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Maintenance and Service Guide

Compaq Evo N600c

Document Part Number: 235393-001

August 2001

This guide is a troubleshooting reference used for maintaining and servicing the notebook. It provides comprehensive information on identifying computer features, components, and spare parts, troubleshooting computer problems, and performing computer disassembly procedures.



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Manual abstract:

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.....
.....
.....
.....
.....
..... 11 Clearing a Password .
.....
.....
..... 14 Power Management.
.....
.....
.....
..... 15 Computer External Components
.....
.....
..... 16 Design Overview.
.....
.....
..... 116 2 Troubleshooting 2.1 Computer Setup and Diagnostics Utilities .
..... 21 Selecting Computer Setup or Compaq Diagnostics ...
.....
.....
.....
..... 21 Selecting from the File Menu
.....
.....
..... 23 Selecting from the Security Menu
.....
..... 24 Selecting from the Advanced Menu
.....
..... 25 2.2 Using Compaq Diagnostics.
.....
.....
..... 27 Obtaining, Saving, or Printing Configuration Information.
.....
.....
.....
..... 27 Obtaining, Saving, or Printing Diagnostic Test Information
.....
.....
..... 28 2.3 Troubleshooting Flowcharts .
.....
..... 210 2.1 Initial Troubleshooting ..
.....
.....
..... 211 2.2 No Power, Part 1 ..
.....
.....
.....
..... 212 2.3 No Power, Part 2
.....
.....

.. 213 2.4 No Power, Part 3 ..	.....
.....	
.. 214 2.5 No Power, Part 4 ..	.....
.....	
..... 215 2.6 No Video, Part 1 ..	.....
.....	
.. 216 2.7 No Video, Part 2 .....	.....
.....	
..... @@
.....	
..... 2.9 No Operating System (OS) Loading ...	
..... 2.10 No OS Loading from Hard Drive, Part 1. . .	
.. 2.11 No OS Loading from Hard Drive, Part 2. .	
... 2.12 No OS Loading from Hard Drive, Part 3.	
.... 2.13 No OS Loading from Diskette Drive.	
... 2.14 No OS Loading from CD- or DVD-ROM Drive .....	.....
.....	
.....	
.....	
2.15 No Audio, Part 1 .....	.....
.....	
.... 2.16 No Audio, Part 2 .....	.....
.....	
... 2.17 Nonfunctioning Device .	.....
.....	
..... 2.18 Nonfunctioning Keyboard . .	.....
.....	
.... 2.19 Nonfunctioning Pointing Device	
..... 2.20 Network or Modem Connection Problems .. @@.	.....
.....	
.....	
.....	
31 Computer System Major Components	
.. 32 Miscellaneous Plastics Kit Components .....	.....
.....	
. 38 Mass Storage Devices .....	.....
.....	
.....	
39 Miscellaneous .....	.....
.....	
.....	
..... @@.
.....	
.....	

.....	
.. 4.2 Service Considerations ..	
.....	
.....	
..... Plastic Parts	
.....	
.....	
..... Cables and Connectors ..	
.....	
.....	
.....	
. 4.3 Preventing Damage to Removable Drives	
4.4 Preventing Electrostatic Damage	
.....	
..... 4.5 Packaging and Transporting Precautions ...	
..... 4.6 Workstation Precautions ...	
.....	
.....	
..... 4.	
7 Grounding Equipment and Methods	
... @@..	
.....	
.....	
.....	
.. 52 5.2 Disassembly Sequence Chart ..	
.....	
.....	
. 53 5.3 Preparing the Computer for Disassembly	
. 54 5.4 Computer Feet ...	
.....	
.....	
.....	
.. 55 5.4 Keyboard ..	
.....	
.....	
.....	
.....	
.. 56 5.5 Modem/Network Interface Card (NIC) ..	
..... 510 5.6 Real Time Clock (RTC) Battery ..	
.....	
.....	
..... 512 5.	
7 TouchPad or Touch Button	
.....	
.....	
.... 513 5.8 Switch Cover	
.....	
.....	
.....	
..... 515 5.9 Display	
.....	
.....	
.....	
.....	

517 5.10 Top Cover

.
.....

. . 520 5.11 System Board . .

.
.....

. 523 5.12 Fan. . .

.
.....

.
.....

. . . . 527 5.

13 DC-DC Converter Board.

.
530 5.15 Modem Cable

.
.....

533 6 Specifications A Connector Pin Assignments B Power Cord Set Requirements 3-Conductor Power Cord Set

.
.....

. . General Requirements

.
.....

. Country-Specific Requirements

.
.....

. Notes

.
.....

.
.....

.
.....

. . . B1 B1 B2 B2 C Screw Listing Index Maintenance and Service Guide v 1 Product Description The Compaq Evo N600c Series of Personal Computers offers advanced modularity, Mobile Intel Pentium III processors-M with 64-bit architecture, industry-leading Accelerated Graphics Port (AGP) implementation, and extensive multimedia support. Figure 1-1. Compaq Evo N600c 1.1 Features I Mobile Intel Pentium III processor 1.066 GHz-M or 866MHz-M, with 512-KB integrated L2 cache, varying by computer model Maintenance and Service Guide 11 Product Description I ATI Mobility Radeon with 64-bit video graphics, 16-MB double data rate (DDR) SDRAM, 4X AGP graphics card 128-MB high-performance Synchronous DRAM (SDRAM), expandable to 1024 MB Microsoft Windows 98, Windows NT 4.0, or Windows 2000 preinstalled, varying by computer model 14.1-inch, XGA, TFT (1024 x 768) display, with over 16.

7 million colors Full-size TouchPad or pointing stick keyboard, varying by computer model Mini PCI 10/100 network interface card (NIC) or Mini PCI V.90 modem plus 10/100 NIC combination card, varying by computer model Support for two Type II PC Card slots with support for both 32-bit CardBus and 16-bit PC Cards External AC adapter with power cord 8-cell Lithium ion (Li ion) battery pack 30-, 20-, or 15-GB high-capacity hard drive I I I I I I I I 12 Maintenance and Service Guide Product Description I Connectors for: RJ-11 modem Mono microphone Stereo line-out/headphone MultiPort Universal Serial Bus Docking Parallel devices Serial devices Composite TV External keyboard/mouse RJ-45 network External monitor AC power I Stereo speakers providing Compaq Premier-Sound™ 16-bit stereo sound Maintenance and Service Guide 13 Product Description 1.2 Clearing a Password If the notebook you are servicing has an unknown password, follow these steps to clear the password. These steps also clear CMOS. 1. Prepare the computer for disassembly (refer to Section 5.3, "Preparing the Computer for Disassembly," for more information). 2. Remove the RTC battery (refer to Section 5.7, "Real Time Clock (RTC) Battery").

3. Wait approximately five minutes. 4. Replace the RTC battery and reassemble the computer. 5.

Connect AC power to the computer. Do not reinsert any battery packs at this time. 6. Turn on the computer. All passwords and all CMOS settings have been cleared.

14 Maintenance and Service Guide Product Description 1.3 Power Management The computer comes with power management features that extend battery operating time and conserve power. The computer supports the following power management features: I I I I I I I I I Standby Hibernation Setting customization by the user Hotkeys for setting level of performance Smart battery that provides an accurate battery power gauge Battery calibration Lid switch suspend/resume Power/suspend button Advanced Configuration and Power Management (ACP) compliance Maintenance and Service Guide 15 Product Description 1.



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4 Computer External Components The external components on the front and right side of the computer are shown in Figure 1-2 and described in Table 1-2. .
Figure 1-2. Front and Right Side Components Table 1-2 Front and Right Side Panel Components Item 1 2 Component Display release latch RJ-11 jack
(internal modem models only) MultiBay Function Opens the computer. Connects the modem cable to an internal modem. A modem cable is included with
internal modem models. Accepts a diskette drive, CD- or DVD-ROM drive, or secondary battery pack.

3 16 Maintenance and Service Guide Product Description Table 1-2 Front and Right Side Panel Components (Continued) Item 4 5 6 7 8 9 Component
Security cable slot Mono microphone jack Stereo line-out/ headphone jack Volume control buttons Infrared port Power light Function Attaches an optional
security cable to the computer. Connects a mono microphone, disabling the built-in microphone. Connects stereo speakers, headphones, headset, or television
audio. Adjust the volume of the stereo speakers. Links to another IrDA-compliant device for wireless communication. On: Power is turned on. Blinking:
Computer is in Standby. The power light also blinks if a battery pack that is the only available power source reaches a low-battery condition. On: A battery
pack is charging. Blinking: A battery pack that is the only available power source has reached a low-battery condition.

Turns on when the hard drive, CD-, or DVD-ROM drive is accessed. Turns on when the diskette drive in the Media Bay or the optional external diskette drive
is accessed. 10 Battery light 11 12 Drive activity light Diskette drive light Maintenance and Service Guide 17 Product Description The computer right side
and rear panel components are shown in Figure 1-3 and described in Table 1-3. Figure 1-3. Right Side and Rear Panel Components Table 1-3 Right Side and
Rear Panel Components Item 1 Component MultiPort Function Connects wireless communication devices, such as a Bluetooth or 802.

11b MultiPort Module, and other options. Connects any one of the following: 1 1 1 2 DC power jack AC adapter Optional automobile power adapter/charger
Optional aircraft power adapter 3 Keyboard/mouse connector Connects an external keyboard or PS/2-compatible external mouse. To connect a keyboard and
a mouse at the same time, use an optional Y-adapter. 18 Maintenance and Service Guide Product Description Table 1-3 Right Side and Rear Panel
Components (Continued) Item 4 5 Component Parallel connector Docking connector Function Connects a parallel device. Connects the computer to the
optional expansion base, convenience base, or port replicator.

Connects a serial device. Connects an external monitor or overhead projector. Connects a television, VCR, camcorder, or overhead projector. Connects the
network cable. A network cable is not included with the computer. Connects USB devices. Allows airflow to cover 8 Docking recess latch 9 10 11 Battery
release latch Battery compartment Serial number Maintenance and Service Guide 115 Product Description 1.5 Design Overview This section presents a
design overview of key parts and features of the computer. Refer to Chapter 3, "Illustrated Parts Catalog," to identify replacement parts, and Chapter 5,
"Removal and Replacement Procedures," for disassembly steps. The system board provides the following device connections: 1 1 1 1 1 1 1 1 Memory expansion
board Hard drive Display Keyboard/TouchPad or pointing stick Audio Intel Pentium III processors Fan PC Card Modem or modem/NIC The computer uses
an electrete a power-on password.

Enable/disable DriveLock; change a DriveLock User or Master password. Settings are accessible Drive Lockenter Computer Setup byonly when you turning
on (not restarting) the computer. Password Options Enable/disable: 1 1 1 Power-on Password DriveLock Passwords Password options can be selected only
when a power-on password has been set. Device Security QuickLock QuickLock on Suspend QuickBlank To enable QuickLock on Suspend or QuickBlank,
you must first enable QuickLock. Enable/disable: 1 1 1 Ports or diskette drives* Diskette write* CD-ROM or diskette startup for a can Settingsin theDVD-
ROMfield. be entered CD-ROM System IDs Enter identification numbers for the computer, a docking base, and all battery packs in the system. *Not
applicable to SuperDisk LS-120 drives. 24 Maintenance and Service Guide Troubleshooting Selecting from the Advanced Menu Table 2-3 Advanced Menu
Select Language (or press F2) Boot Options To Do This Change the Computer Setup language. Enable/disable: 1 QuickBoot, which starts the computer more
quickly by eliminating some startup tests. (If you suspect a memory failure and want to test memory automatically during startup, disable QuickBoot.
) MultiBoot, which sets a startup sequence that can include most bootable devices and media in the system. Enable/disable the embedded numeric keypad at
startup. Enable/disable multiple standard pointing devices at startup. (To set the computer to support only a single, usually nonstandard, pointing device at
startup, select Disable.) Enable/disable USB legacy support for a USB keyboard.

(When USB legacy support is enabled, the keyboard works even when a Windows operating system is not loaded.) Set an optional external monitor or
overhead projector connected to a video card in a docking base as the primary device. (When the computer display is set as secondary, the computer must be
shut down before undocking from a docking base.) I Device Options 1 1 1 1 Maintenance and Service Guide 25 Troubleshooting Table 2-3 Advanced Menu
(Continued) Select Device Options (continued) To Do This I Change the parallel port mode from EPP (Enhanced Parallel Port [default]) to standard,
bidirectional, or ECP (Enhanced Capabilities Port). Set video-out mode to NTSC (default), PAL, NTSC-J, or PAL-M.

* Enable/disable all settings in the SpeedStep window. (When Disable is selected, the computer runs in Battery Optimized mode.) Specify how the computer
recognizes multiple identical docking bases that are identically equipped. (Select Disable to recognize the docking bases as a single docking base; select
Enable to recognize the docking bases individually, by serial number.) Enable/disable the reporting of the processor serial number by the processor to the
software. 1 1 1 1 HDD Self Test Options Run a quick comprehensive self test on hard drives in the system that support the test features. *Video modes vary even
within regions. However, NTSC is common in North America; PAL, in Europe, Africa, and the Middle East; NTSC-J, in Japan; and PAL-M, in Brazil. Other
South and Central American regions may use NTSC, PAL, or PAL-M. 26 Maintenance and Service Guide Troubleshooting 2.

2 Using Compaq Diagnostics When you access Compaq Diagnostics, a scan of all system components is displayed on the screen before the Compaq
Diagnostics window opens.



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You can display more or less information from anywhere within Compaq Diagnostics by selecting Level on the menu bar. Compaq Diagnostics is designed to test Compaq components. If non-Compaq components are tested, the results may be inconclusive. Obtaining, Saving, or Printing Configuration Information 1. Access Compaq Diagnostics by selecting Start > Settings > Control Panel > Compaq Diagnostics. 2. Select Categories, then select a category from the drop-down list. To save the information, select File > Save As. To print the information, select File > Print.

3. To close Compaq Diagnostics, select File > Exit. Maintenance and Service Guide 27 Troubleshooting Obtaining, Saving, or Printing Diagnostic Test Information 1. Access Compaq Diagnostics by selecting Start > Settings > Control Panel > Compaq Diagnostics. 2.

Select the Test tab. 3. In the scroll box, select the category or device you want to test. 4. Select a test type: Quick Test--Runs a quick, general test on each device in a selected category.

Complete Test--Performs maximum testing on each device in a selected category. Custom Test--Performs maximum testing on a selected device. N N To run all tests for your selected device, select the Check All button. To run only the tests you select, select the Uncheck All button, then select the checkbox for each test you want to run. 28 Maintenance and Service Guide Troubleshooting 5. Select a test mode: Interactive Mode--Provides maximum control over the testing process. You determine whether the test was passed or failed and may be prompted to insert or remove devices. Unattended Mode--Does not display prompts. If errors are found, they are displayed when testing is complete. 6.

Select the Begin Testing button. 7. Select a tab to view a test report: Status tab--Summarizes the tests run, passed, and failed during the current testing session. Log tab--Lists tests run on the system, the number of times each test has run, the number of errors found on each test, and the total run time of each test. Error tab--Lists all errors found in the computer with their error codes. Log tab--Select the Log tab Save button. Error tab--Select the Error tab Save button. 8. Select a tab to save the report: 9. Select the Log tab to print the report.

Maintenance and Service Guide 29 Troubleshooting 2.3 Troubleshooting Flowcharts Table 2-4 Troubleshooting Flowcharts Overview Flowchart 2.1 2.2 2.3

2.
4 2.5 2.6 2.7 2.8 2.

9 2.10 2.11 2.12 2.13 2.14 2.15 2.16 2.17 2.18 2.

19 2.20 Description Initial troubleshooting No power, part 1 No power, part 2 No power, part 3 No power, part 4 No video, part 1 No video, part 2 Nonfunctioning docking station No operating system (OS) loading No OS loading from hard drive, part 1 No OS loading from hard drive, part 2 No OS loading from hard drive, part 3 No OS loading from diskette drive No OS loading from CD- or DVD-ROM drive No audio, part 1 No audio, part 2 Nonfunctioning device Nonfunctioning keyboard Nonfunctioning pointing device No network or modem connection 210 Maintenance and Service Guide Troubleshooting 2.1 Initial Troubleshooting Begin Troubleshooting N Is there power? Go to Section 2.2, No Power. Y N Beeps, LEDs, or error Messages? Check LED board, speaker connections. All drives working? N Go to Section 2.17, Nonfunctioning Device. Y N Is there video? (no boot) Go to Section 2.6, No Video. Y N Keyboard/ pointing device working? Go to Section 2.

18, Nonfunctioning Keyboard, or Section 2.19, Nonfunctioning Pointing Device. Y N Is the OS loading? Go to Section 2.9, No OS Loading. Y N Connecting to network or modem? Y N Is there sound? Go to Section 2.

15, No Audio. Y End Go to Section 2.20, No Network or Modem Connection. Y Maintenance and Service Guide 211 Troubleshooting 2.2 No Power, Part 1 No Power (Power LED is off) Remove from docking station if applicable.

N Power up on battery power? *Reset power. Power up on battery power? N Go to Section 2.3, No Power, Part 2. Y N Power up on AC power? *Reset power. Y N Power up on AC power? Go to Section 2.4, No Power, Part 3. Y Y Power up in docking station? Done Y N 1. Reseat power cables in docking station and at the AC outlet. 2. Ensure the AC power source is active.

3. Ensure the power strip is working. *Notes: 1. On some models, there is a separate res button. 2. On some models, the computer may be reset using the Standby switch and either the lid switch or the main power switch. Y Done Power up in docking station? N Go to Section 2.8, Nonfunctioning Docking Station 212 Maintenance and Service Guide Troubleshooting 2.3 No Power, Part 2 Continued from Section 2.2, No Power, Part 1.

Visually check for debris in battery socket and clean if necessary. Y Power on? Done N Check battery by recharging, moving to another computer, or replacing it. N Power on? Replace power supply (if applicable). Y N Done Power on? Go to Section 2.4, No Power, Part 3.

Y Done Maintenance and Service Guide 213 Troubleshooting 2.4 No Power, Part 3 Continued from Section 2.3, No Power, Part 2. Plug directly into AC outlet. Y Power LED on? Done N Reseat AC adapter in computer and at power source.

Y Power on? Done N N Power outlet active? Try different outlet. Internal or external AC adapter? Internal Go to Section 2.5, No Power, Part 4. External Replace external AC adapter. Y Replace power cord. N Power on? Y Power on? Done Y Done N 214 Maintenance and Service Guide Troubleshooting 2.5 No Power, Part 4 Continued from Section 2.4, No Power, Part 3. Open computer. Y Loose or damaged parts? N Close computer and retest.

Reseat loose components and boards and replace damaged items. N Power on? Replace the following items, if applicable. Check computer operation after each replacement: 1. Internal DC-DC converter* 2. Internal AC adapter 3. Processor board* 4. System board* Done *Replace these items as a set to prevent shorting out among components. Y Maintenance and Service Guide 215 Troubleshooting 2.6 No Video, Part 1 No Video Docking Station Stand-alone or Docking Station? Standalone Internal or external display*? External Adjust brightness. Adjust brightness.

Internal Go to Section 2.7, No Video, Part 2. *Note: To change from internal to external display, use the hotkey combination. Y Video OK? Done N A Y Depress lid switch to ensure operation. Y Done Video OK? Done Video OK? N Check for bent pins on cable.

N Replace the following one at a time. Test after each replacement: 1. Cable between notebook and computer display (if applicable) 2. Inverter board (if applicable) 3. Display 4.

System board N Video OK? Try another display. Internal and external video OK? N Replace system board. Y Done Y Done 216 Maintenance and Service Guide Troubleshooting 2.



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7 No Video, Part 2 Continued from Section 2.6, No Video, Part 1. Remove notebook from docking station, if connected. Adjust display brightness. Check brightness of external monitor. N Video OK? Go to "A" in Section 2.6, No Video, Part 1.

Video OK? Y Done Y Check for notebook properly seated in docking station, bent pins on cable, and for monitor connection. N Try another external monitor. Y Video OK? Done Internal and external video OK? Y Done N N Go to Section 2.8, Nonfunctioning Docking Station. Adjust external monitor display. Maintenance and Service Guide 217 Troubleshooting 2.8 Nonfunctioning Docking Station (if applicable) Nonfunctioning docking station Reseat power cord in docking station and power outlet. Check voltage setting on docking station. Reinstall notebook into docking station. Reset monitor cable connector at docking station.

Y Docking station operating? Done N Y Docking station operating? Done Replace these docking station components one at a time. Check computer operation after each replacement: 1. Power supply 2. I/O board 3. Backplane board 4.

Switch box 5. Docking motor mechanism N Remove notebook, reseal all internal parts, and replace any damaged items in docking station. 218 Maintenance and Service Guide Troubleshooting 2.9 No Operating System (OS) Loading No OS loading Reseat power cord in docking station and power outlet. No OS loading from hard drive, go to Section 2.

10. No OS loading from diskette drive, go to Section 2.13. No OS loading from CD- or DVD-ROM drive, go to Section 2.14. No OS loading from network, go to Section 2.20. NOTE: Before beginning, always check cable connections, cable ends, and drives for bent or damaged pins. Maintenance and Service Guide 219 Troubleshooting 2.10 No OS Loading from Hard Drive, Part 1 OS not loading from hard drive.

Y Nonsystem disk message? N Reseat external hard drive. Go to Section 2.11, No OS Loading from Hard Drive, Part 2. Y OS loading? Done N N Boot from CD? N Boot from diskette? Y Check the setup utility for correct booting order. Y N Change boot priority through the setup utility and reboot. Go to Section 2.13, No OS Loading from Diskette Drive. Boot from hard drive? Y Done Boot from hard drive? N Go to Section 2.17, Nonfunctioning Device. Y 220 Maintenance and Service Guide Troubleshooting 2.

11 No OS Loading from Hard Drive, Part 2 Continued from Section 2.10, No OS Loading from Hard Drive, Part 1. Reseat hard drive. N CD or diskette in drive? 1. Replace hard drive.

2. Replace system board. Y Hard drive accessible? Done Y N Remove diskette and reboot. Run FDISK. Y Boot from hard drive? Done Hard drive partitioned? N Create partition, then format hard drive to bootable C:\ prompt.

N N Boot from diskette drive? Go to Section 2.13, No OS Loading from Diskette Drive. Y N Hard drive formatted? Y N Hard drive accessible? Y Y Computer booted? Done Format hard drive and bring to a bootable C:\ prompt. Y Go to Section 2.12, No OS Loading from Hard Drive, Part 3. N Go to Section 2.12, No OS Loading from Hard Drive, Part 3. Load OS using Restore CD if applicable. Maintenance and Service Guide 221 Troubleshooting 2.12 No OS Loading from Hard Drive, Part 3 Continued from Section 2.

11, No OS Loading from Hard Drive, Part 2. N System files on hard drive? Install OS and reboot. Y Y Virus on hard drive? Clean virus. OS loading from hard drive? Y Done N Run SCANDISK and check for bad sectors. N Y Diagnostics on diskette? Replace hard drive. N N Can bad sectors be fixed? Replace hard drive. Run diagnostics and follow recommendations. Y N Fix bad sectors. Boot from hard drive? Replace hard drive. Y Done 222 Maintenance and Service Guide Troubleshooting 2.

13 No OS Loading from Diskette Drive Y OS not loading from diskette drive. Reseat diskette drive. OS loading? Done N Y Nonsystem disk message? Bootable diskette in drive? N Install bootable diskette and reboot computer. N N Boot from another device? Go to Section 2.17, Nonfunctioning Device.

Y Check diskette for system files. Try different diskette. Y N Diskette drive enabled in the setup utility? Enable drive and cold boot computer. Nonsystem disk error? Y 1. Replace diskette drive.

2. Replace system board. Y Y Diskette drive boot order. Clear CMOS. Refer to Section 1.2, "Clearing a Password," for instructions. N Y OS loading? Done N N Change boot priority using the setup utility. Go to Section 2.17, Nonfunctioning Device Maintenance and Service Guide 223 Troubleshooting 2.14 No OS Loading from CD- or DVD-ROM Drive No OS loading from CD- or DVD-ROM drive.

Y Disk in drive? Bootable disk in drive? N N Install bootable disk. Y Try another bootable disk. Install bootable disk and reboot computer. Y Boots from CD or DVD? Done N Y Reseat drive. Boots from CD or DVD? Done N N Booting from another device? Go to Section 2.17, Nonfunctioning Device. Clear CMOS.

@@Audio? Done N Y Notebook in docking station (if applicable)? @@Check after each change: 1. Reseat docking station audio cable. 2.

Replace audio cable. 3. Replace speaker. 4. Replace docking station audio board.

5. @@@@Reload audio drivers. Y N Correct drivers for application? @@Done N 1. Replace internal speakers. 2.

Replace audio board, if applicable. 3. @@Any physical device? Fix or replace broken item. N Reattach device. Close notebook, plug in power, and reboot. Possible bad hard drive. Replace drive. @@Replace card. @@@@Replace internal keyboard or cable. Y Y Done OK? @@Replace system board.

Y Reseat internal pointing device connector (if applicable). N OK? Replace internal pointing device or cable. Y Y Done OK? Done N Replace system board. Maintenance and Service Guide 229 Troubleshooting 2.20 Network or Modem Connection Problems No network or modem connection. N Network or modem jack active? Replace jack or have jack activated. Y Y Digital line? Connect to non-digital line. N N NIC/modem configured in OS? Reload drivers and reconfigure. @@OK? @@@@English U.S.

@@English U.S. @@@@English U.S. @@@@Use care when handling the plastic parts.

@@@@Handle cables by the connector whenever possible. In all cases, avoid bending, twisting, or tearing cables. @@@@Ensure that the optical drive tray is closed. @@While handling a drive, avoid touching the connector. @@Avoid dropping drives from any height onto any surface.

@@@@Avoid exposing a drive to temperature extremes or to liquids. @@Circuitry design and structure determine the degree of sensitivity. Networks built into many integrated circuits provide some protection, but in many cases the discharge contains enough power to alter device parameters or melt silicon junctions. A sudden discharge of static electricity from a finger or other conductor can destroy static-sensitive devices or microcircuitry.



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Often the spark is neither felt nor heard, but damage occurs. An electronic device exposed to electrostatic discharge may not be affected at all and can work perfectly throughout a normal cycle. The device may function normally for awhile, then degrade in the internal layers, reducing its life expectancy. 4.5 Packaging and Transporting Precautions Use the following grounding precautions when packaging and transporting equipment: I I I I I To avoid hand contact, transport products in static-safe containers, such as tubes, bags, or boxes. Protect all electrostatic-sensitive parts and assemblies with conductive or approved containers or packaging.

Keep electrostatic-sensitive parts in their containers until the parts arrive at static-free workstations. Place items on a grounded surface before removing items from their containers. Always be properly grounded when touching a sensitive component or assembly. 4.4 Maintenance and Service Guide Removal and Replacement Preliminaries I I Place reusable electrostatic-sensitive parts from assemblies in protective packaging or nonconductive foam. Use transporters and conveyers made of antistatic belts and roller bushings. Ensure that mechanized equipment used for moving materials is wired to ground and that proper materials were selected to avoid static charging. When grounding is not possible, use an ionizer to dissipate electric charges. 4.6 Workstation Precautions Use the following grounding precautions at workstations: I I I I I Cover the workstation with approved static-dissipative material (refer to Table 4-2). Use a wrist strap connected to a properly grounded work surface and use properly grounded tools and equipment.

Use conductive field service tools, such as cutters, screwdrivers, and vacuums. When using fixtures that must directly contact dissipative surfaces, only use fixtures made of static-safe materials. Keep the work area free of nonconductive materials, such as ordinary plastic assembly aids and Styrofoam. Handle electrostatic-sensitive components, parts, and assemblies by the case or PCM laminate. Handle these items only at static-free workstations.

Avoid contact with pins, leads, or circuitry. Turn off power and input signals before inserting or removing connectors or test equipment. I I Maintenance and Service Guide 4.5 Removal and Replacement Preliminaries 4.7 Grounding Equipment and Methods Grounding equipment must include either a wrist strap or a foot strap at a grounded workstation. I When seated, wear a wrist strap connected to a grounded system.

Wrist straps are flexible straps with a minimum of one megaohm $\pm 10\%$ of resistance in the ground cords. To provide proper ground, wear a strap snugly against the skin at all times. On grounded mats with banana-plug connectors, connect a wrist strap with alligator clips. When standing, use foot straps and a grounded floor mat. @@@@ Both Phillips P0 and Torx T8 screws are removed during disassembly. @@@@ Turn off the computer. 2. Disconnect the AC adapter and all external devices. 3. Remove the battery pack.

4. Remove the hard drive. 5. @@@@ Refer to Figure 5-2 for computer feet locations. Figure 5-2. Replacing the Computer Feet Maintenance and Service Guide 5.5 Removal and Replacement Procedures 5.5 Keyboard Keyboard Spare Part Number Information Keyboard without pointing stick (for use with TouchPad models) Arabic Brazilian Belgian Czech Danish French French Canadian German Greek Hebrew Hungarian International Italian Japanese 241427-171 241427-201 241427-181 241427-221 241427-081 241427-051 241427-121 241427-041 241427-151 241427-BB1 241427-211 241427-002 241427-061 241427-291 Korean Latin American Spanish Norwegian Portuguese Russian Slovenia/Slovakia Slovenian Spanish Swedish/Finnish Swiss Taiwanese Turkish U.K. English U.S.

English 241427-AD1 241427-161 241427-091 241427-131 241427-251 241427-B41 241427-231 241427-071 241427-101 241427-111 241427-AB1 241427-141 241427-031 241427-001 Keyboard with pointing stick Arabic Brazilian Belgian Czech Danish French French Canadian German Greek Hebrew Hungarian International Italian Japanese 241428-171 241428-201 241428-181 241428-221 241428-081 241428-051 241428-121 241428-041 241428-151 241428-BB1 241428-211 241428-002 241428-061 241428-291 Korean Latin American Spanish Norwegian Portuguese Russian Slovenia/Slovakia Slovenian Spanish Swedish/Finnish Swiss Taiwanese Turkish U.K. English U.S. English 241428-AD1 241428-161 241428-091 241428-131 241428-251 241428-B41 241428-231 241428-071 241428-101 241428-111 241428-AB1 241428-141 241428-031 241428-001 1.

Prepare the computer for disassembly (Section 5.3). 2. Turn the computer bottom side up with the front facing you. 5.6 Maintenance and Service Guide Removal and Replacement Procedures 3.

Remove the black M2 \times 7 screw that secures the keyboard to the base enclosure (Figure 5-3). Figure 5-3. Removing the Keyboard Screw 4. Turn the computer top side up with the front facing you. 5. Open the computer. Maintenance and Service Guide 5.7 Removal and Replacement Procedures 6. Slide the four tabs on the top of the keyboard forward 1 (Figure 5-4). 7. Lift the top edge of the keyboard and swing it up and forward until it rests on the top cover 2.

Figure 5-4. Releasing the Keyboard 8. Disengage the keyboard cable from the retaining clips in the top cover. 5.8 Maintenance and Service Guide Removal and Replacement Procedures 9. Release the ZIF connector to which the pointing device cable is attached 1 and disconnect the pointing device cable 2 (Figure 5-5). 10. Release the ZIF connector to which the keyboard cable is attached 3 and disconnect the keyboard cable 4. Figure 5-5. Disconnecting the Keyboard and Pointing Device Cables 11. Remove the keyboard.

Reverse the above procedure to replace the keyboard. Maintenance and Service Guide 5.9 Removal and Replacement Procedures 5.6 Modem/Network Interface Card (NIC) Modem/Network Interface Card (NIC) Spare Part Number Information Mini PCI communications boards Type III mini PCI combination 56-Kbps modem/NIC board Type III mini PCI combination 56-Kbps/NIC/3DES board Type III mini PCI 56-Kbps modem board 230338-001 230339-001 230337-001 1. Prepare the computer for disassembly (Section 5.3).

2. Remove the keyboard (Section 5.5). 3. Lift up the left side of the modem/NIC cover 1 and swing the cover forward 2 (Figure 5-6). Figure 5-6. Removing the Modem/NIC Cover 4. Remove the modem/NIC cover. 5. Disconnect the modem/NIC cable from the modem/NIC board 1 (Figure 5-7). 5.10 Maintenance and Service Guide Removal and Replacement Procedures 6. Spread the retaining tabs 2 that secure the modem/NIC board to the system board. The modem/NIC board rises up at a 45-degree angle. 7. Pull the modem/NIC board away from the connector at a 45-degree angle 3.

Figure 5-7. Removing the Modem/NIC Board Reverse the above procedure to replace the modem/NIC board.



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Maintenance and Service Guide 511 Removal and Replacement Procedures 5.7 Real Time Clock (RTC) Battery The RTC battery is included in the Miscellaneous Plastics Kit (spare part number 241439-001). 1. Prepare the computer for disassembly (Section 5.3). 2. Remove the keyboard (Section 5.5). 3. Remove the modem/NIC cover (Section 5.6). 4. Disconnect the RTC battery cable from the system board 1 (Figure 5-8).

5. Remove the RTC battery from the retaining clip in the top cover 2. The system ROM 3 is also accessible when the modem/NIC cover is removed. Figure 5-8. Removing the RTC Battery Reverse the above procedure to replace the RTC battery.

512 Maintenance and Service Guide Removal and Replacement Procedures 5.8 TouchPad or Touch Button TouchPad or Touch Button Spare Part Number Information TouchPad (for use with TouchPad models) Touch Button (for use with pointing stick models) 135227-001 159530-001 1. Prepare the computer for disassembly (Section 5.3). 2. Remove the keyboard (Section 5.5). 3. Remove the modem/NIC cover (Section 5.6).

Maintenance and Service Guide 513 Removal and Replacement Procedures 4. Lift up on the left side of the TouchPad 1 until it disengages from the top cover (Figure 5-9). 5. Swing the TouchPad up and back 2 and rest it on the top cover. 6. Disconnect the TouchPad cables from the system board 3. Figure 5-9. Removing the TouchPad 7. Remove the TouchPad. Reverse the above procedure to replace the TouchPad.

514 Maintenance and Service Guide Removal and Replacement Procedures 5.9 Switch Cover Switch Cover Spare Part Number Information Switch cover 241438-001 1. Prepare the computer for disassembly (Section 5.3). 2.

Remove the keyboard (Section 5.5). 3. Position the computer so the rear panel faces you. 4.

Remove the two black M2 × 7 screws that secure the switch cover to the base enclosure (Figure 5-10). Figure 5-10. Removing the Switch Cover Screws 5. Position the computer so the front faces you. 6. Open the computer as far as it will open. Maintenance and Service Guide 515 Removal and Replacement Procedures 7. Lift the switch cover up 1, slide it forward 2, and rest it on the keyboard (Figure 5-11). 8. Disconnect the left 3 and right speaker cables 4 from the system board.

Figure 5-11. Removing the Switch Cover 9. Remove the switch cover. Reverse the above procedure to replace the switch cover. 516 Maintenance and Service Guide Removal and Replacement Procedures 5.10 Display Display Spare Part Number Information Displays 14.1-inch, SXGA+, CTFT 14.1-inch, XGA, CTFT 241433-001 241434-001 1. Prepare the computer for disassembly (Section 5.3).

2. Remove the keyboard (Section 5.5). 3. Remove the switch cover (Section 5.

9). 4. Position the display so that it is vertical. Maintenance and Service Guide 517 Removal and Replacement Procedures 5. Remove the black M2 × 7 screw that secures the display ground cable to the top cover 1 (Figure 5-12).

6. Disconnect the display video 2 and inverter cables 3 from the system board. Figure 5-12. Disconnecting the Display Cables 7. Position the computer so the rear panel faces you. 518 Maintenance and Service Guide Removal and Replacement Procedures 8. Remove the two black M2 × 7 screws 1 that secure the display to the base enclosure (Figure 5-13). 9. Lift the display straight up and remove it from the base enclosure 2. Figure 5-13.

Removing the Display Reverse the above procedure to replace the display. Maintenance and Service Guide 519 Removal and Replacement Procedures 5.11 Top Cover Top Cover Spare Part Number Information Top cover 241436-001 1. Prepare the computer for disassembly (Section 5.3) and remove the following components: a. Keyboard (Section 5.5) b. Modem/NIC cover (Section 5.6) c. Switch cover (Section 5.

9) d. Display (Section 5.10) 2. Turn the computer bottom side up with the rear panel facing you. 520 Maintenance and Service Guide Removal and Replacement Procedures 3.

Remove the following screws: three black M2 × 7 screws from the front edge of the base enclosure 1 (Figure 5-14) two black M2 × 5 screws from the hard drive bay 2 three black M2 × 5 screws from the MultiBay 3 two black M2 × 5 screws from the rear panel 4 Figure 5-14. Removing the Top Cover Screws 4.

Turn the computer top side up with the rear panel facing you. Maintenance and Service Guide 521 Removal and Replacement Procedures 5. Insert a flat blade screwdriver into the slot 1 above the docking connector to disengage the top cover from the I/O bracket (Figure 5-15).

6. Lift the top cover straight up and remove it from the base enclosure 2. Figure 5-15. Removing the Top Cover Reverse the above procedure to replace the top cover. 522 Maintenance and Service Guide Removal and Replacement Procedures 5.12 System Board System Board Spare Part Number Information System boards Mobile Intel Pentium III processor 1.066 GHz-M Mobile Intel Pentium III processor 866 MHz-M 241430-001 241432-001 the fully depressed Make sure CardPC Card eject buttons are inserted into the and there are no PC devices or space savers PC Card slots before removing the system board. 1. Prepare the computer for disassembly (Section 5.3) and remove the following components: a.

Keyboard (Section 5.5) b. Modem/NIC cover (Section 5.6) c. RTC battery (Section 5.7) d. Touch button assembly (Section 5.8) e. Switch cover (Section 5.9) f. Display (Section 5.10) g. Top cover (Section 5.11) 2. Position the computer so the rear panel faces you.

Maintenance and Service Guide 523 Removal and Replacement Procedures 3. Remove the tape that secures the modem cable to the system board 1 (Figure 5-16). 4. Remove the two silver 7.0-mm bushing guides 2 on each side of the docking connector that secure the system board to the base enclosure.

5. Remove the three black M2 × 5 screws 3 that secure the system board to the base enclosure. Figure 5-16. Removing the System Board Screws and Screwlocks 524 Maintenance and Service Guide Removal and Replacement Procedures the When removing 5-17): system board, do not remove the following screws (Figure 1 four screws 1 that secure the processor bracket to the system board 1 two screws 2 that secure the heat sink to the system board 1 two screws 3 that secure the hard drive connector the system board 1 four screws 4 that secure the PC Card assembly to the system board Figure 5-17. Do Not Remove These Screws Maintenance and Service Guide 525 Removal and Replacement Procedures 6. Use the MultiBay connector 1 to lift the system board and swing it up and to the right until it rests at a 45-degree angle (Figure 5-18). 7. Slide the system board out of the base enclosure at a 45-degree angle 2. Figure 5-18.

Removing the System Board Reverse the above procedure to replace the system board.

526 Maintenance and Service Guide Removal and Replacement Procedures 5.



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13 Fan Fan Spare Part Number Information Fan 255528-001 1. Prepare the computer for disassembly (Section 5.3) and remove the following components: a. Keyboard (Section 5.5) b. Modem/NIC cover (Section 5.6) c. RTC battery (Section 5.7) d. Touch button assembly (Section 5.8) e. Switch cover (Section 5.9) f. Display (Section 5.10) g. Top cover (Section 5.11) h. System board (Section 5.12) 2.

Turn the system board bottom side up with the rear panel facing you. Maintenance and Service Guide 527 Removal and Replacement Procedures 3. Disconnect the fan cable from the system board (Figure 5-19). Figure 5-19. Disconnecting the Fan Cable 4. Turn the system board top side up with the rear panel facing you. 528 Maintenance and Service Guide Removal and Replacement Procedures 5. Remove the black M1 × 6 Phillips screw 1 and silver M2 × 6.5 Phillips screw 2 that secure the fan to the system board (Figure 5-20). 6.

While holding the system board above the work surface, push the left side of the fan up 3 from the bottom of the system board. 7. When the left edge of the fan has cleared the system board, slide the fan to the left 4 and out of the heat sink. Figure 5-20. Removing the Fan 8. Remove the fan. Reverse the above procedure to replace the fan. Maintenance and Service Guide 529 Removal and Replacement Procedures 5.14 DC-DC Converter Board DC-DC Converter Board Spare Part Number Information DC-DC converter board 241435-001 1. Prepare the computer for disassembly (Section 5.3) and remove the following components: a. Keyboard (Section 5.5) b. Modem/NIC cover (Section 5.6) c.

RTC battery (Section 5.7) d. Touch button assembly (Section 5.8) e. Switch cover (Section 5.9) f. Display (Section 5.10) g. Top cover (Section 5.11) h. System board (Section 5.12) 2. Turn the system board bottom side up with the rear panel facing you. 530 Maintenance and Service Guide Removal and Replacement Procedures 3. Lift the left and right edges of the DC-DC converter board to disconnect the board from the system board (Figure 5-21).

Figure 5-21. Removing the DC-DC Converter Board 4. Remove the DC-DC converter board. @@@@ The modem cable is spared the Miscellaneous Plastics Modem cables are also included in Kit (spare part number 241439-001). 1. Prepare the computer for disassembly (Section 5.3) and remove the following components: a. Keyboard (Section 5.5) b. Modem/NIC cover (Section 5.6) c. RTC battery (Section 5.7) d. Touch button assembly (Section 5.8) e.

Switch cover (Section 5.9) f. Display (Section 5.10) g. Top cover (Section 5.11) h. System board (Section 5.12) 2. Position the base enclosure with the rear panel facing forward. Maintenance and Service Guide 533 Removal and Replacement Procedures 3. Lift the modem connector out of the base enclosure 1 and disengage the modem cable 2 from the alignment clips and tabs in the base enclosure (Figure 5-23). Figure 5-23. Removing the Modem Cable 4. @@@@ capability may differ. 3 Actual drive specifications may differ slightly.

Certain restrictions and exclusions apply. Consult the Compaq Customer Support Center for details. 64 Maintenance and Service Guide Specifications Table 6-3 Hard Drives (Continued) 30.0 GB Physical configuration Cylinders 3 Heads Sectors per track 3 Bytes per sector Buffer size 3 Disk rotational speed (rpm) Transfer rate Interface max (MB/s) 2 Media (Mb/s) 3 11 2 System 20.0 GB 15.0 GB 22,784 6 293560 512 2 MB 4200 22,784 4 293560 512 2 MB 4200 25,800 2 398731 512 512 KB 4200 66.6 109203 66.6 109203 100 155256 GB = 1,000,000,000 bytes. capability may differ. 3 Actual drive specifications may differ slightly.

Certain restrictions and exclusions apply. Consult the Compaq Customer Support Center for details. Maintenance and Service Guide 65 Specifications Table 6-4 Diskette Drive Diskette size Light Height Bytes per sector Sectors per track High density Low density Tracks per side High density Low density Read/write heads Average seek times Track-to-track (high/low) Average (high/low) Settling time Latency average 3 to 6 ms 94 to 174 ms 15 ms 100 ms 18 (1.44 MB) 9 80 80 2 15 (1.2 MB) 3.

5 inch On system 0.5 in 512 12.7 mm 66 Maintenance and Service Guide Specifications Table 6-5 CD-ROM Drive Applicable disk CD-ROM (Mode 1, 2, and 3) CD-XA ready (Mode 2, Form 1 and 2) CD-I ready (Mode 2, Form 1 and 2) CD-R (read only) CD Plus Photo CD (single/multisession) CD-Extra Video CD CD-WO (fixed packets only) CD-Bridge .59 in 1.5 cm 12 cm, 8 cm 1.

2 mm 1.6 µm Center hole diameter Disk diameter Disk thickness Track pitch Access time Random Full stroke Cache buffer Data transfer rate Sustained, 16X Variable Normal PIO Mode 4 (single burst) Startup time Stop time < 150 ms < 300 ms 128 KB 150 KB/s at 1X 1500 to 3600 KB/s (10X to 24X) 16.6 KB/s < 8 seconds < 4 seconds Maintenance and Service Guide 67 Specifications Table 6-6 DVD-ROM Drive Applicable disk DVD-5, DVD-9, DVD-10 CD-ROM (Mode 1 and 2) CD Digital Audio CD-XA ready (Mode 2, Form 1 and 2) CD-I ready (Mode 2, Form 1 and 2) CD-R (read only) CD Plus Photo CD (single/multisession) CD-Bridge .59 in 1.5 cm 12 cm, 8 cm 1.2 mm .74 µm Center hole diameter Disk diameter Disk thickness Track pitch Access time

Random Full stroke Audio output level Cache buffer Data transfer rate Max 24X CD Max 8X DVD Normal IO Mode 4 (single burst) Startup time Stop time < 150 ms < 225 ms Line-out, 0.7 Vrms 512 KB/sec 3600 KB/s (150 KB/s at 1X CD rate) 10,800 KB/s (1352 KB/s at 1X DVD rate) 16.6 MB/s < 12 seconds < 3 seconds 68 Maintenance and Service Guide Specifications Table 6-7 CD-RW Drive Center hole diameter Disk diameter Disk thickness Track pitch Access time Random Full stroke Audio output level Cache buffer Data transfer rate Sustained, 16X Sustained, 4X CD-RW Normal PIO Mode 4 (single burst) Startup time Stop time 150 KB/s 5,520 KB/s 16.6 MB/s < 15 seconds < 6 seconds < 150 ms < 225 ms Line-out, 0.

7 Vrms 128 KB/s minimum .47 in .74 µm .59 in .39 cm 12 cm, 8 cm .12 cm Maintenance and Service Guide 69 Specifications Table 6-8 AC Adapter Dimensions Height Depth Width Weight Power supply (input) Operating voltage Operating current Operating frequency range Maximum transient 90 to 260 VAC RMS Nominal 1.3 A RMS 47 to 63 Hz Nominal 4/50 kV 1.10 in 1.42 in 3.70 in .

39 lb 2.79 cm 3.61 cm 9.40 cm .18 kg Table 6-9 8-cell, Li ion Battery Pack Dimensions Length Width Depth Weight Energy Voltage Amp-hour capacity Watt-hour capacity Temperature Operating Nonoperating 32 to 108°F 32 to 140°F 0 to 42°C 0 to 60°C 14. 8 V Minimum 3.7 Ah, typical 3.9 Ah Minimum 53.2 Ah, typical 56.1 Ah 4.

95 in 3.46 in 0.80 in 0.96 lb 125.80 cm 88.00 cm 20.40 cm 0.43 kg 610 Maintenance and Service Guide Specifications Table 6-10 System DMA Hardware DMA DMA0 DMA1 DMA2 DMA3 DMA4 DMA5 DMA6 DMA7 System Function Available for audio Entertainment audio (default; alternate = DMA0, DMA3, none) Diskette drive ECP parallel port LPT1 (default; alternate = DMA0, none) DMA controller cascading (not available) Available for PC Card Not assigned Not assigned PC Card controller can use DMA 1, 2, or 5.

7 Vrms 128 KB/s minimum .47 in .74 µm .59 in .39 cm 12 cm, 8 cm .12 cm Maintenance and Service Guide 69 Specifications Table 6-8 AC Adapter Dimensions Height Depth Width Weight Power supply (input) Operating voltage Operating current Operating frequency range Maximum transient 90 to 260 VAC RMS Nominal 1.3 A RMS 47 to 63 Hz Nominal 4/50 kV 1.10 in 1.42 in 3.70 in .



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Maintenance and Service Guide 611 Specifications Table 6-11 System Interrupts Hardware IRQ IRQ0 IRQ1 IRQ2 IRQ3 IRQ4 IRQ5 IRQ6 IRQ7 IRQ8 IRQ9 IRQ10 IRQ11 IRQ12 IRQ13 IRQ14 IRQ15 System Function System timer Keyboard controller Cascaded COM2 COM1 Audio (default)* Diskette drive Parallel port Real time clock (RTC) Infrared System use System use Internal point stick or external mouse Coprocessor (not available to any peripheral) IDE interface (hard drive and optical drive) System use Cards IRQ3, PCIRQ15. may assert infrared IRQ4, IRQ5, IRQ7, IRQ9, IRQ10, IRQ11, or Either the or the serial port may assert IRQ3 or IRQ 4.

Default configuration; audio possible configurations are IRQ5, IRQ7, IRQ9, IRQ10, or none. 612 Maintenance and Service Guide Specifications Table 6-12 System I/O Addresses I/O Address (hex) 000 - 00F 010 - 01F 020 - 021 022 - 024 025 - 03F 02E - 02F 040 - 05F 044 - 05f 060 061 062 - 063 064 065 - 06F 070 - 071 072 - 07F 080 - 08F 090 - 091 092 093 - 09F 0A0 - 0A1 System Function (shipping configuration) DMA controller no. 1 Unused Interrupt controller no. 1 Opti chipset configuration registers Unused 87334 "Super IO" configuration for CPU Counter/timer registers Unused Keyboard controller Port B Unused Keyboard controller Unused NMI enable/real time clock Unused DMA page registers Unused Port A Unused Interrupt controller no. 2 Maintenance and Service Guide 613 Specifications Table 6-12 System I/O Addresses (Continued) I/O Address (hex) 0A2 - 0BF 0C0 - 0DF 0E0 - 0EF 0F0 - 0F1 0F2 - 0FF 100 - 16F 170 - 177 178 - 1EF 1F0 - 1F7 1F8 - 200 201 202 - 21F 220 - 22F 230 - 26D 26E - 26 278 - 27F 280 - 2AB 2A0 - 2A7 2A8 - 2E7 2E8 - 2EF System Function (shipping configuration) Unused DMA controller no. 2 Unused Coprocessor busy clear/reset Unused Unused Secondary fixed disk controller Unused Primary fixed disk controller Unused Joystick (decoded in ESS1688) Unused Entertainment audio Unused Unused Unused Unused Unused Reserved serial port 614 Maintenance and Service Guide Specifications Table 6-12 System I/O Addresses (Continued) I/O Address (hex) 2F0 - 2F7 2F8 - 2FF 300 - 31F 320 - 36F 370 - 377 378 - 37F 380 - 387 388 - 38B 38C - 3AF 3B0 - 3BB 3BC - 3BF 3C0 - 3DF 3E0 - 3E1 3E2 - 3E3 3E8 - 3EF 3F0 - 3F7 3F8 - 3FF CF8 - CFB CFC - CFF System Function (shipping configuration) Unused Infrared port Unused Unused Secondary diskette drive controller Parallel port (LPT1/default) Unused FM synthesizer - OPL3 Unused VGA Reserved (parallel port/no EPP support) VGA PC Card controller in CPU Unused Internal modem "A" diskette controller Serial port (COM1/default) PCI configuration index register (PCIDIVO-1) PCI configuration data register (PCIDIVO-1) Maintenance and Service Guide 615 Specifications Table 6-13 System Memory Map Size 640 KB 128 KB 48 KB 160 KB 64 KB 15 MB 58 MB 58 MB 2 MB 4 GB 64 KB Memory Address 00000000 - 0009FFFF 000A0000 - 000BFFFF 000C0000 - 000CBFFF 000C8000 - 000E7FFF 000E8000 - 000FFFFF 00100000 - 00FFFFFF 01000000 - 047FFFFF 04800000 - 07FFFFFF 08000000 - 08FFFFFF 08200000 - FFFFFFFF FFFF0000 - FFFFFFFF System Function Base memory Video memory Video BIOS Unused System BIOS Extended memory Super extended memory Unused Video memory (direct access) Unused System BIOS 616 Maintenance and Service Guide A Connector Pin Assignments Table A-1 Stereo Speaker/Headphone 1 Pin 1 Signal Audio out 2 Pin 2 Signal Ground Table A-2 Microphone 1 Pin 1 Signal Audio in 2 Pin 2 Signal Ground Maintenance and Service Guide A1 Connector Pin Assignments Table A-3 Keyboard/Mouse 1 3 5 KEY 2 4 6 Pin 1 2 3 Signal Keyboard/mouse data1 Keyboard/mouse data2 Ground Pin 4 5 6 Signal +5 VDC Keyboard/mouse clock1 Keyboard/mouse clock2 Table A-4 RJ-11 Modem Pin 1 2 3 Signal Unused Tip Ring Pin 4 5 6 Signal Unused Unused A2 Maintenance and Service Guide Connector Pin Assignments Table A-5 RJ-45 Network Interface 1357 2468 Pin 1 2 3 4 Signal Transmit + Transmit Receive + Unused Pin 5 6 7 8 Signal Unused Receive Unused Unused Table A-6 Universal Serial Bus Pin 1 2 Signal +5 VDC Data - Pin 3 4 Signal Data + Ground Maintenance and Service Guide A3 Connector Pin Assignments Table A-7 Serial 6 1 9 5 Pin 1 2 3 4 5 Signal Carrier detect Receive data Transmit data Data terminal ready Signal ground Pin 6 7 8 9 Signal Data set ready Ready to send Clear to send Ring indicator A4 Maintenance and Service Guide Connector Pin Assignments Table A-8 External Monitor 11 6 1 10 15 5 Pin 1 2 3 4 5 6 7 8 Signal Red analog Green analog Blue analog Not connected Ground Ground analog Ground analog Ground analog Pin 9 10 11 12 13 14 15 Signal +5 VDC Ground Monitor detect DDC 2B data Horizontal sync Vertical sync DDC2B clock Maintenance and Service Guide A5 Connector Pin Assignments Table A-9 Parallel 14 1 25 13 Pin 1 2 3 4 5 6 7 8 9 Signal Strobe Data bit 0 Data bit 1 Data bit 2 Data bit 3 Data bit 4 Data bit 5 Data bit 6 Data bit 7 Pin 10 11 12 13 14 15 16 17 1825 Signal Acknowledge* Busy Paper out Select Auto line feed* Error* Initialize printer* Select in* Signal ground *Signal is active low. A6 Maintenance and Service Guide Connector Pin Assignments Table A-10 Docking 30 60 90 120 1 31 61 91 Pin 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 Signal EBOXL AGND EBOXS1 RED AGND GREEN AGRD BLUE AGND VSYNC HSYNC DDC DAT DDC CLK GND INDEX Pin 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 Signal RDATA TRK0 WDATA WGATE STEP DIR POWER ON SYS RESET GND DSKCHG +5 V (VDD) AUGND XA2/L IN XA3/R IN MID0/MIC IN Maintenance and Service Guide A7 Connector Pin Assignments Table A-10 Docking (Continued) 30 60 90 120 1 31 61 91 Pin 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 Signal AUGND XA0/L OUT XSD/MIC SN XA1/R OUT GND GND EXPCLK2 +3.3 V EXPCLK0 +5 V (8051VCC) EXPLCK EBOXS2 GND EBOXL EBOXL/GND Pin 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 Signal SRDY EBOXS1/GND RII EX GND SLCT LD0 PE LD1 ACK LD2 BUSY LD3 GND STRB LD4 ALF LD5 INIT LD6 SLCTIN LD7 GND PDATA0 LD8 A8 Maintenance and Service Guide Connector Pin Assignments Table A-10 Docking (Continued) 30 60 90 120 1 31 61 91 Pin 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 Signal PDATA1 LD9 PDATA2 LD10 PDATA3 LD11 GND PDATA4 LD12 PDATA5 LD13 PDATA6 LD14 PDATA7 LD 15 GND ERROR LCLK RXD1 LVREQ TXD1 LCREQ RTS1 LEN GND CTS1 LIIC CLK Pin 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 Signal DRT1 LIIC DAT DSRI EX DCD1 EX 12C DATA GND 12C CLK GND HDSEL GND WPROT EBOXS2/GND ERDY EBOXL/GND FLUSHREQ MEMACK Maintenance and Service Guide A9 Connector Pin Assignments Table A-10 Docking (Continued) 30 60 90 120 1 31 61 91 Pin 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 Signal PS2 VCC SERIRQ PS2 CLK EXPREQ AD[29] AD[31] AD[30] AD[28] AD[26] GND AD[24] AD[22] AD[20] AD[18] AD[16] Pin 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 Signal GND AD[15] AD[13] AD[11] AD[09] GND AD[06] AD[04] AD[02] AD[00] GND FRAME TRDY STOP PAR A10 Maintenance and Service Guide B Power Cord Set Requirements 3-Conductor Power Cord Set The computer's wide range input feature permits it to operate from any line voltage from 100 to 120 or 220 to 240 volts AC.



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The power cord set received with the computer meets the requirements for use in the country where the equipment is purchased. Power cord sets for use in other countries must meet the requirements of the country where the computer is used.

For more information on power cord set requirements, contact a Compaq authorized reseller or service provider. General Requirements The requirements listed below are applicable to all countries: I I The length of the power cord set must be at least 5.00 feet (1.5 m) and a maximum of 6.50 feet (2.0 m). All power cord sets must be approved by an acceptable accredited agency responsible for evaluation in the country where the power cord set will be used. The power cord set must have a minimum current capacity of 10 amps and a nominal voltage rating of 125 or 250 volts AC, as required by each country's power system. The appliance coupler must meet the mechanical configuration of an EN 60 320/IEC 320 Standard Sheet C13 connector, for mating with the appliance inlet on the back of the computer. II Maintenance and Service Guide B1 Power Cord Set Requirements Country-Specific Requirements 3-Conductor Power Cord Set Requirements Country Australia Austria Belgium Canada Denmark Finland France Germany Italy Japan The Netherlands Norway Sweden Switzerland United Kingdom United States Accredited Agency EANSW OVE CEBC CSA DEMKO FIMKO UTE VDE IMQ METI KEMA NEMKO SEMKO SEV BSI UL Applicable Note Number 1 1 1 2 1 1 1 1 1 3 1 1 1 1 1 2 Notes 1.

The flexible cord must be <HAR> Type HO5VV-F, 3-conductor, 1.0 mm2 conductor size. Power cord set fittings (appliance coupler and wall plug) must bear the certification mark of the agency responsible for evaluation in the country where it will be used. B2 Maintenance and Service Guide Power Cord Set Requirements 2. The flexible cord must be Type SPT-3 or equivalent, No. 18 AWG, 3-conductor. The wall plug must be a two-pole grounding type with a NEMA 5-15P (15A, 125V) or NEMA 6-15P (15A, 250V) configuration. 3. The appliance coupler, flexible cord, and wall plug must bear a "T" mark and registration number in accordance with the Japanese Dentori Law. The flexible cord must be Type VCT or VCTF, 3-conductor, 1.

00mm2 conductor size. The wall plug must be a two-pole grounding type with a Japanese Industrial Standard C8303 (7A, 125V) configuration. Maintenance and Service Guide B3 C Screw Listing This appendix provides specification and reference information for the screws used in the computer. All screws listed in this appendix are available in the Miscellaneous Screw Kit, spare part number 241440-001. Maintenance and Service Guide C1 Table C-1 Torx T8 M2 × 7.0 Screw Color Black Qty 9 Length 7.0 mm Thread 2 mm Head Width 4.0 mm Where used: 1 One screw that secures the keyboard to the base enclosure (documented in Section 5.5) 2 Three screws that secure the top cover to the base enclosure (documented in Section 5.11) C2 Maintenance and Service Guide Table C-1 Torx T8 M2 × 7.

0 Screw (Continued) Color Black Qty 9 Length 7.0 mm Thread 2 mm Head Width 4.0 mm Where used: 1 Two screws that secure the switch cover to the base enclosure (documented in Section 5.9) 2 Two screws that secure the display to the base enclosure (documented in Section 5.10) Maintenance and Service Guide C3 Table C-1 Torx T8 M2 × 7.

0 Screw (Continued) Color Black Qty 9 Length 7.0 mm Thread 2 mm Head Width 4.0 mm Where used: One screw that secures the display ground cable to the base enclosure (documented in Section 5.10) C4 Maintenance and Service Guide Table C-2 Phillips M1 × 6.0 Screw Color Black Qty 1 Length 6.

0 mm Thread 1 mm Head Width 4.0 mm Where used: One screw that secures the fan to the system board (documented in Section 5.13) Maintenance and Service Guide C5 Table C-3 Phillips M2 × 6.5 Screw Color Silver Qty 1 Length 6.5 mm Thread 2 mm Head Width 4.0 mm Where used: One screw that secures the fan to the system board (documented in Section 5.13) C6 Maintenance and Service Guide Table C-4 Torx T8 M2 × 5.0 Screw Color Silver Qty 12 Length 5.0 mm Thread 2 mm Head Width 4.0 mm Where used: 1 Two screws that secure the memory expansion compartment cover to the base enclosure (refer to the Hardware Guide included with the computer for installation procedure) 2 Two screws that secure the top cover to the base enclosure (documented in Section 5.

11) 3 Three screws that secure the top cover to the base enclosure (documented in Section 5.11) 4 Two screws that secure the system board to the base enclosure (documented in Section 5.12) Maintenance and Service Guide C7 Table C-4 Torx T8 M2 × 5.0 Screw (Continued) Color Silver Qty 12 Length 5.0 mm Thread 2 mm Head Width 4.0 mm Where used: Three screws that secure the system board to the base enclosure (documented in Section 5.12) C8 Maintenance and Service Guide Table C-5 7.0 mm × 20.0 Bushing Guide Color Silver Qty 2 Length 20 mm Thread n/a Head Width 7.0 mm Where used: Two bushing guides that secure the system board to the base enclosure (documented in Section 5.

12) Maintenance and Service Guide C9 Index A AC adapter spare part numbers 313 specifications 610 Advanced Menu, Computer Setup 25 aircraft power adapter, spare part number 314 audio troubleshooting 225 auto power adapter/charger, spare part number 314 C cables, handling 42 caps lock key 111 caps lock light 113 CD-ROM drive illustrated 310 option part number 310 OS loading problems 224 spare part number 37, 310 specifications 67 CD-RW drive illustrated 310 option part number 310 specifications 69 Certificate of Authenticity label 115 Compaq Diagnostics 21, 27 components bottom 114 front 16 keyboard 110 left side 18 rear panel 18 right side 16 top 112 composite TV connector 19 B base enclosure illustrated 36 spare part number 37 battery compartment 115 battery components light 17 release latch 115 specifications 610 battery pack illustrated 36 spare part numbers 37, 314 bottom components 114 Maintenance and Service Guide Index1 Index Computer Setup Advanced Menu 25 File Menu 23 overview 21 Security Menu 24 computer specifications 6-1 connector pin assignments headphone jack A1 keyboard connector A2 microphone jack A1 modem jack A2 monitor connector A5 mouse connector A2 network interface jack A3 parallel connector A6 RJ-11 jack A2 RJ-45 jack A3 serial connector A4 speaker jack A1 universal serial bus (USB) connector A3 connectors, handling 42 cursor control keys 111 D DC-DC converter board illustrated 36 removing 530 spare part number 37, 530 diagnostics configuration information 27 test information 28 disassembly sequence chart 53 diskette drive illustrated 39 light 17 option part number 39 OS loading problems 223 spare part number 37, 39 specifications 66 display illustrated 32 release latch 16 removing 517 spare part numbers 33, 517 specifications 63 DMA specifications 6-11 docking connector 19 recess latch 115 docking station troubleshooting 218 drive activity light 17 drives, preventing damage 43 DVD-ROM drive illustrated 310 option part number 310 OS loading problems 224 spare part number 37, 310 specifications 68 E Easy Access buttons 113 electrostatic damage prevention 44 electrostatic voltage levels 47 Index2 Maintenance and Service Guide Index embedded numeric keypad 111 external battery charger, spare part number 314 external diskette drive cable 39 external monitor connector 19 external MultiBay cradle 39 security screw 115 spare part numbers 37, 39 specifications 64 headphone jack location 17 pin assignments A1 I/O address specifications 613 I/O interface board 532 illustrated parts catalog 31 infrared port 17 interrupt specifications 612 I/Omega ZIP drive option part number 311 spare part number 37, 311 F fan illustrated 34 location 114 removing 527 spare part number 35, 527 features 11 feet illustrated 38 locations 55 File Menu, Computer Setup 23 Fn key 111 front components 16 function keys 111 K keyboard components 110 illustrated 32, 34 removing 56 spare part numbers 33, 35, 56 troubleshooting 228 keyboard connector location 18 pin assignments A2 G grounding equipment/methods 46 H hard drive illustrated 36, 39 location 19 OS loading problems 220 L left side components 18 Logo Kit spare part number 313 Maintenance and Service Guide Index3 Index M mass storage devices, part numbers 39, 310 memory expansion board, spare part numbers 314 memory expansion compartment cover illustrated 38 location 115 memory map specifications 616 Microdrive, part numbers 311 microphone jack location 17 pin assignments A1 Miscellaneous Plastics Kit components 38 spare part number 35, 38 modem removing 510 spare part numbers 37, 312, 510 troubleshooting 230 modem adapter, spare part numbers 312 modem cable illustrated 36 removing 533 routing 535 spare part number 312, 533 modem cable adapter, spare part numbers 312 modem jack, pin assignments A2 Index4 modem/NIC cover illustrated 38 removing 510 monitor connector location 19 pin assignments A5 mouse button 113 mouse connector location 18 pin assignments A2 MultiBay battery pack, spare part number 37, 314 device, illustrated 36

hard drive, option part numbers 311 location 16, 114 release latch 114 MultiPort Module cover, illustrated 38 location 18 N network interface card (NIC) removing 510 spare part number 510 network, troubleshooting 230 nonfunctioning device, troubleshooting 218, 227 num lock light 112 numeric keypad, embedded 111 O operating system loading, troubleshooting 219 Maintenance and Service Guide Index P packing precautions 44 parallel connector location 19 pin assignments A6 password, clearing 14 PC Card eject buttons 19 slot space savers 38 slots 19 plastic parts 42 pointing device, troubleshooting 229 pointing stick 113 power jack 18 light 17 switch 113 troubleshooting 212 power cord 3-conductor set B1 country-specific requirements B2 general requirements B1 notes B2 set requirements B1 spare part numbers 314 power management features 15 removal procedures 41, 51 replacement procedures 4-1, 51 right side components 16 RJ-11 jack location 16 pin assignments A2 RJ-11 P55 adapter spare part numbers 313 RJ-11 PTT adapter spare part number 313 RJ-45 jack location 19 pin assignments A3 RJ-45 network cable, spare part number 313 ROM, system 512 S Screw Kit components C1 spare part number 313 screw listing C1 scroll button 113 scroll lock light 112 security cable slot 17 Security Menu, Computer Setup 24 serial connector location 19 pin assignments A4 serial number 115, 31, 52 service considerations 41 speaker jack pin assignments A1 R real time clock (RTC) battery illustrated 38 removing 512 rear panel components 18 Maintenance and Service Guide Index5 Index speakers disconnecting 516 location 113 specifications AC adapter 610 battery 6-10 CD-ROM drive 67 CD-RW drive 69 computer 61 diskette drive 66 display 63 DMA 611 DVD-ROM drive 68 hard drive 64 I/O addresses 613 interrupts 6-12 memory map 616 Standby button 113 static shielding materials 47 stereo line-out jack 17 SuperDisk LS120 drive, spare part number 37, 310 switch cover illustrated 32 removing 515 spare part number 33, 515 system board illustrated 36 removing 523 spare part numbers 37, 523 system memory map 616 system ROM, location 512 T tools required 41 top components 112 top cover illustrated 34 removing 520 spare part number 35, 520 touch button removing 513 spare part number 35, 513 TouchPad illustrated 34 removing 513 spare part number 35, 513 transporting precautions 44 troubleshooting audio 225 Compaq Diagnostics 27 Computer Setup 22 docking station 218 flowcharts 210 keyboard 228 modem 230 network 230 nonfunctioning device 218, 227 operating system loading 219 overview 21 pointing device 229 power 212 video 216 TV connector 19 Maintenance and Service Guide Index6 Index U universal serial bus (USB) connector location 19 pin assignments A3 video troubleshooting 216 volume control buttons 17 W Windows application key 111 Windows logo key 111 workstation precautions 45 V vent 19, 114 Maintenance and Service Guide Index7 .



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