


Illustrated Parts & Service Map

HP Compaq dx2400 Microtower Business PC



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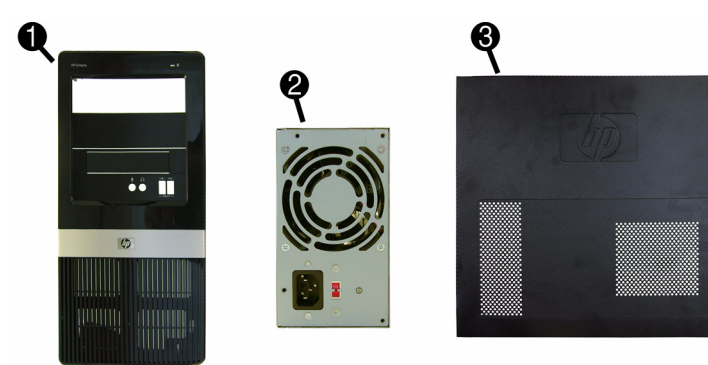
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Key Specifications

Processor Type	Intel Core 2 Duo, Pentium Dual-Core 2, Celeron, Celeron Dual Core
RAM Type	DDR2-SDRAM DIMMs, PC2-6400 (800 MHz) non-ECC
Maximum RAM Supported	4 GB
Expansion Slots	<ul style="list-style-type: none">1 PCIe-x162 PCIe-x11 PCI 2.3 (full height)
Graphics Adapter	Intel GMA 3100 integrated
Drive Support	<ul style="list-style-type: none">(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), RJ-45, audio in (2), audio out, PS/2 ports (2), VGA

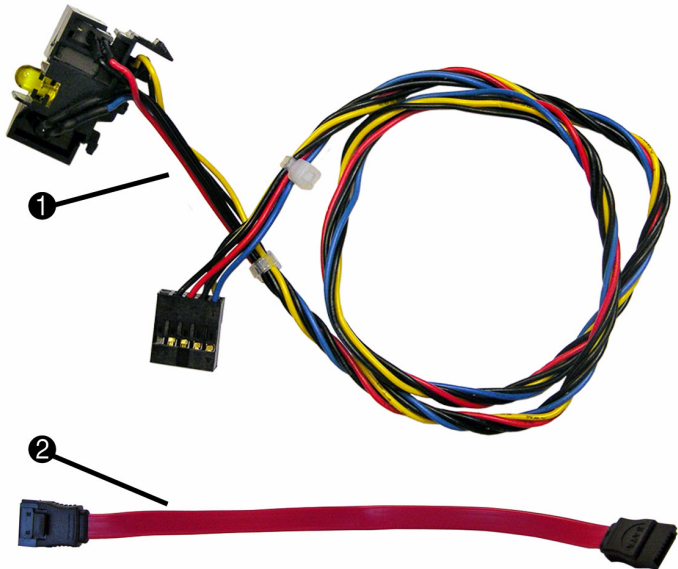
Spare Parts



System Unit

1	Front bezel	464575-001
2	Power supply, 300W, PFC	463317-001
2	Power supply, 300W, non-PFC	463318-001
3	Access panel	464597-001
*	3.5-inch bezel blank - diskette drive	459913-001
*	5.25-inch bezel blank	335937-001

* Not shown



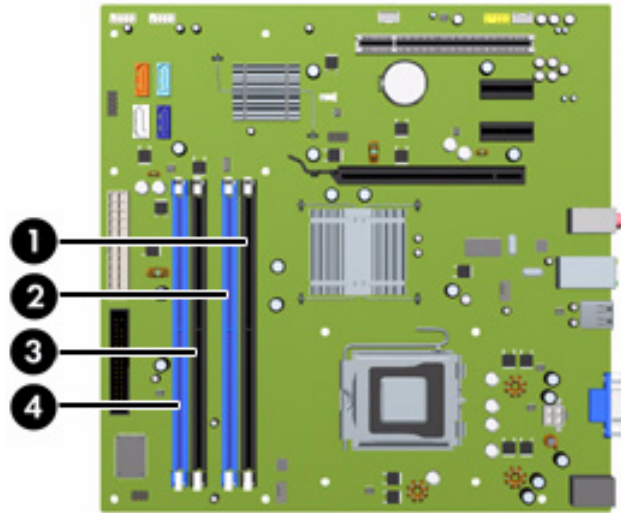
Cables

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
*	DMS-59 to dual VGA cable	463023-001
*	Modem cable - see modem cable adapters in Misc Parts section	198220-001
*	Adapter, DVI-I to VGA	202997-001
*	Diskette drive cable	395967-001

*Not shown

Keyboards (not illustrated)

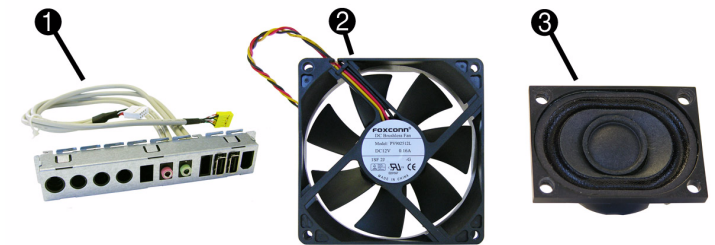
PS/2, Basic		435302-xxx	
USB, Basic		435382-xxx	
Arabic	-171	Italian	-061
Belgian	-181	LA Spanish	-161
BHCSY	-B41	Norwegian	-091
Czech	-221	Portuguese	-131
Danish	-081	Romanian	-271
Finnish	-351	Russian	-251
French	-051	Slovakian	-231
French Arabic	-DE1	Spanish	-071
French Canadian	-121	Swedish	-101
German	-041	Swiss	-111
Greek	-151	Thai	-281
Hebrew	-BB1	Turkish "Q"	-141
Hungarian	-211	U.S.	-001
International	-B31	U.K.	-031



DIMM Population

Item	Description	Socket Color
1	DIMM socket XMM1, Channel A (populate first)	Black
2	DIMM socket XMM2, Channel A	Blue
3	DIMM socket XMM3, Channel B (populate second)	Black
4	DIMM socket XMM4, Channel B	Blue

NOTE: A DIMM must occupy the XMM1 socket.



Miscellaneous Parts			
1	Front I/O + USB assembly	448667-001	
2	Chassis fan	449207-001	
3	Speaker	463316-001	
*	Heatsink with fan, alcohol pad, and thermal grease (does not include backplate)	481422-001	
*	Real-time clock battery	153099-001	
*	Rubber foot (4 ea)	370708-001	
*	Media card reader, 3.5-inch	407187-001	
*	Media card reader, 3.5-inch, 1394 USB	480032-001	
*	USB powered speakers	466618-001	
*	Laser mouse	459821-001	
*	2-Button, USB, optical with scroll wheel	390938-001	
*	2-Button, PS/2, optical with scroll wheel	417966-001	
Miscellaneous screw kit, includes:		414180-001	
*	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)		
Modem Cable Adapters (not illustrated) (use with 198220-001)			
Australia	417561-011	Italy	316904-065
Belgium	316904-181	Netherlands	316920-335
Czech	234963-225	Poland/Russia	316904-241
Germany	316904-041	Scandinavia	382848-DH1
Greece	316904-151	South Africa	316904-AR1
France	316904-051	Switzerland	417562-111
Hungary	234963-215	Turkey	316904-141
Israel	316904-BB1	U.K.	158593-035

**Not shown*

Mass Storage Devices (not illustrated)

Diskette drive with bezel	431452-001
16X SATA DVD±RW and CD-RW drive with LightScribe	447310-001
16X SATA DVD-ROM drive	419496-001
48X CD-RW/DVD-ROM combo drive	419497-001
500 GB SATA hard drive	457909-001
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

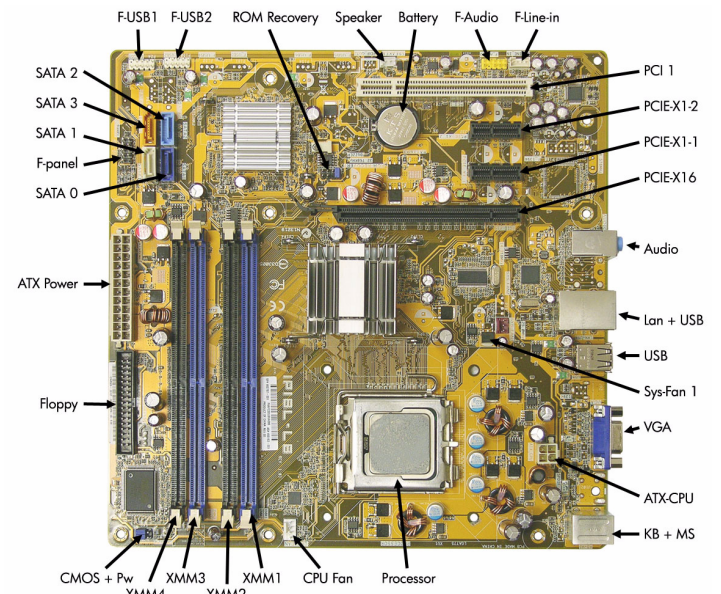
Interrupt Assignments

IRQ	System Function	IRQ	System Function
0	Timer Interrupt	18	Intel ICH9 Family USB Universal Host Controller
1	Keyboard	18	Intel ICH9 Family USB2 Enhanced Host Controller
8	Real-Time Clock	19	Intel 82801HR/HH/HO SATA RAID Controller
9	Microsoft ACPI-Compliant System	19	Intel ICH9 Family USB Universal Host Controller
11	Intel ICH9 Family SMBus Controller	20	Intel 82566DC-2 Gigabit Network Connection
12	Mouse	21	Intel ICH9 Family USB Universal Host Controller
13	Numeric Data Processor	22	Microsoft UAA Bus Driver for High Definition Audio
16	Intel G33/G31 Express Chipset Family	23	Intel ICH9 Family USB Universal Host Controller
16	Intel ICH9 Family USB Universal Host Controller	23	Intel ICH9 Family USB2 Enhanced Host Controller
16	Intel ICH9 Family USB Universal Host Controller		

Standard and Optional Boards (not illustrated)

System board with thermal grease and alcohol pad	462797-001
Memory modules:	
512 MB, PC2-6400, CL6	418952-001
1 GB, PC2-6400, CL6	418951-001
2 GB, PC2-6400, CL6	457624-001
Other boards:	
Belkin 802.11a/g WLAN adapter for use in United States and most of world	391866-002
Belkin 802.11a/g WLAN adapter for use in the rest of the world	391866-001
ATI HD X2400, PCIe×16, DMS-59 and TV outputs, 256MB graphics adapter	462477-001
Adapter, PCI, serial/parallel	321722-001
56K modem, Agere 2006 PCI Hi-Speed, FH	398661-001
nVidia GeForce 8400 GS 256-MB video card with DMS-59 and TV (S-Video) outputs, LP	445743-001
DVI, SDVO graphics card, FH	398333-001
HP FireWire IEEE 1394 PCI card, 2 external, 1 internal port, FH	441448-001
Intel Pro 1000 PT Gigabit PCIe NIC, FH	398754-001
Intel Celeron Processors with alcohol pad and thermal grease:	
440, 512-KB cache, 2.00 GHz	449166-001
430, 512-KB cache, 1.80 GHz	449165-001
420, 512-KB cache, 1.60 GHz	449164-001
Intel Celeron Dual-Core Processors with alcohol pad and thermal grease:	
E1200, 512-KB cache, 1.60 GHz	468589-001
Intel Core 2 Duo Processors with alcohol pad and thermal grease:	
E8500, 6-MB cache, 3.16 GHz	466170-001
E8400, 6-MB cache, 3.00 GHz	466169-001
E8300, 6-MB cache, 2.83 GHz	466168-001
E8200, 6-MB cache, 2.67 GHz	466171-001
E6850, 4-MB cache, 3.00 GHz	450792-001
E6750, 4-MB cache, 2.66 GHz	450791-001
E6550, 4-MB cache, 2.33 GHz	450694-001
E4600, 2-MB cache, 2.40 GHz	462569-001
E4500, 2-MB cache, 2.20 GHz	449452-001
Intel Pentium Dual-Core 2 Processors with alcohol pad and thermal grease:	
E2200, 1-MB cache, 2.20-GHz	465216-01
E2180, 1-MB cache, 2.00-GHz	457656-01
E2160, 1-MB cache, 1.80-GHz	457622-001

System Board



System Board Connectors and Jumpers (position of some untitled components may vary in location)			
LAN+USB	RJ-45 over dual USB	F_PANEL	Power button/LED
USB	Double stack USB	SPEAKER	Internal speaker
PCI 1	PCI slot 1	VGA	VGA connector
PCIE_X1_1	PCIe X1, slot 1	CPU_FAN	CPU fan
PCIE_X1_2	PCIe X1, slot 2	SYS_FAN1	System fan
PCIE X16	PCIe X16 slot	CMOS+PW	Clear CMOS
KB+MS	Double stack keyboard/mouse	BATTERY	Real-time-clock battery
SATA0 - SATA3	Optical drive connectors	DIMM 1 - DIMM 4	Memory slots
AUDIO	Double stack audio connector	PROCESSOR	Processor socket
ATXPOWER	Main power	F_USB1	Front USB
FLOPPY	Diskette drive	F_USB2	Media card reader
F_AUDIO	Front audio	ATX_CPU	CPU power

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 Dis-kette 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 chan-nel: SMART status check, SMART short self test, SMART extended self test.
	System Infor-mation	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 Mem-ory 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 Con-troller	Disable/enable the SATA1 controller
	SATA1 Con-troller Mode	If SATA1 controller enabled, allows you to set the mode to IDE or AHCI.
	SATA2 Con-troller	Disable/enable the SATA2 controller.
	Onboard Audio	Auto/disable/enable.
	Internal Speaker	Disable/enable.
	Supervisor Password	Allows you to change the supervisor password.
	User Pass-word	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 Discard-ing 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 (<i>continued</i>)		
Beeps	Meaning	Recommended Action
1 short	No legacy floppy drive or opti-cal 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 Password** 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 the power cord.
2. Move the jumper cap on jumper CLPWD to pins 1-3.
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 3-5.

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.