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HP iPAQ 2210/2215 Pocket PC 2003 PDA

Posted June 19, 2003 by Lisa Gade, Editor in Chief

Discontinued and replaced by the iPAQ hx2000 series models

The iPAQ 2210 and 2215 (they're the same unit with different model numbers used to designate the retail channel through which they're sold) is big news. Why? The 2210/2215 is the first iPAQ with an integrated CF slot and SD slot, and at a relatively modest \$399, it packs a lot of bang for the buck. It's also one of the first Pocket PC 2003 PDAs to hit the market. In fact, Microsoft is scheduled to officially announce the release of Pocket PC 2003 PDAs on June 23rd, but some 2210 and 2215's have hit the shelves a few days prior, like ours.



What is Pocket PC 2003, aka Windows Mobile 2003?

Pocket PC2003 is based on Windows CE 4.2, while prior Pocket PC and Pocket PC 2002 PDAs were based on Windows CE 3.0. Microsoft is calling all new devices based on Pocket PC 2003 "Windows Mobile 2003", including Pocket PC Phone Edition PDAs with the new OS. What's the difference between Pocket PC 2002 and Pocket PC 2003 PDAs? You won't notice much difference at all. There are numerous bug fixes, improvements in page rendering times for Internet Explorer, a more friendly user interface for setting up network connections, networking changes under the hood, and support for 3rd party applications that are written for the XScale processor. The OS itself still has not been optimized for the newer and faster XScale processor, but now developers can offer enhanced versions of their applications that should run noticeably faster. This means that demanding applications like multimedia players and games will likely offer more features and run faster in the future.

There are two versions of Pocket PC 2003: Pro for the more basic Pocket PC models and Premium for higher end Pocket PCs. To the end user, the differences won't be terribly important, except that MS Reader seems to be absent from the Pro version. Apps like Terminal Services, MS Reader and the new Pictures app are built into the OS stored in ROM in the Premium Edition,

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while you must install it from the CD into RAM on Pro Edition (or not get it all).

Features and Horsepower

The iPAQ 2215 (that's the model we have, so we'll use that model number) has a transfective display, an SD slot that supports SDIO, a CF type II slot that accepts both type I and type II CF cards, built-in Bluetooth wireless networking, consumer grade IR, a 400 MHz PXA255 Intel XScale processor, 32 megs of ROM and 64 megs of RAM. 57.11 megs of RAM are available to the user to run and store applications, and 3.8 megs of ROM are available as the iPAQ File Store too. The battery is user replaceable, which means you can swap a new one in whenever power's running low, or simply replace a tired battery easily.

This is a very full featured Pocket PC for the price, and I must say that HP has come up with a gem this time! While previous full-featured iPAQs were the most expensive Pocket PCs, this one offers just about every feature a power user could want for \$399. It competes well with the Dell Axim X5 advanced, offering all the same features plus Bluetooth for a bit more money. And while the Dell is quite large, the 2215 has similar lines, but is significantly smaller and lighter.

HP is targeting the 2215 at consumers, while the iPAQ 5555 targets the corporate user. The 5555 has more memory, integrated WiFi and a same biometric fingerprint scanner. However, the 2215 has a CF slot, while you must purchase a separate CF sleeve for the 5555 and earlier 3000 and 5000 series iPAQs. The 2215 cannot accept iPAQ expansion sleeves, but for many users that won't matter since the CF sleeve is probably the most necessary and popular, and you won't need it for the 2215.

How fast is this unit? You can check out the benchmark numbers for yourself below, but let me tell you it feels very fast. MPEG and Windows Media videos played back perfectly, games run smoothly and all operations feel downright zippy. Experientially, this feels like the fastest Pocket PC released to date. The only thing that is slower is boot time from a soft reset (reboot).

Design, Buttons and Ergonomics

The 2215 sports a new design, that's somewhat reminiscent of the very popular iPAQ 1910 entry model. As stated, it is not compatible with iPAQ sleeves. It's an attractively designed unit, with comfortable curves and rubberized sides that help insure the unit doesn't slip out of your hand. The case is made of plastic and well, it looks and feels like plastic. Fit and finish are very good, and the buttons have a chrome finish.

The unit is surprisingly small and light. How did HP pack all this into such a small package? Miniaturization of components, which raises the cost of the unit, but somehow HP kept the price reasonable. While not as small as the tiny iPAQ 1940, it is significantly smaller and lighter than other iPAQ models and the Toshiba e750 and Dell Axim X5 which are its competitors. It will easily fit into a suit pocket or pleated pants pocket.



Comparing size: Dell Axim X5 left, Toshiba e330 center and iPAQ 2215 right.



Comparing size again: top iPAQ 2215, middle Dell Axim X5 and bottom Toshiba e330.

If you're a record button or jog dial fan, you'll be disappointed that the 2215 has neither. You'll get the standard front 4 button layout for contacts, calendar, email and iTask, and these buttons can be mapped to other applications. The 4 buttons are small and you may find them hard to press when gaming. The center round directional pad is a dream: large enough to be operated when playing intense action games, yet not overly large like the old iPAQ oval D-pad. It moves smoothly and easily in any direction, with enough tactile sensation to work quite well in games.

The CF and SD slots are located at the top of the unit, as are the mic, stereo headphone jack and stylus.

Compatibility

The connector on the 2215 is the same as the iPAQ 3800, 3900 and 5000 series models. I tested HP's folding keyboard with the 2215 and it worked perfectly. Existing cables and chargers work with this new model, but HP's cradle for these other models will not. 3rd party products should also work, though some may require updated drivers from the manufacturers.

Screen and Sound

Transflective displays are absolutely gorgeous, and the 2215 is no exception. It's a 3.5" display like the 1910, rather than the 3.8" found on the top of the line iPAQs. Transflective screens reflect ambient light to illuminate the screen (for outdoor viewability and power savings) and have backlighting. How different is it compared to older technology reflective screen PDAs like the [Toshiba e740](#)? Hugely different! Reflective screen PDAs look milky and lack the color saturation and true blacks of transflective displays. Colors are also more accurate. The screen is very bright and color saturated, and at medium brightness I found it more than bright enough for my mediocre eyes. Unlike previous high end iPAQs, the 2215 does not have an ambient light sensor, so you can't set it to automatically adjust the screen brightness based on ambient light. New in this model is a ClearType tuner, which allows you to control the sharpness and color aliasing of text.

The sound volume is pretty loud, though not as loud as the [iPAQ 5555](#). You'll be able to hear reminders in a noisy office when the volume is set to high. MP3s sound great when using stereo headphones connected to the standard 3.5mm audio jack, and you'll find the familiar iPAQ Audio Settings in the control panel, which allows you to set bass boost, treble adjustment and mic gain control.

Battery Life

The 2215 has a 900 mA Lithium Ion battery which isn't that large compared to other full-featured PPCs. However, so far run times have been very good, perhaps because the Intel PXA255 is more power-frugal. With Bluetooth running and connected to an access point, I've been able to surf the web for an hour with only about 17% battery drain. In one test run starting with a fully charged battery, I played games, tested my 3rd party software, surfed via WiFi using the SMC card for 1 hour, watched three 5 minute videos using Windows Media Player and Pocket TV Enterprise and still had 60% charge left. These activities spanned 4 hours of fairly frequent use. I had the brightness set to 50%, and standby time set to 48 hours.

As with recent iPAQs, you'll get a battery control applet. You can set the "Standby" time (essentially how low you're willing to let the battery get before it gives you warnings and shuts down to preserve the contents of memory). So if you generally put it in the cradle each day or at night when you get home, you can set a low standby time since you know it'll be charged frequently. This can significantly increase runtimes.

The battery is user replaceable, and like other Pocket PCs and mobile phones, is located in the back under a door. You have 10 minutes to change batteries before losing your data— so don't take one out then forget to put a new one in. While the battery ostensibly looks like the iPAQ 1900 battery, it is different, so you won't be able to use 1910 batteries in the 2200 series PDAs. The cradle can charge a naked battery: it has space for the battery and contacts behind where the iPAQ sits.

Bluetooth

HP has done an excellent job of making Bluetooth relatively friendly. The new interface, like the 5450's, is wizard based, and it walks you through connecting to a variety of devices, from your ActiveSync partner (if you have a USB Bluetooth adapter installed on your PC), to mobile phones and access points. I was able to use a [Sony Ericsson P800](#) as my modem, ActiveSync to a PC that has a [Belkin USB adapter](#) and connect to the Internet via a [Red-M access point](#). There are no

software settings to control radio strength, but the range is quite good and depends on what you're connecting to. Phones have relatively weak Bluetooth radios, so you will need to be within a 30 foot range. Our Red M access point has a strong class 1 radio, and I was able to surf via Bluetooth when about 40 feet away through walls and one floor away.

Nevo: A/V Remote Control software plus enhanced IR

Since Nevo appeared on the iPAQ 3900 series it's been a big hit. Nevo is an A/V remote control program made by the same company that does much of the world's remote control software. Setup is easy, you can select your A/V by brand, do a few tests and you're done. It has a very friendly user interface and can control pretty much every piece of home entertainment equipment you've heard of, and many you've never heard of. More brands and models can be downloaded from www.mynevo.com. If you're a remote guru, you can add your remote by its code as well. You can set up multiple rooms, and switch between them to control the TV, DVD, cable box, receiver and etc. in your living room, and the TV and stereo in your bedroom. This is more than just software: if you've ever tried shareware A/V remote control software on Pocket PCs, you've probably noticed that the range isn't very good (who wants to get up and stand within 5 feet of her TV to change channels?). Compaq/HP beefed up the IR power to what they call consumer grade for the iPAQ 3900 series, 5450 and 2215 models. You'll be able to use your iPAQ to control your TV, DVD, Stereo and etc. from your couch, even if you have a large living room. Some playful types actually enjoy using their iPAQ and Nevo to change channels on TVs at consumer electronics stores and other public venues 😊 .

Software Bundle

For the price, the 2215 comes with a decent software bundle. Pocket Windows Media Player 9 is included, as are the usual suspects: Pocket versions of Outlook, Word, Excel and Internet Explorer. MS Money is no longer included and neither the version that ships with Money 2003 nor the version that came with Pocket PC 2002 PDAs will install 🙄. The iPAQ runs Pocket PC 2003 Premium Edition and comes with MS Outlook 2002 for the PC. Bundled 3rd party software includes Conduits Peacemaker Pro (allows you to beam to non-Pocket PC PDAs), RealOne Player, AvantoGo!, Audible (first month free), XcelleNet's Afaria, HP Mobile Printing for Pocket PC, Westtek's ClearVue Office Suite which allows you to view native Word, Excel and PowerPoint files without conversion, F-Secure FileCrypto, MARGI's Presenter-to-Go, and several trial versions of popular programs.

Changes to MS Built-in Applications

1. Pocket Internet Explorer now supports HTML 4.0, XHTML, JScript 5.5 and WAP 2.0. It does render pages better and more quickly, and better still, it requires less memory to run.
2. The Contacts app now supports vCAL and vCARD.
3. Media Player 9 is a great improvement: you'll definitely notice improved framerates and buffering.
4. Pictures, a new applicaton included on Pocket PC 2003 Premium Edition models, is an image viewer that supports thumbnail view, full screen view, slideshows and simple editing.
5. File Explorer now can connect to network shares (shared folders on Windows machines).
6. You get a new game built into ROM, called Jawbreaker. It's the same as Bubbles.
7. The OS has stronger built-in support for WiFi networking and can simplify connecting to WiFi networks.

Benchmarks

We've run benchmarks using VOBenchmark 3.0 from Virtual Office Systems. I've compared the 2215 , iPAQ 5555 and the iPAQ 5450, all of which run a 400 MHz XScale processor. **Higher numbers are better (shown in bold)**.

Test	HP iPAQ 2215 (PPC 2003)	5450 (PPC 2002)	iPAQ 5555 (PPC 2003)
CPU Floating Point	12.68	12.64	12.66
CPU Integer	26.96	26.86	25.82
Graphics Bitmap BitBlt	78.25	56.30	39.76
Graphics Bitmap StretchBlt	76.70 (grow) 28.60 (shrink)	17.71	73.50 (grow), 29.90 (shrink)
Graphics Filled Elipse	4.68	2.34	4.96
Graphics Filled Rectangle	12.94	6.50	9.41



The Bluetooth Wizard.

Graphics Filled Round Rect.	3.82	1.70	3.78
Memory Allocation	11.23	11.71	11.31
Memory Fill	1.97	0.91	1.99
Memory Move	1.24	0.37	1.34
Text	19.80, 5.20 with ClearType enabled	4.45	21.00, 4.80 with ClearType enabled
SD Storage Cards	256 meg SanDisk card was used	128 meg SanDisk and SimpleTech were used	256 meg SanDisk card was used
LRR/LRW	0.62/0.08	0.64/0.18	0.68/0.08
LSR/LSW	0.61/0.19	1.13/0.19	0.1.19/0.32
SRR/SRW	238.18 /0.48	123.32/1.64	303.44/0.18
SSR/SSW	14.08/9.51	22.57/3.40	24.53/7.20

Conclusion

Go get one! For the price you get everything except built-in WiFi, but you can add that with a CF WiFi card for under \$100 additional. Great transfective display, excellent expansion options thanks to the dual CF type II and SD slot which supports SDIO, user replaceable battery, fast performance, latest version of the OS means this thing packs a lot of power. The design is attractive and the unit is very small and lightweight— you can't get a Pocket PC much smaller than this except the iPAQ 1910, which offers fewer features.

Suggested list price **\$399**

The **2210** and **2215** have different model numbers because HP uses different model numbers to track sales in consumer vs. business channels. Both come with a ballistic nylon slip case, USB cradle, charger, one battery, CD with software and PDF manuals.

Specs:

Display: transfective TFT color LCD, 65,536 colors, Screen Size Diag: 3.5", Resolution: 240 x 320, .24mm dot pitch.

Battery Lithium Ion rechargeable. Battery is user replaceable. 900 mA.

Performance: Intel XScale PXA255 400 MHz processor. 32 MB NAND Flash ROM with 3.8 megs available in FileStore for your use, 64 MB built-in RAM with 57.11 megs available to the user.

Size: 4.57" x 2.95" x .63". Weight: 5.01 oz.

Audio: Built in speaker, mic and stereo headphone jack. Voice Recorder included.

Software: Pocket PC 2003 Premium operating system. Microsoft Pocket Office suite including Pocket Word, Excel, Internet Explorer, and Outlook. Also, Terminal Services, MSN Instant Messenger for Pocket PC, MS Reader, Pocket Windows Media Player 9 and Voice Recorder as well as handwriting recognition. 3rd party and other software: MARGI Presenter-to-Go, RealOne Player, Acrobat Reader, Nevo A/V remote control, and several additional trial/demo programs. ActiveSync 3.7 and Outlook 2002 for PCs included.

Expansion: 1 SD (Secure Digital) slot, 4 bit data bus, supporting SDIO. 1 CF type II slot supporting type I and type II cards. Does not accept iPAQ expansion sleeves.

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