



Acer Ferrari 4000 4005WLMi Notebook Reviewed by Barry Little - September 21, 2005 Manufacturer: Acer, Inc. Model: LX.FR406.035

Few names personify the word *legend* in the world of Formula One racing and exotic dream cars as *Ferrari*. When *Acer*, one of the world's top five PC manufacturers, joined

forces with *AMD* and *Scuderia Ferrari* to create the *Ferrari 3000* notebook back in October 2003, they had an immediate winner on their hands. A year later, Acer blew the industry away with the *Ferrari 3200* and *3400* notebooks. They were a tough act to follow, but like all true champions who never rest on their laurels, Acer went back to the drawing board in their never-ending quest to perfect their racing-heritage notebook. On May 26, 2005, the **Acer Ferrari 4000 4005WLMi Notebook** was born—lighter, faster, more powerful and feature-packed than any of its predecessors. Today, we'll take a look at this race-bred beauty to see if it's truly worthy of its namesake.

Whether on the racetrack or in business, strategic partnerships are crucial to success; so the partnership between the *Scuderia Ferrari F1 Team*, the *FIA* (*Fédération Internationale de l'Automobile*)—the governing body of international motor sports, AMD and Acer was a natural and logical choice. Cutting edge technology is crucial to the advancement of auto racing, and you'd be hard pressed to find a more cutting-edge company than AMD, whose award-winning AthlonTM 64 Processors made them a force to be reckoned with against long-time rival Intel.

Acer immediately recognized that the high profile relationship between one of the world's top racing organizations and a company who was seriously challenging Intel's dominance and winning, was a unique opportunity to increase their name recognition and market share. Unlike their competitors who either dismissed or ignored the AMD and Ferrari partnership, Acer knew a good thing when they saw it, and got on board immediately. The rest, as they say, is history.

Page 1 of 1



Now a little about Acer from their website:



About Acer

Acer ranks among the world's top five branded PC vendors, designing and marketing easy, dependable IT solutions that empower people to reach their goals and enhance their lives. In 2000, Acer spun-off its manufacturing operation to focus on globally marketing its brand-name products: desktop and mobile PCs, servers and storage, displays, peripherals, and e-business solutions for business, government, education, and home users. Established in 1976, Acer Inc. employs 5,600 people supporting dealers and distributors in more than 100 countries. Revenues in 2004 reached US \$7 billion.

Acer Ferrari from Past to Present

Below is a table summarizing the features and specs of Acer's *Ferrari-series* notebooks:

Series	Processor	Operating system	Display	System memory	HDD	Optical devices	Dimensions & weight
Ferrari 3000	AMD Athlon™ XP- M processor 2500+	Microsoft® Windows® XP Home Edition preloaded	15.0" SXGA+ TFT LCD	256/512 MB	60 GB or higher	DVD- DUAL drive	330 (W)x272 (D)x31 (H) mm 2.93 kg (6.45 lbs.)
Ferrari	Mobile AMD Athlon™ 64 processor 2800+	Microsoft® Windows® XP Home Edition preloaded	15.0" SXGA+ TFT LCD	512 MB	80 GB	Slot-load DVD- Super Multi drive	330 (W)x272 (D)x31 (H) mm 3.014kg (6.64 lbs.)
Ferrari	Mobile AMD AthIon™ 64	Microsoft® Windows®	15.0" SXGA+ TFT LCD	512 MB	80 GB	DVD- Super	330 (W)x272 (D)x31 (H) mm

Page 2 of 2



Series	Processor	Operating system	Display	System memory	HDD	Optical devices	Dimensions & weight
3400	processor 3000+	XP Home Edition preloaded				Multi drive	3.014kg (6.64 lbs)
Ferrari	AMD Turion ^a 64 ML-37 or ML-30 Mobile Technology	Microsoft® Windows® XP Professional x64 Edition, Microsoft® Windows® XP Professional (Service Pack 2), or Microsoft® Windows® XP Home Edition (Service Pack 2) preloaded	15.4" WSXGA+ 185-nit color TFT LCD, 15.4" WXGA 185-nit Acer CrystalBrite color TFT LCD	512MB/1GB	80/100GB	Slot-load DVD- Super Multi double- layer drive	363 (W) x 267.5 (D) x30.5/34.3 (H) mm 2.86kg (6.3lbs.)

Courtesy of Acer



The *Ferrari 4000* arrived in a larger box with additional packing to protect it during shipping.



This attentiongrabbing design would look just as much at home on the showroom floor of a Ferrari dealership, as it would on the shelf of your local computer store.



No mistaking Ferrari's commitment to the product here.



Ferrari's holographic sticker of authenticity.



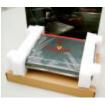
The inner flap displays multilingual instructions on unpacking the *Ferrari 4000.*

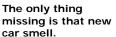
Page 3 of 3













All of the software and accessories are in this box



Here's a closer look at the Quick-Start fold out

The first thing that greets you when you open the box is this Quick-Start fold-out

Let's get this thing unpacked.

The only thing

As you can see, the *Acer Ferrari Notebook* has evolved quite a bit over the years. Let's see just how much...

Packaging

FedEx delivered the notebook in a large box filled with Styrofoam packing peanuts. Additional protection was provided by the Acer factory box sealed with tape designed to show any tampering of the contents, and had shipping labels from the Acer plant in China and its final destination at an Ingram Micro distribution center in California. The boxes were in good shape and showed no sign of rough handling or damage.

The Ferrari 4000's display box has the clean, tasteful and expensive look of a highquality automotive publication gracing the glass top of a living room table with its glossy finish. Striking photos of the notebook are set off against a black and carbon fiber-background, with Acer's corporate logo, "Ferrari 4000" in sleek, red letters, and Ferrari's world-famous "Prancing Horse" crest. A closer look reveals the brushed aluminum "Ferrari Official Licensed Product" logo and holographic sticker on the side of the box. First Class all the way—but then, you'd expect nothing less from anything with the *Ferrari* name on it.

You have to give Acer's marketing team credit; the box is designed to do more that just grab your attention and protect the product (though it does both exceptionally well). Opening the box, unpacking it, and removing the *Ferrari 4000* from its protective wrapping invokes almost the same awe and excitement as sliding behind the wheel of the real thing.

The Notebook

To say that the *Ferrari 4000* lives up to its four-wheeled namesake would be an understatement. Gone is the predominantly Rosso Corsa (Ferrari Red) finish of previous models. For this incarnation of the Ferrari notebook, Acer decked the lid of the 15.4" Wide-Screen LCD display with *real carbon-fiber*—the same tough, lightweight material used in race cars—with the Acer corporate logo in the upper lefthand corner, and the Ferrari crest right in the middle. Acer's *SignalUp™* Technology

Page 4 of 4



places two PIFAs (Planar Inverted F-Antennas) inside the top of the Ferrari 4000's LCD display, creating a perfect omni-directional signal sphere for enhanced wireless network reception even in low-reception areas, as indicated by the SignalUp logo on the red styling strip running along the upper edge of the LCD display.



WHOA!



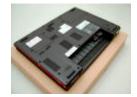








the center of the lid.



Let's take a look at the Ferrari's undercarriage. The battery slides into the back of the laptop.



The 71 W Li-ion battery fully charges in 2.5 hours, and lasts for 3.5 hours in use-not bad for a laptop with this much power.



The Wireless Network and FCC certification sticker, with another Ferrari hologram sticker



The 2.5" 100GB 5400 RPM hard drive.



The integrated controllers for the **Broadcom Gigabit** Ethernet NIC, **Bluetooth Wireless** Mouse, and the IrDA Fast Infrared port.



The Acer Ferrari 4000 comes with 1GB of DDR333 RAM. It can be expanded to 2GB; but with only 2 sockets available for memory, you'll have to remove these two 512MB soDIMMs first.

At 14.29 x 10.46 x 1.2/1.36 inches, the black and red-trimmed Ferrari 4000 certainly isn't the *smallest* notebook around—but at a svelte 6.3 pounds with the battery installed, it's certainly one of the *lightest* in its class, made possible by the carbonfiber lid. Up front, a pair of 16-bit stereo speakers flank a 5-in-1 Card Reader that accepts Memory Stick, Memory Stick Pro, MMC (MultiMediaCard), SD (Secure Digital) and *xD-Picture* cards; a built-in Microphone, Infrared Port, Power and Battery Indicators; a Headphone/Speaker and Microphone jack; a *Bluetooth* wireless button/indicator and a Wireless LAN button/indicator.

On the left side of the notebook, we find a DB-15 Female VGA port next to the ventilation slots, to connect either a monitor or LCD projector; an RJ-45 port for the

Page 5 of 5



Ferrari 4000's integrated *Broadcom NetLink 10/100/1000 Gigabit Ethernet* adapter and an RJ-11 port for the built-in *Agere Systems AC'97 56K ITU V.92* modem; a USB 2.0 port; a 4-pin IEEE 1394 "Micro" Firewire port; and one PC Card Slot that accepts any standard *Type II PCMCIA* card.





The latch on the left releases the DVD burner; the one on the right, the battery.

Here's the rear view of the *Ferrari 4000* with the battery installed.



A *DVI-D* and *S*video/TV-out (NTSC/PAL) port lets you connect the *Acer Ferrari 4000* to a wide range of supported devices.



The 124-pin

connector to park

an Acer eZDock

docking station.

your Ferrari 4000 in



On the right, we find a standard DB-15F *External VGA display port* for monitors and projectors next to the ventilation slots.





From left to right: the RJ-45 port for the integrated *Broadcom Gigabit Ethernet port*; the RJ-11 port for the *Agree Systems AC'97 56K modem*; a USB *2.0 port*, and an *IEEE-1394 4-pin Firewire port*.

Up front is the *Type II PC Card* slot with removable dust cover, and the *PC Card slot eject button*.



On the left side of the laptop, is the AC Power Jack, and a security key lock that accepts any *Kensingtoncompatible Computer Security Lock.*



The optical drive supplied with the *Acer Ferrari 4000*, is a slot-loaded *Matshita UJ-845S DVD-RAM* drive that can read and burn to a wide range of standard-sized CD and DVD media including dual-layer



Finally, we have three more USB 2.0 ports.

Moving to the right side of the notebook, there's a *Kensington-compatible Computer Security Lock* and the power jack for the AC adaptor; a *Panasonic/Matshita Model UJ-845S Slot-Loaded, Dual-Layer DVD-RAM burner.* Upon closer inspection, you can tell that the faceplate has been painted red, rather than made of red plastic; yet the color matches the rest of the notebook's hi-impact red-trimmed plastic chassis and accents perfectly without the slightest variation. But this is a *Ferrari*, so you'd expect nothing less when it comes to quality and attention to detail. There are also three more USB 2.0 ports next to the drive. Out back is a 124-pin *Acer ezDock* connector for Acer's docking station, an *S-video* port to connect the notebook to a TV or display device with an S-video input, and a *DVI-D* port that connects to monitors or other devices that support digital video connections. The Model 10696SANYOZF01 *Sanyo*

Page 6 of 6



71w Li-ion (Lithium Ion) Battery Pack snaps in the rear of the notebook, takes 2.5 hours to fully charge, and holds that charge for an average of 3.5 hours under normal use. Carefully turn the notebook over, and you'll find the latches that release the battery and Matshita optical drive, as well as compartments containing the Wireless LAN, hard drive, and memory. There's also another set of ventilation slots.



Here's a head-on view of the Ferrari 4000. Not only is it slim, but at 6.3 pounds, its one of the lightest notebooks in its class. The series of perforations flanking the ports in the center are the 16-bit stereo speakers which sound surprisingly good for a laptop.

The Acer Ferrari 4000 is equipped with a versatile 5-in-1 card reader that supports Memory Stick, Memory Stick Pro, MultiMediaCard (MMC), Secure Digital (SD) and xD-Picture Card. Further to the right is the Internal Microphone and part of the Infrared Port.

From left to right: the other half of the Infrared Port; Power and Battery LED indicators; and an Audio-Out jack for things like headphone and speakers.

Here are the button/indicators for Bluetooth (left) and Wireless (right) communications. The laptop powers-up with Bluetooth and Wireless networking enabled by default. Both can be manually enabled and disabled by pressing the appropriate button, or by using the Acer Launch Manager.



When using the button/indicators to manually enable or disable either the Bluetooth or Wireless LAN, the status will also briefly show on LCD display via the OSD (On Screen Display). Here, Bluetooth has been enabled by pressing the Bluetooth button/indicator.



...and here it's disabled. You'll see a similar message displayed for the Wireless LAN and speaker volume.



Thanks to Acer **CrystalBrite** technology, everything from spreadsheets and presentations, to movies and games look simply fabulous on the Ferrari 4000's 15.4" XGA widescreen LCD.



The Ferrari 4000 signature logo adorns the LCD display.



The red styling strip running across the top of the Ferrari 4000's LCD display isn't just for looks. Dual PIFAs (Planar Inverted F-Antennas) are installed underneath to improve wireless signal reception-part of Acer's SignalUp technology.



The Ferrari 4000's "sponsors."

When you're ready to "pop the hood" and get down to business, you'll be greeted by Acer's gorgeous, high-contrast 15.4" WSXGA+ CrystalBrite™ LCD display with a

Page 7 of 7



native resolution of 1680 x 1050; Acer's 89-key ergonomic *FineTouch*TM keyboard, and a generous-sized touch pad framed in aluminum-colored plastic with matching mouse buttons and a neat scroll pad button in the center. To the right once again, is the Ferrari's Prancing Horse crest, and on the left are OEM logos displayed like sponsor decals, of the primary components that power this race and sports carinspired beauty: the *AMD Turion*TM 64 Mobile Technology Processor, ATI's X700 MobilityTM Radeon[®] PCI Express graphics controller with 128MB of high performance GDDR3 VRAM, and the familiar Microsoft "Designed for Windows XP" label with a surprising twist: Windows XP x64 Edition is also listed on the "Designed for" label as well.

The *Ferrari 4000's* boot screen consists of a full-color photo of a Ferrari Formula One car and a simple "Press <F2> to Enter Setup" message at the bottom for entering the notebook's BIOS. When Windows XP Professional SP2 starts, a .WAV file of the F1 racer shown on the boot-up splash screen roars through the dual 16-bit stereo speakers, while *Ferrari World* provides some cool desktop background imagery that changes monthly and displays the latest calendar on your desktop. A *Ferrari World* Flash-animated screensaver protects the 15.4" WXGA+ LCD display while impressing passers-by. The surface surrounding the keyboard area, which Acer refers to on the Ferrari 4000 home page as their "Soft-touch Coating," not only makes for a comfortable palm and wrist rest but feels—not surprisingly—like the surface of a racing slick tire.

Page 8 of 8





Here's the Ferrari crest again.



A close look at Acer's 89-key *FineTouch* ergonomic keyboard. As you might expect, it may take a brief adjustment period to get used to, and you'll either love it or hate it (I love it). The generous-sized touchpad is one of the smoothest, quickest and most responsive ones I've ever used on a laptop—but that's to be expected when the laptop is named after a premier exoti-car and race car. The center button is used for scrolling. At the upper-left, above the keyboard, the *Power* button on the left fires-up the *Ferrari 4000*. On the right, the more conventional *Num* and *Caps Lock* indicators are joined by a *Hard Disk* activity LED that's filling in for the MIA Scroll Lock indicator.



Let's get properly introduced to the Easy-launch buttons in the upper-right hand corner, above the keyboard. Working our way from left to right: Mail, Web Browser, Acer's eManager, and one Userprogrammable button. All can be modified and configured through the Acer Launch Manager in the system tray.



Ferrari World's wallpaper applet automatically puts a cool, new Ferrari photograph and calendar directly on your desktop every month.

The Acer Ferrari

4000 runs as fast

and as good as it

looks.

In the upper left-hand corner of the keyboard, you'll find a power button and a Caps Lock, Num Lock and Media Activity LED protected under a transparent dome. In the upper right-hand corner are *Acer's Easy-launch* buttons. The button with *the Mail icon* (an envelope), launches your default E-Mail program; the *Web Browser* button (the planet with the ring around it) launches your default browser. The *Acer eManager* button (with the fancy letter "e") launches *Acer's eManager* application. The last button (with the letter "P") is *User-programmable*, to launch an additional

Page 9 of 9



program of your choice. All of the Easy-launch buttons can be reconfigured to your liking with *Acer's Launch Manager* software.

As with most notebook keyboards, engaging the *<Num Lock>* key or pressing the *<Fn>* + *<F11>* keys changes the keys to on the right-hand side of the keyboard to a numeric keypad for numeric data entry. The *<Fn>* (function) key used in combination with specifically-labeled keys perform the usual shift-key functions from blanking and toggling screens when a monitor is connected, to putting the notebook in sleep mode, adjusting the volume of the speakers and toggling the touchpad on and off. The keys are just the right size and have a firm, but quiet touch. The slightly curved ergonomic layout of the keyboard will probably require a brief period of adjustment to get used to. If your local retailer carries the *Acer Travelmate 3000* and *4000*-series notebooks do—I'd recommend trying it out in a store first to make sure that you like it, before making a commitment. The generous-sized touchpad with its 4-way scroll-button is the fastest, most responsive I've ever used on a notebook, requiring only the lightest of touches without any skipping or lagging.



This is the Acer Ferrari 4000's boot screen. Pressing <F2> here will take you straight into the BIOS; Hitting <Alt><F10> will take you into Acer's eRecovery System. Let's take a look.



Acer's eRecovery loads from a special hidden factory partition. Type in the password (six zeroes by default, which can be changed) and press *<Enter>*



This is the *eRecovery Main Menu*, which uses the arrow keys for navigation. Press *<Enter>* to select the highlighted *System Recovery* option.



Here you can restore the Factory Default Image, which resides on eRecovery's hidden partition, and will erase everything on the hard drive and restore the Ferrari 4000 to its brand new out-of-the-box condition. You can also restore the laptop from an image created on CD or DVD media with eRecovery under Windows XP.



Remember the password you typed in earlier? Here's where you change it...

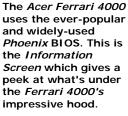
Page 10 of 10





....like so. Now let's reboot and check out the *Ferrari 4000's* BIOS.





 70 This is the Main
ar Screen where you can configure basic
s system settings: *Quiet Boot* a determines whether
r you see the cool
Ferrari splash screen on boot-up or the more pedestrian textbased BIOS and system startup info.

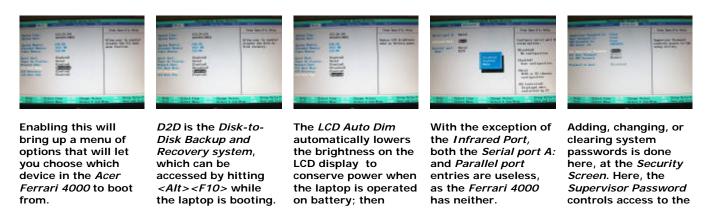
You can tell the Ferrari 4000 to automatically detect and use a second external display if detected on powerup, or force it to look for and use both the laptop's LCD and t- external display for those fussy external display devices that need a little coaxing.



You can activate the *Ferrari 4000's* Gigabit Ethernet NIC's ability to boot from a network here.

The engine beneath the Acer Ferrari 4000's hood is a fast and energy-efficient 2.0 GHz AMD Turion[™] 64 Mobile Technology ML-37 Processor with a 1GB cache, mounted in a Socket 754 motherboard powered by the new ATI Radeon[®] Xpress 200P chipset, with 1GB of Single-Channel DDR 333 RAM upgradeable to 2 GB. Mass storage is provided by a Seagate Momentus ST9100823A Ultra/ATA 1000 5400 RPM 100MB IDE hard drive with an 8MB buffer and 12.5ms access time.

Included with the *Ferrari 4000* is a Bluetooth rechargeable wireless mouse. Powered by two rechargeable AA batteries, the full-sized scroll wheel mouse is colorcoordinated to match the notebook with the Ferrari's glossy Rosso Corsa finish, black rubberized "Soft-Touch" side grips, and an ambidextrous design. With the included USB charger cord, it takes approximately five hours to fully charge the mouse, and the charge lasts about a week and a half under normal use.



Page 11 of 11

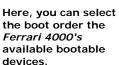


You'll probably want b to leave this enabled. w

brightens the display when the laptop is plugged into a power outlet.



This enables or disables the password protection on the hard drive for the aforementioned D2D utility which is run from a special hidden partition on the hard drive, or *Acer Recovery* through *Acer eManager*.



And finally, here's the Exit screen where you can load system defaults and save or discard any of the BIOS settings.

Acer even throws in a Ferrari Red cleaning cloth to clean the notebook with—a good thing, since the reflective carbon-fiber lid shows fingerprints easily, and the rubberized surface around the notebook's keyboard has a tendency to show dust, lint, and oils from your hands (or food if you're an eat-while-you-work person). The supplied cloth handles the typical build up of dust and minor smudges on the lid and elsewhere without any problem, but you may need additional help from a soft, lint-free cloth dampened with cool water for more the more stubborn cleaning jobs. The 26-page *User's Guide* has the same black, carbon-fiber and Ferrari Red motif as the notebook, and gives you the basics on operating the *Ferrari 4000* (with more detailed info in the notebook's online documentation).

Page 12 of 12

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Pressing the third Easy-launch button (with the "e" on it) brings up Acer's eManager Menu, which groups the Ferrari 4000's most commonly used Acer utilities together for quick and easy access. Let's take a look at the first option—Acer ePresentation. Acer ePresentation provides a fast and simple way of setting the Ferrari's screen resolution when it's connected to a projector, without having to dig through the Display Settings applet under Windows Control panel. Clicking the *Help* icon on the *ePresentation* screen brings up this useful mini-guide on the utility. Next, is *Acer eRecovery* for creating and restoring system backups, and reinstalling system applications and drivers.

Type in the password (default is six zeroes)

Software

Nowadays, the average notebook computer ships with enough pre-installed software and utilities for *two* notebooks; most of it will never be used and just hogs disk space and system resources. If you're looking for full-blown office suites and the usual myriad of trial programs, "added value" shovelware and System Tray slop, you'll be disappointed with the *Acer Ferrari 4000*. But if you're looking for a hi-performance notebook that provides a pretty clean and decent foundation for installing the applications and utilities *you* want installed, rather than wasting *hours* uninstalling all the junk you don't want, the *Ferrari 4000* is for you.

Page 13 of 13





Pay attention to this warning if you don't have the AC adapter plugged in before starting *eRecovery*—it will save you a *lot* of grief. The first option lets you create backups and change the utility's default password.

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Note the options here. Acer eRecovery requires a separate FAT32 partition on the local hard drive to create or delete a backup snapshot image of the laptop's current configuration under Windows. The first and third options are grayed because I created a single NTFS partition on the Ferrari 4000. I can create a Factory default image to the DVD burner. If the two FAT32 partitions were left in place on the hard drive, any user-created images would also be displayed, as well as the option to create the image on the second drive partition. Note that while you can convert the C: partition to NTFS, the D: partition on the hard drive must remain FAT32.



Next is *Recovery Actions*. Online help is available at any time for all *eManager* functions by clicking the Help icon in the upper right-hand corner of the menu.



Note the options here. You can also reinstall all of the original drivers and utilities.





The "Acer System Series CD" is stored on the special hidden factory partition on the hard drive. You can browse its contents, install the drivers, and view the complete Acer Ferrari 4000 User's Guide in Acrobat .PDF format, from here. Here's what's on the "Acer System Series CD." These are for the 32-bit version of Windows XP only. If you want to run Windows XP Professional x64 Edition on the Ferrari 4000, you'll have to download all the 64bit drivers from Acer's Support Website. This is the Install screen for the drivers.



The full User's Guide, which is available in a number of languages, is launched from here.

Page 14 of 14



The Acer Ferrari 4000 ships with four CDs; a three-disc recovery CD set consisting of a bootable System CD that loads Symantec's Ghost, and two Recovery CDs containing the actual Ghost image of the factory OS, driver and utility install. In spite the Acer OEM Windows XP Start Here booklet, there is no CD with the actual Windows XP OS included—an unfortunate but growing trend followed by many OEM PC and Notebook manufacturers these days to rein in costs.



Here's the guide. You can print it out or save it elsewhere on your hard drive where you can have quicker access to it. Finally, there's *Acer* eSettings.

As you can see, you can change a number of the *Acer Ferrari 4000's settings*. A number of changes to the notebook's display settings can be made with this option. The *Display Device* configuration screen.

The fourth CD contains Symantec's *Norton Antivirus 2005*, which Acer does *not* preinstall on the *Ferrari 4000*. This way, you have the option of installing your own favorite antivirus program without having to worry about any potential conflicts due to something that an uninstall of Norton might have typically left behind—a good move on Acer's part.

Other software included and pre-installed on the *Acer Ferrari 4000* is *Adobe Acrobat Reader 6.0*; an Acer-branded version of *CyberLink's PowerDVD 5.0*, and an Acerbranded version of *NTI CD & DVD Maker Version 7* which also includes *NTI Backup NOW! Version 4*. Acer also includes a pre-installed suite of utilities for getting the most out of the *Ferrari 4000*:

• Acer eManager—a slick little front-end for the following apps: Acer ePresentation—if you've ever fought with screen resolutions when connecting a notebook to a projector for that all-important PowerPoint slide presentation, ePresentation will make the process and your life much simpler.

Page 15 of 15



Acer eRecovery—although the *Ferrari 4000* ships with a set of recovery CDs, eRecovery lets you make an additional set quickly and easily, allowing you to bring your *Ferrari 4000* back to life after a crash-n-burn. Backups can be performed to the hard drive, or to CDs and DVDs. One thing I've learned the hard way a long time ago, is that you can never have too many backups. You can also run eRecover outside of Windows, by pressing *<Alt><F10>* during system boot-up.

Acer eSettings—allows you to make system and security changes in Windows without having to go into the notebook's CMOS on boot-up.

- Acer GridVista—a utility with four pre-defined display settings that allow you to run multiple windows on the same screen. With dual monitor support, two displays can be partitioned independently of each other. This utility makes arranging and working with multiple windows on both the notebook and an attached second monitor a lot quicker and easier than manually resizing and positioning the windows on both screens.
- Acer Launch Manager—a system tray applet that allows you to assign the notebook's *Easy-launch* buttons to launch any application you choose. You can also enable or disable the *Acer Ferrari 4000's* Bluetooth and Wireless network on system start-up.

Page 16 of 16





Now let's check out Boot Options.

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The most commonly changed settings normally performed through the BIOS on system boot-up can quickly and easily be made here. The changes will be in effect the next time you reboot the *Ferrari* 4000.



Next, we have Security Settings.



Again, this option saves you from having to go into the BIOS to set and modify system passwords and configuring any smart cards you may be using for security.



Finally, System Information gives you a look under the Ferrari 4000's hood.



Here's a summary of the laptop's configuration.



Info on the *Ferrari* 4000's graphics processor chip...



Details on the *Ferrari* 4000's powerplant— AMD's 2.0 GHz Turion 64 ML-37 Mobile Processor.



Here you can see the version of the BIOS.



This gives you the laptop's serial number.



This displays the amount of memory installed.



...and sound system.

Although Windows XP Professional x64 Edition is supported on the *Acer Ferrari 4000*, only the 32-bit drivers for the notebook are shipped with it, so you'll have to go out to Acer's support page for the *Ferrari 4000* and download the necessary 64-bit drivers.





Battery Life

Designing a notebook has always been a delicate balancing act between size, weight, performance, heat, and battery life. It's nearly impossible to maximize one area without making compromises in others to achieve that balance. While the *Acer Ferrari 4000* is no exception, it does strike a reasonable balance between power and power usage for a laptop chocked with hi-performance components, while running fairly cool, even under full load.

Although the *Ferrari 4000's* battery has a rated recharge time of 2.5 hours and runtime of 3.5 hours, as you've probably guessed or have experienced if you already own a laptop computer (or any other battery-powered gadget), *advertised* battery life and recharge times don't always jibe with the ones in the real world.

I use the *Ferrari 4000* connected to a power outlet about 85% of the time. On battery, I average roughly around 2 to 3 hours battery life before getting the usual low battery warnings, depending on what I happen to be doing on the notebook, and how many applications I'm running on it at any given time. Two hours or less is the norm if I'm doing anything disk or graphic intensive. I can usually squeeze in a 90minute DVD movie before having to hunt for a wall socket, and am doing good if I can get through a couple of levels of a game. Depending on how low the battery gets, it does take anywhere from an hour to two and a half hours to recharge. Depending on individual usage, battery life and recharge time is one area where your mileage definitely can, and will vary.

Battery Eater '05	Z
Battery Eater ⁰⁵ (Center Edition)
AC status: Online	Elapsed:
Bat status: High	Total:
10	0.0%
2-nd Batter	y Unplugged
Begin test when disconnecting	g AC
Info Options	Help Exit

Page 18 of 18



To see how long it *really* takes a battery to discharge and recharge, I used the *Battery Eater 05 Utility*. All power saving options and hibernation were disabled during the test. The notebook's default power saving scheme Portable/Laptop was used to insure that the processor would automatically scale its speed accordingly to the workload imposed by Battery Eater Pro, as it would if the *Ferrari 4000* were used while on battery power under normal circumstances. The "Classic" test was used.

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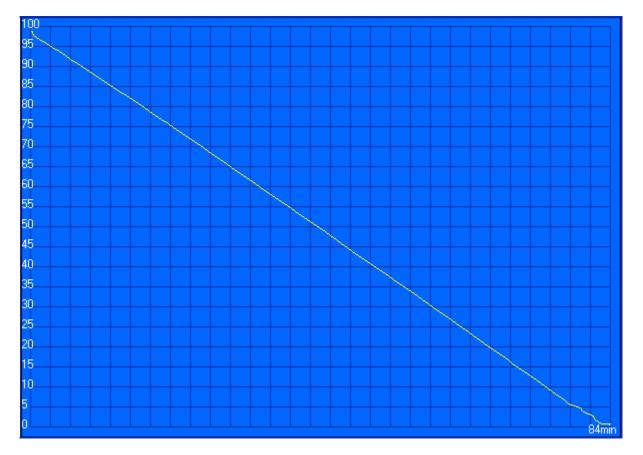
Page 19 of 19



Unique ID	10696SANYOZF01
Chemistry	Lithium Ion
Temperature	Thermal Control Not Present
Designed Capacity	71040mWh
Full Charged Capacity	67828mWh
Designed Voltage	0V
Current Voltage	0V
Manufacture Date	0/0/0
Cycles Count	0
Cells count	0
Force charge support	Not Supported
Force discharge support	Not Supported
	Benchmark results
CPU BEmarks	0
GPU BEmarks	0
RAM BEmarks	0
HDD BEmarks	0
	Work Done
Pi calculations	81880 Cycles
HDD read\write	12107 Mb
Fames Rendered	641333 Frames
	Benchmark Options
Resolution	640x480x32
FullScreen	Enabled
Mode	Classic
	Results
Total time	0:83:97
	Result Graph

Page 20 of 20





Well, the results speak for themselves. It took *84 minutes* for the battery to be fully depleted by Battery Eater 05. It also took *3 hours, 27 minutes and 51 seconds* for the battery to fully charge again.

Keep in mind that Battery Eater is designed to completely drain a battery by running an endless loop of vigorous processor, video and hard drive routines that typically do not occur under normal use—but it is useful in determining just how well your battery will hold up and recover under the most extreme conditions.

Benchmarks

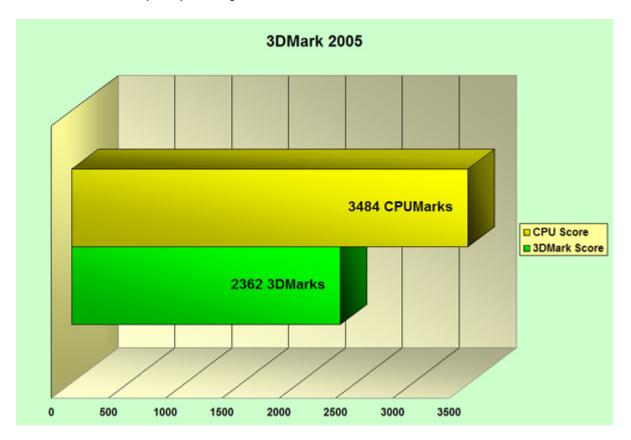
3DMark05 Professional

The industry standard of 3D synthetic benchmarks, Futuremark's *3DMark05*[®] is designed to measure the performance of the latest generation of DirectX[®] 9.0 graphics cards with a series of high quality 3D tests, CPU tests and feature tests and has support for Pixel Shader 2.0 and 2.0b. The latest version of 3Dmark05, Version

Page 21 of 21

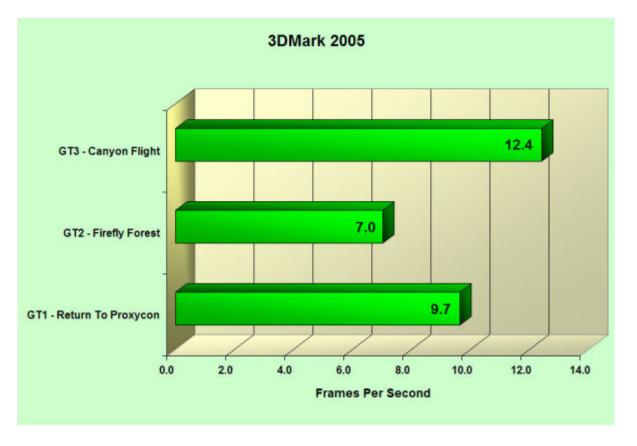


1.20, was used for the test. The default settings for the benchmark were used, and the video driver control panel settings were left at the default "Application Preference" for all quality settings.



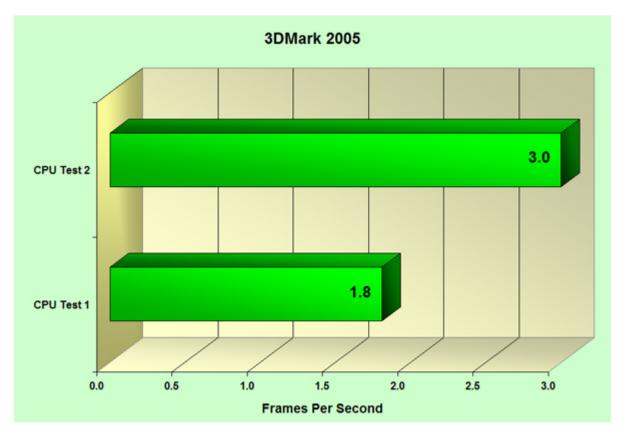
Page 22 of 22





Page 23 of 23





No surprises here for the Mobility Radeon X700 with its 128MB of RAM and the Turion 64 ML-37 processor, as the results are pretty much what you'd expect them to be.

DOOM³

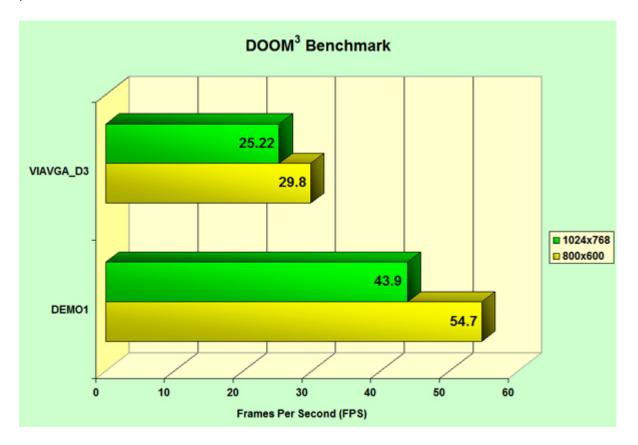
id Software's remake of the classic first-person shooter that started it all, powered by a spectacular new graphics engine with incredible lighting effects and nearphotorealistic visuals.

The retail version of the game was used and patched to Version 1.3. The tests were performed at 800x600 and 1024x768—the two resolutions where the game was most playable. High Quality and 2x antialiasing were enabled. DOOM³'s default anisotropic filtering setting is 8x, so that's where it was left at. Vertical sync was disabled. The video driver control panel settings were left at the default "Application Preference" for all quality settings. Each test was run five times and the results were averaged.

Page 24 of 24



Two separate maps were used for the benchmark. The first is *Demo_1*, which is the default DOOM³ benchmark, and consists of the Mars City Underground level right after the demonic invasion, where you confront a number of Imps and UAC personnel turned into Zombies.



The second map, *VIAVGA_D3*, is a custom-recorded DOOM³ benchmark created by *VIA Arena* and is available for download. This visually intensive benchmark is based on one of VIA Arena's premier custom-made multiplayer maps for DOOM³. Not only is this map designed for lots of fast-and-furious deathmatch fragging, but it's perfect for stressing even the fastest video cards and CPUs.

Because DOOM³ scales well visually at lower resolutions, the game still looks pretty good at 800x600 and 1024x768. Since the majority of environments in the game are dark, using higher antialiasing settings to eliminate jaggies isn't as much an issue as it would normally be. Acer doesn't specify in the documentation or their website what the response time for the 15.4" WSXGA+ LCD display is, but I detected no ghosting while playing DOOM³ or any other game on the *Ferrari 4000*.

Page 25 of 25



As you can see from the chart, the 800x600 resolution gives the best overall frame rates. At 1024x728 the game is still playable, but you can expect some hitching and slowdowns with multiple enemies on the screen. With only 128MB of video memory on-tap, at 1280x1024, DOOM³ played, not surprisingly, more like a slide show than a first-person shooter, even with antialiasing turned off (although 1600x1200 was selectable from the menu, the game wouldn't run at that resolution, defaulting back to 640x480 after performing the required restart of the game after changing resolutions).

Half-Life 2

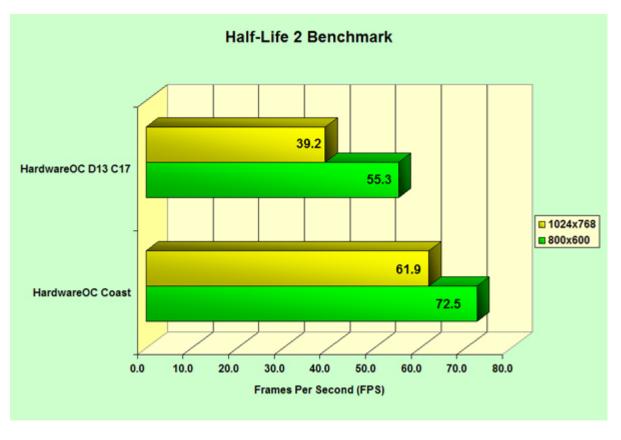
The follow-up to the most influential first-person shooter since id Software's *DOOM*, Valve Software's Sci-Fi first-person shooter epic powered by the *Source* engine, rivals the DOOM³ engine in both visual quality and the ability to push the video subsystem to the limit. Unlike DOOM³, you don't spend 95% of your time in darkness or near-darkness in Half-Life 2, so visual jaggies from disabled or low levels of antialiasing are going to be more noticeable in the game.

The retail version of the game was patched with the latest updates downloaded from Valve's *Steam* online service. The tests were performed at 800x600 and 1024x768—the two resolutions where the game was most playable—with 2x antialiasing and anisotropic filtering enabled, and the High Quality setting enabled for all visual effects. Although the game looked better with 4x anisotropic filtering, the frame rates were way too choppy for comfortable gameplay, even when moving through a level with no enemies present.

Once again, the driver control panel was left at the default "Application Preference" for all quality settings and Vsync disabled. The benchmark was performed with the *HardwareOC Half-Life 2 Benchmark Utility Version 1.4* (downloaded from *Guru3D*). The utility's default maps—*HardwareOC D13 C17*, where *Gordon Freeman* and *Alyx Vance's* robot guardian *Dog*, attack a Combine checkpoint and Dog destroys a Combine APC; and *HardwareOC Coast*, where Gordon encounters City 17's *Ant Lions*, were used.

Page 26 of 26





The highest resolution supported for Half-Life 2 on the *Acer Ferrari 4000*, is 1400x1050—a resolution high enough to get by with, without using antialiasing and with Trilinear filtering enabled—if it wasn't for some very distracting driver-version related visual anomalies related to the HUD (Heads Up Display) and some *seriously* sluggish frame rates, particularly during the larger firefights with Gordon Freeman and the Resistance against the Combine troops.

As we can see from the chart, if you're willing to live with occasional, brief moments of slowdowns and chugging when there's a lot going on in a level, the 1024x768 resolution is a good compromise between looks and performance on the *Acer Ferrari* 4000—provided that you don't get crazy with the antialiasing and anisotropic filtering settings. If frame rates are more important, the game doesn't look that bad at 800x600.

For gaming, the Mobility Radeon X700's 128MB of GDDR3 Video RAM and 8 parallel pixel pipelines just isn't enough to run the latest titles at the highest possible resolutions with all the visual effects cranked to the limit. While bumping the RAM another 128MB to 256MB definitely would have improved performance and allowed

Page 27 of 27

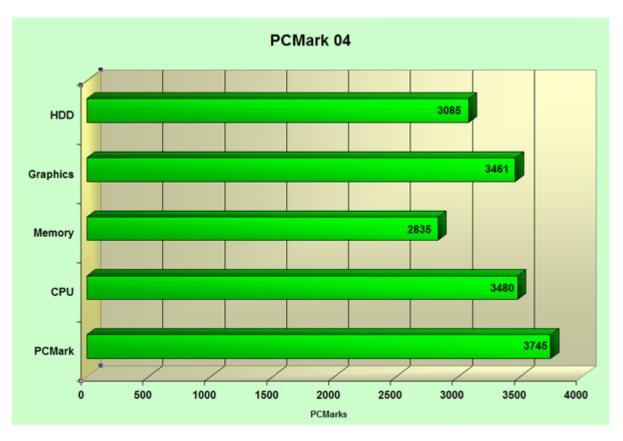


higher resolutions and antialiasing settings, it also would have added to the cost of an already expensive notebook that was designed for general all-around use and *not specifically for gaming*. But look at the bright side: there are a number of laptops in the *Ferrari 4000's* class that can *barely* run games like DOOM³ and Half-Life 2—if at all.

PCMark04 Professional

PCMark®04 is Futuremark's application-based benchmark for measuring overall system performance, utilizing portions of real applications instead of including full-sized, actual applications with specifically created scripting code. This keeps the cost of the benchmark within reach of the average enthusiast, makes the benchmark easier to use, as well as providing a smaller installation footprint to avoid hogging unnecessary disk space.

The latest version of PCMark04, Version 1.30, was used for the test, and the default settings were used.



Page 28 of 28



3.1 MB/s
30.8 MB/s
24.3 MB/s
12.3 MPixels/s
1532.7 MB/s
3.1 KB/s
61.1 MB/s
2613.5 KB/s
4.6 Pages/s
45.8 FPS
49.7 FPS
174.0 FPS
1612.1 FPS

Again, the results are what you would expect for a laptop of this type. For generalpurpose use, the *Acer Ferrari 4000* should have no problems handling a wide variety of business and entertainment tasks, satisfying all but the most extreme power users.

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The circled System Tray icon is <i>Acer's</i> <i>Launch Manger</i> .	Launch Manger is the utility that you can use to enable or disable Bluetooth or Wireless LAN support and configure the Easy-launch buttons located above the upper right-hand corner of the keyboard.	You'll see this the first time you use <i>Launch Manger</i> to disable Wireless LAN support.	The circled System Tray icon is <i>Acer</i> <i>GridVista</i> —a utility that allows you to view multiple windows on the same screen using four pre-defined display settings, and works with both single and dual displays.	You'll need to check off the <i>Extend my</i> <i>Windows desktop on</i> <i>this monitor</i> option under the secondary monitor in <i>Display</i> <i>Properties</i> .

Impressions and Conclusion

Whether it has four wheels or can sit on your desk and can be carried around in a bag, when you shell out the bucks for a *Ferrari*, you'd expect it to be the pinnacle of performance, styling, quality and functionality. The *Acer Ferrari 4000 4005WLMi*

Page 29 of 29



Notebook fires on all cylinders and hits all of these attributes on the mark, with few exceptions.



Right-click on the *GridVista* icon in the System Tray and select *Options* to change the utility's settings.

Right-clicking the icon and selecting *Grid Display* for each available monitor will bring up a list of grid configuration options.

GridVista will place three buttons in the title bar of all applications that can be dragged and dropped into a grid. The first button has options for making a window transparent and snapping it to a specific grid. The second button locks or unlocks a window to a grid. The third enables or disables a window in grid to always be on top.



A screen capture of a GridVista four-grid display on the Acer Ferrari 4000's LCD display (left) and a connected 17" LCD display (right).



This is what a GridVista configuration looks like on a dual display. It's important that the resolution on both displays match for best results.

I was very impressed with the styling and performance of the *Acer Ferrari 4000*. The notebook is s a real head-turner wherever I take it. Whether I was reading E-Mail, working on a spreadsheet, playing games or watching a movie, AMD's Turion 64 ML-37 Mobile Processor teamed up with ATI's Mobility Radeon X700 video, Gigabyte of RAM, and spacious, speedy hard drive, easily ran circles around my previous Intel Centrino-powered *Toshiba Tecra A2*, and the bright, sharp 15.4" wide screen LCD display never disappointed (not a dead pixel anywhere). While the sound obviously wasn't going to compare with a SoundBlaster Audigy 2 sound card playing through a set of Logitech 5.1 speakers, the 16-bit stereo speakers in the *Ferrari 4000* did an admirable job for their size and power, though they did tend to clip a bit in some games with the volume pushed up.

Keyboards, touch pads and mice are always a subjective matter. What might be acceptable to me may be unbearable to you. I personally found the slight curve and tactile feedback of the *Ferrari 4000's* keyboard more enjoyable and comfortable to type on, especially for extended periods of time, compared to the keyboard on my previous Toshiba laptop, whose layout was a bit too cramped for me (in fact, I'm typing this review on the *4000* now). I permitted a colleague of mine to try the *Ferrari 4000*. An hour later, she came to the conclusion that while it was a nice notebook and she was blown away by the styling, the 15.4" wide screen, and the

Page 30 of 30



performance, she preferred the keyboard of her *IBM ThinkPad* over the Ferrari 4000 keyboard.

The touch pad on the Ferrari 4000 was the most responsive I've ever used, but for doing any work for an extended period of time, a mouse is still a better choicewhich is why Acer included the Bluetooth wireless mouse with the Ferrari 4000. Although the size and styling of the mouse is a plus compared to some mice, the lack of any kind of indicator showing how much charge is left—whether built into the mouse itself similar to some of Logitech's cordless mice, or even a software-based System Tray icon, is hardly reassuring. And contrary to the documentation, it did not work as a regular USB mouse with the batteries removed and the charging cable attached (which could have been a bit longer). With batteries, the mouse is heavier than a regular full-sized corded mouse, with responsiveness that varies between average and below-average. I personally prefer something lighter to carry around in my bag on a daily basis that has much more responsive performance and better precision, so my Salamander Red Razer Diamondback mouse is now occupying the compartment in my notebook bag where the Acer Bluetooth mouse used to be. The mouse also flaked out on numerous occasions, forcing me to push the Bluetooth button at the front of the notebook on and off several times and underneath the mouse, before it finally started working again.

I was surprised to find that the *Ferrari 4000's* 100 GB hard drive was split into two 50 GB FAT32 partitions. As it turns out, *Acer eRecovery* requires the second, empty FAT32 partition to store backup images—the rationale being that all of your programs and data would reside on the C: partition, while the *eRecovery* backups would be stored on the D: partition. Storing backup images on another partition on the same hard drive may be fast and convenient, but if the hard drive crashes, not only do you lose your current data, but everything you backed up as well. Since I make image backups of all my systems to my *Buffalo TeraStation NAS* on a regular basis with *Acronis True Image*, needed the full 100 GB disk space and prefer Windows XP's NTFS file system over FAT32 for its better performance and reliability, I used Vcom's Partition Commander Version 9 to convert the drive into a single 100GB NTFS partition, while still maintaining the option of using eRecovery from the Acer's hidden partition or CDs to return the notebook to factory condition if I choose.

One totally bizarre and unexpected issue I encountered with the *Acer Ferrari 4000* was with *NTI's Backup NOW! 4*. When backing up and restoring files with Backup NOW! the program changes the case of files that it backs up. For example, backing up a file named *mywordfile.doc* would be backed up and restored as *Mywordfile.doc*. I was able to duplicate this anomaly on several other machines that I installed the software on.

Page 31 of 31





The Acer Ferrari

4000's Realtek AC'97

Audio Control panel

thankfully lacks the

gaudy-looking skins

used by other OEMs,

using the default Windows theme

instead.

Here you can select

headphones or the

speakers.

built-in 16-bit stereo



A variety of environment effects are available to choose from—though Generic is the bestsounding one of them all, particularly when listening to music, playing games or watching your favorite DVD.

The *Graphic Equalizer* can also be used to tweak the sound to your liking.



S/PDIF-out settings can be made here.

and a data for the state	O
2 inclusions	

Microphone settings are adjusted here.



This is the General
tab that summarizesAtab that summarizesCThe Ferrari 4000'sFaudio capabilities.tlHere we see that the
Ferrari 4000's soundMSystem is powered by
the ATI's 4730 audio
controller with
Realtek's ALC250
doing Codec duty.H

Acer ships CyberLink's PowerDVD 5.0 with the Ferrari 4000. While it's not the latest version, it gets the job done.



The Acer-branded PowerDVD player is skinned to match the Ferrari color scheme.



Ice Cube kickin' ass in xXx - State of The Union.

I went to *NTI's website* and looked for an update. Unfortunately, the *NTI Backup NOW!* 4.0.2202 update, which is listed for NTI Backup NOW! 4.0.2202 or earlier does not install on the Acer-branded version of Backup NOW! that ships with the *Ferrari* 4000 notebook because it isn't a "Full/Retail version" of the software. Ironically, *NTI's CD & DVD Maker 7* bundled with the *Ferrari* 4000 does not engage in this kind of digital monkey-business with file names. Updates specifically for the Acernotebook only version are available on the NTI website. Since CD & DVD Maker and Backup NOW! are two separate packages an integrated suite like *Roxio's/Sonic's Easy Media Creator 7*, as they appear to be, applying the update to CD & DVD Maker 7 has no effect on Backup NOW!

Page 32 of 32



While this issue wouldn't be a problem for the most part, people who use software to create and manage websites and publish their sites to web servers that have casesensitive operating systems should avoid using NTI's Backup NOW! to backup their work. There's no good reason for any backup program to change the case on files.







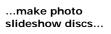


...back up files and folders or create system images



An Acer-branded version of NTI CD & DVD-Maker Gold, Version 7 is included with the Ferrari 4000. With it, you can burn Data CDs, DVDs, and Mixed Mode CDs...

... create videos in a variety of DVD and CD formats...



You can also make copies of CD and DVD discs (copy-protected discs may prove to be problematic).

If you're used to going out to ATI's website and downloading the latest-and-greatest drivers for increased performance and functionality, you may be in for a rude shock with the Ferrari 4000. The verification software on ATI's site will scan your laptop to determine if you can pull down the latest Catalyst Mobility™ Radeon[®] drivers. If your laptop isn't on the rather short list of approved vendors, then you will not be able to download them from ATI's site—nor will you be able to install the "regular" Catalyst drivers (standard and .NET/Catalyst Control Center versions), which will immediately tell you that the graphics chip is "not supported" before aborting the install.

OEMs often build specific hardware features into their notebooks that require custom-written drivers from vendors like ATI to support them. Installing "generic" drivers usually break those features. Since stability and reliability is somewhat more of a concern for laptops than DIY gaming rigs, ATI's hard-line approach to restricting video driver updates to specific vendor systems for the Mobility Radeon isn't as "Draconian" as it may appear to be. Still, if your favorite game won't run properly on the Ferrari 4000 without the latest-and-greatest Radeon drivers, fear not: there is a utility that you can download from DriverHeaven.net called the DriverHeaven Mobility Modding Tool that allows you to download the latest Catalyst drivers and install them on your laptop. Be advised it's one of those "Use at your own risk" deals. Be sure to keep your Acer eRecovery CDs at the ready...

Page 33 of 33





Because there's only one optical drive and burner in the Acer Ferrari 4000, you'll have to copy the source disc to a temporary file on the hard drive, then onto a blank CD or DVD disc afterwards. This isn't such a bad or inconvenient thing, as it's usually a more reliable method of duplicating CD and DVD discs, due to the wide range of quality in media and other factors that can often prevent a successful drive-to-drive copy.



NTI CD & DVD-Maker can also burn and play audio discs, and has a Wave Editor. NTI Backup NOW! 4 supports backups to disk and other popular media. I ran into a strange bug with the software changing the case on files it backed up.

1.1.1.1.1.1.1

1 1

NTI DVD Fit has the ability to compress dual-layer movies down to single-layer size, and remove unwanted features, before burning them without having to split a movie onto multiple DVD discs. It won't work with copy-protected movies, though.



NTI File CD is the packet writing software for CD-RW and DVD±RW discs.



You can design your own CD and DVD labels and jewel case liners with *NTI JewelCase Maker*.



The NTI WaveEditor is your typical .WAV file recording and editing utility.

As razor-thin margins continue to shrink and competition becomes more ferocious each day, PC and notebook vendors are out to reduce their expenses and maximize profits while keeping pricing within reach of their target markets. I suspect it won't be much longer before three-year warranties for notebooks and PCs are the exception, rather than the rule. Although Acer puts the *Ferrari 4000* through what they describe as "an extremely vigorous Q&A process that guarantees it will perform without problem or incident for 20,000 hours," considering its \$2,000+ price tag and the fact that no matter how tough the Q&A process or how high the quality of parts, sooner or later, something *is* going to break (usually after the warranty's up), a warranty longer than Acer's *One-Year International Traveler's Warranty*, is not

Page 34 of 34



unreasonable to expect. There are a number of extended warranty options available, but if you want the extra peace of mind, you'll have to pay for it.

The Acer Ferrari 4000 's styling has been toned down quite a bit from the previous 3000-series notebooks (although some folks will still find it a bit too flashy for their tastes), but its performance, functionality and quality hasn't—in fact they've gotten better. Although it's not an absolute must, it would have been nice if the integrated Broadcom Gigabit Ethernet controller supported Jumbo Packet Frames. Finally, tweakers looking to enhance system performance will undoubtedly be disappointed by the rather sparse Phoenix BIOS (Version S3A17 on my unit), which allows only the most basic of settings necessary for configuring the notebook.

Leveraging both Windows XP 32-bit and Windows XP Professional x64 support with AMD's latest 64-bit mobile processor and other best-of-breed components in a lightweight, powerful, stunningly beautiful and surprisingly flexible package, the **Acer Ferrari 4000 4005WLMi Notebook** is every bit a winner as the exotic sports cars and F1 champions of the same name.



Page 35 of 35



Final Score:



Summary:

Highs: Acer takes their series of Scuderia Ferrari-sponsored laptops to the next level with the Ferrari 4000 4005WLMi Notebook. Powered by AMD's Turion 64 ML-37 mobile processor, ATI's Mobility RADEON X700 PCI Express graphics processor and RADEON XPRESS 200P Motherboard chipset, with 1GB RAM, 100GB hard drive, a gorgeous 15.4" WSXGA+ LCD display, upgraded Ferrari styling with a genuine carbon-fiber lid, the Acer Ferrari 4000 4005WLMi Notebook is an eye-catching powerhouse in a lightweight package. SignalUp[™] Wireless LAN and Bluetooth Wireless supported (Bluetooth Wireless Mouse included with notebook). *FineTouch™* ergonomic keyboard with "Soft-touch coating," and generous-sized touchpad with a separate 4-way scroll button. Slot-loaded DVD-RAM drive (supports dual-layer media). 5-in-1 Card Reader and a generous number of I/O ports makes the Acer Ferrari 4000 one of the most versatile and flexible notebooks in its class. Acer eManager, GridVista and Launch Manager utilities makes common tasks from system backup and recovery to presentations a snap.

Lows: Bluetooth wireless mouse has average response time, is a bit on the heavy side, doesn't work as regular USB mouse without batteries as stated in documentation, and has no system tray battery life indicators. Bundled backup software tampers with case settings of files. Acer eRecovery requires a FAT32 partition. Minimal configuration options in BIOS.

Page 36 of 36



Acer Ferrari 4000 4005WLMi Notebook

Manufactured by: Acer, Inc. Distributed by: Various retailers Specifications:

Operating system

- Microsoft Windows XP Home Edition
- Microsoft Windows XP Professional

Platform

- Processor: AMD Turion 64 ML-37 processor (2.0 GHz)
- Chipset: ATI RADEON XPRESS 200P

Memory

- 1 GB of DDR333 memory, upgradeable to 2 GB using two soDIMM modules

Display

- 15.4" WSXGA+ TFT LCD, 1680 x 1050 resolution

- 16.7 million colors

Graphics

- ATI Mobility RADEON X700 with 128 MB of external DDR VRAM, supporting ATI Powerplay 5.0, Microsoft

- DirectX 9.0 and PCI Express

- DualView support; external display at up to 2048 \times 1536 pixel resolution, 85 Hz

- MPEG-2 DVD hardware-assisted capability
- S-video/TV-out (NTSC/PAL) support
- DVI-D (true digital video interface) support

Audio

- Audio system with microphone and two built-in speakers
- AC'97 compliant
- S/PDIF (Sony/Philips Digital Interface) support

Storage

- 100 GB ATA/100 hard disk drive

- 5-in-1 card reader supporting Memory Stick®, Memory Stick Pro, MultiMediaCard (MMC), Secure Digital (SD) and xD-Picture Card Optical media drive

- Slot-load DVD-Super Multi double-layer drive

Page 37 of 37



Communication

- Modem: 56K ITU V.92 with PTT approval;
- Wake-on-Ring ready
- LAN: gigabit Ethernet; Wake-on-LAN ready
- WLAN: integrated Acer InviLink[™] 802.11b/g Wi-Fi CERTIFIED[™]
- solution; supporting Acer SignalUp wireless technology
- WPAN: integrated Bluetooth

Size and weight

- 363 (W) x 265.7 (D) x 30.5/34.3 (H) mm
- (14.29 x 10.46 x 1.2/1.36 inches)
- 2.86 kg (6.3 lbs.)

Power

- ACPI 1.0b power management standard supports Standby and Hibernation power-saving modes

- 71 W Li-ion battery pack
- 2.5-hour rapid charge, 3.5-hour charge-in-use
- 3-pin 90 W AC adapter

Special keys and controls

- 88-/89-key Acer FineTouch™ keyboard
- Built-in touchpad with 4-way scroll button
- Four easy-launch buttons

- Two front-access buttons: WLAN LED-button and Bluetooth $\ensuremath{\mathbb{R}}$ LED-button

I/O ports

- 124-pin Acer ezDock connector
- Four USB 2.0 ports
- IEEE 1394 port (4-pin)
- Ethernet (RJ-45) port
- Modem (RJ-11) port
- External display (VGA) port
- S-video/TV-out (NTSC/PAL) port
- DVI-D port
- Microphone/line-in jack
- Headphones/speaker/line-out port with S/PDIF support
- PC Card slot (one Type II)
- 5-in-1 card reader
- DC-in jack for AC adapter

System compliance

Page 38 of 38



- Mobile PC 2001
- ACPI 1.0b
- DMI 2.0
- Cisco Compatible Extensions (CCX)

Warranty

- One-year International Travelers Warranty (ITW)

Page 39 of 39

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