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Palm Treo 700wx for Sprint

Editor's rating (1-5): ★★★★★
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Review posted September 3, 2006 by Lisa Gade, Editor in Chief

When the Treo 700w on Verizon came out at the beginning of January 2006, it made quite a stir since it was the first Windows Mobile rather than Palm OS Treo. The Palm OS Treo line had nearly defined the PDA phone market with its great ergonomics, ease of use and cross-platform syncing ability. In short, it was a hard act to follow. The 700w, running Windows Mobile 5, offered the same great ergonomics, enhanced usability over other Windows Mobile Pocket PC Phones (Palm's doing) and a high speed EVDO radio for data. But it fell short in one key area: memory. It had plenty of storage for programs and data but not enough RAM to support several heavy-hitting programs running at once. Since Windows Mobile by design doesn't offer a way to completely exit programs, it was all too easy to have lots of apps running and thereby slow down the device. The problem is solved easily but not conveniently by going to Windows Mobile's memory applet to close programs (press and hold the OK button to go straight to the memory manager), installing a 3rd party task manager or simply rebooting the Treo by pressing the reset hole on the back under the battery cover.



Fast forward nine months: Palm and Sprint have a better solution— equip the Treo 700w with twice the memory, bringing it up to the standard Windows Mobile Pocket PC 64 megs of RAM. And thus we have the Treo 700wx on Sprint. The 700wx is otherwise nearly identical to the [Treo 700w reviewed here](#). In fact, you'll notice some shared editorial copy because there are only so many ways to say it has a 240 x 240 pixel display 😊. Other than the much needed memory boost, the Treo 700wx differs in the following ways:

- 1) More memory (we just wanted to say that again, it's really important)
- 2) DUN (dial up networking)
- 3) Microsoft's AKU2 Microsoft Security and Messaging Feature Pack (MSFP) which means Direct Push email when used with Exchange 2003 mail servers and bug fixes
- 4) Good Mobile Messaging bundled with the device (though you must pay for the service if you wish to use it)

Features at a Glance

For those of you who've never indulged in the cult of Treo, the 700wx is both a PDA and a phone that works on Sprint's service in the US. It has a color touch screen and works like most any other Palm PDA you've used. It runs Windows Mobile 5.1 Pocket PC Phone Edition on a 312MHz Intel XScale processor with 64 megs of RAM and 128 megs of flash ROM (60 megs of which are available for storage). It has a 1.3 megapixel camera, Bluetooth and EVDO for fast data. It comes with Windows Mobile versions of IE, Outlook, Word, Excel and a PowerPoint viewer. It's a dual band digital device that supports both the 800MHz cellular band and the 1900MHz PCS band (no legacy analog).

The Treo 700wx uses the same accessories as the Treo 650, 700p and 700w which means you can find new life for your old cradle, charger, sync cables and more. It's an identical fit for cases made for the Treo 700w and 700p as well.



In the Box

The 700wx comes with a standard Treo battery, stylus, USB sync cable, charger, adapter to use Treo 650 chargers with the 700wx, stereo earbud headset with integrated mic, software CD with syncing software for Mac and Windows, a thick manual and an email quick start guide.



Palm's Enhancements to Windows Mobile

I like Palm OS. I like Windows Mobile. Heck I like Symbian S60 and Series 80 devices quite well. But let's face it, while Windows Mobile is pretty easy to use, it was first designed as a PDA OS and needs a little help here and there when it comes to phone use. Enter Palm, who took a good thing and enhanced it with their trademark usability. The Today Screen has a speed dial plugin with shortcuts similar to the [Treo 650](#) and [Treo 700p](#), and there's even a photo dialer (thumbnails of any contacts you wish) on the home screen. Simply tap the photo to dial that person. As with the Palm OS Treo, you can also assign any letter on the QWERTY thumb keyboard to a contact for speed dial—so you can press "o" to call the office if you desire. To dial someone in your contacts, start typing the first few characters of their name to bring up their name. You can even type in their first initial, a space, then their last name's initial to lookup and dial a contact. When the Treo is in the Today Screen, just punch in numbers to call someone who's not in your address book (no need to switch the keyboard to number mode). You'll see the number fill in a field in the Today Screen so you can verify you've entered the right numbers. There's also a Google search box Today Screen plugin so you can google without switching to IE. The only thing we miss is the much loved threaded SMS which is on the other Treos.



The Today Screen with Palm's plugins: dial field, photo caller ID and "favorites" (shortcuts to speed dial numbers). That search box you see below the calendar is a Google search box.

Design and Ergonomics

The Treo 700w and 700wx are absolutely identical in physical design (and the 700p is nearly identical with some button changes). The device feels great in the hand with excellent ergonomics, as you'd expect from a Treo. Most tasks can be done one-handed, such as selecting a number to dial, looking at call history, opening the calendar, contacts or even Internet Explorer. Simply use the 5-way directional pad, keyboard keys and the dedicated Windows Start Menu and OK keys (for you Palm folks, OK generally closes a window).

Below the Treo 700wx's 2.5" display you'll find dedicated soft keys which offer contextual actions in applications and the Today Screen. Microsoft added soft keys in Windows Mobile 5.0, and the Treo is one of the few to offer the hardware to match that feature. The Windows Start Menu key sits to the left of the d-pad and the OK sits on the right. The call send and end buttons flank the Windows and OK keys.

Palm tweaked the keyboard from the Treo 650 design and the keys are squared and less domed compared to the 650. I find both equally easy to use and with some practice the Treo keyboards are usable, though not as roomy as the [Sprint PPC-6700](#) or [Cingular 8125](#). Though the PPC-6700 and 8125's keyboards may be better, with the Treo 700wx you need not slide out and rotate the device to begin typing.

Like the Palm OS Treos, the 700wx has a slider switch up top to turn all sounds on or off (the device will automatically vibrate rather than ring or sound an alarm when the slider is set to off). The SD card slot (supporting memory cards and SDIO cards such as [Palm's SD WiFi card](#)) is also located up top along with the IR window. On the left side you'll find the volume up and down buttons which control both system and ring volume when not in a call and call volume when in a call. Below these you'll find another application button which you can assign to whatever you like—i.e. MS Voice Command or the camera. The user replaceable battery lives under a door on the back of the unit and the camera lens and self portrait mirror are on the back as well.

Phone Features, Reception and Data

The Treo 700wx is a Sprint phone which runs on their CDMA network supporting the 800 and 1900 MHz bands used in the US (no legacy analog support). Call quality is excellent, even with 1 or 2 bars (4 bars are max on Windows Mobile) and we prefer Sprint's incoming voice quality overall to Verizon. Voices are full and clear and volume is very good (and louder than the GSM Treo 650). Volume through the headset is very loud and will beat out midtown Manhattan traffic handsily. Reception is average for a Sprint phone, managing similar signal strength to the Samsung a920 and BlackBerry 7130e but not as strong as the Treo 700p.

Web browsing and downloading email with attachments are a breeze on the 700wx, though our dsleports.com mobile tests showed only 300k in our EVDO blanketed area. We'd generally expect closer to 500k on a weekend in our area, but tower congestion may be a factor. Sprint's Treo supports DUN (Dial Up Networking) at launch. You are supposed to add on Sprint's PAM (phone as modem) plan if you wish to use the phone as a high speed wireless modem for a notebook.



Display, Sound and Multimedia

While nearly all Pocket PCs and Pocket PC phones have QVGA 240 x 320 pixels displays, Palm kept the square screen used on their Palm OS Treos, but at a lower 240 x 240 pixel resolution. The [Treo 700w](#), Treo 700wx and [HP iPAQ hw6515](#) / [HP iPAQ hw6915](#) Pocket PC phones are the only devices with that lower, square resolution; each doing so to accommodate their thumb keyboards. Alas, 320 x 320 isn't supported by [Windows Mobile 5](#), so you will see less on screen compared to the Palm OS [Treo 650](#) and [Treo 700p](#) which run at 320 x 320. Will the lower resolution bother you? If you're a power user who needs to see the most on screen when browsing the web or viewing a spreadsheet, then yes. If you love to play games (not many support 240 x 240), then yes. If you just want to use the phone lots, don't plan on adding lots of non-square resolution compliant software or playing games that don't support 240 x 240, then the resolution should work fine for you. Personally, I'm not bothered by the Treo's resolution except when web browsing; you just don't see much of a web page on screen at this resolution. Putting Internet Explorer Mobile into full screen mode which hides the top and bottom menu bars does help.

The transfective display itself is bright and colorful and at 2.5" diagonally, text is easy on the eyes. Though not as bright as the Treo 700p, it's certainly more than adequate and is quite viewable outdoors when viewing text and icons (though the camera's full screen viewfinder does wash out when taking photos). The display has virtually no color cast, unlike our Verizon Treo 700w which has a slight blue color cast. We believe that Palm uses several suppliers for their LCDs, so the variation may be due to that rather than differing product lines. Since the operating system supports both portrait and landscape orientations, you can flip the display to landscape but this is pointless given the square resolution and the keyboard being utterly out of place for landscape use.

The Treo 700wx's speaker has very ample volume. Alarms, ringtones and general audio out through the large rear-firing speaker will get your attention. The speaker is located on the back so you're not accidentally deafened when an alarm goes off while you're holding the phone to your head in conversation. The speakerphone is very loud and clear as well. The phone supports MIDI, MP3, WMA and WAV ringtones (just drag new ones into the Rings folder inside the Windows folder on the Treo).

Like all Windows Mobile phones, the Treo can play MP3s using the included Windows Media Player 10 Mobile, even DRM protected Play For Sure content. Windows Media Player also handles WMA, ASF and WMV videos for movie playback. If you want to watch AVI, DIVX and various other MPEG formats or listen to OGG music, download [The Core Pocket Media Player](#) (TCPMP), an excellent free open source player which works fine on the Treo.

We use TCPMP to run our video playback benchmark test, and threw our usual test file at it: "The Chosen" (a neat BMW flick with Clive Owen) which is a 4:26 minute long, 10 meg MPEG1 file recorded at 320 x 240, 308 kb/s. As with the Verizon Treo 700w (whose results are nearly identical), the results aren't stunning for a file encoded at a fairly low bitrate but it manages just fine with videos under 550 kbps.

Average speed: 155.79%
Bench Frame Rate: 37.39
Bench. Data Rate: 482 kbit/s
Orig. Frame Rate: 24fps
Orig. Data Rate: 310 kbit/s

Camera

The Treo 700wx also includes a camera, especially taken during and out of photos. We've never seen the Treo 700p's but our mobile flick



There's no nice way to say it; the camera generally takes dark and colorless photos. It's no worse than the Treo 700w but any Nokia, high-end LG phone on Verizon and even some of the Samsungs take much better photos. The Treo 700wx isn't alone however, most PDA phones and smartphones offered by US carriers have poor cameras. The 1.3 megapixel camera can take photos at a maximum resolution of 1280 x 1024 as well as lower resolutions suitable for MMS and photo caller ID.

The camera application offers 7 brightness settings (normal and up to + or - 3 EV) along with 2x digital zoom. You may save images to internal memory or an SD card in one of three quality settings and set the image prefix as you wish. The Treo can shoot video with audio (you can turn off audio if you like) and you can set a 15 second, 30 second or no limit on duration. The phone saves videos in .3g2 format in 176 x 144 or 352 x 288 resolution and also offers 7 brightness recording levels. Like still shots, video is lacking in color, and is of average quality compared to other US camera phones with less jerkiness than most. Audio is recorded at 8kHz and our samples reported video at 26 fps. You can view videos on the Treo using the included Windows Media Player and on the desktop using QuickTime or other applications.



Horsepower and Performance

The 700wx runs on the same 312 MHz Intel XScale PXA272 processor as the Treo 700w and Treo 700p. It has 64 megs of RAM with an amazing ~57.5 megs of available RAM to run programs on a fresh boot. That's more than Pocket PC phones since Palm learned how to conserve RAM during the less memory-endowed Treo 700w's development. It has 128 megs of flash ROM where the OS lives and where you can install programs and data. There are 60 megs of storage memory free on the Treo, which is a generous helping of space. Since it's a Windows Mobile 5 device it features persistent storage which means your data will survive a complete battery drain.



The unit feels fast and responsive, and like the Treo 700w it feels a bit faster than the [Sprint PPC-6700](#) Pocket PC Phone which has a faster processor and benchmarked faster than the Treo. Speaking of benchmarks, the Treo 700 pair lost nearly every Spb Benchmark test, yet they feel more responsive when opening menus, scrolling through windows and running core apps than other Windows Mobile 5.0 Pocket PCs and PPC phones. Palm must have done a great job caching frequently used core apps and related files (without using much memory— doubly impressive).

While the Treo 700w and Treo 700wx feel identical in speed when freshly booted, the 700wx is still fast at the end of the day while the 700w on Verizon often slows down unless we manually close applications to keep enough RAM free.

Benchmark Results, comparing Windows Mobile 5 PPC Phones

	i-mate K-JAM (HTC Wizard) (195 MHz)	Verizon XV6700 HTC Apache) (416 MHz)	Treo 700w (same CPU and speed)	Treo 700wx
Spb Benchmark index	258	344	166	233
CPU index	934	1669	1264	1233
File system index	108	138	63.4	92.5
Graphics index	1439	2178	1765	1774
Platform index	288	375	221	273
Write 1 MB file (KB/sec)	570	692	679	646
Read 1 MB file (MB/sec)	3.13	4.27	1.99	1.97
Copy 1 MB file (KB/sec)	660	612	495	4.77
Write 10 KB x 100 files (KB/sec)	115	265	235	230
Read 10 KB x 100 files (MB/sec)	1.83	2.16	1.04	1.19
Copy 10 KB x 100 files (KB/sec)	206	246	223	220
Directory list of 2000 files (thousands of files/sec)	0.992	1.23	0.521	0.882
Internal database read (records/sec)	592	1611	1225	1258
Graphics test: DDB BitBit (frames/sec)	35.1	204	330	332
Graphics test: DIB BitBit (frames/sec)	12.3	33.1	40.5	40.6
Graphics test: GAPI BitBit (frames/sec)	509	266	185	186
Pocket Word document open (KB/sec)	5.72	7.77	6.33	5.94
Pocket Internet Explorer HTML load (KB/sec)	7.37	6.55	5.81	6.29
Pocket Internet Explorer JPEG load (KB/sec)	86.2	109	113	127
File Explorer large folder list (files/sec)	335	449	277	327
Compress 1 MB file using ZIP (KB/sec)	165	197	185	184
Decompress 1024x768 JPEG file (KB/sec)	244	516	364	356
Arkaball frames per second (frames/sec)	145	157	112	110
CPU test: Whetstones MFLOPS (Mop/sec)	0.032	0.08	0.059	0.06
CPU test: Whetstones MOPS (Mop/sec)	25.9	57.8	43.1	43.2
CPU test: Whetstones MWIPS (Mop/sec)	2.2	5.12	3.83	3.83
Memory test: copy 1 MB using memcopy (MB/sec)	62.2	107	73.6	69.8

Software

The Treo 700wx comes with the usual Windows Mobile 5 Pocket PC phone applications, including Mobile versions of Word, Excel, PowerPoint, Internet Explorer, Windows Media Player, MSN and more. The bundle is nearly identical to the Verizon version but Sprint adds *On Demand* (actually the full version of the excellent Handmark Pocket Express) and Good's push email client.

Word and Excel can both view and edit documents (some advanced formatting isn't supported, but all the basics work well) while PowerPoint is a viewer only. Palm includes the excellent MS Voice Command, which handles speaker independent voice dialing and a variety of commands. For example, press the assigned Voice Command button, ask "what's my next appointment?" and the Treo will read it to you. To learn more about Voice Command, read our review [here](#). Though VC is a memory hog, it plays well with the Treo and it's a welcome addition. Note that Voice Command doesn't support voice dialing over Bluetooth headsets. This is the application's limitation, not the Treo's.

The mobile counterpart to Outlook is standard on Pocket PC and Pocket PC phones. These are Messaging (for email, SMS and MMS), Contacts, Calendar, Tasks and Notes. Each syncs with Outlook on the desktop (sorry no Mac support, for that get MissingSync). You can sync your emails to and from your PC and download and send them directly using the Treo's data connection. Messaging supports POP3, IMAP and Exchange servers along with multiple email accounts, SSL, different authentication for outgoing servers, HTML formatted email and attachments. Since the 700wx ships with Microsoft's Messaging and Security Feature Pack (MSFP) "Direct Push" email support is built into the OS. This means you can receive push email if your company is running Exchange Server 2003.

In addition Palm includes PicSel's PDF viewer, and a basic camera application for taking photos and videos. You'll use MS' Pictures and Videos (a part of the WMS package) to view photos and videos taken with the camera, or your favorite 3rd party image viewer and editor. Sprint also includes their house branded version of the addictive and useful Handmark Pocket Express which brings the latest news, sports scores, stock data, entertainment information and more to you over Sprint's Power Vision data connection.

Battery Life

We've only had the Treo 700wx for a few days, so we'll update the review in a few more days with our final verdict. So far the battery has lasted two full days with light to moderate use and a day when checking email on a 15 minute schedule during business hours. The Treo 700wx uses the same 1800 mAh Lithium Ion battery as the Treo 650, 700p and 700w. That's a large capacity battery which should last most users through the day with fairly heavy use. However, should you need more staying power, you can purchase additional batteries and swap them in as needed.

Bluetooth

The Treo 700wx has a class 2 Bluetooth 1.2 radio which is the same one used in the 700w and 700p. Like the other Treos, range with Bluetooth headsets doesn't exactly lead the pack and you'll want to stay within 10 to 15 feet of the phone when using a Bluetooth headset. We tested the Treo with Palm's own [Treo Bluetooth Headset](#) and the [Plantronics Discovery 640](#), both of which offered good voice quality and volume within a 10 foot range. The [Jabra BT250](#) offered decent range as did the [Cardo Scala 500](#).

The Treo 700wx uses Microsoft's no-frills Bluetooth stack which lacks Wizards or any other user-friendly way of walking you through the connection process. Though spartan, it gets the job done and you can use it to pair with any supported device (since there's no wizard listing devices you might connect to, guessing at supported devices and Bluetooth profiles is par for the course). The Treo supports headset, handsfree, serial port (used for GPS) and HID (keyboards and mice) profiles. We tested the Treo with [Think Outside's Wireless Bluetooth Keyboard](#) using only the built-in drivers from

