
	CPU Speed	View only.
	Cache RAM	View only.
	Primary Video Adapter	Allows you to select boot display device when more than 2 video options are offered by system: Integrated (Onboard), PCI, PCI-Ex16, PCI-Ex1.
	Onboard Video Memory Size	1 MB, 8 MB.
	DVMT Mode Select	Allows you to set video memory mode to: Fixed mode, DVMT mode.
	DVMT/Fixed Memory	Allows you to set video memory size to: 128 MB, 256 MB, Maximum DVMT (available for DVMT Mode only).
	PS/2 Mouse	Disable/enable/auto detect
	USB Legacy Mode Support	Disable/enable (USB keyboard, mouse, and flash media).
	Onboard LAN	Disable/enable onboard LAN controller.
	Onboard LAN Boot ROM	Disable/enable the boot ROM of the onboard LAN chip.
	SATA1 Controller	Disable/enable the SATA1 controller
	SATA1 Controller Mode	If SATA1 controller enabled, allows you to set the mode to IDE or AHCI.
	SATA2 Controller	Disable/enable the SATA2 controller.
	Onboard Audio	Auto/disable/enable.
	Internal Speaker	Disable/enable.
	Supervisor Password	Allows you to change the supervisor password.
	User Password	Allows you to change the user password.
Power	After AC Power Failure	Allows you to select system restart behavior after power loss: Stay off, Power on, Auto.
	XD	Disable/enable XD bit.
Boot	Boot-time Diagnostic Screen	Disable/enable
	1st Boot Device, 2nd Boot Device, 3rd Boot Device, 4th Boot Device	Allows you to specify which device groups will boot first, second, third, and fourth or to disable any of the four: Floppy group, CD-ROM group, Hard drive group, Network boot group. MS-DOS drive lettering assignments maybe apply after a non-MS-DOS operating system has started.
	Floppy Group Boot Priority	Specifies boot device priority within removable devices.
	CD-ROM Boot Priority	Specifies boot device priority within CD/DVD drives.
	Hard Drive Boot Priority	Specifies boot device priority within hard drives.
	Network Group Boot Priority	Specifies boot device priority within bootable network devices.
Exit	Exit Saving Changes	Press **Enter** to exit saving changes.
	Exit Discarding Changes	Press **Enter** to exit discarding changes.
	Load Setup Defaults	Press **Enter** to load setup defaults.
	Discard Changes	Press **Enter** to discard changes.
	Save Changes	Press **Enter** to save changes.

POST Audible Codes

Beeps	Meaning	Recommended Action
1 short, 1 long	Bad memory or memory configuration error	Check that the memory modules have been installed correctly and that proper modules are used.
2 short, 1 long	No graphics card installed or graphics card initialization failed.	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.
3 short, 1 long	CPU configuration error or invalid CPU detected before graphics card initialized.	1. Upgrade the BIOS to proper version. 2. Change the processor.

POST Audible Codes (*continued*)

Beeps	Meaning	Recommended Action
1 short	No legacy floppy drive or optical drive found.	1. Check cable connections. 2. Run the Computer Setup utility and ensure the device port is enabled.
2 short	No floppy diskette or CD found.	1. Check the type of drive that you are using and use the correct media type. 2. Replace the diskette or CD with a new one.
3 short	Flashing not ready (missing utility or BIOS image file, etc.)	Upgrade the BIOS to proper version.
4 short	Flashing operation has failed (checksum error, corrupted image, etc.)	1. Verify the correct ROM. 2. Flash the ROM if needed. 3. If an expansion board was recently added, remove it to see if the problem remains. 4. Clear CMOS. 5. If the message disappears, there may be a problem with the expansion card. 6. Replace the system board.
5 short	BIOS recovery was successful	No action required.

Password Security

Establishing a Setup password using computer setup

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 **Security > Setup Passwor**d and follow the instructions on the screen.
4. Before exiting, click **File > Save Changes and Exit**.

Changing a Power-on or Setup password

1. Turn on or restart the computer. If you are in Windows, click **Start > Shut Down > Restart**.
2. If you want to change the Setup password, 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.
3. If you want to change the Power-On password, 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.
4. Press Enter.

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

Deleting a Power-on or Setup password

1. Turn on or restart the computer. If you are in Windows, click **Start > Shut Down > Restart**.
2. To delete the Setup password, 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.
3. To delete the Power-on password, when the key icon appears, type the current password followed by a slash (/) or alternate delimiter character as shown: currentpassword/
4. Press Enter.

Clearing Password using the Jumper

1. Turn off the PC and unplug the power cord.
2. Move the jumper cap on jumper JPWD1 to pins 2-3.
3. Plug in the power cord and turn on the PC.
4. Hold down the **F10** key during the boot process and enter BIOS setup to enter any custom BIOS settings.
5. After changing or clearing the BIOS passwords, turn off the PC, and then replace the jumper onto pins 1-2.

HP Insight Diagnostics

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. You can find Insight Diagnostics on the *Documentation and Diagnostics* CD that shipped with the computer. You can also download the tool from the HP Web site as follows:

1. Go to www.hp.com
2. Click the **Software & Download driver** link.
3. Enter the product number (for example, dx2400) 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**.

NOTE: The download includes instructions on how to create a bootable CD.

Clearing CMOS

1. Turn off the computer and any external devices, and disconnect the power cord from the power outlet.
2. Remove the access panel.
3. On the system board, move the jumper cap from pins 2-4 (Normal) to pins 4-6 (Clear CMOS) Keep the cap on pins 4-6 for about 5~10 seconds, and then move the cap back to pins 2-4.
4. Replace the access panel, external devices, reconnect the power cord, and then turn on the computer.
5. Hold down the **Del** key during the boot process to enter BIOS setup and re-enter data.

CAUTION: Other than when clearing CMOS, never remove the cap from the default position. Removing the cap will cause system boot failure.