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# Palm Tungsten C Wi-Fi PDA

*A Reg* in-depth review[Tony Smith](#)

Mon 27 Oct 2003 // 09:33 UTC

Each member of Palm's Tungsten line of pro-oriented PDAs offers wireless connectivity of one form or another. The original member of the family, the Tungsten T, has built-in Bluetooth. Earlier this year, Palm shipped the W, which can talk to cellular networks. The newest addition to the line, the Tungsten C, sports integrated 802.11b Wi-Fi connectivity.

In addition, the C provides a more general upgrade to the Tungsten line, offering the latest version of the Palm OS, much more memory and a significantly faster ARM-based processor. A must-have purchase for the discerning Palm owner then?

Not quite. Wi-Fi may be the IT world's flavour of the month right now, but we'd question how useful it is to the average PDA user, and for all the C's power, we think the T remains the best mainstream machine Palm has produced. Indeed, when a faster, more capacious version of the T ships, we think it will relegate the C into something of a niche role.

That's not to say the C is a poor product - it's actually a rather good one. A look at Palm's [product page](#) will show you its chief physical attributes. To add

to that, the C's construction is solid, feeling meaty rather than heavy (it's 178.6g or 6.3oz). Alas its case is scratchable plastic rather than the T's durable metal. It's bigger than the T, being thicker, slightly wider and an inch longer when the T is shut. It's the same length as an open T.

Hidden within the T's slide-open case is the PDA's Graffiti character-entry pad. The C has a Blackberry-style micro keyboard instead, which makes for faster (with practice) writing. The C also has a T-style five-way navigator button, though it's smaller and thus more fiddly than the T's.

## **Graffiti vs Graffiti**

Despite the keyboard and lack of a dedicated character-entry area, the C retains Palm's pen-based text entry mode, offering Graffiti 2 rather than the original version, which the company was forced to ditch after being successfully sued by Xerox for patent infringement. CIC, the developer of Jot, which Palm has rebranded as Graffiti 2, presumably has as a licence from Xerox.

Graffiti 2 lets you use the whole screen to enter text. Text is entered on the left-hand side of the screen, numbers on the right. It will display your pen strokes on the screen if you wish so you can see what you're writing.

Graffiti 2 is an improvement over its venerable predecessor. Some character shapes are different and require two strokes of the stylus, but it took us almost no time to get the hang of them. It makes mixing upper and lower case characters far easier than the original did - you just write in the middle of the screen for capitals. That's much better than having to manually select caps or caps lock mode as you do with Graffiti 1. Entering symbols is much easier too. For many of them you no longer need to select symbol mode.

The sooner Palm offers a Palm OS 5.2 update for the Tungsten T, the better, though we suspect licensing issues and the commercial realities of today's PDA market may prevent this.

While we like Graffiti 2, we wish Palm hadn't implemented it in the C. Pen input may be part of the operating system, but the hardware hasn't really been designed with it in mind - hence the lack of a dedicated (or even virtual) text-entry area. If you don't use the keyboard for text entry, you can run into difficulties. For instance, if you write a line of characters with Graffiti on, you can't highlight the selection to delete it - you have to switch Graffiti off first, select the text, then switch full-screen entry back on if you want to use a stroke of the stylus to delete the text. Use the pen this way is how most existing Palm users work, and they'll be surprised when the C doesn't accommodate them.

Incidentally, this isn't an issue with Palm's other Graffiti 2 PDA, the Zire 71, as we'll explain in our upcoming review of that product.

Despite the C's keyboard centricity, users will still need to pull out the stylus to work with the UI. You need it for UI elements like on-screen buttons, moving the text caret and entering symbols that don't appear on the keyboard, such as % and £. Buttons on keyboard provide access to menus, the app launcher and the Find... dialog. But while you can type in your search string, or call up the list of applications to beam, you can't select which application you want to send, or activate the search without the pen. Actually, you can do the latter - pressing the centre button clicks the dialog's left-most button, which is fine if the app developer has put the default button there.

Palm really should have gone all the way and configured the C to operate without the stylus. That doesn't necessarily mean forcing one way of working on the user, but giving the choice to use one or the other, not requiring they

use a mixture of the two.

## Palm OS 5.2

Graffiti 2 is part of Palm OS 5.2 - the Tungsten C ships with a minor update, 5.2.1 - which also incorporates some under-the-hood enhancements such as support for 64MB of built-in memory, which the C duly provides. Rather more fun is the ability to change the UI's colour scheme, including a theme called Nostalgia for folk missing the PalmPilot's green and black monochrome display. Alas you can't create your own themes out of the box, which defeats the object a bit.

Palm offers all the usual PIM applications in the C's ROM, where it has also installed bundled apps, including updated versions of Palm's own VersaMail e-mail package, WebPro browser and PhotoBase picture gallery software (the last two now renamed Web and Photo, respectively). All contain worthwhile enhancements and like Graffiti 2 should be made available to Tungsten T users.

## New adventures in Wi-Fi

Web and VersaMail naturally take advantage of the C's integrated Wi-Fi adaptor. Palm has integrated 802.11b access rather well, and once we'd made the necessary security adjustments to our base-station, we could connect to the Internet via the C with ease. Palm wisely prints the device's MAC address on the back of the case, making it easy to add the device to your WLAN base-station's list of permitted clients.

Public Wi-Fi access should be a doddle, but with so few hotspots around, how often owners will connect this way is open to question. Palm probably has its eye on corporates rolling out Wi-Fi at the campus level, allowing the C to be used as a mobile email terminal or for wireless vertical applications. Of course, you can check your email in Starbucks, etc. but how often would you want to? Many users will, but most, we reckon, will prefer the freedom of movement offered by a cellphone/Tungsten T/Bluetooth combo. Yes, it's slower, but until hotspots become more widely available (and cheaper), it may be the preferred mode, particularly since the PDA, even with Palm's fine Web software, isn't really a browsing platform of choice.

At home, most WLAN users will surf using a Mac or PC, for that very reason. The C might make a good portable music terminal, pulling songs off a desktop system via the WLAN, but the software's not there yet - RealPlayer, Palm's preferred MP3 playback software can't yet see music files stored on the network, only on the PDA.

And you'd have to use the device's built-in speaker - the headphone socket isn't a standard 3.5mm job, nor is it stereo.

The C displays the Wi-Fi signal strength in the Command bar, once you're connected, but for such a key component, you'd have thought it would be more prominently displayed, like next to the battery life indicator. Speaking of which, Wi-Fi eats into the battery life - the battery fell from 100 per cent to 84 per cent after just an hour's usage. You can set the Palm to conserve power by shutting down the WLAN connection when it's not being used.

Irritatingly, though, the device continually pops up a Connecting... dialog box every time you access the WLAN. It does this even when you tell the device to stay powered up permanently.

The C can HotSync via the WLAN, but only if your computer is a PC - Mac HotSync software doesn't support this mode, alas.

### **T or W?**

As a Tungsten T owner, we were keen to see how the two compared. The C certainly has the better screen. The new 'transflective' display is much brighter than the T's screen - and readable at wider vertical angles. Colours are more vivid, more realistic - a white screen looks more like paper, less like a backlit LCD. The backlight is always on, by the way. A Big improvement, we thought. Well almost. In bright light conditions, there's less of a benefit, and in some instances, outdoors, we even found the T's screen easier to read.

The C lacks the T's voice memo facility. We don't use the latter very much, but it's a nice feature limited only by the T's memory capacity. The C has the memory capacity, but not the built in microphone. Palm has chosen not to bundle a headset.

Where the C definitely does beat the T is speed. The T seemed quick after years spent using a Palm V, but the C seems another order of magnitude faster again. That's thanks to its 400MHz Intel PXA255, the mainstay of

PocketPC PDAs. It runs 178 per cent faster than the T's 144MHz CPU. The C's 64MB of memory (51MB for user data and apps) outshines the T's meagre 16MB too, though both are expandable with SD cards.

## Verdict

So would we swap our Tungsten T for the C? Sorry, Palm, but no, we wouldn't. We'd certainly like to add Palm OS 5.2 and Graffiti 2 to the T, not to mention more RAM and a faster processor, but we prefer the broader utility of the T - the standard headphone socket makes it a better media player, it's got voice recording built in, and Bluetooth lets gets us quickly online whenever we can't find an Wi-Fi signal. We prefer the T's smaller size too.

Wi-Fi is a strong draw, but we'd happily wait for SanDisk's SD card Wi-Fi adaptor, which is due this autumn. Wi-Fi access isn't widespread enough to warrant buying into for PDAs just yet - having to find a specific location just to check your email on the move defeats the object of portable computing that the PDA was designed to provide. That said, the C should appeal to corporate users with on-site WLANs.

And the keyboard? Like Wi-Fi, there will be users who demand it, and heavy-duty email users will want the speed it brings to writing messages. Graffiti is good for basic stuff, but for anything long you really need a keyboard. It's an important feature of the C - just as it of the Tungsten W - though it's a shame that its integration isn't as tight as it might be. ®

**Rating** 75%

### Pros

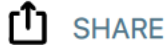
- Very fast
- Realistic colour display
- Integrated Wi-Fi

### Cons

- No built-in voice record facility
- Non-standard microphone socket
- Keyboard integration could be better
- Weighty

**Price** \$499/£395/€560

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## China-linked Twisted Panda caught spying on Russian defense R&D

Because Beijing isn't above covert ops to accomplish its five-year goals

Jessica Lyons Hardcastle Fri 20 May 2022 // 20:03 UTC



Chinese cyberspies targeted two Russian defense institutes and possibly another research facility in Belarus, according to Check Point Research.

The new campaign, dubbed Twisted Panda, is part of a larger, state-sponsored espionage operation that has been ongoing for several months, if not nearly a year, according to the security shop.

In a technical analysis, the researchers detail the various malicious

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## FTC signals crackdown on ed-tech harvesting kid's data

Trade watchdog, and President, reminds that COPPA can ban ya

Thomas Claburn in San Francisco Fri 20 May 2022 // 19:26 UTC



The US Federal Trade Commission on Thursday said it intends to take action against educational technology companies that unlawfully collect



data from children using online educational services.

In a policy statement, the agency said, "Children should not have to needlessly hand over their data and forfeit their privacy in order to do their schoolwork or participate in remote learning, especially given the wide and increasing adoption of ed tech tools."

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## Mysterious firm seeks to buy majority stake in Arm China

Chinese joint venture's ousted CEO tries to hang on - who will get control?

Dylan Martin   Fri 20 May 2022 // 18:49 UTC



The saga surrounding Arm's joint venture in China just took another intriguing turn: a mysterious firm named Lotcap Group claims it has signed a letter of intent to buy a 51 percent stake in Arm China from existing investors in the country.

In a Chinese-language press release posted Wednesday, Lotcap said it has formed a subsidiary, Lotcap Fund, to buy a majority stake in the joint venture. However, reporting by one newspaper suggested that the investment firm still needs the approval of one significant investor to gain 51 percent control of Arm China.

The development comes a couple of weeks after Arm China said that its former CEO, Allen Wu, was refusing once again to step down from his position, despite the company's board voting in late April to replace Wu with two co-chief executives. SoftBank Group, which owns 49 percent of

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## SmartNICs power the cloud, are enterprise datacenters next?

High pricing, lack of software make smartNICs a tough sell, despite offload potential

Tobias Mann Fri 20 May 2022 // 17:32 UTC



SmartNICs have the potential to accelerate enterprise workloads, but don't expect to see them bring hyperscale-class efficiency to most datacenters anytime soon, ZK Research's Zeus Kerravala told *The Register*.

SmartNICs are widely deployed in cloud and hyperscale datacenters as a means to offload input/output (I/O) intensive network, security, and storage operations from the CPU, freeing it up to run revenue generating tenant workloads. Some more advanced chips even offload the hypervisor to further separate the infrastructure management layer from

the rest of the server.

Despite relative success in the cloud and a flurry of innovation from the still-limited vendor SmartNIC ecosystem, including Mellanox (Nvidia),

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## US fears China may have ten exascale systems by 2025

China refuses to share benchmarks, US sharpens focus on developing optimized software

Dan Robinson Fri 20 May 2022 // 16:04 UTC

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The US is racing to catch up with China in supercomputing performance amid fears that the country may widen its lead in exascale computers over the next decade, according to reports.

The Frontier supercomputer at Oak Ridge National Laboratory is expected to be the first exascale system in the US once it is fully operational, but China already has two exascale systems up and running since last year, as reported on our sister site *The Next Platform*.

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## Repairability champ Framework's modular laptop gets a speed boost

With any other portable, this would be bad news for existing owners

Liam Proven in Prague Fri 20 May 2022 // 15:07 UTC

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Laptop vendor Framework Computer has launched new faster models. Unlike in the case of any other laptop maker, if you already have one, this is *good* news.

Modern laptops tend to be promoted on the basis of thinness and lightness, and the Framework range is no different. The machines have 13.5-inch (8.89cm) screens, are just under 16mm thick (0.6 inch), and

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## Boeing's Starliner CST-100 on its way to the ISS 2 years late

A couple of thruster failures shouldn't affect the Calamity Capsule's second attempt at reaching space station

**Richard Speed** Fri 20 May 2022 // 14:34 UTC

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Two and a half years after its first disastrous launch, Boeing has once again fired its CST-100 Starliner capsule at the International Space Station.

This time it appeared to go well, launching at 18:54 ET from Space Launch Complex 41 at Cape Canaveral. The RD-180 main engine and twin solid rocket boosters of the Atlas V performed as planned before Starliner was pushed to near orbital velocity by the Centaur upper stage.

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## Biden tours Samsung fab, talks chip cooperation with South Korea

Factory is a model for one the company has planned in Texas

Brandon Vigliarolo Fri 20 May 2022 // 14:00 UTC

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US president Joe Biden kicked off his first Asian tour since taking office in South Korea, where he visited a Samsung semiconductor fab said to be the model for the company's planned plant in Taylor, Texas.

While speaking at the Samsung Electronics Pyeongtaek Campus, Biden said the region will be a key part of the next several decades – a reason "to invest in one another to deepen our business ties."

Much of the talk on Biden's five-day trip to South Korea and Japan will center around broader deepening of economic and business ties. In Pyeongtaek, however, the emphasis was on semiconductor cooperation.

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## Meta to squeeze money from WhatsApp with Cloud API for businesses

How to make a free messaging platform bought for \$22 billion profitable

Richard Currie Fri 20 May 2022 // 13:30 UTC

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At Meta's first Conversations keynote yesterday, the company announced the WhatsApp Cloud API, aimed at improving the customer service experience for businesses of all sizes.

Meta already has the WhatsApp Business API, the first revenue-generating enterprise product for the otherwise free messaging app, where companies pay WhatsApp on a per-message basis and can use the platform to direct customer communications to other lines like SMS, email, other apps, and more.

to make it easier for customers to get in touch. But the WhatsApp Business API is on-premises and would normally need a solutions provider like Twilio to facilitate back-end integration.

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## Microsoft patches the patch that broke Windows authentication

May 10 update addressed serious vulns but also had problems of its own

**Richard Speed** Fri 20 May 2022 // 13:00 UTC

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Microsoft has released an out-of-band patch to deal with an authentication issue that was introduced in the May 10 Windows update.

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## Daisy Group to take on some of data management company Sungard's UK customers

Customers at other Sungard datacenters are not affected

**Dan Robinson** Fri 20 May 2022 // 12:30 UTC



UK customers of datacenter and colo service provider Sungard Availability Services are to be transferred to Daisy Corporate Services, part of the Daisy Group, months after Sungard went into administration.

According to some reports, Daisy Group has signed a deal to acquire the UK arm of Sungard, in a move that would see the company pick up Sungard's former customers, including major banks and other financial institutions.

However, a statement given to *The Register* by the administrators, Teneo

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