



Just because a notebook is rugged doesn't mean it has to be huge, and the ToughBook R1 is a prime example of this fact. This two-pound portable is small, but has enough power to handle most applications for workers on the move. With a single-spindle design, the 800-MHz Toughbook R1 is housed in an attractive and durable magnesium alloy case and comes with your choice of Windows XP Professional or Windows 2000.

Regardless of durability, there are always compromises to be made with an ultralight laptop. Our review unit was not supplied with either an external floppy or optical drive. Should you need one or both, you can purchase a USB drive from Panasonic or another vendor, such as YE, Data.

We plugged in a Micro Solutions back-pack cd rewriter to install our benchmark software. If you opt for a USB floppy disk drive to install software and drivers, the Windows XP Professional operating system recognizes this device and automatically installs the required drivers.

There aren't a lot of other ports on the R1; there's simply not much space for them. The front panel of the laptop has jacks for a head-

Panasonic Toughbook R1 \$1,850

Panasonic Computer Solutions Co.

Sales Channel: Resellers

50 Meadowlands Pkwy., Secaucus, NJ 07094; (800) 662-3537; www.panasonic.com/toughbook

CPU: 800-MHz Intel Mobile Pentium III

RAM/Expandable to: 128MB SDRAM/512GB

Drives: 20GB 4,200-rpm ATA/66 hard drive; one-spindle design

Video: 10.4-inch XGA active-matrix display; Silicon Motion Lynx3DM video with 4MB of VRAM

Audio: SigmaTel STAC9757 using AC'97 codec; integrated mono speaker

Input: 82-key Windows keyboard, touchpad

Software: Windows XP Professional or Windows 2000 (selected on first bootup)

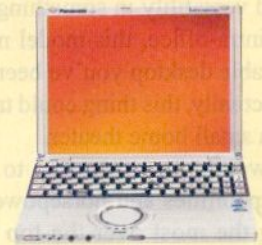
PC Card Slots: One Type II

Communications: 56-Kbps fax modem, 10/100BaseT Ethernet

Ports: Headphone, mic, two USB 1.1, SD Card slot

Size/Weight: 9.5 x 7.2 x 1.5 inches/2.2 pounds with battery installed

Battery: 4,400-mAh Li-Ion



Other: Kensington lock slot

Service and Support: One-year parts and labor warranty, toll-free tech support 24/7

BENCHMARK SCORES

Performance: 74

Response Time: 2.68 seconds

Battery Life: 4 hours 36 minutes

3DMark: N/A

phone and mic, while the right-hand panel offers a USB port and a Type II PC Card slot. The other panel provides the second USB

port, a special connector for an external VGA monitor, and covered connectors for the internal 56-Kbps fax modem and 10/100BaseT

Ethernet adapter. There's an SD flash memory card slot, which provides a handy way to transfer files to the 20GB hard drive.

Panasonic didn't design the ToughBook R1 to be a mobile multimedia system, so we didn't test it as one. The 10.4-inch active matrix LCD panel has an

anti-glare coating, so it can be read even in direct sunlight. The default resolution is XGA (1024 x 768). The panel is driven by a Silicon Motion Lynx3DM+ controller and provides 4MB of video RAM for frame buffering. Gamers may turn up their nose at that small amount RAM, but it's fine for most other applications, including Web surfing.

Panasonic Toughbook R1

PROS

- Magnesium alloy case
- Very light
- Great battery runtime
- SD Card slot

CONS

- Small keyboard

QUICK TAKE

A rugged ultraportable that doesn't know when to quit.

The R1's audio capabilities are basic, as it uses the AC '97 codec. There's room for a single speaker in the small case, and Panasonic does manage to include a microphone, as well.

In this day of blazing Pentium 4-based laptops, it's unusual to see a system containing a Pentium III CPU. The exceptions are ultraportables, which aim to squeeze every possible drop of runtime out of the battery. Some vendors use Transmeta's Crusoe processor, which, while slow, is very power efficient. A better compromise between endurance and performance is the 800-MHz Pentium III CPU that Panasonic chose for the R1.

Above all, the Toughbook R1 is a work-

ing laptop that is meant to be taken out in the field. With its large battery capacity and ultra-low-voltage CPU, the Toughbook R1 runs for hours. Using MobileMark2002, the R1 ran for a very impressive 4 hours and 30 minutes before giving up the ghost. With a modest amount of power management enabled, you might be able to get a bit closer to five hours from a charge.

Some may find the 10.4-inch screen too small to work with for long periods, but it's fine when you are out on a job site and need to make adjustments on a budget, project job cost, or timeline.

We found the R1's keyboard a bit small and uncomfortable for our large hands. This may have some impact on your touch-typing speed, so you should try out the keyboard before buying if you spend a lot of time creating documents.

If you can live with these inconveniences, you'll love the Toughbook R1. It's super light, provides more than enough power for most applications, and runs seemingly forever.