

WHITE PAPER

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Armada 7800 Software Overview

The Armada 7800 is the latest addition to the Armada 7000 family of notebook computers. The purpose of this White Paper is to present an overview of the pre-installed software including operating system support, comparison with earlier Armada 7700 and 7300 pre-install image builds as well as a brief description of major software components and features.

This document is intended external audiences with a need for information about the Armada 7800.

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Armada 7800 Software Overview

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HIGHLIGHTS

Preinstalled software on the Armada 7800 features a number of enhancements over the Armada 7700 and 7300 families. The following are highlights:

- (1) **New** video drivers to support the new S3 VIRGE™ graphics chipset.
- (2) **New** audio drivers to support the new ESS 1879 audio controller.
- (3) **New** System Enhancements Diskette for both Windows 95 and Windows NT 4.0 includes all pre-installed patches and features a single, easy to use automated installation.
- (4) **New** FAT32 pre-install image for Windows 95 provides higher performance and a single hard drive partition.
- (5) **New** Carbon Copy Host provides allows Compaq technical support to remotely diagnose and correct problems.
- (6) **New** pre-installed USB support from Microsoft for Windows 95.
- (7) **Updated** Compaq Intelligent Manageability Agents providing local alerts and SNMP agents.
- (8) **Updated** Microsoft DirectX to version 5.0 providing support for software MPEG1 playback and other multimedia innovations.
- (9) **Changed** Internet Explorer 4.0 is no longer pre-installed, but rather is pre-loaded. When unbundling, the user will now have the choice of installing Internet Explorer.

IMPORTANT!

Windows NT 4.0 does not support FAT32. Customers who purchase a model with Windows 95 pre-installed and who choose to install Windows NT 4.0 on their own need to repartition the hard drive using either FAT16 or NTFS, both of which are supported under Windows NT 4.0.

SUPPORTED OPERATING SYSTEMS

There are two supported operating systems for the Armada 7800:

- Microsoft Windows 95 OSR 2.1
- Microsoft Windows NT 4.0

Detailed below are specifics as to which hardware features are supported under the different operating systems and what functionality is enhanced by Compaq deliverables.

Microsoft Windows 95

The version of Windows 95 preinstalled on the Armada 7800 is Microsoft Windows 95 OSR2.1 (OEM Service Release 2.1), which offers an expanded feature set over Windows 95 OSR1 and the retail version of Windows 95. The primary purpose of OSR2.1 is to provide support for new hardware technology that has evolved since OSR1 and Windows 95 Retail were made available. Microsoft has stated that they do not have plans to provide a retail version of Windows 95 OSR2.1 at this time. Therefore, Windows 95 OSR2.1 is only available through OEMs, such as Compaq, and is not available for retail purchase.

For additional information on versions of Microsoft Windows 95, refer to the *Functionality Overview of Windows 95 Retail, OSR1 and OSR2.1* White Paper.

For additional information on Windows 95 OSR1 on the Armada Family of Personal Computers, refer to the *Operating System Support for Compaq Portable Platforms* White Paper.

IMPORTANT!

Customers who downgrade from the preinstalled version of Windows 95 OSR2.1 will lose key functionality. Compaq strongly recommends that customers do not downgrade.

Key Benefits of Windows 95 OSR 2.1 over OSR 1

- **PC Card Enhancements** - Windows OSR2.1 PC Card utility adds support for multi-volt (3.3 and 5.0 volt), 16-bit multifunction PC Cards (i.e., network/modem) and 32-bit CardBus PC Cards.
- **Power Management Enhancements** - Enhancements include Advanced Power Management (APM) 1.2 support, resume on ring, disk spin down, and a battery meter which reflects multiple batteries.
- **New Display Control Panel** – The new Display Control Panel includes:
 - Integrated QuickRes, - the ability to change resolution without the need to restart the computer
 - Dynamic Color Depth Changing - the ability to change the number of colors displayed without the need to restart the computer
 - Hardware Panning – the ability to have a virtual desktop that is larger than would be possible by using just the resolution supported by the monitor (e. g. a 1024x768 desktop on a panel or monitor with 800x600 physical resolution). The maximum virtual resolution is 1600x1200.
 - Monitor Refresh Rate Settings - the ability to select different refresh rates depending on which resolution the screen is set for (i. e. 640x480, 800x600, etc.)
- **Multimedia** - ActiveMovie and DirectX III are included in OSR2.1. Compaq has further updated DirectX to the latest version available from Microsoft, DirectX V.
- **Microsoft NetMeeting** - This voice and data conferencing application is built around open Internet conference standards. Point-to-point voice calls can be placed over the Internet using industry standard protocols or using DSVD when a modem-to-modem based connection is preferred. NetMeeting also provides multi-point data collaboration tools including an interactive whiteboard, file sharing and application sharing.

A Word about Windows 95 OSR1

For customers who prefer to use Windows 95 OSR1 or Windows 95 Retail on the Armada 7800, Compaq offers support only for those features inherently supported by the operating system. This support includes basic functionality, such as audio and video, along with Compaq enhancements that enable hardware functionality. Please refer to the *Compaq Armada Portable products with Microsoft Windows 95 OSR1* White Paper for details.

Microsoft Windows NT 4.0

Microsoft Windows NT 4.0 with Service Pack 3 is offered as a pre-install operating system for the Armada 7800. Compaq supports customers who install Windows NT 4.0 on their own. Compaq drivers, utilities and applications for Windows NT 4.0 are discussed in detail in later sections of this White Paper.

Hardware Functionality and Software Enhancements

Since Microsoft Windows NT 4.0 was originally positioned and designed for desktop computing, there are some portable computer features that are either not supported by the native operating system or which do not function in the same manner to which Compaq customers have become accustomed under Windows 95. These features primarily fall into the areas of PC Card and power

management support. Compaq provides software enhancements that compliment Windows NT 4.0 by enabling the same level of features and hardware functionality provided under Windows 95. Native Windows NT 4.0 features and Compaq software deliverables include the following:

- Compaq's F10 Setup/Diagnostics and PC Diagnostics
- Audio, Video and Network support enhanced by Compaq
- Multimedia support enhanced by Compaq
- PC Card support through CardWare[®] NT provided by Compaq
 - Traditional 16 bit, PC Card 16 and 32 bit CardBus support
 - Power Management for PC Cards
- User-Programmable Keys support provided by Compaq
- Power Management support provided by Compaq
 - Suspend, Hibernation and Power Utility
- Compaq Intelligent Manageability
 - AssetControl, Fault Prediction and Security Management
- Internet browser and service to access information on the world wide web
- Microsoft Internet Explorer

ARMADA 7800 VERSUS THE ARMADA 7700 AND 7300

The following tables summarize software components included on the Armada 7800 as compared with the Armada 7700 and 7300 families.

Windows 95

WINDOWS 95 SOFTWARE VERSION COMPARISON

Software Component	Armada 7800 Versions ¹	Armada 7700 and 7300 Versions ²	Version Change
Compaq Armada NetFlex 3 Network Support	2.00	1.00 K	Yes
Compaq Diagnostics (Operating System Independent)	10.26	10.19	Yes
Compaq Diagnostics for Windows 95	1.21	1.20 B	Yes
Compaq F10 Setup (Operating System Independent)	2.01	2.00	Yes
Compaq Intelligent Manageability for Windows 95	3.50	3.20 D	Yes
Compaq Power Management for Windows 95 ³	2.02	2.01 B1	Yes
Compaq Security Extensions for Windows 95 (Security32)	1.10	1.00 A	Yes
Display Driver for Windows 95 ⁴	3.32.08	2.31.33	Yes
Display Utility for Windows 95 ⁵	3.32.08	1.03.08 A	Yes

¹ All version information for the Armada 7800 is current as of February 17, 1998.

² For comparison purposes, version numbers used on the Armada 7700 and 7300 families are those included in the January, 1998 pre-install image refresh. For a comparison of these version number with those used in earlier Armada 7700 and 7300 pre-install image builds refer to the Compaq White Paper titled *Armada 7700 and 7300 Pre-install Refresh*.

³ This release fixes two known problems: (1) free space is now reported correctly on partitions larger than 2GB; and (2) the hibernation file is validated when selecting the hibernation tab in the control panel extension.

⁴ The Armada 7700 and 7300 use the S3 Aurora video chipset and the Armada 7800 uses the S3 VIRGE™ chipset.

⁵ The Display Utility for Windows 95 is included as part of the display driver component.

WHITE PAPER (cont.)

Software Component	Armada 7800 Versions ¹	Armada 7700 and 7300 Versions ²	Version Change
ESS Audio Drivers for Windows 95 ⁶	4.04.00.1240	4.04.00.1133 B1	Yes
Microsoft DirectX	5.0	3.0A	Yes
Compaq Programmable Keys for Windows 95	1.10	1.10	No
Microsoft Internet Explorer for Windows 95 ⁷	4.0	4.0	No
MSDOS Real Mode Support for Windows 95	1.00	1.00	No
Non-DDC Monitor Configuration Utility for Windows 95 ⁸	1.00 A	1.00 A	No
True Flash File System for Windows 95	1.00 A	1.00 A	No

Table 1 - Windows 95 Software Component Version Comparison

REMOVED SOFTWARE COMPONENTS FOR WINDOWS 95

Software Component	Version
PointCast	1.38
MediaMatics Arcade Pak for Windows 95	2.032.00.03 B
JustConnect for Windows 95	1.20 A
Compaq DSVD Enabler for Microsoft NetMeeting	1.20 A

Table 2 - Removed Software Components for Windows 95

NEW SOFTWARE COMPONENTS FOR WINDOWS 95

Software Component	Version
Microsoft USB Support	4.03.1214
Compaq System Enhancements for Windows 95 ⁹	2.00
Carbon Copy Host for Windows 95	4.10
SMC Fast Infrared Driver for Windows 95 ¹⁰	1.10

Table 3 - New Software Components for Windows 95

WINDOWS 95 SOFTWARE ENHANCEMENTS

Category	File	Comment
QFE ¹¹	FLOPUPD2.EXE	Plug and Play support for floppy drive
QFE	IOSYSUP.EXE	Reduces HIMEM.SYS footprint in EMEA systems

⁶ The Armada 7700 and 7300 use the ESS 1878 chipset and the Armada 7800 uses the ESS 1879 chipset.

⁷ Internet Explorer 4.0 is pre-loaded and not pre-installed. Internet Explorer 3.02 is the pre-installed browser and users have the choice during or after unbundling to choose to upgrade.

⁸ Also referred to as the External CRT Configuration Utility.

⁹ See the Windows 95 Software Enhancements table for more detailed information about the Compaq System Enhancements for Windows 95.

¹⁰ Fast IR drivers are not pre-installed in the last Armada 7700 and 7300 pre-install image refresh due to the fact that they were not certified by Microsoft in time to meet key schedule milestones; however, they were made available for download from the Compaq Web site. Version 1.10 is certified by Microsoft and pre-installed on the Armada 7800.

¹¹ QFE standard for Quick Fix Engineering.

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Category	File	Comment
QFE	PCCARD.VXD	Fixes resume on ring, zoom video, problems with suspend/resume and SCSI cards
QFE	PCI.VXD	Fixes TDK Ethernet CardBus configuration problems
QFE	PCIMP.PCI	Multiple IDE controllers when docked
QFE	RMM.PDR	Fixes IOS protection errors
QFE	SYSDM.CPL	Fixes problem updating drivers
QFE	VJOYD.VXD	Fixes version conflict messages
QFE	W95FILUP.EXE	Year 2000 fix for File Manager
INF Update	CQPQSE.INF	Description file for Armada systems and chipsets
INF Update	LOGO.SYS	Cloud bitmap with COMPAQ logo
INF Update	MACHINE.INF	Support for COMPAQ specific hardware
INF Update	MSHDC.INF	Support for COMPAQ IDE controllers
INF Update	PCMCIA.INF	Support for T11220 and T11250 CardBus controllers
INF Update	INFRARED.INF, MSIRPORT.INF & MSPORTS.INF	Enables infrared hardware
Registry Update	CDROM4X.REG	Change CD speed to maximum
Registry Update	DMAHDC.REG	Enable DMA for hard drive
Registry Update	MOBILE.REG	Modify caching for mobile systems

Table 4 - System Enhancements for Windows 95

Windows NT 4.0

WINDOWS NT 4.0 SOFTWARE VERSION COMPARISON

Software Component	Armada 7800 Versions ¹²	Armada 7700 and 7300 Versions ¹³	Version Change
Display Driver for Windows NT 4.0 ¹⁴	3.25.10	1.02.21 A	Yes
Display Utility for Windows NT 4.0 ¹⁵	3.25.10	1.03.06 B	Yes
Compaq Diagnostics (Operating System Independent)	10.24	10.19	Yes
Compaq Intelligent Manageability for Windows NT 4.0	3.50	3.20	Yes
CardWare® for Windows NT 4.0	2.11	2.08 A	Yes
Compaq F10 Setup (Operating System Independent)	2.01	2.00	Yes

¹² All version information for the Armada 7800 is current as of February 17, 1998.

¹³ For comparison purposes, version numbers used on the Armada 7700 and 7300 families are those included in the January, 1998 pre-install image refresh. For a comparison of these version number with those used in earlier Armada 7700 and 7300 pre-install image builds refer to the Compaq White Paper titled *Armada 7700 and 7300 Pre-install Refresh*.

¹⁴ This version fixes a minor problem with the HOTKEY.EXE application.

¹⁵ The Display Utility for Windows 95 is included as part of the display driver component.

WHITE PAPER (cont.)

Software Component	Armada 7800 Versions ¹²	Armada 7700 and 7300 Versions ¹³	Version Change
Compaq Diagnostics for Windows NT 4.0	1.11	1.09 A	Yes
Compaq Armada NetFlex 3 Network Support	2.00	1.00 K	Yes
Compaq Security Extensions for Windows NT 4.0	1.10	1.00 A	Yes
ESS Audio Drivers for Windows NT 4.0	2.00.92	2.00.81 A	Yes
Microsoft Internet Explorer for Windows NT 4.0	4.0	4.0	No
Compaq Multibay Swapping Support for Windows NT 4.0 with Service Pack 3	3.10	3.10	No
Microsoft Service Pack for Windows NT 4.0	3.00	3.00	No
Compaq Power Management for Windows NT 4.0 with Service Pack 3	2.20	2.20	No
Compaq Programmable Keys for Windows NT 4.0	1.10	1.10	No
Non-DDC Monitor Configuration Utility for Windows NT 4.0 ¹⁶	1.00	1.00 A	No

Table 5 - Windows NT 4.0 Software Component Version Comparison

REMOVED SOFTWARE COMPONENTS FOR WINDOWS NT 4.0

Software Component	Version
Trio Communications Suite for Windows NT 4.0	5.12 C
Active Movie Filter for Windows NT 4.0	4.15.97 A

Table 6 - Removed Software Components for Windows NT 4.0

NEW SOFTWARE COMPONENTS FOR WINDOWS NT 4.0

Software Component	Version
Compaq System Enhancements for Windows NT 4.0 ¹⁷	1.00

Table 7 - New Software Components for Windows NT 4.0

WINDOWS NT 4.0 SOFTWARE ENHANCEMENTS

Category	File	Comment
QFE ¹⁸	SCSIPTORT.SYS	Use SP2 version to fix IM3.50 blue screen problem
Registry Update	CDROM4X.REG	Change CD speed to maximum
Registry Update		Alter installation sub-directory to C:\I386
Registry Update		Enable DMA for hard drive

¹⁶ Also referred to as the External CRT Configuration Utility.

¹⁷ See the Windows NT 4.0 Software Enhancements table for more detailed information about the Compaq System Enhancements for Windows NT 4.0.

¹⁸ QFE standard for Quick Fix Engineering.

Category	File	Comment
Registry Update		Turn off CD-ROM AutoRun feature
Registry Update		Alter PCMCIA IRQ map to prevent IRQ15 from being assigned

Table 8 - System Enhancements for Windows NT 4.0

SOFTWARE DELIVERY

Compaq QuickRestore CD

The Compaq QuickRestore CD is shipped with each Armada 7800 notebook. The CD provides an easy to use and complete restore solution. The pre-installed operating system (i.e. either Windows 95 or Windows NT 4.0) and all Compaq software enhancements are provided on the CD. The solution allows customers to perform a complete restore including destructive format as well as a refresh option that does not reformat the hard drive thus preserving data and applications. The Compaq QuickRestore CD is shipped with each notebook and cannot be provided through fulfillment.

Compaq Support Software CD

The Compaq Support Software CD includes the latest updates to drivers and utilities for Armada Portable, Desktop and Workstation PCs. Key drivers and utilities in all supported languages for the Armada 7800 are included on the Compaq Support Software CD. The user interface is translated in English, French, Italian, German, Spanish and Japanese. The Compaq Support Software CD is updated monthly and is available either via an annual subscription or as a one-time purchase. The Armada 7800 software will be included on the Compaq Support Software CD beginning with the April 1998 edition. Subscriptions can be purchased through Compaq Customer Support or your dealer.

Compaq World Wide Web Site and Download Facility

Individual drivers and utilities can be downloaded, in the form of SoftPaqs, from the Compaq Download Facility, the Compaq web site (<http://www.compaq.com> or <ftp://ftp.compaq.com>) or through other online services such as AOL, Prodigy, and CompuServe. SoftPaqs are a way for Compaq to distribute driver and ROM updates as well as product software enhancements. It allows for multiple files and bootable diskettes to be distributed conveniently and electronically via floppy diskette or the web.

SOFTWARE ENHANCEMENTS

Setup & Diagnostics

Computer Setup/P

F10 Computer Setup/P is operating system-independent software that allows customers to their configuration their notebook. Computer Setup allows the user to resolve resource conflicts among devices, enable many of the Compaq-specific features without resorting to an operating system-dependent Compaq utility, change the system settings, and quickly and easily setup the Armada 7800. The utility supports a wide range of devices that can be plugged-in, inserted, or embedded into the system, which is an enhancement to previous versions and other setup utilities offered on competitive platforms.

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NOTE:

F10 Setup and Diagnostics reside in a hidden partition on the hard drive. Deleting this partition with FDISK or other partitioning tool will result in loss of functionality.

Computer Setup/P allows the user to control the system's configuration, including device resources and Compaq features such as security and power management. F10 Computer Setup/P and a set of diagnostic packages are grouped under the name "F10" because the "F10" key accesses the hidden disk partition where these utilities reside.

Windows 95 Windows NT 4.0 Compaq Support Software CD Compaq QuickRestore CD Compaq Web Site

PC Diagnostics

F10 Diagnostics is a utility that allows customers to test their system hardware. Hardware that may be tested includes CPU, memory, keyboard, pointing device, sound (audio), parallel and serial ports, graphics controllers, diskette drives and hard drives.

Windows 95 Windows NT 4.0 Compaq Support Software CD Compaq QuickRestore CD Compaq Web Site

Compaq Diagnostics for Windows

Compaq Diagnostics for Windows, also called Compaq Insight Personal Edition, is an application that displays detailed PC information in a user-friendly manner. The user can retrieve data on the processor, memory, operating system, storage capacity, video, communication, input devices, serial numbers, asset tag, and others. Diagnostics is also the only application that can locally retrieve very detailed Compaq-specific information.

Windows 95 Windows NT 4.0 Compaq Support Software CD Compaq QuickRestore CD Compaq Web Site

PC Card Support

For those users who wish to extend the PC Card support of Microsoft Windows NT 4.0, Compaq provides Award Software International's CardWare[®]. With the addition of CardWare, users will gain: CardBus support, Enhanced Power Management, 3.3v support, and the ability to hot swap most PC Cards.

For complete details on PC Card support for Microsoft NT 4.0, see the White Paper titled *Compaq Portable PC Card Support for Microsoft Windows NT 4.0*, First Edition, October 1997.

Windows 95 Windows NT 4.0 Compaq Support Software CD Compaq QuickRestore CD Compaq Web Site

Intelligent Manageability

Compaq Intelligent Manageability combines innovative hardware technology with Enterprise Management and PC LAN management solutions from Compaq and other leading vendors to make Compaq portable computers easier to inventory, troubleshoot, and protect, thereby reducing total cost-of ownership. Compaq Intelligent Manageability provides Fault Management, Inventory

NOTE:

LAN and SCSI PC Cards do not support hot removal without card-specific software driver support. Consequently, resuming from standby or hibernation mode may lead to unexpected results. Customers should contact their PC Card manufacturer for more information about the level of driver support for CardWare[®] under Windows NT 4.0.

Management, Security Management and Support Software Management features as described below.

Fault Management

Fault Management is a utility designed to warn the user or network administrator about the potential loss of critical data using the following features:

- IntelliSafe (SMART) hard drive – Constantly monitors hard drive activity to predict failure before they occur
- Temperature sensing – Hardware and software that tracks the internal temperature of the computer and displays a warning message when the normal range is exceeded.
- Compaq Insight Personal Edition – Automatically displays a pop-up message to notify you when a hard drive or system temperature fault is detected. If the computer is connected to a network managed by Compaq Insight Manger, fault notices are also sent to the network management application.

Inventory Management

AssetControl is an inventory and asset management utility designed to reduce the time and total cost of ownership of conducting a physical inventory of personal computers, key components, and monitors. AssetControl is preinstalled on, and available for, asset management of portable computers, key components and monitors that support the VESA DDC and EDID standards.

AssetControl provides ease of use and an inexpensive method of maintaining an accurate, up-to-date inventory. Detailed inventory information, including manufacturer, model, serial number, asset tag and ROM revision level can be viewed, printed or saved electronically using Compaq Insight Personal Edition, Compaq Insight Manager and network management products from the Compaq Desktop Management Solutions Partners.

Security Management

The Security Management utility provides a set of security features to protect the computer and data from unauthorized access.

- Passwords – Prevents unauthorized access to information stored on the computer or network.
- Drive Security – Control access to the information stored on the computer and prevents unauthorized data transfer to a diskette drive.
- Device disabling – Prevents unauthorized data transfer over fax/modems, serial ports or parallel ports, diskette drives, and PC Cards.

Security Management features and current security settings can be viewed using Compaq Insight Personal Edition or Compaq Insight Manager.

For additional information on Intelligent Manageability, please refer to the *Intelligent Manageability for Portables* White Paper.

- Windows 95
- Windows NT 4.0
- Compaq Support Software CD
- Compaq QuickRestore CD
- Compaq Web Site

Video

The Armada 7800 features the S3 VIRGE™ video chipset along with software drivers to enable all functionality of the chipset. Driver support is complimented by a Display Utility that provides easy access to video settings through the Windows Control Panel as well as a System Tray accessible

icon that allows the user to changes video resolution and color depth without requiring the computer to be powered cycled.

- Windows 95 Windows NT 4.0 Compaq Support Software CD Compaq QuickRestore CD Compaq Web Site

Multimedia

Microsoft Multimedia Support

The versions of Windows 95 and Windows NT 4.0 preinstalled on the Armada 7800 include Microsoft DirectShow, which enables the following types of video playback:

- .AVI, .MOV and MPEG1 playback support
- Indeo4-compressed AVI playback support
- MCI support for both 16 and 32-bit applications

Software MPEG Support

The Armada 7700 and 7300 families included the MediaMatics Arcade Pack to provide software MPEG1 playback capability. This capability was provided in the form of a filter for use with Microsoft Active Movie and the Microsoft Media Player, of which both are included in the Windows 95 operating system. The MediaMatics Arcade Pack was optimized for use with Intel MMX processors providing better performance than the native playback capabilities of Windows 95. With the Armada 7800, pre-installing Microsoft DirectX 5.0 and Internet Explorer 4.0 means that it is no longer necessary to provide the MediaMatics Arcade Pack.

DirectX is a collection of APIs (Application Programming Interface) designed to introduce a set of standards for multimedia content creation and playback on personal computers. With these APIs developers can more easily develop cutting edge graphic media such as 3D VRML, support new web technologies like streaming, moving picture playback, online gaming and modeling.

Active Movie has been replaced by Microsoft DirectShow, which is a part of the DirectX architecture. Although DirectShow is not shipped as part of DirectX 5.0, it is installed as part of Internet Explorer 4.0. DirectShow provides enhancements over its Active Movie predecessor, most notably providing MPEG1 software playback that has been optimized for Intel MMX processors. DirectX 5.0 and Internet Explorer 4.0 are included as part of both the Windows 95 and Windows NT 4.0 pre-install images.

The following table compares MPEG1 playback performance on the Armada 7800 with the Armada 7700 and 7300 families.

MPEG-1 PLAYBACK PERFORMANCE COMPARISON

WinBench 98 Video Test ^{19,20,21}	Compaq Armada 7800	Compaq Armada 7360
Processor	Intel Pentium® PII with MMX™	Intel Pentium® with MMX™
Clock Speed	266MHz	200 MHz
Color Depth	High Color (16bpp)	High Color (16bpp)
Memory	32 MB	32 MB

¹⁹ The clip was played through the ActiveMovie interface.

²⁰ Common test settings: Disk Drive=c:\ CDROM Drive=e:\ Report CPU Utilization=No.

²¹ The video clip played contained a total of 448 frames.

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WinBench 98 Video Test ¹⁹²⁰²¹	Compaq Armada 7800	Compaq Armada 7360
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Normal Playback Test²²

CPU Utilization	44.0% Used	59.4% Used
Maximum Frame Rate	90.2 Frames/Sec	65.1 Frames/Sec
Visual Quality	1 Frame Dropped	4 Frames

Fast Playback Test²³

CPU Utilization	61.4% Used	81.0% Used
Maximum Frame Rate	61 Frames/Sec	43.7 Frames/Sec
Visual Quality	18 Frames Dropped	34 Frames

Table 9 - Software MPEG Playback Performance Comparison

Premiere Audio

Armada 7800 audio device drivers enable the ESS 1879 audio chipset, to run multimedia applications using Microsoft DirectSound audio capability. The DirectSound interface provides significantly more control over the audio controller in the Armada 7800. In addition to playing WAV and MIDI files, DirectSound also provides a high-quality wave mixing facility, as well as an industry-standard MIDI playback system. Additionally, DirectSound provides added control over the memory utilization of the sound controller, allowing user-selection of sounds to be cached.

Windows 95 Windows NT 4.0 Compaq Support Software CD Compaq QuickRestore CD Compaq Web Site

Security

DriveLock

DriveLock is a security feature that offers customers advanced protection against unauthorized access to valuable data on their internal notebook hard drives. There are two passwords that control access providing customers with a means to unlock a protect drive for which the day-to-day user password has been lost. Hard drives protected with DriveLock remain protected even if removed from the notebook. Features and settings are accessed through the Compaq F10 Setup Utility.

For more information about DriveLock refer to the Compaq White Paper titled *DriveLock Hard Drive Protection for the Armada 7800*, Second Edition, February 1998.

Compaq Security Extension

Security32 provides a Windows Control Panel extension to allow the user to secure the system with supported passwords.

Windows 95 Windows NT 4.0 Compaq Support Software CD Compaq QuickRestore CD Compaq Web Site

NOTE:

Forgetting or losing both the USER and MASTER passwords will render the protected hard drive permanently unusable. Record your MASTER password and keep it in a secure location physically separate from your notebook computer. In the event you lose the USER password, the MASTER password can be used to unlock a protected hard drive and reset the USER password.

²² WinBench 98/Video/Action, MPEG-1, 352x240, 30fps, 150KB/S.

²³ WinBench 98/Video/Action, MPEG-1, 352x240, 30fps, 300KB/S.

Power-on Password

The power-on password first and foremost prevents an unauthorized user to power on the system. Once a power-on password is established, the user is required to type the password during the power-on process.

The power-on password also allows the user to enable **QuickLock**, a hot-key combination used to lock the keyboard. Under QuickLock, any keys pressed are ignored until the power-on password is entered. If QuickLock is enabled, the user can elect to have the keyboard QuickLocked when the computer enters suspend mode, or the user can have the screen blanked when QuickLock is activated. Setting the screen to blank when QuickLock is activated is called **QuickBlank**.

- Windows 95
- Windows NT 4.0
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Administrator Password

The administrator password, also known as the setup password, prevents unauthorized changes to the system's configuration. Unless the Administrator Password is known, F10 utilities (provided by Compaq on the hidden drive partition) are inaccessible. Also, with the Administrator Password set, any attempted changes to the system's configuration (i.e., via Windows 95 Device Manager) will not be accepted by the system.

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Power Management

The Armada 7800 uses Advanced Power Management (APM) version 1.2 to provide power conservation features under Windows 95 and Windows NT 4.0. Users access these features through the Compaq Power Management Utility. This Windows Control Panel applet provides an easy-to-use interface for setting and controlling power management features. Power management features are categorized into one of the four groups, which appear as pages in the Power Utility. These groups are outlined below.

AC Energy Saver Page

AC Energy Power Conservation features provide the ability to turn AC power conservation on or off, utilize the energy saving features of the monitor, if available, set hard drive time-outs for AC, and set screen save time-outs for AC power use.

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Battery Conservation Settings Page

Battery Power Conservation features include four possible battery conservation levels. These levels include high, medium, drain and custom. When the custom level has been selected, the user can modify the various custom level time-outs. These time-outs include suspend, processor speed

and brightness. This feature also provides the ability to enable or disable low battery warning beeps.

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Hibernation Settings Page

The Hibernation features include the ability to turn hibernation on or off, set hibernation time-outs, and select the logical partition where the hibernation file will reside.

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Battery Status Page

The Battery Status feature shows the position of multiple battery locations in the computer. If a battery is present in a given location, the status (high, low, critical, charging) and a percentage of charge remaining for that battery is shown. The Multiple Battery Status provides a critical value-add for Compaq customers, allowing the ability to check the status of each individual battery, in addition to the cumulative battery status.

The Multiple Battery Status Page is not available under Windows 3.1; however, the user can invoke a multiple battery status by using FN+F8.

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Advanced Configuration and Power Interface (ACPI)

The Armada 7800 is “ACPI Hardware Ready.” ACPI is dependent on having an ACPI-capable operating system. The first ACPI operating system is Microsoft Windows 98 due out later this year. Until Windows 98 is available, the Armada 7800 will ship with ACPI disabled. Once Microsoft has released the finalized ACPI portion of Windows 98, Compaq will release an ACPI enabling applet. The user will be able to obtain the applet from the Compaq web site, FTP site, BBS, or the Support Software CD. The first ACPI operating system will be Windows 98. According to the Compaq White Paper titled *ACPI*²⁴:

Today, Compaq portable computers are using Advanced Power Management 1.2 (APM 1.2) which allows the user – mostly through F10 settings – to manage power and configuration settings. The overall concept of ACPI is to shift the Configuration and Power Management functionality from OEM BIOS solutions to the operating system.

ACPI is part of the OnNow design initiative from Microsoft. The OnNow design initiative is a comprehensive, system-wide approach to system and device power control. OnNow is a term for a PC that is always on but appears off and responds immediately to user or other requests. The OnNow design initiative involves changes

²⁴ *ACPI*, Compaq Computer Corporation, First Edition, October 1997.

that will occur in the operating system (Windows 98 and Windows NT 5.0), device drivers, hardware, and applications, and also relies on the Advanced Configuration and Power Interface Specification (ACPI).

Microsoft plans to incorporate some ACPI functionality in the Windows 98 operating system and full ACPI in Windows NT 5.0. Because of this dependency, ACPI availability will move with the Windows 98 and Windows NT 5.0 schedules.

The PC 98 Specification states that ACPI is a requirement for all Office PCs, which includes portable PCs. PC 98 certification is mandatory after July 1, 1998.

Compaq is working closely with Microsoft to define and test ACPI features on Compaq portable PCs. However, current Beta versions of Windows 98 are still incomplete and many features are still being defined or are in development.

Multibay Interchange Support

Multibay Interchange Support is provided for Windows NT 4.0. This feature allows for hot swapping of the Multibay CDROM, floppy disk drive and second battery in a standalone configuration. Multibay hot swapping is not supported in the docking station. Also note that this functionality requires that the Microsoft Dynamic Floppy Driver be installed.

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Fast Infrared

Windows 95 supports standard infrared (IR) transfer rates of 1.5MBs. Compaq supplies Enhanced IR drivers giving the user the ability to use IR at 4MBs.

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Programmable Keys

The Armada 7800 keyboard includes four user-programmable keys that can be used to launch or toggle between applications, and can also be programmed to emulate the Windows 95 Logo keys (Start or Secondary-Click²⁵). The Programmable Keys Utility can be accessed through the control panel, or when one of the unassigned keys is pressed. This utility also provides an easy-to-use interface to setup key assignments. Using a secondary-click on the system tray icon allows the user to quickly select a different scheme. Each scheme includes key assignments for each of the four programmable keys. Multiple schemes can be defined and the system tray icon provides a fast and intuitive way to change the active scheme depending on the user's current activity.

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²⁵ For right-handed persons it is the right mouse button.

Communications

The Armada 7800 relies upon the operating system for data, fax and conferencing communication applications. The user will need a PC Card or external serial modem for any data/fax application. Compaq recommends that customers reference the Compaq PC Card Solutions List for PC Cards that are qualified to work on all Compaq commercial portables including the Armada 7800. A copy of this List, which is updated quarterly, can be obtained from the Compaq web site at <http://www.compaq.com/support/techpubs/pcmcia/pccardlist.html>.

Data communications are achieved with HyperTerminal; a basic application that allows for easy connection to bulletin boards, host systems, or other text-based online services.

Exchange, Microsoft's e-mail and fax client, is used for faxing and can also be used for workgroup information sharing solutions.

NetMeeting can be used for data conferencing applications including whiteboarding, and application and data sharing.

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Online Help

The Armada 7800 has three online reference guides including the Safety & Comfort Guide, the Reference Guide, and Options Catalog.

The Safety & Comfort Guide explains to the user how to properly use items like the keyboard and mouse to reduce the potential of repetitive motion injuries like Carpal Tunnel Syndrome.

The Reference Guide includes information about all aspects of the computer including, but not limited to, identifying connectors, inserting and removing hardware, major hardware subsystems, upgrades, and troubleshooting.

Included in the Options Catalog is a list of supported option parts, part numbers, and descriptions.

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Internet Explorer 4.0

Internet Explorer 4.0 (IE4) integrates the PC and the Internet which eliminates the need to use one tool to browse the Web and another to use the PC. Microsoft labels this concept as the Web PC. IE4 introduces a host of new features that solve some of the problems previously experienced by customers. The features include a Search Bar to IE4 that lists search results in view while the user explores the sites listed. Another feature of IE4 is the AutoComplete function in which the Address Bar automatically completes addresses for users based on sites already visited and also corrects syntax errors. In addition, Microsoft has included an Offline Reading feature which lets users set up favorite Web sites to be downloaded to their hard drive according to a customizable schedule for off-line viewing at a later time. Compaq has designed its own commercial channel, *The Compaq Channel for Business*, and is available for download on the Compaq Web site. It provides users with up-to-date access to helpful technical support, product information and announcement news, timely articles, and the latest software and driver downloads. More detailed information about IE 4.0 can be found in the White Paper titled *Internet Explorer 4.0 for Compaq Commercial Portable and Desktop Products*, October 1997.

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FREQUENTLY ASKED QUESTIONS

Does Compaq pre-install the latest version of Microsoft Internet Explorer on the Armada 7800?

Compaq pre-loads Microsoft Internet Explorer 4.0 and pre-installs Internet Explorer 3.02 on the Armada 7800. Users will have the choice to upgrade during and after the unbundling process. Since the Armada 7800 pre-install images were complete, Microsoft released a new version of Internet Explorer, version 4.01. This latest release includes a number fixes to problems with version 4.0. The latest release is available for download from the Microsoft web site at <http://www.microsoft.com>.

How is the internal hard drive partitioned on the Armada 7800?

On Armada 7800 notebooks pre-installed with Windows 95, the hard drive comes formatted using FAT32. FAT32 provides a number of advantages over its predecessor, FAT16, including support for partitions larger than 2GB and smaller cluster size. Unlike the Armada 7700 and 7300 families, Armada 7800 partition sizes are not constrained by this FAT16 limitation, and smaller cluster size translates to improved performance and more efficient hard drive utilization.

On Armada 7800 notebooks pre-installed with Windows NT 4.0, the hard drive comes formatted using FAT16 and is therefore subject to its partition size constraints. Windows NT 4.0 does not support FAT32 since NTFS (NT File System) provides comparable features and performance improvements. Customers using Windows NT 4.0 on the Armada 7800 are able to easily format unused partitions or partition unused space using NTFS.

Customers who purchase models with Windows 95 pre-installed and later choose to install Windows NT 4.0 will need to repartition the hard drive using either FAT16 or NTFS. This can be accomplished using FDISK and then reformatting the hard drive. In order to avoid having to do a destructive format there are applications available on the market which will convert from one file system without requiring the user to format the hard drive.

Will Compaq be providing a data/fax application under Windows NT 4.0?

Compaq previously provided the Trio Communications Suite for Windows NT 4.0 on the Armada 7700 and 7300 families. This application was removed from the Armada 7800 Windows NT 4.0 pre-install image because it is a 16-bit application. Microsoft logo certification requirements with which the Armada 7800 complies do not allow any 16-bit software to be included on the pre-install image. Compaq is currently working to qualify a 32-bit data/fax application for inclusion on future platforms and provided through fulfillment on currently shipping platforms including the Armada 7800.

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