


Illustrated Parts & Service Map

HP Compaq dx2450 Microtower Business PC



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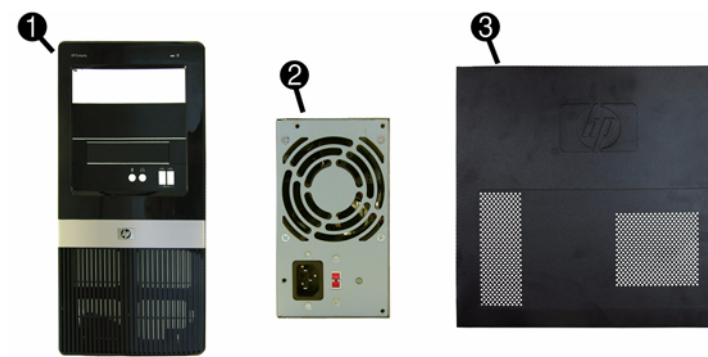
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Key Specifications

| | |
|-----------------------|--|
| Processor Type | AMD Athlon 64, Sempron-64, Phenom |
| 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 | Integrated NVIDIA GeForce 6150SE Graphics |
| 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 |

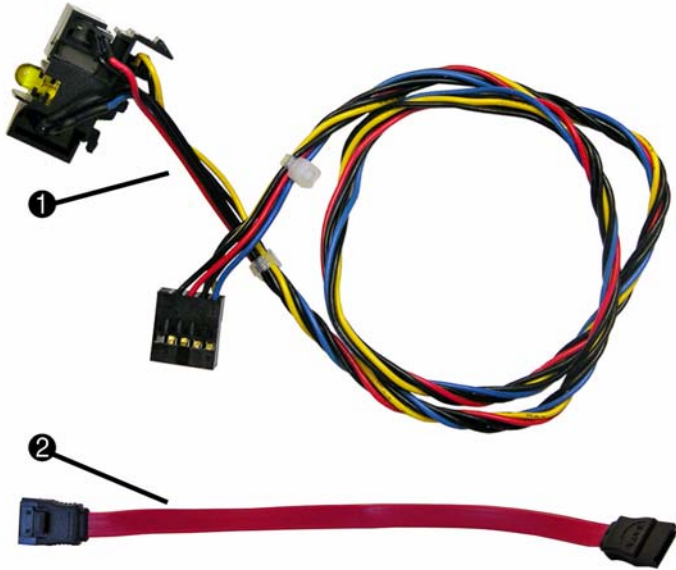
Spare Parts



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



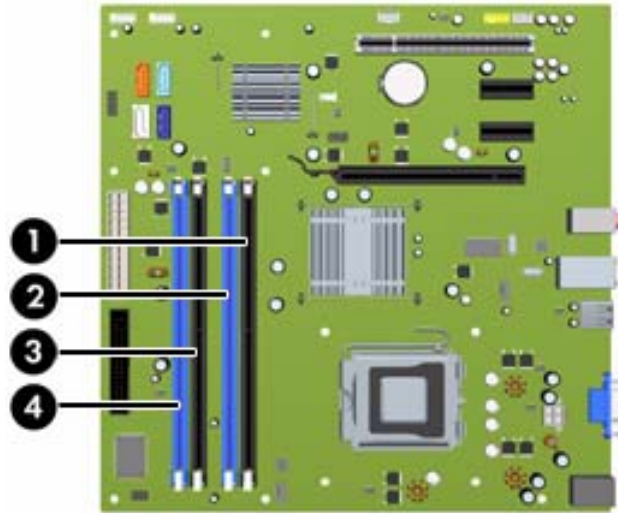
Cables

| | | |
|---|--|------------|
| 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)

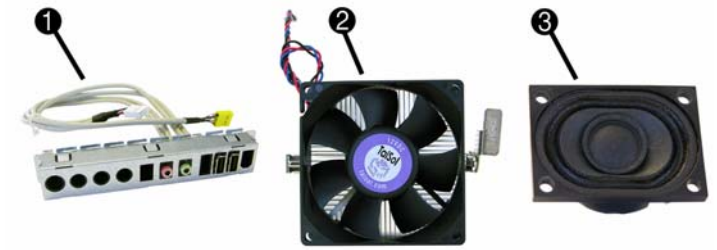
| PS/2, Basic | | 435302-xxx | |
|-----------------|------|-------------|------|
| USB, Basic | | 435382-xxx | |
| Arabic | -171 | Italian | -061 |
| Belgian | -181 | LA Spanish | -161 |
| BHCSY | -B41 | Norwegian | -091 |
| Czech | -221 | Portuguese | -131 |
| Danish | -081 | Romanian | -271 |
| Finnish | -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 | Heatsink with fan, alcohol pad, and thermal grease (does not include backplate) | | 464576-001 |
| 3 | Speaker | | 463316-001 |
| * | Chassis fan | | 449207-001 |
| * | 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*

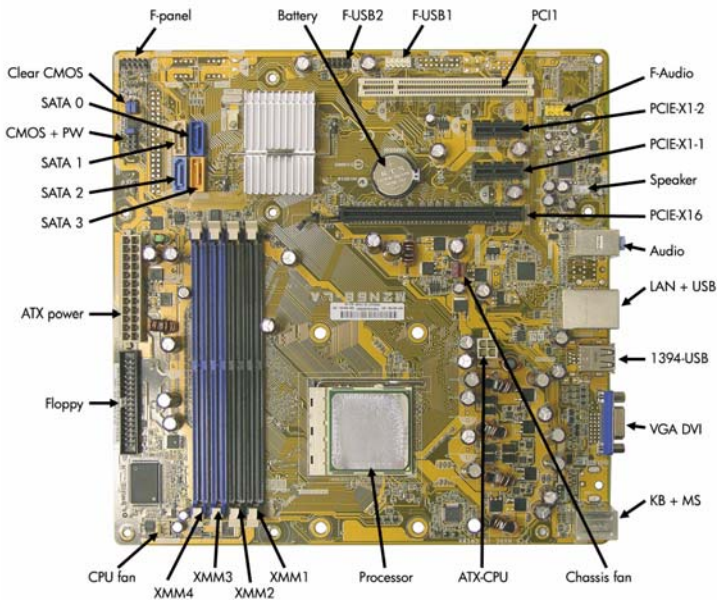
Mass Storage Devices (not illustrated)

| | |
|--|------------|
| 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 |

Standard and Optional Boards (not illustrated)

| | |
|---|------------|
| System board with thermal grease and alcohol pad | 462798-001 |
| 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 the United States and most of the world | 391866-002 |
| Belkin 802.11a/g WLAN adapter for use in the rest of the world | 391866-001 |
| ATI HD X2400, PCIe x16, 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 |
| HP FireWire IEEE 1394 PCI card, 2 external, 1 internal port, FH | 441448-001 |
| Intel Pro 1000 PT Gigabit PCIe NIC, FH | 398754-001 |
| AMD Athlon 64 processor with alcohol pad and thermal grease | |
| X2 5400+, 2.8 GHz, 1-MB L2 cache | 465312-001 |
| X2 5200+, 2.7 GHz, 2x512-KB L2 cache | 465302-001 |
| X2 5000+ 2.6 GHz, 2x512-KB L2 cache | 465301-001 |
| X2 4450B, 2.3 GHz, 1-MB L2 cache | 465303-001 |
| LE-1640, 2.6GHz, 1-MB L2 cache | 465304-001 |
| AMD Sempron-64 processor with alcohol pad and thermal grease | |
| 1300, 2.3 GHz, 512-KB L2 cache | 458069-001 |
| 1250, 2.2 GHz, 512-KB L2 cache | 458068-001 |
| 1200, 2.1 GHz, 512-KB L2 cache | 460341-001 |

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 |
| 1394-USB | Double stack USB | SPEAKER | Internal speaker |
| PCI 1 | PCI slot 1 | VGA DVI | VGA connector |
| PCIE_X1_1 | PCIe X1, slot 1 | CPU_FAN | CPU fan |
| PCIE_X1_2 | PCIe X1, slot 2 | CHASSIS_FAN | 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 (L2) | View only. |
| | Cache RAM (L3) | View only - some models. |
| | Primary Video Adapter | Allows you to select boot display device when more than 2 video options are offered by system: PCI, PCI-Ex16, PCI-Ex1, Onboard. |
| | Onboard Video Mem-ory Size | 32 MB, 128 MB, 256 MB. |
| | PS/2 Mouse | Disable/enable/auto detect. |
| | USB Legacy Mode Support | Disable/enable. |
| | Onboard LAN | Disable/enable onboard LAN controller. |
| | Onboard LAN Boot ROM | Disable/enable the boot ROM of the onboard LAN chip. |
| | SATA Con-troller | Allows you to set Disabled, SATA1, SATA1+2 |
| | 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: Auto, Power On, Stay off. |
| | XD | Disable/enable XD bit. |
| Boot | Boot-time Diagnostic Screen | Disable/enable POST diagnostic message display. |
| | 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 |
| 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, if necessary.
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 1-2.
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 2-3.

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. 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 & 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. Remove the RTC battery.
4. On the system board, move the jumper cap from pins 2-3 (Normal) to pins 1-2 (Clear CMOS). Keep the cap on pins 1-2 for about 5~10 seconds, and then move the cap back to pins 2-3.
5. Replace the access panel, external devices, reconnect the power cord, and then turn on the computer.
6. Hold down **F1** 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.