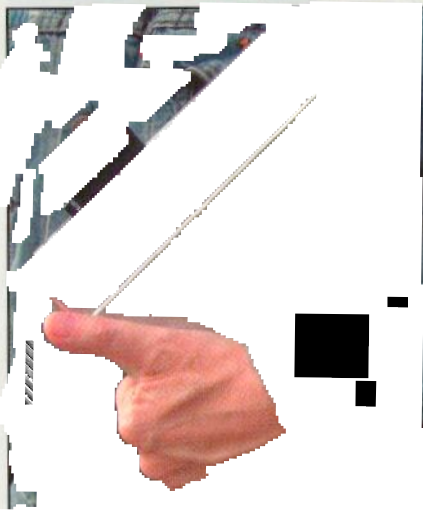


PANASONIC TOUGHBOOK CF-T1

A FULL-MAGNESIUM ULTRA-COMPACT NOTEBOOK THAT WEIGHS ONLY 2.4 POUNDS.

BY CONRAD H. BLICKENSTORFER



The CF-T1 is a full-magnesium ultra-compact notebook that weighs only 2.4 pounds. It is designed to be rugged and durable, with a magnesium case that provides good protection. The device is also very compact and easy to carry around. It is a great choice for anyone who needs a portable computer that is both light and tough.

The T1 has a rigid magnesium case and provides good protection by using some of the same designs as the rugged Toughbooks. However, it is an ultra-light.

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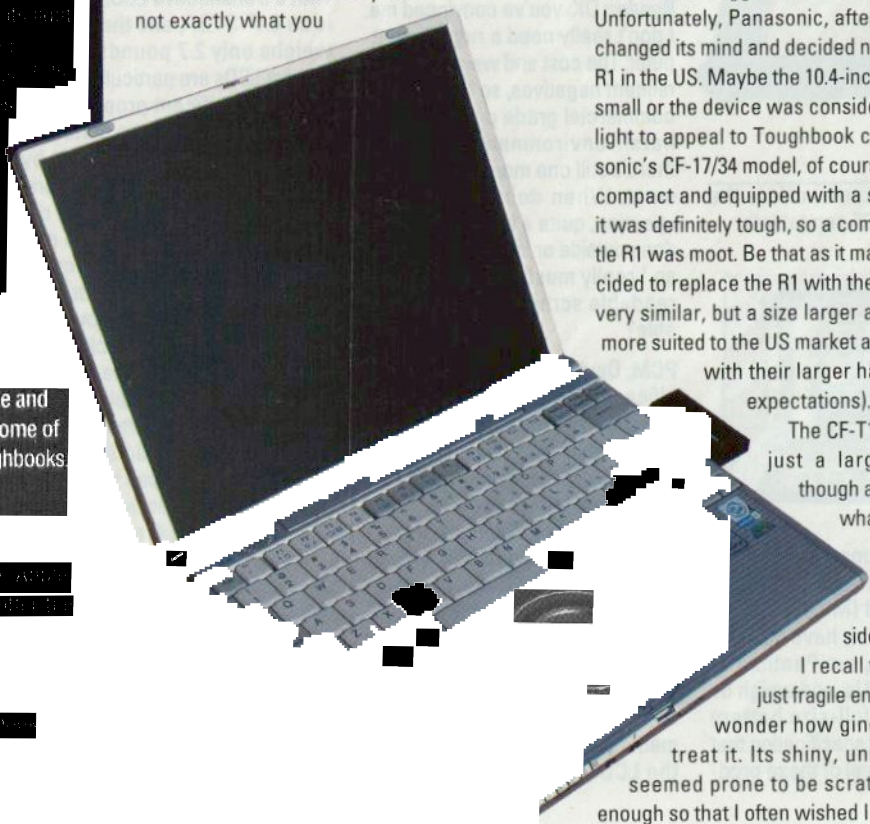
Only about 15% of US notebook buyers choose an ultralight, defined as a more or less fully configured computer that has a display large enough to do real work on but that only weighs around four pounds. Ultralights generally cost more than bigger, heavier notebooks although they often have fewer features and slower processors. The higher cost, of course, is the result of having to pack all those components into an almost impossibly light and thin package. People buy ultralights for just that—ultra light weight. When you travel a lot, the difference between a four pound ultralight and an eight pound full-size notebook can be tremendous. It could be argued that in terms of transportability and handiness, an ultralight is closer to a PDA than to the proverbial notebook whereas a full function laptop is closer to an essentially stationary desktop computer.

All of those contemplations must have gone through the minds of Panasonic's product planners when they decided to add an ultralight to their highly regarded line of rugged Toughbook computers. Panasonic Toughbooks are generally built to be used in harsh environments, places where standard notebooks just cannot survive. That makes them thick and heavy and not exactly what you

want to lug along in your briefcase on a business trip. So why not offer a Toughbook that, while being much lighter and handier, is still designed and built to be sturdier and tougher than the competition? This would offer existing Toughbook clients the chance to stay with a tried and true vendor, Panasonic, and may even add a good chunk of new sales to first time Panasonic buyers. This reasoning makes sense but it is also somewhat risky. No matter how well built it is, an ultralight could not possibly come close to the legendary toughness of conventional Toughbooks and could thus either lessen the Toughbook name or not be accepted as a Toughbook. As is, it looks like Panasonic is willing to take the gamble.

The CF-T1 actually is not the first Panasonic ultralight to join the Toughbook line. That distinction goes to the even smaller and lighter CF-R1 that we reviewed in the December 2002 issue of *Pen Computing Magazine*. I had seen that little marvel during a trip to Panasonic last summer and had absolutely fallen in love with it. Despite being downright diminutive, the R1 was just large enough to do real work on. It felt very solid and was incredibly handy. It was like having a PDA with a much bigger screen and Windows on it. Unfortunately, Panasonic, after a brief test run changed its mind and decided not to offer the CF-R1 in the US. Maybe the 10.4-inch screen was too small or the device was considered just a bit too light to appeal to Toughbook customers. Panasonic's CF-17/34 model, of course, was also very compact and equipped with a small display, but it was definitely tough, so a comparison to the little R1 was moot. Be that as it may, Panasonic decided to replace the R1 with the very T1 which is very similar, but a size larger and thus perhaps more suited to the US market and US customer with their larger hands (and bigger expectations).

The CF-T1, however, is not just a larger CF-R1 even though at first sight that is what it looks like. I no longer have the R1 and can't make a side-by-side comparison, but I recall the R1 as feeling just fragile enough to make you wonder how gingerly you had to treat it. Its shiny, unribbed surface seemed prone to be scratched or dented enough so that I often wished I had some kind

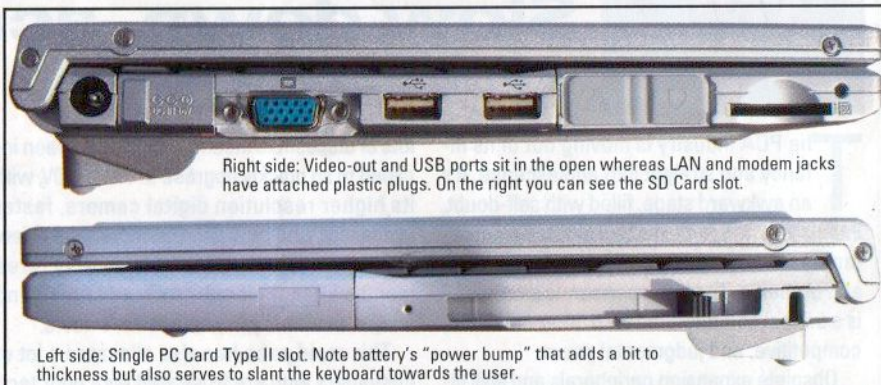


PDA-style case for it. The T1 changes all that in subtle ways. While it looks like a larger, more grown-up version of the R1, it also feels significantly sturdier and more businesslike. The all-magnesium case now sports the same powder finish as the big, rugged Toughbooks and that alone makes a big difference. Part of the case are ribbed and contoured, making the T1 feel much more solid. Despite the larger LCD, the display part of the T1 flexes less than that of the R1. Anyone who liked the size and handiness of the R1 but felt the device was simply a bit too flimsy should take a look at the T1. It may look like a larger CF-R1 with which it shares most of its features, but it feels more like a handier, lighter CF-72.

So let's take a closer look at the CF-T1.

Despite exuding a much greater sense of ruggedness and a generally more businesslike appearance, the T1 is definitely an ultralight. That means no such notebook stalwarts as internal optical drives or a large bank of full-size ports. There is simply no room for that. If you need to install software, you use an external optical drive. That is not to say the T1 is lacking in connectivity. It has two USB ports, a video port, jacks for the internal 56k modem and 10/100 kbps LAN adapter, the usual headphone and microphone jacks, and a Type II PC Card slot for expansion. There is also a SD Card slot that can be used either for storage or, via a special Panasonic utility, as a system access key. If you decide to use it, no one can work on your T1 unless the proper SD card is inserted.

In the keyboard and display department, the T1 makes few compromises compared larger notebooks. The full-size keyboard is nicely laid out and has a good feel to it. Alphanumeric and punctuation keys are white whereas function and other keys are light-gray, a nice touch for non-touch typists like myself. The only gripe I have is with the too small cursor control keys, an ever problematic area when keyboard space is at a premium. Like the R1, the T1 has a round touchpad with the left and right mouse button wrapped around its lower half. The round pad may look unusual, as does its metallic pad area, but it works exceptionally well. In fact, I like it better than any other touch pad arrangement. Unlike a growing number of notebooks, the T1 does not have a navigation knob sticking out from the middle of the keys and I found myself missing it. The T1's 12.1-inch LCD is sharp and bright, as virtually all LCDs are these days. Though just as large as the LCDs on the full-size CF-28 and CF-72, 12.1 inches is, of course, considered small by today's standards of 14 and 15 inch notebook displays. As someone who is used to working with smaller notebooks, I find it more than adequate for almost any work and I only miss a larger screen size when I have many windows open at the same time. The T1's maximum resolution of 1024x768 pixels is just right for the 12.1-inch display.



Right side: Video-out and USB ports sit in the open whereas LAN and modem jacks have attached plastic plugs. On the right you can see the SD Card slot.

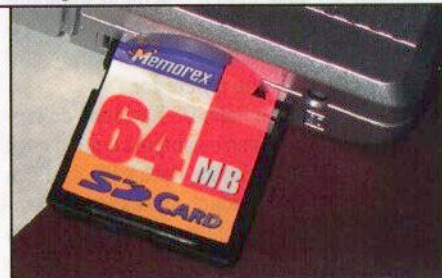
Left side: Single PC Card Type II slot. Note battery's "power bump" that adds a bit to thickness but also serves to slant the keyboard towards the user.

SPECIFICATIONS

COMPANY	Panasonic Computer Solutions Company
PRODUCT	Toughbook T1
PROCESSOR	866MHz Ultra Low Voltage Mobile Intel Pentium III
OPERATING SYSTEM	Windows XP Professional
COMMUNICATIONS	10/100 BaseT, 56k modem, wireless options
MEMORY CONFIGURATION	256MB 133MHz SDRAM (expandable to 512MB via single slot)
DRIVES	40GB Hard Drive
SLOTS	1 PC Card Type II, 1 Secure Digital Card
DISPLAY	12.1-inch 1024 x 768 TFT Thin-Screen LCD with anti-glare coating
KEYBOARD	85-key full size
TOUCHPAD	Round electrostatic touchpad
PEN/DIGITIZER	None
DIMENSIONS	10.6 x 8.3 x 1.0 inches (battery bulge 1.5 inches)
WEIGHT	2.4 pounds including battery
HOUSING	Magnesium alloy, stainless steel hinges, scratch-resistant coating
POWER	Li-Ion battery pack (7.4V, 4,400mAh; 32.6 WHr)
INTERFACE	RJ45, RJ11, 2 USB 2.0, video, speaker, microphone
OPTIONS	USB CD-RW/DVD drive, external floppy, 801.11b wireless
PRICE	US\$2,355
CONTACT	www.panasonic.com/toughbook

In terms of other specs, the T1 comes with a 40GB hard disk, an 866MHz Mobile Intel Pentium III processor with SpeedStep technology, and 256MB of RAM (expandable to 512MB via an expansion slot located behind a screwed-down door at the bottom of the unit). Unlike the R1 which offered installation of the professional versions of either Windows 2000 or Windows XP upon first start-up, the T1 comes with XP Pro only. The SpeedStep processor is plenty fast enough to run Windows XP Pro without annoying waiting and delays, and the T1's hard disk was devoid of the annoying clicking sounds of that in the R1. As someone who despises the great heat buildup in almost all current notebooks, I was pleasantly surprised by how cool the T1 ran. This is one notebook that won't burn your lap.

While some ultralights offer less than stellar battery life, the T1 suffers no such shortcoming. Like the R1, it uses a beefy battery that snaps into the back of the computer. Its size adds a bulge to the T1's otherwise very slender profile. Panasonic cleverly converted this extra width into a feature by adding two little feet to the left and right of the battery, thus slightly tilting the keyboard towards you when the computer sits on a desk. Battery life is exemplary. Depending on the



kind of use, you may get as much as five hours from a full charge.

Overall, the CF-T1's more grown-up appearance and significantly sturdier housing makes this new computer certain to have more appeal to traditional Toughbook buyers than the diminutive R1 had. It may also help Panasonic make additional inroads into the lucrative corporate markets which will appreciate the T1's combination of performance, features, light weight, and rugged construction. Those who had a chance to use it will miss the shortlived R1's unbeatable handiness, but the T1 is definitely more of a "real" computer. I'd like mine with built-in 802.11b wireless LAN instead of having to use up the PC Card slot with a LAN card that sticks out an inch, but other than (and perhaps a touchscreen version) I can't think of a thing I'd change.