COMPAQ

White Paper

Installing Microsoft Windows 98 on Compaq Portable Products

Abstract: This White Paper focuses on the steps necessary for the successful installation of Microsoft Windows 98 on select Compaq Armada portable products. The steps outlined herein will provide the user with complete installation procedures for a clean installation or an upgrade installation over Windows 3.1x/Windows 95.

Compaq has made available the Windows 98 specific installation instructions and software enhancements (BIOS, hardware-enabling drivers, and software applications) for the **Armada 1100, 1500, 1700, 3500, 4100, 4200, 7300, 7400, 7700, 7800, SB families, and LTE 5000 families**. This white paper instructs you on installing the operating system and Compaq enhancements.

Although Compaq will support customers that upgrade to Windows 98 on the **Armada 6500**, doing so at this time is not recommended. Compaq continues to test Windows 98 on the Armada 6500 and intends to release updates to many existing Compaq drivers, BIOS and other software enhancements specifically for Windows 98 in 4Q98. Windows 98 will install and run on the Armada 6500. However, it is important to note that without the updated versions of various Compaq enhancements, users will experience a loss of functionality.

Please refer to *Read This First - Limitations When Using Microsoft Windows 98 on Compaq Armada Portables* before you install Windows 98.

For details on Compaq's overall operating system strategy and operating system features please refer to the white paper titled *Operating System Support for Compaq Portable Platforms*.

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Installing Microsoft Windows 98 on Compaq Portable Products
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Summary

This white paper discusses installing Microsoft Windows 98 on Compaq Armada portable products. The intent of the white paper is to provide step by step instructions for the installation process either as an upgrade from Windows 3.1, Windows 95, or as a newly installed operating system on a Compaq Armada portable. When you have completed all the procedures outlined for your specific platform, you will have successfully installed Windows 98 and all Compaq provided software deliverables that extend functionality and enhance the overall user experience.

These scripts are for installing Windows 98 with APM (Advanced Power Management) support. If you wish to enable ACPI (Advanced Configuration and Power Management) on those Armada notebooks which support ACPI, see Appendix 6, "ACPI."

Note: You must back up all data and applications before beginning any installation procedures of Windows 98.

Installation Requirements and Dependencies

Before beginning the installation scripts for any of the platforms, you have to obtain the items listed below:

- The Retail Microsoft Windows 98 CD-ROM or Upgrade CD-ROM, or the Compaq Upgrade CD-ROM, as applicable.

- Microsoft DOS Boot Diskette with FDISK, FORMAT, and SYS utilities if not performing an upgrade installation. In addition, Microsoft utilities XCOPY and MSCDEX may also be needed if performing a clean installation or upgrading from Windows 3.1x.

- Windows 98 Drivers and Enhancements from Compaq.

  Installing the latest versions of Windows 98 compatible Drivers and Enhancements is very important. Previous versions may not work or may produce anomalies.

  You may obtain the drivers and enhancements in two ways; from the Compaq Support Software CD or by downloading the driver software from the Compaq website.

  – The Compaq Support Software CD version 98.08 (or later) contains all updated drivers and deliverables listed in the section titled "Installing Compaq drivers and enhancements." The Compaq Support Software CD is updated monthly and is available either through an annual subscription or as a one-time purchase.

  – The Compaq website at http://www.compaq.com/support/files/portables/us/index.html. has the downloadable driver software files. For instructions on using the Compaq website see Appendix 1, "Downloading Software from the Compaq Website."

- Blank, high-density floppy diskettes, if you choose to make the recommended Windows 98 Startup Diskette, and for downloading SoftPaqs from the Compaq website.

- ROM version required. For information on determining the current ROM version for your portable model and how to update if necessary, see Appendix 4, "Determining Your ROM Version and Upgrade Version."

Table 1. Current Compaq ROM Versions

Portable Family	Current ROM Version
Armada 1100 Family	07/18/98
Armada 1500 and SB Families	8/31/98
Armada 1700 Family	09/09/98
Armada 3500 Family	09/09/98
Armada 4100 Family	05/04/98
Armada 4200 Family	05/21/98
Armada 7300/7700 Families	05/13/98
Armada 7400/7800 Families	08/07/98
LTE 5000 Family	05/31/98

Terms and Assumptions

- **Secondary-click**—Throughout the scripts, the term secondary-click is used. For right-handed mouse users, this is the right mouse button. For left-handed mouse users, this is the left mouse button.

- **Double-click**—Throughout the scripts, you are asked to double-click certain items. If you are using Microsoft's Internet Explorer 4.x and have turned on the single-click option, you should simply single-click the selection, not double-click as indicated in these instructions.

- **Drive Letters**—All drive letters used for hard drives and CD-ROM drives are examples only. Your individual configuration may vary. D: may be the drive letter used in the example, however the letter for your CD-ROM drive may actually be E:.

- **Web**—A term used synonymously with www.compaq.com/support/files/portables/us/index.html, the Compaq Support Software CD, the Compaq BBS, or the Compaq FTP site. It is important that you obtain the latest Windows 98 compatible drivers and enhancements from one of these sites.

- **Drivers and Enhancement File Locations**—Most drivers and enhancements are assumed to be in the directory C:\~COMPAQ\XXXXXXXX where XXXXXXXX is the subdirectory name created by the SoftPaq utility for these scripts. If you are unfamiliar with the SoftPaq utility and extracting files, see Appendix 2, "Using the SoftPaq Utility." One exception is the Real Mode CD-ROM drivers that may be on diskette, normally the A: drive.

- **Restarting the Computer**—During the Windows 98 installation, and the installation of several drivers and enhancements, you are prompted to restart the computer. Be sure that you have removed any floppy diskettes from the diskette drive and the Windows 98 disk from the CD-ROM drive, as applicable, before restarting the computer.

- **Real Mode CD-ROM Drivers**—Depending on your platform, these can be found on the web www.compaq.com/support/files/portables/us/index.html either under Windows 3.1 or Windows 95. They are listed as either "IDE CD-ROM Drivers" under the Storage section or as "Real Mode Support" under the Utilities section.

Instructions for using the Compaq website and Compaq SoftPaqs are located in the appendices at the end of this document.

Installation Scripts

This scripts apply to the Armada 1100, 1500, 1700, 3500, 4100, 4200, 7300, 7400, 7700, 7800, SB families, and LTE 5000 families unless otherwise noted.

New Installation

Preliminary Steps

You must prepare an MS-DOS boot diskette with the Compaq Real Mode CD-ROM drivers to have access to the CD-ROM drive during the installation process.

1. Connect the unit to an AC power source. This prevents it from abruptly shutting down if the battery power gets too low, which could corrupt the Windows 98 installation.

2. Undock your system and remove any PC cards from the PCMCIA slots. For information on docking your Armada Portable for the first time, see Appendix 5, "Docking for the First Time."

3. Obtain the latest Real Mode CD-ROM driver from the web and extract it from the SoftPaq.

4. Copy the CD-ROM driver, the SYS utility, and the MSCDEX file to the MS-DOS boot diskette by typing the following commands at the DOS prompt, pressing **Enter** after each command:

   a. COPY CPQLTECD.SYS A:

   b. COPY MSCDEX.EXE A:

   c. COPY SYS.COM A:

5. Create a CONFIG.SYS file and an AUTOEXEC.BAT file on the boot diskette to load the CD-ROM drivers. Use an editor of your choice to create a one line CONFIG.SYS file containing the entry:

   DEVICE=CPQLTECD.SYS /D: IDECD001

   Note: An editor is a program for creating and changing simple text files. Two examples are "EDIT" for DOS and "NOTEPAD" for Windows.

6. Use your editor to create a one line AUTOEXEC.BAT file containing the entry:

   MSCDEX /D:IDECD001

   If your hard drive does not currently have an operating system installed, or if your current operating system uses NTFS or HPFS for its file system, or if you have an operating system installed using the FAT file system and wish to remove it, perform steps 6a, 6b, and 6c to prepare the hard drive for Windows 98 installation. Otherwise, proceed to step 7.

   Note: If you do not have a non-DOS partition as partition 1, Compaq strongly recommends the installation of Diagnostics and Setup **after** removing all other partitions and before proceeding with the operating system installation. For instructions on this installation, see Appendix 3, "Installing Diagnostics and Setup."
   *Exception: The **Armada 6500** does not use standard Compaq Diagnostics and Setup.*

   a. Back up all data and applications before removing any partitions and reformatting the hard drive or all data *will be lost*.

   b. Boot the system with the MS-DOS boot diskette inserted into the diskette drive.

> **IMPORTANT: Do not delete the non-DOS partition that contains your installed Compaq Diagnostics and Setup.**

To repartition the hard drive with a single Primary DOS partition:

c.   Type FDISK and press **Enter**.

If you are not sure about the use of the FDISK program, refer to Microsoft's KB article Q106423 for instructions. This article may be found online at http://support.microsoft.com/support/kb/articles/q106/4/23.asp.

7. Reformat the hard drive. Boot the system with the MS-DOS boot diskette inserted into the diskette drive.

8. Type FORMAT C:/S from the MS-DOS A:> prompt and press **Enter**.

9. When warned that all data on the hard drive will be deleted, press **Y** and **Enter** to proceed with formatting the hard drive.

10. Enter a volume label or simply press **Enter**. A "system transferred" message should appear.

11. Copy the Real Mode drivers, AUTOEXEC.BAT, and CONFIG.SYS from the boot diskette to the hard drive.

    From the MS-DOS A:> prompt, type each of the following lines, pressing **Enter** at the end of each line:

    a.   COPY AUTOEXEC.BAT C:

    b.   COPY CONFIG.SYS C:

    c.   COPY MSCDEX.EXE C:

    d.   COPY CPQLTECD.SYS C: (You may have to check the floppy drive directory for this file.)

12. **Armada SB, 1100, 1500, 1700, 3500, 4100, and 4200 Family users** should remove the Boot Diskette from the floppy drive and restart the system by simultaneously pressing and holding **Ctrl**, **Alt**, and **Del**.

    Armada 7000 and LTE 5000 Family users should power off the system, swap the diskette drive for the CD-ROM drive, and restart the computer. If you are not sure how to swap the diskette drive for the CD-ROM drive, see your unit documentation.

After the computer reboots and the C:> prompt is displayed, you are ready to install Windows 98.

Installation Procedure

This script relies on using the retail release of Windows 98. If upgrading from Windows 3.1 or Windows 95, see those respective sections. If using a Windows 98 upgrade CD for this installation, your results may vary slightly. You will also need the original media for Windows 3.1 or Windows 95 to complete the upgrade.

1. Copy the Windows 98 setup files to the hard drive. You may need them for future additions of new hardware, such as PC Cards, or for docking the unit for the first time.

   a. Type MD WIN98 and press **Enter**.

   b. Type CD WIN98 and press **Enter**.

2. Place the Windows 98 disk into the CD-ROM drive.

   a. Type COPY D:\WIN98*.* and press **Enter**.

   Note: If you want to install the Microsoft Channel Content, use the following command at step 2: XCOPY D:\WIN98*.* /S.

   Armada 7000 and LTE 5000 Family users only should now power off the system, swap the CD-ROM drive for the diskette drive and then restart the computer. If you are not sure how to swap the diskette drive for the CD-ROM drive, see your unit documentation. After the system reboots,

   b. Type CD WIN98 and press **Enter**.

3. Type SETUP and press **Enter**. The next screen informs you how Setup will perform a routine system check.

4. Press **Enter** to continue. The Windows 98 Setup screen appears.

5. Click **Continue**. The License Agreement appears. After reading the License Agreement:

   a. Click on 'I accept the Agreement.'

   b. Click **Next** to accept the Agreement.

6. Enter the Product Key on the Certificate of Authenticity that came with your Windows 98 documentation, then click Next to continue.

7. Select the directory where the operating system will be installed. The recommended directory is the default directory, C:\WINDOWS.

   Click **Next** to accept the default directory, or,

   If you choose to use a directory other than the default directory:

   Click **Other Directory**, enter the directory name, then click **Next**.

8. Select the type of installation to be performed. If you are unsure of which type to select, contact your IT department, otherwise:

   a. Select **Portable**.

   b. Click **Next** to continue.

9. Enter your name and, if desired, tab to the Company field and enter your company name, then click **Next** to continue.

10. Select the Windows Components to be installed. If you are unsure which to install:

    Click **Next** to install the most common components, or,

    Click on 'Show me the list of components so I can choose,' select the components you want to install, then click **Next** to continue.

11. If the unit has an integrated modem, you are asked to enter the computer identification information.

    a. Every computer on a network must have a unique name. Accept the default or change the name as appropriate. **Tab** to the next field.

    b. A Workgroup is a group of related computers. Accept the default or change the Workgroup as appropriate. **Tab** to the next field.

    c. The Computer Description is just that. Accept the default or change the description as appropriate. Click **Next** to continue.

12. Click **Next** to create a Startup Disk. You may elect to skip this process. However, Compaq strongly recommends creating a Startup disk.

    a. Insert a blank, high-density diskette into the diskette drive and click **OK**.

    b. When prompted, remove the diskette and click **OK**.

13. The Windows 98 files are copied to their installation directory. Click **Next** to continue.

14. This phase is now complete and the unit reboots. Click **Restart Now** or wait.

15. Click **Next** from the PC Card Setup Welcome screen.

16. Click **Next** on the second PC Card Wizard screen.

17. Click **Finish** on the third PC Card Wizard screen.

18. Verify your geographical location, select the correct time zone, and date and time for your area. Click **Next**.

19. After Setup finishes this phase, the unit reboots. Click **Restart Now** or wait.

20. The user name from the Identification setup (step 11) is displayed.

    a. To change the user name:

        Click the 'User name' field, delete the current name, and replace it with the user name you wish to use.

    b. To enter a password:

        Tab to the Password field and enter a case sensitive password. Confirm the password by retyping, then click **OK** to continue.

21. Windows finalizes your Personalized Settings. The Welcome to Windows 98 screen displays.

    If you do not want to see this screen the next time you start Windows, click on 'Show this screen each time Windows 98 starts' to uncheck the box.

22. Click on the X in the upper right corner of the window to close it.

23. After the unit reboots, click on the X in the upper right corner of the Welcome window to close it.

24. Remove the Real Mode drivers. To do this, delete the AUTOEXEC.BAT, CONFIG.SYS, CPQLETCD.SYS, and MSCDEX.EXE files.

    a. Double-click on the "My Computer" icon.

    b. Click **View → Folder Options → View → Show All Files** on the menu bar, then click OK

    c. Double-click the (C:) icon. You can view the files listed above.

    d. Click each file name, then press **Delete**. Confirm that you are deleting the correct file, then click **YES**. Repeat until all the files listed in step 24 have been deleted.

25. Double-click the WINDOWS folder.

26. Click SHOW FILES on the left side of the window.

27. Scroll through the list of files until you see the DOSSTART file.

28. Highlight the DOSSTART file and press **Delete**. Click **YES** to confirm deletion of this file.

The Windows 98 operating system installation is now complete. Proceed to the section titled "Installing Compaq Drivers and Enhancements" to install the other necessary files for your Compaq portable computer to ensure the system's complete functionality and stability.

Note: Armada 1700 and 7000 family users may wish to enable DMA. For instructions on how to enable DMA, see Appendix 7, "Enabling Hard Drive DMA."

Upgrading from Windows 95

A successful installation requires:

- A stable Windows 95 environment. If you are currently having problems with your Windows 95 operating system, or with applications while in Windows 95, Compaq recommends that these issues be resolved before upgrading to Windows 98.

- Either the retail version of the Microsoft Upgrade CD-ROM or the Compaq Upgrade CD-ROM, as applicable.

Please review the README.TXT file located in the root folder on the Windows 98 CD-ROM and the SETUP.TXT file in the WIN98 folder. README lists other text files that are installed as part of the operating system installation. These files contain information on known hardware and software issues that you should be aware of before installing Windows 98. These files are located in the file WIN98_47.CAB file. You may manually extract these files and review them before installing Windows 98. For instructions on how manually to extract these files before the installation, refer to Microsoft KB article Q129/6/05, which may be found online at http://support.microsoft.com/support/kb/articles/q129/6/05.asp.

Review the Microsoft website for any changes or additions to the README, SETUP, or other associated files.

Installation Procedure

1. Connect the unit to an AC power source. This prevents it from abruptly shutting down if the battery power gets too low, which could corrupt the Windows 98 installation.

2. Back up all data and programs before beginning the upgrade process.

3. Undock your system and remove any PC cards from the PCMCIA slots. For information on docking your Armada Portable for the first time, see Appendix 5, "Docking for the First Time."

4. Swap the diskette drive for the CD-ROM drive. If you are not sure how to swap the diskette drive for the CD-ROM drive, see your unit documentation.

    If you are not running Real Mode PCMCIA drivers, proceed to step 5.

    If you are using Real Mode PCMCIA drivers, they should now be disabled; if unsure, please continue through steps 4a to 4p. These steps are for the Compaq specific version of SystemSoft's CardWizard. If you are using another company's Card & Socket Services, please consult your documentation on how to disable them.

    a. Click **Start → Run** on the Task Bar.

    b. Type SYSEDIT and click **OK**.

    c. Click the title bar labeled C:\CONFIG.SYS.

    d. Find the line 'rem SystemSoft CardSoft/16™ PCMCIA Drivers.' At least four lines may need to be commented out. If the drivers were installed to the default directory, they all contain CARDWIZ, or CARDWORKS as part of the text.

    e. Type REM and a space at the beginning of each line.

    f. Click the title bar labeled C:\WINDOWS\SYSTEM.INI. If it is not visible, click Window on the title-bar and select the SYSTEM.INI file by clicking on it. Scroll through this file until you see '[386Enh]'.

    g. Again, look for the lines that contain the phrase 'C:\CARDWIZ\.' Place a ; (semicolon) and a space at the beginning of each line.

    h. Close the System Configuration Editor by clicking on the X in the upper right corner of the windows. You are prompted to save each file. Confirm that you wish to save each file by clicking **YES**.

    i. Secondary-click the **Start** on the Taskbar.

    j. Click **Explore**.

    k. Double-click **Programs**.

    l. Double-click **Start Up**.

    m. If there is an icon named 'CardWizard' in the right pane, highlight it, then press **Delete**.

    n. Click **YES** to confirm deleting the icon.

    o. Exit the window by clicking the X in the upper right corner.

    p. Restart the computer by clicking **Start → Shut Down → Restart** and click **YES**.

You are now ready to install Windows 98 by first copying the Windows 98 setup files to the hard drive. You will need these files for future additions of new hardware or for docking for the first time.

IMPORTANT: *For Armada 4100 and LTE 5000 users only:*

You must uninstall Win 95-specific Infra-Red Support before beginning the Win 98 upgrade. Open the Control Panel and select **Add/Remove Programs**. Select "InfraRed Support for Win 95 Version x.x" by clicking once with the left mouse button, then click **Add/Remove**. Close the Control Panel.

You must uninstall Intelligent Manageability for Win 95 before beginning the Win 98 upgrade. Open the Control Panel and select **Add/Remove Programs**. Select "Compaq Insight Manager" by clicking once with the Left Mouse Button, then click **Add/Remove**. Close the Control Panel.

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5. Double-click **My Computer**.

6. Double-click the hard drive icon '(C:)'.

7. Secondary-click in the open area of the My Computer window and choose **New → Folder**.

8. Type WIN98 and press **Enter**.

9. Double-click on the WIN98 folder.

10. Place the Windows 98 disk into the CD-ROM drive.

   Note: If Autoplay (or Auto Insert Notification) is enabled, a dialog box appears informing you that the '…CD-ROM contains a new version of Windows …' and asks if you would like to upgrade. Click **NO**. A window titled 'Windows 98 CD-ROM' is displayed. Click 'Browse This CD' and proceed to step 11.

11. Double-click **My Computer**.

12. Double-click the CD-ROM drive icon '(D:)'.

13. Double-click the folder WIN98.

14. Click **View → List** on the Menu bar.

15. Click the file named BASE4. Press and hold **Shift** and **Ctrl**, then press **End** (all listed files are selected).

   Note: If you want to install the Microsoft Channel content, use the following instruction to replace the one in step 15: Click **Edit → Select All**.

16. Click **Edit → Copy** on the Menu bar.

17. Close this window by clicking on the X in the upper right corner. You should now see the window labeled C:\WIN98.

18. Click **Edit → Paste** on the Menu bar to copy the files.

19. *Armada 7000 and LTE 5000 Family users only*—After the files have been copied to the hard drive, close all open windows, remove the CD-ROM disk from the its drive, and power off the system. Swap the CD-ROM drive for the diskette drive and then restart the computer.[1]

   – Double-click in the following order: My Computer/the C: icon/Win98 folder.

20. Double-click the SETUP.EXE file in the C:\WIN98 directory. The 'Windows 98 Setup' screen appears.

21. Click **Continue**. The License Agreement appears.

22. After reading the License Agreement, click on 'I accept the Agreement' and click **Next** to accept the Agreement.

23. Enter the Product Key on the Certificate of Authenticity that came with your Windows 98 documentation, then click **Next** to continue.

24. You are asked if you wish to save the existing system files. Compaq strongly recommends doing so. Click on the appropriate selection, then click **Next** to continue.

   Note: If you have more than one partition on your hard drive, you are prompted where to save the 'uninstall' files. Choose the appropriate drive and click OK.

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[1] See your documentation if unsure how to swap the diskette drive for the CD-ROM drive.

If networking was not installed in your system as part of Windows 95, or if the unit has an integrated modem, proceed to step 26.

25. If networking was installed in your system as part of Windows 95 (other than Dial-Up Networking without the Microsoft client) or if the unit has an integrated modem, you are asked to enter the computer identification information.

    a. Every computer on a network must have a unique name. Accept the default or change the name as appropriate. **Tab** to the next field.

    b. A Workgroup is a group of related computers. Accept the default or change the Workgroup as appropriate. **Tab** to the next field.

    c. The Computer Description is just that. Accept the default or change the description as appropriate. Click Next to continue.

26. You are asked to verify your geographical location, select the appropriate time zone, and date and time for your area. Make your selections and click **Next**.

27. Click **Next** to create a Startup Disk. You may elect to skip this process. However, Compaq strongly recommends creating a Startup disk.

    a. Insert a blank, high-density diskette into the diskette drive and click **OK**.

    b. When prompted, remove the diskette and click **OK**. The Windows 98 files are copied to their installation directory. [2] Click **Next** to continue.

28. No user input is required during this next phase. Do nothing while the system updates and finalizes your settings.

    Note: The left margin on your screen informs of the time remaining in this finalization process.

29. After Setup finishes this phase, the unit reboots. Click **Restart Now** or wait.

30. After rebooting, if you performed step 25, the user name you entered in that step is shown.[3] If you wish to change this, click the 'User name' field, delete the current name, and replace it with the user name you want to use. If you want to enter a password, **Tab** to the Password field and enter a password.[4] Click **OK** to continue.

    Note: If this is the first time this user name has been used on this computer, you are asked to reenter the password. Confirm the password by retyping it and click **OK**. If the passwords do not match, you are asked to type them again. Click **OK** to reenter the password. If you previously had a password for the user name entered, this one must match the previous.

31. Windows finalizes your Personalized Settings and displays the Welcome to Windows 98 screen. If you do not want to see this screen the next time you start Windows, uncheck the box 'Show this screen each time Windows 98 starts' by clicking on that text. Close this window by clicking on the X in the upper right corner of the window. The next time the unit reboots, click on the X in the upper right corner of the Welcome window to close it.

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[2] You may experience Windows 98 Setup needing to be reminded where the installation directory is. If you are prompted that a file cannot be found, click OK, reenter the path C:\WIN98, and click OK.
[3] In certain instances, this step may be skipped.
[4] Passwords are case sensitive.

This completes the Windows 98 installation. Proceed to "Installing Compaq Drivers and Enhancements" to install the other necessary files for your Compaq portable computer.

IMPORTANT: You must install all drivers for your system to have complete functionality.

Note: Armada 1700 and 7000 family users may wish to enable DMA. See Appendix 7, "Enabling Hard Drive DMA" for instructions on how to enable DMA.

Upgrading from Windows 3.1x

A successful installation requires:

- A stable Windows 3.1x environment. If you are currently having problems with your Windows 3.1x operating system, or with applications while in Windows 3.1x, Compaq recommends that these issues be resolved before upgrading to Windows 98.

- Either the retail version of the Microsoft Upgrade CD-ROM or the Compaq Upgrade CD-ROM, as applicable.

- An original Disk One of Windows 3.1x to use the upgrade CD.

Please review the README.TXT file located in the root folder on the Windows 98 CD-ROM and the SETUP.TXT file in the WIN98 folder. README lists other text files that are installed as part of the operating system installation. These files contain information on known hardware and software issues that you should be aware of before installing Windows 98. These files are located in the file WIN98_47.CAB file. You may manually extract these files and review them before installing Windows 98. For instructions on how to manually extract these files before the installation, refer to Microsoft KB article Q129/6/05, which may be found online at http://support.microsoft.com/support/kb/articles/q129/6/05.asp.

Review Microsoft's website for any changes or additions to the README, SETUP, or other associated files.

Installation Procedure

1. Connect the unit to an AC power source. This prevents it from abruptly shutting down if the battery power gets too low, which could corrupt the Windows 98 installation.

2. Back up all data and programs before beginning the upgrade process.

3. Undock your system and remove any PC cards from the PCMCIA slots. For information on docking your Armada Portable for the first time, see Appendix 5, "Docking for the First Time."

4. Swap the diskette drive for the CD-ROM drive. If you are not sure how to swap the diskette drive for the CD-ROM drive, see your unit documentation.

   If you have Compaq Real Mode CD-ROM drivers installed, proceed to step 6.

5. You must have the Compaq Real Mode CD-ROM drivers installed to install Windows 98. Please perform steps (a) to (g) to install the drivers.

   a. Obtain the latest Real Mode CD-ROM drivers from the web and extract them from the SoftPaq.

   b. If not already in Windows, type WIN from the DOS prompt.

   c. From the File Manager or Program Manager window, click **File → Run**.

   d. Type SYSEDIT and click **OK**.

   e. The highlighted window should read C:\AUTOEXEC.BAT. Scroll to the end of this file and type following line: MSCDEX /D:IDECD001. Make sure that the correct path name is included

   f. Click the title bar labeled C:\CONFIG.SYS. If it is not visible, click Window on the menu bar and select the CONFIG.SYS file by clicking on it. Scroll to the end of this file and add the following line: DEVICE= CPQLTECD.SYS /D:IDECD001. Make sure that the correct path name is included.

   g. Do not close the System Configuration Editor window. Proceed to step 6.

6. Disable the Real Mode PCMCIA drivers. If you are not running any PCMCIA drivers, proceed to step 7.

   If your are using Real Mode PCMCIA drivers, or if unsure, continue through steps 6a to 6n. These steps are for the Compaq specific version of SystemSoft's CardWizard. If you are using another company's Card & Socket Services, please consult your documentation on how to disable them.

   a. If the System Configuration Editor is already running skip to step d.

   b. From either the Program Manager or File Manager window, click **File → Run**.

   c. Type SYSEDIT and click **OK**.

   d. Click the title bar labeled C:\CONFIG.SYS.

   e. Find the line 'rem SystemSoft CardSoft/16(TM) PCMCIA Drivers.' At least four lines may need to be commented out. If the drivers were installed to the default directory, they all contain CARDWIZ, or CARDWORKS as part of the text.

   f. Type REM and a space at the beginning of each of these lines.

   g. Place a semicolon (;) before these lines if they exist:

      ```
      device=c:\dos\monoumb.386
      device=c:\cardwiz\pccard.386
      device=c:\cardwiz\ssvrdd.386
      device=ssvcd.386
      device=ssvcd311.386
      COM1Base=3F8
      COM1Irq=4
      COM4Base=2E8
      COM4Irq=11
      EMMEXCLUDE=C800-CBFF
      EMMEXCLUDE=D000-D4FF
      ```

      And add:

      ```
      device=*vcd
      ```

   h. Click the title bar labeled C:\WINDOWS\SYSTEM.INI. If it is not visible, click Window on the menu bar and select the SYSTEM.INI file by clicking on it. Scroll through this file until you see '[386Enh]'.

   i. Again, look for the lines that contain the phrase 'C:\CARDWIZ\.' Place a ; (semicolon) and a space at the beginning of each line.

   j. Close the System Configuration Editor by clicking on the X in the upper right corner of the windows. You are prompted to save each file. Confirm that you want to save each file by clicking **YES**.

   k. Double-click the STARTUP group icon in the Program Manager. If the icon is not visible, click the word WINDOW on the menu bar and then click on the word MAIN. If the word Main does not appear when you click the word WINDOW, click the words MORE WINDOWS. A dialog box with all the groups listed displays. Scroll through until you see the STARTUP group, click it, and then click **OK**.

   l. Click the icon labeled 'CardWizard' and then press **Delete**.

   m. Click **YES** to confirm deleting the icon.

   n. Exit Windows by clicking **File → Exit Windows** from the Program Manager window.

o.   Restart the computer by pressing, then releasing **Ctrl**+**Alt**+**Delete** simultaneously.

You are now ready to install Windows 98. The Windows 98 setup files must be copied to the hard drive first. You need them for future additions of new hardware, such as PC Cards, or for docking the unit for the first time.

7.   Type MD WIN98 and press **Enter**.

8.   Type CD WIN98 and press **Enter**.

9.   Place the Windows 98 disc into the CD-ROM drive.

10. Type COPY D:\WIN98*.* and press **Enter**.

> **Note**: If you wish to install the Microsoft Channel Content, substitute the following command in step 10: XCOPY D:\WIN98*.* /S

11. **Armada 7000 and LTE 5000 Family users** should now power off the system, swap the CD-ROM drive for the diskette drive, restart the computer, and proceed to step 20. If you are not sure how to swap the diskette drive for the CD-ROM drive, see your unit documentation.

Steps 12 to 19 are for **Armada 1500 users only**. All others should proceed to step 20. The video driver needs to be reset to the default VGA and a file needs to be renamed.

12. Type CD\WINDOWS and press **Enter**.

13. Type SETUP and press **Enter**.

14. Using the arrow keys, highlight the line titled 'VGA' and press **Enter**.

15. Again, using the arrow keys, scroll through this list until you see VGA and highlight it. Press **Enter**.

16. Press **Enter**.

17. You are prompted that the driver is already installed. Press **Enter**.

Armada 1540, 1560, 1570, 1571, 1572, 1573, 1590, 1592, 1598 users also need to perform steps 18 and 19. Others should proceed to step 20.

18.   Type CD SYSTEM and press **Enter**.

19. Type REN CHIPSCPL.CPL *.ORG and press **Enter**.

20. Start Windows by typing WIN and pressing **Enter** from the command prompt.

21. From the Program Manager or File Manager window, click **File → Run**.

22. Type C:\WIN98\SETUP and click **OK**.

23. The 'Windows 98 Setup' screen appears. Click **Continue**. The License Agreement appears.

24. After reading the License Agreement, click on 'I accept the Agreement' and click **Next** to continue.

25. Enter the Product Key on the Certificate of Authenticity that came with your Windows 98 documentation, then click **Next** to continue.

26. Select the directory where the operating system will be installed. The recommended directory is the default directory, C:\WINDOWS. Click **Next** to accept the default directory.

To use a directory other than the default directory, click **Other Directory**, enter the alternate directory, then click **Next**.

27. You are asked if you want to save the existing system files. Compaq strongly recommends doing so. Click on the appropriate selection and click **Next** to continue.

If you have more than one partition on your hard drive, you are prompted where to save the 'uninstall' files. Choose the appropriate drive and click **OK**.

28. Select the type of installation to perform. If you are unsure about which type of installation to select, contact your IT department, otherwise, select PORTABLE and click **Next** to continue.

29. Click **Next** to select the Windows Components to be installed. If you are unsure of which to install,

    a. Click on 'Show me the list of components so I can choose' and click **Next**.

    b. Select the components you wish to install and click **Next** to continue.

    If networking was not installed in your system as part of Windows 3.1x, and if you do not have an integrated modem, proceed to step 33.

30. If networking was installed in your system as part of Windows 3.1x (other than Dial-Up Networking without the Microsoft client) or if the unit has an integrated modem, you are asked to enter the computer identification information.

    a. Every computer on a network must have a unique name. Accept the default or change the name as appropriate. **Tab** to the next field.

    b. A Workgroup is a group of computers that are somehow related. Accept the default or change the Workgroup as appropriate. **Tab** to the next field.

    c. The Computer Description is just that. Accept the default or change the description as appropriate. Click **Next** to continue.

31. Verify that the location is correct and click **Next**.

32. Click **Next** to create a Startup Disk. You may elect to skip this process. However, Compaq strongly recommends creating a Startup Disk.

    a. Insert a high-density floppy into the diskette drive and click **OK**.

    b. When prompted, remove the diskette and click **OK**. The Windows 98 files are copied to their installation directory. Click **Next** to continue.

33. This phase is now complete. The unit restarts. Click **Restart Now** or wait.

34. From the PC Card Setup Welcome screen, click **Next**.

35. Click **Next** on the second PC Card Wizard screen.

36. Click **Finish** on the third PC Card Wizard screen.

37. You are asked to verify your geographical location, select the appropriate time zone, and the date and time for your area. Make your selections and click **Next**.

38. After Setup finishes this phase, the unit restarts. Click **Restart Now** or wait.

39. After rebooting, if you performed step 30, the user name you entered in that step displays. If you want to change this, click the 'User name' field, delete the current name, and replace it with the user name you want to use. If you want to enter a password, tab to the Password field and enter a case sensitive password. Click **OK** to continue.

Note: If this is the first time this user name has been used on this computer, you are asked to reenter the password. Confirm the password by retyping it and click **OK**. If the passwords do not match, you are asked to type them again. Click **OK** to reenter the password. If you previously had a password for the user name entered, this one must match the previous.

40. Windows finishes its hardware configuration and finalizes your Personalized Settings. The Welcome to Windows 98 screen displays. If you do not want to see this screen the next time you start Windows, uncheck the box 'Show this screen each time Windows 98 starts' by clicking on that text. Close this window by clicking on the X in the upper right corner of the window. After the unit restarts, click on the X in the upper right corner of the Welcome window to close it.

41. Reference to the Real Mode drivers, if added, must now be removed. To do this, remove the lines added in steps 5e and 5f also using SYSEDIT.

    Additionally, the DOSSTART file must be modified to remove Real Mode references.

42. Click **Start → Run**.

43. Type NOTEPAD C:\WINDOWS\DOSSTART.BAT and click **OK**.

44. Type REM and a space in front of the line

    C:\WINDOWS\COMMAND\MSCDEX.EXE /IDECD001.

45. Click **File → Exit** on the Notepad title bar.

46. Click **YES** to save the file.

The Windows 98 installation is complete. Proceed to "Installing Compaq Drivers and Enhancements" to install the other necessary files for your Compaq portable computer.

Note: You must install all drivers in order for your system to have complete functionality.

Note: Armada 1700 and 7000 family users may wish to enable Hard Drive DMA. See Appendix 7, "Enabling Hard Drive DMA" for instructions on how to enable DMA.

Installing Compaq Drivers and Enhancements

Compaq Drivers and Support Software

The necessary drivers and enhancements available for the Compaq Armada Portables discussed in this white paper are summarized in Table 2. The list is current at the date of this publication. You should always check the Compaq website for the complete, up-to date list of available drivers and enhancements and their associated SoftPaq numbers. Instructions for obtaining the SoftPaqs is in Appendix 1, "Downloading Software from the Compaq Website." After obtaining the necessary files for your Armada portable, proceed to the installation instructions for each deliverable.

Important Notes

- Make sure that the system is undocked (Standalone) and there are no PC Cards in the PCMCIA slots when installing drivers. [5]

- Any item with an asterisk is considered optional and may not be needed by all users depending upon their environment.

- Any first step which begins with 'Double-click SETUP' assumes that you have used 'My Computer' or Explorer to navigate to the directory where the files are located after extraction from the SoftPaq.

- These SoftPaqs are the minimum required for Windows 98[6]. They may be superceded as noted on the Compaq website.

Table 2. Compaq Drivers and Enhancements SoftPaqs for Windows 98

Family	Driver/Enhancement	SoftPaq #
Armada 1100	C&T Video Drivers	SP2051
	Diagnostics	SP7445
	Real Mode Support*	SP7143
	Power Management	SP7726
	Security 32 Support	SP7251
Armada 1500	C&T 68554, 655xx Video Drivers	SP7141
	ESS 1878 Audio Drivers	SP7448
	Diagnostics	SP7445
	Real Mode Support*	SP7143
	Insight Management	SP7393
	Power Management	SP7726
	Programmable Keys	SP7176
	Security 32 Support	SP7251
	Carbon Copy 32 Host Edition*	SP7441
	560CL Telephony Modem Drivers	SP6468
	Intel Ethernet Drivers*[7]	SP7129

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[5] See APPENDIX 5 DOCKING FOR THE FIRST TIME for information on docking your Armada Portable for the first time.
[6] These SoftPaq numbers are for the US English versions. Versions for other language may vary.

Family	Driver/Enhancement	SoftPaq #
Armada SB	C & T Video Drivers	SP7141
	ESS 1869 Audio Drivers	SP7156
	Diagnostics	SP7445
	Real Mode Support*	SP7143
	Insight Management	SP7393
	Power Management	SP7726
	Programmable Keys	SP7176
	Security 32 Support	SP7251
	Carbon Copy 32 Host Edition*	SP7441
	Portable Telephony Modem Drivers	SP7447
	Intel Ethernet Drivers*[7]	SP7129
Armada 1700	C&T Video Drivers	SP7141
	ESS 1869 Audio Drivers	SP7156
	Diagnostics	SP7142
	Real Mode Support*	SP7143
	Insight Management*	SP7393
	Programmable Keys	SP7176
	Security 32 Support	SP7251
	Carbon Copy 32 Host Edition*	SP7441
	Compaq 56VL Global Internal Modem Drivers	SP7447
	Intel Ethernet Drivers*[7]	SP7129
Armada 3500	C&T Video Drivers	SP8326
	ESS 1869 Audio Drivers	SP8301
	Diagnostics	SP8288
	Insight Management*	SP7393
	Power Management	SP8071
	Intel Ethernet Drivers*[7]	SP7129
	Carbon Copy 32 Host Edition*	SP7441
	Programmable Keys	SP7176
	Real Mode Support*	SP8289
	Security 32 Support	SP8086
Armada 4100	C&T Video Drivers	SP6853
	Diagnostics	SP7142
	Real Mode Support*	SP8058
	Insight Management*	SP7393
	ESS 6/88/1688 Audio Drivers	SP2027

continued

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[7] As no two network setups are the same, it is highly recommended that you do not set up any networking components. You should contact your Network Administrators and have them properly set up the networking portions of Windows 98.

Family	Driver/Enhancement	SoftPaq #
Armada 4100 (continued)	Programmable Keys	SP7176
	Security 32 Support	SP8086
	Ethernet Drivers*[7]	SP2761
Armada 4200	C&T 68554, 655XX Video Drivers	SP5469
	Diagnostics	SP7142
	Real Mode Support*	SP7143
	Insight Management*	SP7393
	Programmable Keys	SP7176
	Security 32 Support	SP7378
	Ethernet Drivers*[7]	SP5387
Armada 7300/7700	S3 Display Drivers	SP6300
	ESS 1878 Audio Drivers	SP6299
	Diagnostics	SP7142
	Real Mode Support*	SP7143
	Insight Management	SP7393
	Programmable Keys	SP7176
	Security 32 Support	SP7378
	Carbon Copy 32 Host Edition*	SP7441
	Modem Information File	SP3716
Armada 7400/7800	S3 M5 Video Drivers	SP7411
	External Display Configuration Utility	SP7578
	ESS 1879 Audio Drivers	SP7603
	Diagnostics	SP7142
	Real Mode Support*	SP8058
	Insight Management*	SP7393
	Programmable Keys	SP7176
	Security 32 Support	SP8086
	Carbon Copy 32 Host Edition*	SP7441
	Compaq Series II Modem Drivers	SP6470
LTE 5000	Video Drivers EXCEPT model 5380	SP1859
	Video Drivers for model 5380	SP2051
	ESS 6/88/1688 Audio Drivers	SP1860
	Diagnostics	SP7445
	Real Mode Support*	SP8058
	Power Management	SP7726

SoftPaq Installation Procedures

Installing the C & T Video Drivers—Armada SB, 1700 Family, 1505, 1540, 1560, 1570, 1571, 1572, 1573, 1590, 1592, and 1598

1. Secondary-click an open area on the Desktop.
2. Click **Properties**.
3. Click the SETTINGS tab.
4. Click **Advanced Properties**.
5. Click the ADAPTER tab.
6. Click **Change**.
7. Click **Next** on the first Wizard prompt.
8. Click 'Display a list of all the drivers in a specific location…' then click **Next**.
9. Click **Have Disk**.
10. Enter the path to the video driver extracted from the SoftPaq.
11. 'Chips and Tech. 68554 PCI. (COMPAQ)' displays. Click **OK**.
12. Click **Next**.
13. If the Version Conflict dialog appears, click **NO** to replace the existing files.
14. Click **Close** to end the installation.
15. Click **Finish** to return to the Adapter tab.
16. Click the MONITOR tab.
17. If your monitor type is listed as 'Unknown,' click **Change**. If the correct panel is displayed, skip to step 19.
18. Select either 'Laptop Display Panel (800x600) or 'Laptop Display Panel (1024x768) as appropriate for your computer[8] then click **OK**.
19. Click **Close**.
20. Click **Close** again.
21. Click **YES** to restart the computer and begin using your new video drivers.

Installing the C & T 68554, 655xx Video Driver—Armada 4200 and 1700

1. Secondary-click an open area on the Desktop.
2. Click **Properties**.
3. Click the SETTINGS tab.
4. Click **Advanced Properties**.
5. Click the ADAPTER tab.
6. Click **Change**.
7. Click **Next** on the first Wizard prompt.

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[8] If you are unsure of your panel resolution, choose 800x600.

8. Click 'Display a list …' and then click **Next**.

9. Click **Have Disk**.

10. Enter the path or drive letter to the video driver extracted from the SoftPaq and click **OK**.

11. 'Chips and Tech. 65555 PCI' displays. Click **OK**.

12. Click **YES** to confirm that you want to install the Compaq video driver.

13. Click **Next**.

14. Click **Finish** to return to the Adapter tab.

15. Click the MONITOR tab.

16. If your monitor type is listed as 'Unknown Monitor,' click **Change**. If the correct panel is displayed, skip to step 19.

17. Select 'Laptop Display Panel (800x600) then click **OK**.

18. Click **Close**.

19. Click **Close** again.

20. Click **YES** to restart the computer and begin using your new video drivers.

Installing the S3 Display Driver—Armada 7300 and 7700 Family

1. Secondary-click an open area on the Desktop.

2. Click **Properties**.

3. Click the SETTINGS tab.

4. Click **Advanced**.

5. Click the ADAPTER tab.

6. Click **Change**.

7. Click **Next** on the first Wizard prompt.

8. Click 'Display a list…' then click **Next**.

9. Click **Have Disk**.

10. Enter the path to the video driver extracted from the SoftPaq.

11. 'S3 Inc. 86CM65' displays. Click **OK**.

12. Click **YES** on the warning dialog.

13. Click **Next**.

14. Click **Finish** to return to the Adapter tab.

15. Click the MONITOR tab.

16. If your monitor type is listed as 'Unknown,' click **Change**. If the correct panel is displayed, skip to step 17.

17. Select 'Laptop Display Panel (1024x768)' then click **OK**.

18. Click **Close**.

19. Click **Close** again.

20. Click **Yes** to restart the computer and begin using your new video drivers.

Installing the S3 M5 Video Drivers—Armada 7400 and 7800 Family

1. Double-click SETUP.
2. Click **OK** to restart the computer.

Installing the Cirrus GD7543 Video Drivers—LTE 5000 Family EXCEPT 5380

1. Secondary-click an open area on the Desktop.
2. Select **Start → Settings → Control Panel → Display**.
3. Click the SETTINGS tab.
4. Click **Change Display Type**.
5. Click the ADAPTER tab.
6. Click **Change**.
7. Click **Have Disk**, then **OK**.
8. Enter the path to the video driver extracted from the Softpaq, then click **OK**. The Select Device dialog appears.
9. Select "Cirrus Logic 7543 2.30a (Cirrus)" then click **OK**.
10. Click **Close**.
11. Click **Close** again.
12. Click **Yes** to restart the computer and begin using your new video driver.

Installing the Cirrus GD7548 Video Drivers—LTE 5380

1. Secondary-click an open area on the Desktop.
2. Select **Start → Settings → Control Panel → Display**.
3. Click the SETTINGS tab.
4. Click **Change Display Type**.
5. Click the ADAPTER tab.
6. Click **Change**.
7. Click **Have Disk**, then **OK**.
8. Enter the path to the video driver extracted from the Softpaq, then click **OK**. The Select Device dialog appears.
9. Select "Cirrus Logic 7548 1.35 (Cirrus)" then click **OK**.
10. Click **Close**.
11. Click **Close** again.
12. Click **Yes** to restart the computer and begin using your new video driver.

Installing the Cirrus GD7548 Video Drivers—4100 Family

1. Secondary-click an open area on the Desktop.
2. Select **Start → Settings → Control Panel → Display**.
3. Click the SETTINGS tab.
4. Click **Change Display Type**.
5. Click the ADAPTER tab.
6. Click **Change**.
7. Click **Have Disk**, then **OK**.
8. Enter the path to the video driver extracted from the Softpaq, then click **OK**. The Select Device dialog appears.
9. Select "Cirrus Logic 7548 1.40m (Cirrus)" then click **OK**.
10. Click **Close**.
11. Click **Close** again.
12. Click **Yes** to restart the computer and begin using your new video driver.

Installing the Cirrus GD7548 Video Drivers—Armada 1100 Family

1. Secondary-click an open area on the Desktop.
2. Select **Start → Settings → Control Panel → Display**.
3. Click the SETTINGS tab.
4. Click **Change Display Type**.
5. Click the ADAPTER tab.
6. Click **Change**.
7. Click **Have Disk**, then **OK**.
8. Enter the path to the video driver extracted from the Softpaq, then click **OK**. The Select Device dialog appears.
9. Select "Cirrus Logic 7548 1.35 (Cirrus)" then click **OK**.
10. Click **Close**.
11. Click **Close** again.
12. Click **Yes** to restart the computer and begin using your new video driver.

Installing the ESS 1879 Audio Drivers

1. Double-click the file SETUP.EXE.
2. Click **Next** from the Welcome screen.
3. Click **Finish** to restart the computer and finish the installation.

Installing the ESS 1869 Audio Drivers

1. Double-click the file SETUP.EXE.

2. Click **Next** from the Welcome screen.

3. Click **Finish** to restart the computer and finish the installation.

Installing the ESS 1878 Audio Drivers—Armada 7300 and 7700

4. Click **Start → Settings → Control Panel**.

5. Double-click the System icon.

6. Click the tab labeled 'Device Manager.'

7. Click the + sign next to 'Sound, video and game controllers.'

8. Click and highlight the second 'ES1878 Control Interface (WDM).'

9. Click **Properties**.

10. Click the DRIVER tab.

11. Click **Update Driver**.

12. Click **Next**.

13. Click 'Display a list of all the drivers in a specific location.' Select the driver you want, then click **Next**.

14. Click **Have Disk**.

15. Enter the path to the ESS 1878 Audio Drivers.

16. Click **OK**.

17. Click **YES** to verify the installation of the Compaq driver.

18. Click **Next**.

19. Click **Finish**.

20. Repeat steps 4-16, substituting "ES1878 Plug and Play Audio Drive (WDM)" in step 5.

Installing the ESS 1878 Audio Drivers—Armada SB and Armada 1500

1. Double-click the file SETUP.EXE.

2. Click **Next** to continue.

3. Click 'Yes, I want to restart my computer now,' then click **OK**.

Installing the ESS 6/88/1688 Audio Drivers—LTE 5000 Family

4. Click **Start → Settings → Control Panel**.

5. Double-click the System icon.

6. Click the tab labeled 'Device Manager.'

7. Click the + sign next to 'Sound, video and game controllers.'

8. Double-click 'ES688 AudioDrive.'

9. Click the DRIVER tab.

10. Click **Change Driver**.

11. Click **Have Disk**.

12. Enter the path to the ESS 688 Audio Drivers.

13. Click **OK**.

14. Click **YES** to verify the installation of the Compaq driver.

15. Click **OK** at the Properties tab.

16. Click **Close** at the System Properties dialog box. You must reboot the system.

Installing the ESS 688/1688 Audio Drivers Armada—4100 Family

1. Click **Start → Settings → Control Panel**.

2. Double-click the System icon.

3. Click the tab labeled 'Device Manager.'

4. Click the + sign next to 'Sound, video and game controllers.'

5. Double-click 'ES1788 AudioDrive.'

6. Click the DRIVER tab.

7. Click **Change Driver**.

8. Click **Have Disk**.

9. Enter the path to the ESS 688 Audio Drivers.

10. Click **OK**.

11. Click **YES** to verify the installation of the Compaq driver.

12. Click **OK** at the Properties tab.

13. Click **Close** at the System Properties dialog box. You must reboot the system.

Installing the Compaq Insight Management Agents

1. Double-click SETUP.

2. Click NEXT to continue.

3. If you wish to install DMI 2.0 support, click **Next** otherwise click **None** and **Next**.

4. Accept the destination directory by clicking **Next** or choose **Browse** and enter a different destination directory, click **OK**, **YES**, **Next**, if installing DMI support.

5. When the program finishes, highlight 'Yes, I want to restart my computer now' and click **Finish** to restart the computer. Remove the diskette from the drive before restarting.

6. The IM Agents Help file displays the next time the unit is rebooted and you log on. Close the file by clicking on the X in the upper right corner of the window.

Power Management

1. Double-click the file SETUP.EXE.

2. Click **Next** to continue.

3. Click **OK** to complete the installation.

4. Click **OK** to restart the computer.

External Display Configuration Utility

1. Double-click the file SETUP.EXE.
2. Click **Next** to continue.
3. Click 'Yes, I want to restart my computer now,' then click **OK**.

Installing Diagnostics

1. Double-click the file SETUP.EXE.
2. Click **Next** to continue.
3. Click **Finish** to complete the installation.

Installing Programmable Keys

1. Double-click the file SETUP.EXE.
2. Click **Next** to continue.
3. Click **OK** to complete the installation.
4. Click 'Yes, I want to restart my computer now,' then **OK**.

Installing Real-Mode Support

1. Double-click the file SETUP.EXE.
2. Click **Next** to continue.
3. Click **OK** to complete the installation.

Installing Security 32 Support

1. Double-click the file SETUP.EXE.
2. Click **Next** to continue.
3. Click **OK** to complete the installation.

Installing Carbon Copy 32 Host Edition

1. Double-click the file SETUP.EXE.
2. To accept the displayed name and company information, click OK or change the information and then click **OK**.
3. If you would like to view the README.TXT[9] file, click **YES** otherwise click **NO**.
4. When finished reading the README.TXT file, close it by clicking on the X in the upper-right hand corner.
5. Confirm the installation directory by click **OK** or type in a new directory and click **OK**.
6. Click **OK** to install the files.
7. Remove the diskette from the drive.
8. Click **YES** to restart the computer and finish the installation.

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[9] Compaq strongly recommends reading the README.TXT file.

Installing the Modem Information File

1. Navigate to the folder that contains the Modem Information File. Double-click on the 'My Computer' icon on the Windows desktop.

   a. Double-click on the '(C:)' icon.

   b. Continue to double-click folders until you are in the folder containing the extracted Modem Information File. You will see a file named SP7000NT.

2. Highlight the file SP7000NT and click on the 'Copy' icon.

3. Click on the change directory icon until you are in the root directory of C:\

4. Double-click on the Windows folder.

5. Click **Show Files** on the left side of this window.

6. Click **View** → **Folder Options** → **View** → **Show All Files** on the menu bar, then click **OK**.

7. Double-click on the INF folder.

8. Click on the paste icon.

9. Click **Start** → **Settings** → **Control Panel**.

10. Double-click **Modems**.

11. If prompted, enter your area code and click **Close**.

12. Click **Remove**, then click **Close**.

13. Restart the computer by clicking **Start** → **Shut Down** → **Restart the Computer** and **YES**.

    Once the computer restarts, it will properly identify your modem.

Installing the Compaq Series II Modem Driver

1. Click **Start** → **Programs** → **MS-DOS Prompt** on the Start Menu.

2. Type each of the following lines, pressing **Enter** at the end of each. Be sure to include the complete correct path and drive letter of the directory into which the drivers were extracted with the name of the first file.

   a. COPY SPQ7000V.INF C:\WINDOWS\INF

   b. COPY GBENABLE.VXD C:\WINDOWS\SYSTEM

3. Type **Exit** and press **Enter** to return to Windows.

4. Click **Start** → **Settings** → **Control Panel** on the Start Menu.

5. Double-click **Modems**.

6. If prompted, enter your area code and click **Close**.

7. Click **Remove**, then **Close**.

8. Restart the computer by clicking **Start** → **Shut Down** → **Restart the Computer** and **YES**.

   Once the computer restarts, it will properly identify your modem.

Installing the 560CL Telephony Modem—Armada SB, 1505, 1540, 1560, 1570, 1571, 1572, 1573, 1590, 1592, and 1598

1. Click **Start → Settings → Control Panel**.
2. Double-click the System icon.
3. Click the tab labeled 'Device Manager.'
4. Click the + sign next to 'Other devices.'
5. Click **Unknown Device**.
6. Click **Properties**.
7. Click **Reinstall Driver**.
8. Click **Next** from the Wizard dialog.
9. Click **Next** to search for a better driver.
10. Click **Floppy Disk Drive** so that there is a check in the box, then click **Next**
11. Click **Next** to continue.
12. Click **Next** for the Wave Device installation.
13. Click **Next** to search for a better driver.
14. Click **Floppy Disk** so that there is a check in the box, then click **Next**.
15. Click **Next** to continue.
16. Click **Finish** on the Voice Modem Serial Wave Device dialog.
17. Scroll through the countries listed in the Country Settings and choose the appropriate country.
18. Click **Change Country**.
19. Confirm the country by clicking **YES**.
20. Click **Finish** on the Update Device Driver Wizard dialog.
21. Click **YES**.
22. Click **Close** to return to the System Properties dialog.
23. Click **OK** to close the System Properties dialog.

Installing the Portable Telephony Modem INF—Models 1510, 1520, 1530, 1535, 1550, 1580

1. Click **Start → Settings → Control Panel**.
2. Double-click 'Add New Hardware' to add the Communications port.
    a. Click **Next** on this dialog and the next three dialogs.
    b. Click **Finish**.
3. Double-click the Modem icon.
4. Click **Other** so that the black circle appears in the white circle, then click **Next**.
5. Click 'Don't run the Hardware Installation Wizard' so that there is a check in the box, then click **Next**.
6. Click 'Don't detect my modem…' so that there is a check in the box, then click **Next**.

7. Click **Have Disk**.

8. Enter the path to the Portable Telephony Modem INF file and click **OK**.

9. Click **Next** to continue the installation.

10. Click 'Communications Port (COM2) so that it is highlighted, then click **Next**.

11. The Location Information dialog must have the area or city code filled in as a minimum. Change and enter all appropriate information, then click **Next**.

12. Click **Finish**.

13. Click **OK** to close the Modems Properties window.

Installing the Compaq 56VL Telephony Modem Driver

1. Click **Start → Settings → Control Panel**.

2. Double-click the System icon.

3. Click the tab labeled 'Device Manager.'

4. Click the + sign next to 'Other devices.'

5. Click 'Unknown Device.'

6. Click **Properties**.

7. Click **Reinstall Driver**.

8. Click **Next**.

9. Click the box 'Display a list of all the drives in a specific location and select the driver you want.

10. Click **Next**.

11. Select Modem and Click **Next**.

12. Click **Have disk**.

13. Enter the path to the files.

14. Click **Finish** to complete the installation.

Appendix 1: Downloading Software from the Compaq Website

1. The base URL for all Compaq Portables software is www.compaq.com/support/files/portables/us/index.html. Enter this location in the browser of your choice.

2. You are presented three drop-down dialog boxes for Family, Model, and Operating System. Fill in each box as appropriate and click the **Locate** button.

   a. Family—which series of Armada are you trying to find software for; e.g. Armada 7700, Armada 4200, etc.

   b. Model—the specific portable; e.g. 42XX where XX represents the last two digits—as in 4210 or 4220. For the 7800 Armada series, it is in the form of XXXX/Z/XXXX/Z/Z/Z—e.g. 6266/T/5000/D/M/1. See the bottom of your portable to obtain the proper model number.

   c. Operating system, in this case "Windows 98"

3. A list of all files currently available displays. Click on each sub-bulleted item.

   a. You are shown information on this particular deliverable.

   b. Click the DOWNLOAD button.[10]

   c. Place all of the files into a common directory so that they may be extracted for use in the scripts. A common directory used is C:\~COMPAQ.

See the instructions on how to use the SoftPaq utility in Appendix 2.

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[10] Consult your browser's help for instructions on how to download files if necessary.

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Appendix 2: Using the SoftPaq Utility

Currently, there are two versions of the SoftPaq utility on the Compaq website[11]. As drivers are updated and released as SoftPaqs, they are released using the most current version of the utility. You can tell which version is in use by looking at the application title-bar at the top of the screen. The procedure for using either version is outlined below.

SoftPaq 2.x

1. When you run the application, you are presented with information as to which software driver or program you are going to extract to floppy. Press **PgDn** to view the Licensing Agreement.

2. Type **AGREE**. The number of required diskettes is displayed.

3. Type the destination drive letter for the software extraction.

4. Insert a 3.5" 1.44 MB diskette into the drive and press **Enter**.

5. When the software has been extracted, the program exits automatically.

The software is now ready for installation from the diskette prepared according to the steps outlined in the section titled "Installing Compaq Drivers and Enhancements." Compaq recommends viewing the README file for any updates.

SoftPaq 3.x

1. Place the SoftPaq file in a temporary directory where the files will be extracted.

2. When you run the application, you are presented with information as to which software driver or program you are going to extract to floppy. Press **C** to continue.

3. Press **A** to agree to the Licensing Agreement.

4. You are asked if the destination directory for extraction is OK. Type **Y** to continue.

5. When the software has been extracted, the program exits automatically.

The software is now ready to be used in the steps outlined in the section titled "Installing Compaq Drivers and Enhancements." It will be installed from the directory to which it was extracted. Compaq recommends viewing the README files for any updates.

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[11] SoftPaqs are a way for Compaq to distribute driver and ROM updates as well as product enhancements.

Appendix 3: Installing Diagnostics and Setup

You need both the Diagnostics and Setup diskettes before beginning. If you do not have them, you can download them from the Compaq website. Ensure that there are no existing partitions on the hard drive with the FDISK utility. If you are unsure how to use the FDISK program, refer to Microsoft's web page on the subject. This information is available at http://support.microsoft.com/support/kb/articles/q106/4/23.asp.

1. Start the computer from the Diagnostics diskette.

2. Press **Enter** on the 'Create Diagnostics Partition' dialog.

3. Press **Enter** to restart the computer.

4. Press **Enter** to confirm that you have both the Diagnostics and Setup diskettes.

5. Insert the Setup diskette when prompted and press **Enter**.

6. Insert the Diagnostics diskette when prompted and press **Enter**.

7. Insert the Setup diskette when prompted and press **Enter**.

8. Press **Enter** to complete the installation.

9. Power off your system and restart the operating system installation.

Appendix 4: Determining Your ROM Version and Upgrade Version

To determine your ROM revision, use either the Compaq Inspect utility or Compaq Diagnostics for Windows.

Determining Your ROM Version Using Inspect

If you have Compaq's Diagnostics and Setup properly installed on the hard drive, a block cursor is displayed in the upper right corner of the screen during startup. When you see the block cursor, press **F10**. See Appendix 3 for instructions on installing Diagnostics and Setup from a diskette.

1. The Welcome to Compaq Utilities dialog appears. Press **Enter**.

2. Scroll down using the down arrow key until 'View system information (INSPECT)" is highlighted, then press **Enter**.

3. Wait while information about your system is gathered.

4. Scroll down using the down arrow key until 'ROM' is highlighted, then press **Enter**.

5. Your system ROM revision information is displayed. Make note of the date and compare it to the date at the beginning of this white paper in the section titled 'Installation Requirements and Dependencies."

6. Press **F3** to exit the ROM information screen.

7. Scroll down using the down arrow key until 'Exit…' is highlighted and press **Enter**. Repeat this step to exit from the Compaq Utilities.

8. Press **Enter** to confirm exiting the Compaq Utilities.

9. If your ROM requires upgrading and you do not have a ROMPaq diskette for your computer, see '"Creating a ROMPaq Diskette" in this appendix; otherwise proceed to "Upgrading Your ROM."

Determining Your ROM Revision using Compaq Diagnostics for Windows

1. Click **Start → Settings → Control Panel** on the Taskbar.

2. Double-click the Compaq Diagnostics icon.

3. Once Diagnostics is loaded, press **F8**.

4. Click the left-most Icon on the icon bar near the top of the window.

5. Scroll through this list until you see the System ROM information. Make note of the date and compare it to the date at the beginning of this White Paper in the section titled 'Installation Requirements and Dependencies.'

6. Close Diagnostics for Windows by clicking on the X in the upper right corner of this window.

7. If your ROM requires upgrading and you do not have a ROMPaq diskette for your computer, go to the section titled "Creating a ROMPaq Diskette; otherwise proceed to "Upgrading Your ROM."

Creating a ROMPaq Diskette

The ROMPaq SoftPaq is a version 7.x SoftPaq. After downloading the appropriate SoftPaq from the Compaq website, follow the instructions in Appendix 2 to extract the image onto a diskette.

Upgrading Your ROM

1. Connect your computer to AC power.

2. Place your ROMPaq diskette into your diskette drive and restart the computer.

3. Press **Enter** on the 'Welcome to ROMPaq' screen.

4. Press **Enter** to select your 'COMPAQ System ROM.'

5. Press **Enter** to select the most current firmware image.

6. Press **Enter** to continue.

7. To start the ROMPaq upgrade, press **Enter**.

8. When your receive the message that your system ROM has been successfully reprogrammed, power off your system.

Appendix 5: Docking for the First Time

Before docking, you need to ensure that all of the specific drivers and support software for your specific Armada are installed. See "Installing Compaq Drivers and Enhancements" for the list of deliverables and instructions on how to install them.

Compaq strongly recommends a 'cold dock' for the user's first docking under Windows 98. Shut down Windows 98 by clicking **Start** → **Shut Down** and clicking on **YES**. Place the computer in the docking station or convenience base and restart the unit.

Depending on your type of installation, you may or may not be prompted during the "New Hardware Found" phase of your initial docking. Regardless of your installation type, simply press Enter when prompted with questions. Continue doing this until the computer reboots and Windows 98 loads as usual.

If you did not upgrade over Windows 95 together with the Compaq System Enhancements Disk, you will have one or more unknown devices shown in the device manager. These are cosmetic in nature only and do not degrade performance in any way.

After docking for the first time, you must reinstall your video drivers. See "Installing Compaq Drivers and Enhancements" and refer to the section for your family.

Appendix 6: ACPI

ACPI (Advanced Configuration and Power Interface) represents a significant innovation in power and configuration management that allows operating systems and applications to manage power based on activity and use. Compaq worked closely with Microsoft and Intel on the implementation of ACPI, and provided Microsoft with one of the first notebook test platforms with ACPI hardware, the Armada 4200.

The Armada 1700, Armada 3500, Armada 4200, Armada 7400, and the Armada 7800 are all ACPI-hardware ready. All new Armada platforms will also be ACPI-hardware ready.

Compaq remains committed to ACPI and firmly believes ACPI will become the preferred model for power and configuration management in the long term. As with introduction of any new technological innovation, it takes time for it to be adopted by industry. To gain the full benefit of ACPI, the operating system, applications and hardware must all be ACPI aware. Windows 98 is the first ACPI-aware operating system. At this time, no ACPI-aware applications have been developed. It is important to note that once ACPI is enabled it is not possible to switch back to APM without reinstalling the operating system.

For these reasons, Compaq anticipates that, in the near term, many customers will not want to switch from the current power management standard, APM (Advanced Power Management).

Compaq continues to work closely with Microsoft to test ACPI extensively to ensure Compaq customers get comparable battery life with ACPI as they did with APM. We will release ACPI support for each Compaq platform only after completion of the testing phase, and feel comfortable with the battery performance under ACPI.

Compaq's ACPI strategy for Armada notebooks is designed to allow customers to continue using APM until our ACPI testing is complete, then encourage them to choose the power management model best suited to their particular requirements. To accomplish this, all ACPI-aware notebooks will be set up to use APM as the default power management model. Then, anytime after the initial setup, customers will be able to convert their factory-installed version of Windows 98 to ACPI by means of an easy-to-use tool to be provided by Compaq. This tool will be available as a SoftPaq on Compaq's website and Support Software CD.

Appendix 7: Enabling Hard Drive DMA

Direct Memory Access (DMA) is the process by which information is transferred between two devices on a bus under the supervision of a direct memory access controller.

By default, Hard Drive DMA is not enabled at installation of Windows 98. Users of the Armada 1700, 3500 and 7000 family series may see some performance improvements if they manually enable DMA by following the steps outlined below.

1. Click **Start → Settings → Control Panel**.

2. Double-click the System icon.

3. Click the tab labeled 'Device Manager.'

4. Click the '+' next to 'Disk drives.'

5. Click 'GENERIC IDE DISK TYPE65.'

6. Click the button labeled 'Properties.'

7. Click the 'Settings' tab.

8. Click the box next to 'DMA' so that there is a √ (check) mark in the box.

9. If prompted, click **OK** to confirm enabling DMA.

10. Click **OK** to return to the Device Manager.

11. Click **Close**. You are prompted to restart your computer. Click **YES** to restart.

Appendix 8: Infrared Functionality

The installation of Windows 98 makes infrared communications non-functional and affects all infrared systems that support Windows 98. The problem is due to a driver conflict caused by the Win98 installation, which allows the existing IR device to remain in place while a Win98-specific driver is installed at the same resources.

To resolve this conflict, remove the Win95 IR device by performing the following procedure:

1. Click **Control Panel → System Properties → Device Manager**.

2. Click the + (plus) symbol next to the 'Infrared Devices" category.

3. Note that there are two infrared devices listed:

    Windows 95 Built-in Infrared Communication Device
    Windows 98 Infrared Communication Device

4. Remove both devices and Close Device Manager.

5. Restart the system and allow the OS to auto-detect IR.

    Note: If the OS does not automatically detect the "Infrared Communications Device," you have to manually install the device using the "Add New Hardware" feature in the Control Panel. Make sure you specify COM4 and LPT3 as the default ports.

6. Open the 'Infrared Monitor' applet in the Control Panel.

7. Click the 'Options' tab.

8. Select 'Enable infrared communication.'

9. You are now able to use "IR Recipient."

To set up Direct Cable Connection (DCC), perform the following steps:

1. Open the 'Network' applet in the Control Panel.

2. Add 'Client for Microsoft Networks.'

3. Add the 'NetBEUI' protocol.

4. Enable 'File Sharing.'

5. Make sure the 'Identification' tabs on both machines use *unique computer names,* for example, HOST/GUEST, and are in the same "Workgroup."

6. Restart the computer.

7. Share folders on Host computer.

8. Run DCC on both machines.

9. Set up one computer as HOST, the other as GUEST.

10. Select 'Serial Cable on COM4' on both systems.

11. Click **Finish**.

12. The GUEST computer searches for shared folders on the HOSTcomputer and establishes an open link.