

Ultra portables

We pitch the world's sleekest laptops against each other in a slimline fight

Ultra-portable notebooks used to be the domain of high-flying executives wanting to make an impression on clients, but more buyers are realising the benefits of this excellent form factor.

With 1.2GHz chips now fitting inside a chassis less than 20mm high, there's no reason why even a power user needs to buy a 3kg desktop replacement.

And there are more signs of a maturing product than just speed. Five of the notebooks here offer integrated 802.11b wireless networking as standard, and a further one offers it as an option. Although the UK is yet to adopt 802.11b with the same passion as the US, this remains a great feature for those with access to wireless networks here, or those who use their notebooks overseas.

We need hardly mention that ultra portables are the ideal travelling companions. Not only are they light – we stipulated a weight limit of 2kg

here – but the battery life varies from merely good to excellent. Many manufacturers also include high-capacity battery options for yet more minutes, albeit at the expense of weight and form.

Battery life is one of the most important factors when buying an ultra portable, which is why we tested these notebooks under both intensive and light use – for the results, see the graphs on p95. This page also gives the results of the rest of our tests, including ratings for style, build quality and TFT quality, not to mention 2D performance. Full details of how we test notebooks was printed in last month's £999 notebooks group test (see *Labs*, issue 90, p80).

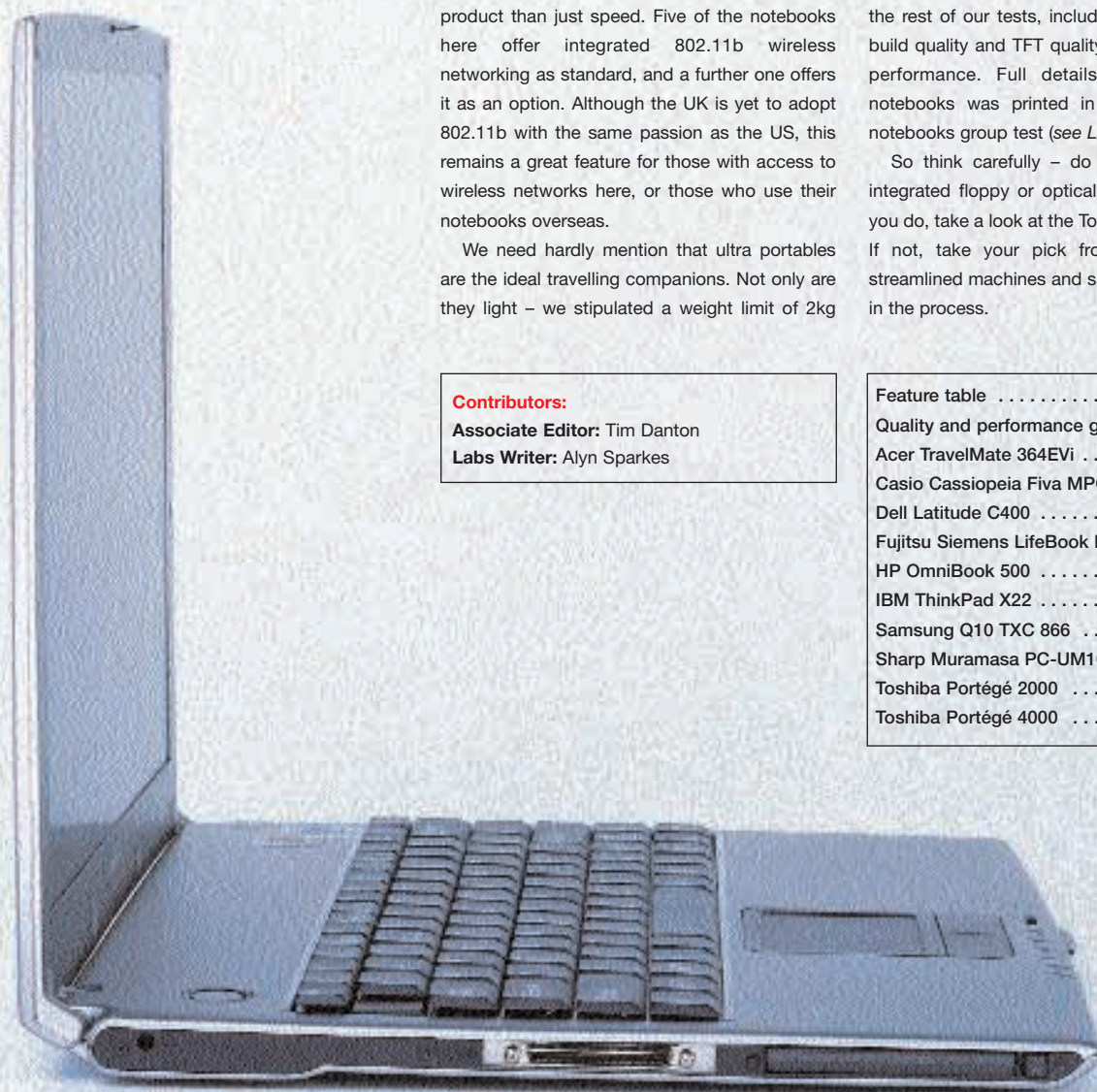
So think carefully – do you really need an integrated floppy or optical drive? (And even if you do, take a look at the Toshiba Portégé 4000.) If not, take your pick from these excellent, streamlined machines and save yourself a hernia in the process.

Contributors:

Associate Editor: Tim Danton

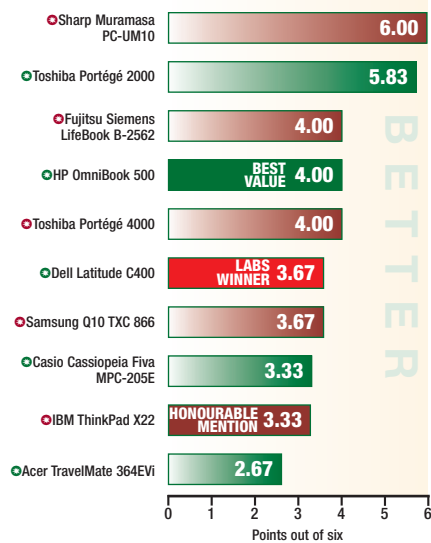
Labs Writer: Alyn Sparkes

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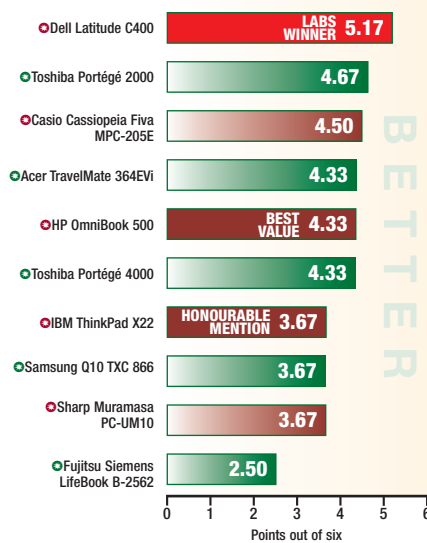


Quality and performance graphs

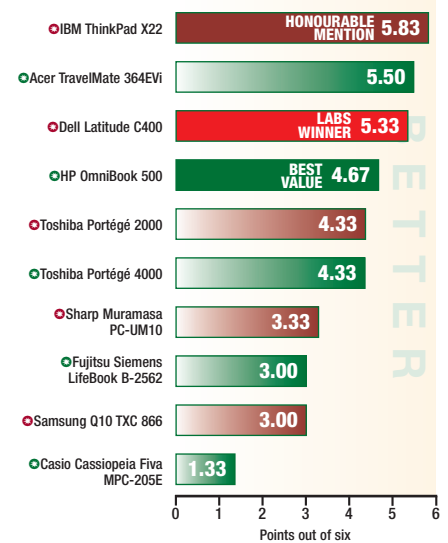
STYLE RATING



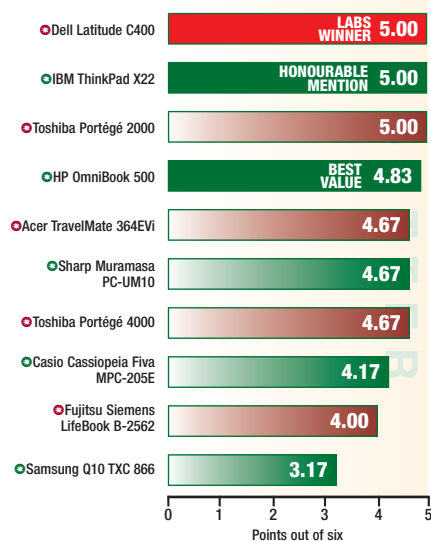
TFT QUALITY



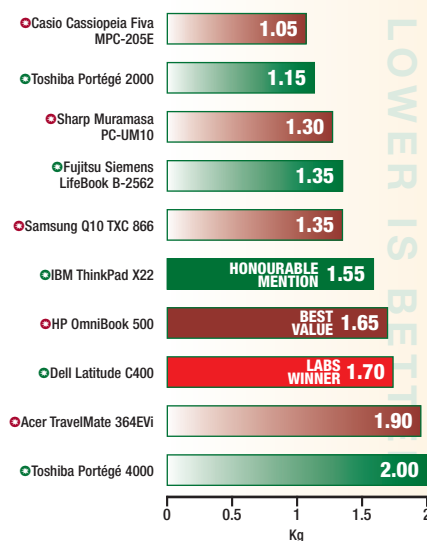
KEYBOARD QUALITY



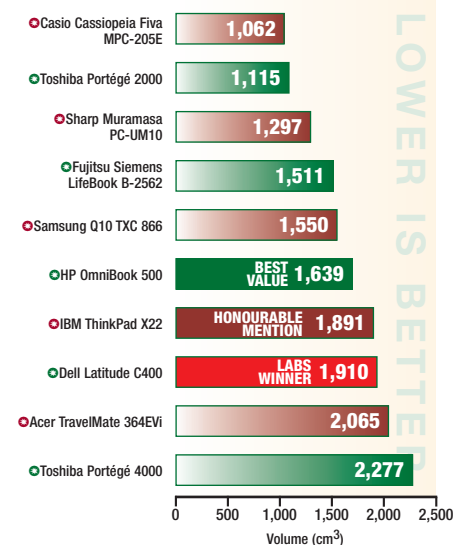
BUILD QUALITY



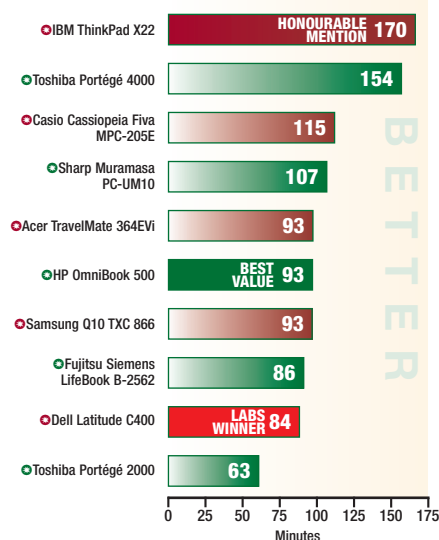
WEIGHT



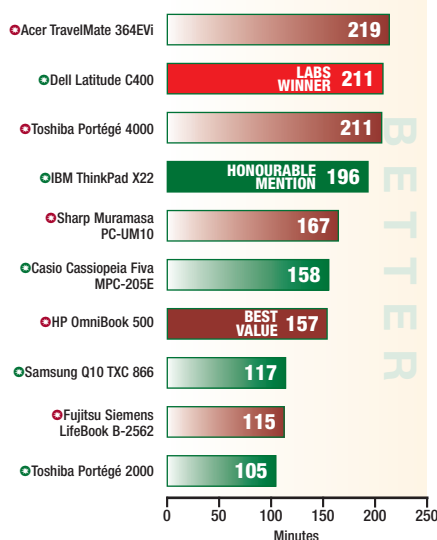
SIZE (VOLUME)



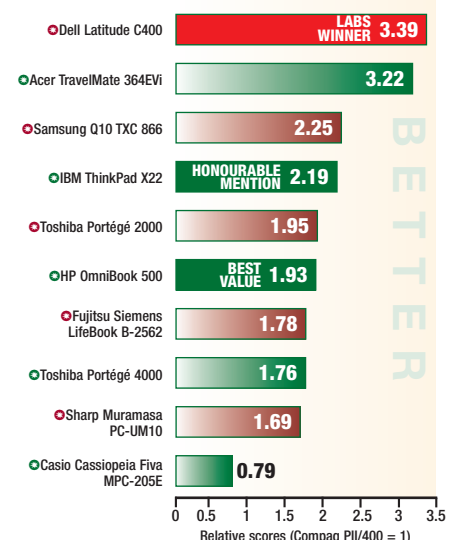
BATTERY LIFE (INTENSIVE USE)

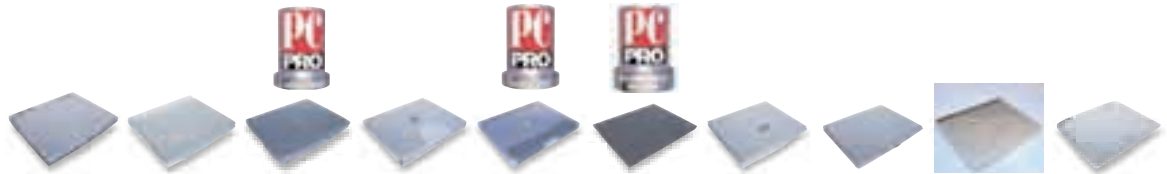


BATTERY LIFE (LIGHT USE)



2D SPEED OVERALL



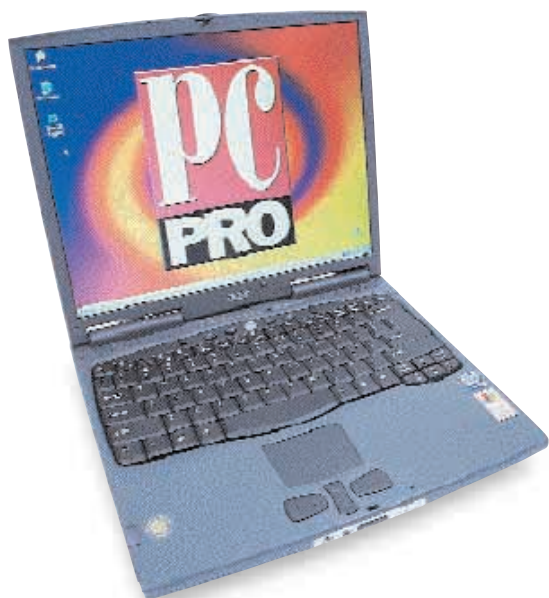


Specifications & features

	Acer TravelMate 364EVI	Casio Cassiopeia Fiva MPC-205E	Dell Latitude C400	Fujitsu Siemens LifeBook B-2562	HP OmniBook 500	IBM ThinkPad X22	Samsung Q10 TXC 866	Sharp Muramasa PC-UM10	Toshiba Portégé 2000	Toshiba Portégé 4000
Overall rating	○○○○○○	○○○○○○	○○○○○○	○○○○○○	○○○○○○	○○○○○○	○○○○○○	○○○○○○	○○○○○○	○○○○○○
Manufacturer's code	N/A	N/A	N/A	N/A	F3482K	TX19EUK	N/A	N/A	N/A	N/A
Price* (inc VAT)	£1,849 (£2,173)	£1,349 (£1,585)	£1,399 (£1,644)	£1,325 (£1,556)	£1,232 (£1,448)	£1,689 (£1,985)	£1,616 (£1,899)	£1,349 (£1,585)	£1,595 (£1,874)	£1,499 (£1,761)
Cost of delivery (inc VAT)	Dependent on reseller	£7 (£8)	£45 (£53)	Free	£8 (£9)	£45 (£53)	Dependent on reseller	Free	Free	Free
Supplier	Acer 0870 900 2237	Paradigm Technology 01235 750602	Dell 0870 152 4647	FH Brown 01282 463222	WStore 01252 745000	IBM 0800 169 1458	Samsung 0800 521652	dabs.com 0800 138 5182	dabs.com 0800 138 5182	dabs.com 0800 138 5182
Supplier's Web site	www.acer.co.uk	www.paradigm.co.uk	www.dell.co.uk/latitude	www.fhbrown.co.uk	www.wstore.co.uk	www.pc.ibm.com/uk	www.samsungelectronics.co.uk	www.sharp.co.uk/muramasa	www.dabs.com	www.dabs.com
Manufacturer's Web site	www.acer.co.uk	www.casio.co.uk	www.dell.co.uk/latitude	www.fujitsu-siemens.co.uk	www.hp.com/uk	www.pc.ibm.com/uk	www.samsungelectronics.co.uk	www.sharp.co.uk/muramasa	www.computers.toshiba.co.uk	www.computers.toshiba.co.uk
Basic warranty**	3yrs RTB	1yr RTB	3yrs on-site NBD	1yr C&R international	1yr RTB international	3yrs RTB international	1yr C&R	3yrs swap-out	3yrs RTB international	3yrs RTB international
Size: W x D x H (mm)	293 x 243 x 29	220 x 193 x 25	289 x 236 x 28	251 x 215 x 28	276 x 220 x 27	279 x 226 x 30	276 x 234 x 24	282 x 230 x 20	289 x 227 x 17	270 x 248 x 34
System weight with battery (kg)	1.90	1.05	1.70	1.35	1.65	1.55	1.35	1.30	1.15	2.00
Core components										
Processor type	1.2GHz Intel Pentium III-M	Transmeta Crusoe TM5600 500MHz	1.2GHz Intel Pentium III-M	700MHz Intel Pentium III ULV	700MHz Intel Pentium III ULV	800MHz Intel Pentium III-M	866MHz Intel Pentium III-M	600MHz Intel Pentium III ULV	750MHz Intel Pentium III ULV	750MHz Intel Pentium III ULV
Mobile/desktop chip	Mobile	Mobile	Mobile	Mobile	Mobile	Mobile	Mobile	Mobile	Mobile	Mobile
Level 2 cache size	512Kb	256Kb	512Kb	256Kb	256Kb	512Kb	512Kb	256Kb	256Kb	256Kb
RAM fitted	512Mb PC133	96Mb PC133	256Mb PC133	128Mb PC100	128Mb PC100	128Mb PC100	256Mb PC133	128Mb PC100	256Mb PC100	128Mb PC100
Maximum RAM in current configuration	512Mb	96Mb	768Mb	128Mb	384Mb	384Mb	256Mb	128Mb	512Mb	640Mb
SODIMM sockets free/total	0/2	0/1	1/1	0/1	1/1	1/1	0/1	0/0	1/1	1/2
Battery technology	Lithium ion	Lithium ion	Lithium ion	Lithium ion	Lithium ion	Lithium ion	Lithium ion	Lithium ion	Lithium polymer	Lithium ion
Price of spare battery	£90	£72, double-capacity £143	£65	£75, double-capacity £90	£118	£135	Extra battery included	£105	£90	£65
Display										
LCD technology	TFT	TFT	TFT	Touchscreen TFT	TFT	TFT	TFT	TFT	TFT	TFT
Display size (in)	13.3	8.4	12.1	10.4	12.1	12.1	12.1	12	12	12.1
Native resolution	1,024 x 768	800 x 600	1,024 x 768	1,024 x 768	1,024 x 768	1,024 x 768	1,024 x 768	1,024 x 768	1,024 x 768	1,024 x 768
Graphics chipset	Intel 830M	Silicon Motion 712 Lynx EM+	Intel 830M	ATI Rage Mobility-M	ATI Rage Mobility-M	ATI Mobility Radeon	Intel 830M	ATI Rage Mobility-M	Trident CyberBlade XP Ai1	Trident CyberBlade XP Ai1
Video memory	Shared	2Mb	Shared	8Mb	8Mb	8Mb	Shared	4Mb	Shared	Shared
Extended Desktop support	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Other output	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Drives										
Hard disk (make and model)	IBM Travelstar 30GN	IBM Travelstar 20GN	IBM Travelstar 30GN	Toshiba MK1016GAP	IBM Travelstar 30GN	IBM Travelstar 30GN	IBM Travelstar 30GN	Hitachi DK23CA-20	Toshiba MK5002MAL	IBM Travelstar 30GN
Removable	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Capacity	30Gb	10Gb	20Gb	10Gb	20Gb	20Gb	20Gb	20Gb	20Gb***	20Gb
Formatted capacity	27.9Gb	9.1Gb	18.5Gb	9.4Gb	18Gb	17.7Gb	18.6Gb	18.6Gb	Not yet known	18.6Gb
Floppy disk drive	External (via media bay)	External via USB	External (via media bay)	External (via port replicator)	Via docking station	✓ (optional)	External (via docking station)	✓ (optional)	✓ (optional)	✓ (optional)
Optical drive and speed (DVD read/CD write/re-write/CD read)	External Panasonic JUDA710 (8x/8x/4x/32x) via Media bay	External Casio MPC-142CDD (24x) via PC Card	External Samsung SN-124 (24x) via media bay	✓	External Panasonic CR-177 (24x) via docking station	✓ (optional)	External combo Toshiba SD-R2102 (8x/8x/8x/24x) via docking station	✓ (optional)	✓ (optional)	Removable TEAC DV-28E-B (8x/24x)
Optical drive options	✓	✓	CD-RW, DVD, CD-RW/DVD combo	External floppy drive, CD, DVD or CD-RW	DVD, CD-RW, LS-120 SuperDisk, Zip drive, hard disk	CD, DVD, CD-RW, CD-RW/DVD combo, Zip 250, SuperDisk via UltraBase X2 Media Slice	✓	CD (£153)	✓	✓
Ports										
VGA	1	Via adaptor	1	1	1	1	1	Via optional port bar or bundled adaptor cable	1	1
PC Card Type II slots	1	1	1	2	1	1	1	1	1	2
Other slots	1 smart card	1 Type II CompactFlash	✓	✓	✓	1 Type II CompactFlash	✓	✓	1 SecureDigital	1 SecureDigital
USB	2	1	1	2	2	2	2	1	2	2
FireWire (IEEE-1394)	1	1	✓	✓	✓	✓	1 (powered)	✓	✓	✓
Fast infrared	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Serial	✓	✓	1	Via port replicator	Via docking station	✓	Via docking station	Via optional port bar	✓	✓
Parallel	✓	✓	✓	Via port replicator	Via docking station	✓	Via docking station	Via optional port bar	✓	✓
PS/2 mouse	Shared	✓	✓	Via port replicator	Via docking station	✓	Combined via docking station	✓	✓	✓
PS/2 keyboard	Shared	✓	✓	Via port replicator	Via docking station	✓	Combined via docking station	✓	✓	✓
Pointing device type	Trackpad	Trackpoint	Trackpoint/trackpad	Trackpoint and touchscreen	Trackpoint	Trackpoint	Trackpad	Trackpad	Trackpad	Trackpoint
Docking station options	Port replicator (£89)	✓	Port replicator (£231), docking station (£414)	Port replicator included	Docking station included	Port replicator (£82), UltraBase X2 Media Slice (£142)	Docking station included	Port bar (£97)	Port replicator (£199)	Port replicator (£125)
Communications										
Modem (speed)	Lucent Soft Modem AMR (V.90)	Lucent Soft Modem AMR (V.90)	PCTel 2304WT (V.92)	Lucent Soft Modem AMR (V.90)	3Com Mini-PCI (V.90)	Lucent Soft Modem AMR (V.90)	SENS PT56ADW (V.90)	Lucent Soft Modem AMR (V.90)	Toshiba software (V.90)	Toshiba software (V.90)
Network (speed)	Intel Pro/100 VE (10/100)	✓	3Com 3C920 (10/100)	Realtek RTL8139 (10/100)	3Com Mini-PCI (10/100)	Intel Pro/100 VE (10/100)	3Com (10/100)	Realtek RTL8139 (10/100)	Intel 8255x (10/100)	Intel 8255x (10/100)
Wireless technologies	Integrated 802.11b	✓	Optional 802.11b (antenna integrated)	✓	✓	Integrated 802.11b	Integrated 802.11b	✓	Integrated 802.11b	Integrated Bluetooth and 802.11b
Other peripherals										
Sound chipset	Intel (AC97)	Ali Audio Wave (AC97)	Crystal WDM Audio (AC97)	SigmaTel Audio (AC97)	ESS Maestro (AC97)	Crystal WDM Audio (AC97)	Crystal WDM Audio (AC97)	Crystal WDM Audio (AC97)	Ali Audio Wave (AC97)	Ali Audio Wave (AC97)
Speakers location	Below keyboard (mono)	Below keyboard (mono)	Side of chassis (mono)	Bottom of chassis	Bottom of chassis (mono)	✓	Below touchpad (stereo)	Bottom of chassis (mono)	Bottom of chassis (mono)	Above keyboard (stereo)
Internal microphone	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Carry case supplied	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Additional peripherals	Modem cable	✓	Modem cable	Type II PC Card smart card reader, port replicator, PS/2 splitter cable	Docking station	✓	SliceDock II docking station, extended lithium ion battery, USB 350,000-pixel digital camera	✓	High-capacity second battery	✓
Software supplied										
Operating system	Windows XP Home	Windows ME	Windows XP Professional Recovery CD	Windows XP Professional Recovery CD	Windows 2000 Professional Recovery CD	Windows XP Professional Recovery on hidden HD partition	Windows XP Professional Windows CD	Windows 2000 Professional Recovery CD	Windows XP Professional Recovery CD	Windows 2000 Professional Recovery CD
Recovery/Windows CD provided	Recovery CD	Windows CD and Recovery CD	✓	✓	✓	✓	✓	✓	✓	✓
Main titles	✓	✓	✓	Works 6, Word 2000	HP TopTools 5, HP e-DiagTools 3	Lotus Notes, Lotus SmartSuite Millennium Edition (CDs not included)	✓	✓	✓	✓

*Prices were correct at time of going to press. **Warranty is parts and labour unless otherwise stated. ***The test unit was a 5Gb device, but the Portégé 2000 will be supplied with a 20Gb disk.





Acer TravelMate 364EV

verdict The full-width keyboard and 13.3in screen are good compensation for the large footprint. Just a shame about the price.
price £1,849 (£2,173 inc VAT) **supplier** Acer 0870 900 2237

Acer kicks off this ultra-portable Labs with a notebook that only just qualifies as ultra portable – it more accurately fits in the thin'n'light category favoured by our American cousins. It's certainly not sub-A4 size, with its 293 x 243mm footprint being the largest on test, but it does weigh in just below our 2kg limit at 1.9kg.

There are obvious advantages to the larger size. For one, the keyboard is full-width, and Acer combines this with a very nice feel and sensible key positioning. Another bonus is the 13.3in TFT screen, adding an air of luxury compared to the 12.1in displays we see elsewhere. When plugged in, it's also one of the best screens we've seen, but a noticeable drop in brightness when on battery power meant our panel of judges marked it down.

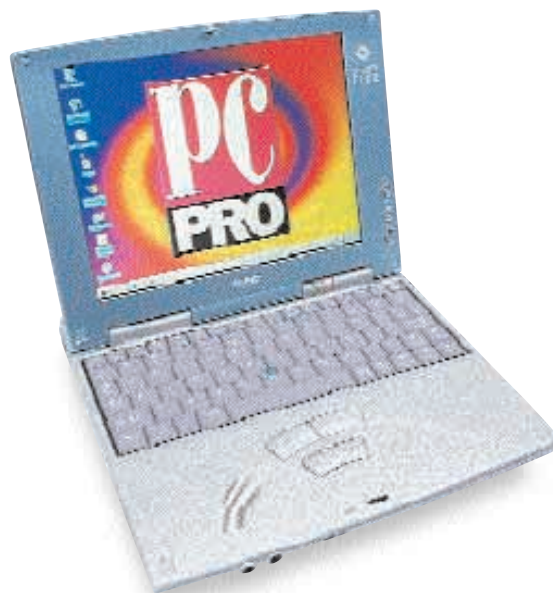
The reduced brightness didn't help the TravelMate much in our demanding battery rundown test – a time of 93 minutes was nothing special in this Labs. Thankfully, this increased when we reduced our demands to more real-world levels, with the 364EV reversing its fortunes and lasting for the longest time – over three and a half hours.

The difference in times is largely due to the processor's power demands. Although the 1.2GHz Pentium III-M is a genuine mobile chip, and drops down to 866MHz on battery power, when used to its fullest it still consumes more energy than the ULV (ultra low voltage) chips we see elsewhere. If and when you do need the extra power, the 364EV won't disappoint, partially thanks to 512Mb of RAM. With this in place, it scored 3.22 in our benchmarks, a whisker away from Dell's Latitude.

This high specification is a reflection of the 364EV's top-of-the-range status, and it's no surprise to see a large, 30Gb hard disk accompanied by an external combo DVD/CD-RW drive. The writing and re-writing functions are particularly useful – note that there's no video out for the DVD anyway. Acer combines the optical drive with the floppy drive in one single unit, weighing 850g.

So there's lots to like about the TravelMate – and we haven't even mentioned the FireWire connector, integrated smart card reader for added security and integrated 802.11b. In fact, the Acer TravelMate 364EV posed a real threat to the award winners; but for the high price, it may well have been a winner itself.

results	OVERALL	○○○○○○
	PERFORMANCE	○○○○○○
	FEATURES	○○○○○○
	VALUE FOR MONEY	○○○○○●



Casio Cassiopeia Fiva MPC-205E

verdict The keyboard is this notebook's biggest problem, but it does have excellent battery life, especially with the larger battery.
price £1,349 (£1,585 inc VAT) **supplier** Paradigm 01235 750602

The MPC-205E immediately qualifies as the most unusual ultra portable in this Labs. Not only does it weigh around the same as a bag of sugar – it tipped our scales at 1.05kg – it's also incredibly small. With a width of 220mm and depth of 193mm, you'll have difficulty even finding it in a briefcase.

Another factor that separates the Cassiopeia out from the crowd is its processor. Casio snubs Intel in favour of upstart Transmeta, with a Crusoe TM5600 in place. The Crusoe was designed with power conservation in mind, partially due to some instructions being processed in software rather than hardware; for full details, see www.transmeta.com

The Crusoe was never intended to match Intel's Pentium III chips for speed, but we were a little surprised at just how slow the Fiva was. Its score of 0.79 was disappointing, perhaps due to the combination of just 96Mb of RAM and Windows ME, which has never been famed as a fast OS. The Fiva even felt slow when loading common apps like Word and Excel, although once you start typing there's no visible lag.

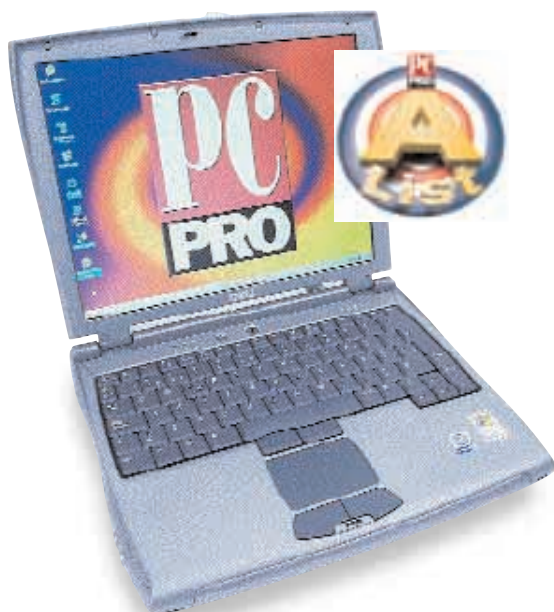
And a second's wait in opening Word would be a small price to pay if you could carry on working for the nine hours Casio claims, though this refers to the larger, optional battery (£143), which adds 150g to the unit's weight; the claim is halved for the standard battery. In our intensive rundown tests, the MPC-205E lasted for 115 minutes before giving up – compared to 170 minutes from the ThinkPad – and the long-life battery provided 213 minutes of life.

In order to more accurately measure how long the Fiva would last with less intensive use, we used Casio's Mobile Cockpit II software, a graphical interface that allows you to set the power mode to Economy. With this in place, and just a timer running in the background, the MPC-205E lasted for three hours in our tests with the normal battery, and a stunning six hours with the long-life unit.

But the problem with this notebook stems from its size: the keyboard is just too annoying. Each button is difficult to hit, so too much of that time you've gained will be used to correct typing errors. What's more, this notebook is too expensive – apart from the small form factor and great battery life, you're getting little for £1,349. For us to recommend this unit, it needs a better keyboard and a lower price.

results	OVERALL	○○○○○○
	PERFORMANCE	○○○○○○
	FEATURES	○○○○○○
	VALUE FOR MONEY	○○○○○●





Dell Latitude C400

verdict Not the lightest or most stylish notebook, but great performance and a good keyboard make it ideal for heavy usage.
price £1,399 (£1,644 inc VAT) **supplier** Dell 0870 152 4647



Dell takes an aggressive stance when it comes to pricing its notebooks, and it's no surprise that despite including a 1.2GHz Pentium III-M processor and 256Mb of RAM, the C400 costs a very reasonable £1,399. Only Acer could beat this specification, but its machine costs £450 more. One obvious use for this much power is video editing, and it's surprising that Dell doesn't include a FireWire port here. There's an infrared port, but the single USB port is slightly disappointing and, despite the chassis being thick enough to provide two Type II PC Card slots, there's just one.

We're not huge fans of the Latitude's styling either. The C400 might be the most stylish notebook in Dell's range, but it's no match for the Sharp Muramasa or Toshiba's Portégé 2000. Also beware this notebook's weight and size: at 1.7kg and with a width of 289mm, it's almost a match for the Portégé 4000, which includes a DVD-ROM drive.

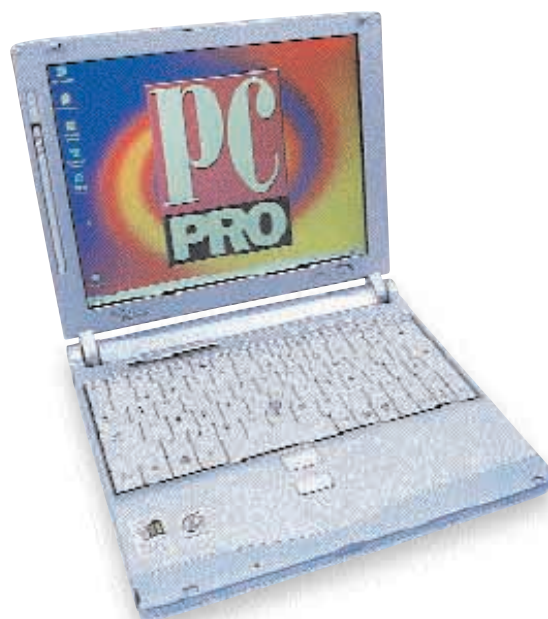
But from thereon in, it's difficult to find fault with the C400. Although it didn't fare exceptionally well in our intensive battery rundown tests, where the processor and backlight are pushed to their mobile maximum, it lasted for over three and a half hours in our less demanding test.

Both the keyboard and TFT gained accolades from our panel of judges, with the TFT being rated in first place thanks to its excellent contrast, bright image and even backlighting. The keyboard's greatest strength is its layout, with large keys in all the right places, while the dual trackpoint/trackpad is a very useful feature.

With an integrated antenna, adding 802.11b is possible just by requesting a mini-PCI card at time of purchase for £79 – a V.92 modem and 10/100 network adaptor are included as standard. Dell doesn't go wild with the storage specification, opting for a 20Gb hard disk matched by a 24-speed CD-ROM. The latter fits via the bundled external media bay, and Dell supplies a floppy drive that fits in the same bay, although not simultaneously.

The final touch is one that business users will appreciate: a three-year, on-site, next-business-day warranty. This combined with the great performance, low price and excellent ergonomics earn the Dell Latitude C400 the Labs Winner award.

PC PRO	OVERALL	*****
	PERFORMANCE	*****
	FEATURES	****
	VALUE FOR MONEY	*****



Fujitsu Siemens LifeBook B-2562

verdict The touchscreen TFT marks the LifeBook out from the crowd, but there's little else here to lift it into awards territory.
price £1,325 (£1,557 inc VAT) **supplier** FH Brown 01282 463222

Whether you want to buy the LifeBook B-2562 boils down to one simple question: do you have any need for a touchscreen TFT? Perhaps your work involves lots of pull-down menus, perhaps you want to draw on screen using a pen, or perhaps you have a rabid hatred of traditional notebook pointing devices.

Unfortunately, the touchscreen coating means the screen doesn't look as sharp or bright as the rest of the TFTs here – that's why our panel of judges gave it the lowest mark on test. Otherwise, the feature is nicely executed, with the pen held in place next to the screen when not in use.

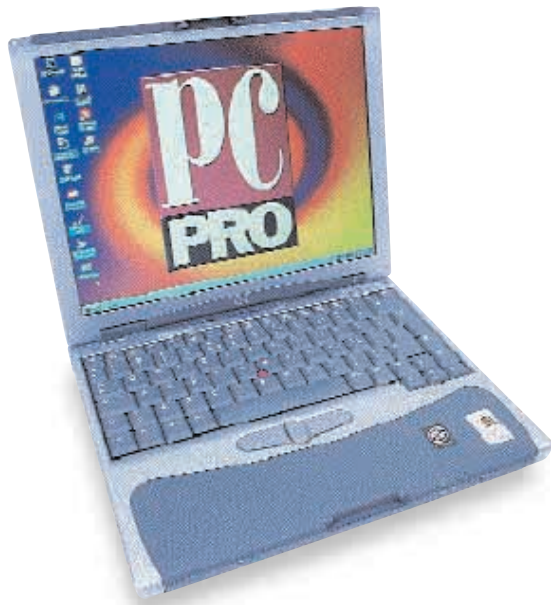
There are a number of other features unique to the LifeBook this month. For starters, there's an LCD panel giving information about the system, such as battery life. There are also four shortcut buttons for accessing your favourite programs, and these can even be used as a PIN-like security device to stop unauthorised users accessing the machine. And we appreciated the two Type II PC Card slots – surprising considering the LifeBook's 1.35kg weight.

However, we're not the greatest fans of the B-2562's keyboard. Quite apart from a lack of travel on the keys, the full stop, right-Shift and apostrophe buttons are all too small, making touch-typing something of a chore. The LifeBook also lost some marks for build quality, with flex on the palmrest (and thus potential damage to the hard disk underneath) one cause for concern, and it's also a shame that the rubberised port covers aren't physically attached to the notebook, so will quickly be lost. But then again, most vendors don't provide covers at all.

Fujitsu Siemens deserves credit for integrating two USB ports, an infrared port and a VGA out on the unit itself; this price also includes a port replicator, which offers a PS/2, serial and parallel port, together with a LAN passthrough and VGA out. FH Brown can supply a larger battery for £90, and our tests suggest this is well worth buying. The LifeBook only lasted for 86 minutes in our intensive rundown test, and this stretched to just 115 minutes under standard usage.

It was also an unexceptional performer in our benchmarks, with the 700MHz Pentium III ULV processor and 128Mb of RAM combining for a score of 1.78. This brings us back to our original point: this notebook is only worth buying if you want a touchscreen TFT.

PC PRO	OVERALL	*****
	PERFORMANCE	*****
	FEATURES	*****
	VALUE FOR MONEY	*****



HP OmniBook 500

verdict A low price makes the OmniBook 500 something of a bargain, especially as it includes a docking station.

price £1,232 (£1,448 inc VAT) **supplier** WStore 01252 745000



The title 'OmniBook 500' hides a quite amazing quantity of products, with WStore alone stocking 41 variations of this notebook at time of going to press. You can choose from different chips, different operating systems, different hard disk sizes – you name it, you can almost certainly get it. In its infinite wisdom, HP sent us the F3482W, a 700MHz Pentium III-equipped version with 128Mb of RAM, a 20Gb hard disk and Windows 98 SE. However, trying to find the F3482W is rather difficult, so we recommend you choose the F3482K – exactly the same configuration, except with Windows 2000 Professional. It also has the advantage of being newer stock, so the price is more competitive.

Another bonus with this particular configuration is the docking station, complete with a 24-speed CD-ROM and floppy drive. This adds PS/2 ports for a keyboard and mouse, an S-Video out, a LAN passthrough, parallel and serial ports, plus two extra USB ports – there's even a pair of stereo speakers on the front, together with CD playing controls. As with the Samsung, the docking station makes hooking up to a network or peripherals much simpler; IT managers will also be pleased to see TopTools in place. If you go further up the range, you'll find features like integrated 802.11b, but expect to pay for the privilege.

Standard with all OmniBook 500 models is the two-tone grey/metallic grey chassis; it may sound dull, but actually has an understated style. The OmniBook also feels well made, with our only concern being the catch for keeping the lid locked down. This is also slightly awkward to use, as you have to push up while pressing the catch in.

Our panel of judges all liked the keyboard, with the highlight being its layout – touch typists won't have trouble here. The TFT screen was also considered one of the best, although the Dell's even backlighting and larger viewing angles pushed it ahead of the rest.

The OmniBook's battery life wasn't particularly remarkable, fading after just 93 minutes of intensive use; in our less demanding test it kept on going for just under three hours. It's also not the lightest ultra portable at 1.65kg. But what's truly amazing about this particular model is the price. If you've got £1,200 to spend and want a well-equipped, reasonably light, compact notebook, the F3482K is an excellent buy.

	OVERALL	○○○○○○
	PERFORMANCE	○○○○○○
	FEATURES	○○○○○○
	VALUE FOR MONEY	○○○○○○

results



IBM ThinkPad X22

verdict It may not be the final word in style, but it offers good 3D acceleration, wireless networking and a great keyboard.

price £1,689 (£1,985 inc VAT) **supplier** IBM 0800 169 1458



The X22 provoked wildly differing reactions from our judges. Some liked the all-black design, some felt ambivalent, and one particular observer expressed her distaste with a simple 'yuck'. But the ThinkPad is solidly built and, according to hundreds of readers in our annual survey, you can expect great reliability as well.

When it comes to pure usability, the X22 can't be faulted. Take the keyboard. Despite the reduced width, there are no visible sacrifices on either key positioning or size, and the keys' tactile feedback makes it a real pleasure to use. The TFT is again unparalleled when the notebook is plugged into the mains, but IBM forces the brightness levels to drop when on battery power. This makes the screen look more mediocre, but it remains sharp.

Of course, the benefit of this is greater battery life, and the X22 stormed to the top of our intensive rundown charts with an amazing average of almost three hours, despite the processor running at full tilt. This aspect of the notebook is particularly useful as IBM integrates 802.11b, which places extra demands on the battery.

When it comes to hardware, there's plenty more to like here. It may not be the fastest in 2D, with the 800MHz Pentium III-M processor and 128Mb of RAM steering it into mid-table respectability in our tests, but the ATI Mobility Radeon graphics chip provides the fastest acceleration in 3D of all the ultra portables here. In Quake III, it managed a highly respectable 30.4 frames per second at 1,024 × 768.

The 20Gb hard disk is nothing exceptional in this Labs, but the X22 is one of only two machines boasting a Type II CompactFlash slot – perfect for IBM's own Microdrive. However, be prepared to spend if you want an IBM optical drive. You can either choose simple external drives, such as a USB CD-ROM for £178, or buy an UltraBase X2 docking station at £142, and then more (from £90) for the Ultrabay drives themselves.

In this Labs, more than any other, we can't say 'buy this for your every need', because you may prefer the style and sleekness of Sharp's Muramasa, the built-in DVD of the Portégé 4000 or even the Fujitsu Siemens' touchscreen.

But the battery life, fantastic keyboard and other features make the ThinkPad X22 a great alternative to the Dell.

	OVERALL	○○○○○○
	PERFORMANCE	○○○○○○
	FEATURES	○○○○○○
	VALUE FOR MONEY	○○○○○○

results





Samsung Q10 TXC 866

verdict The Q10 is the undoubted winner in terms of supplied hardware, but others beat it for both style and battery life.

price £1,616 (£1,899 inc VAT) **supplier** Samsung 0800 521652

Samsung believes that mobile executives like their ultra portables to pack a punch, and the Q10 TXC 866 has enough to make Lennox Lewis look nervous. Although it can't match the 1.2GHz Pentium III-M chip inside Dell's Latitude, the 866MHz processor here, coupled with 256Mb of PC133 SDRAM, provides plenty of power.

But it's the sheer range of features that makes the Q10 a machine to be reckoned with. For use on its travels, there's a powered FireWire port to accompany the single PC Card and two USB ports, and sat in the docking station (which is generously bundled) you have access to a combo DVD/CD-RW and floppy drive. This is a much neater solution than Acer's external device, as you can permanently attach a network cable, monitor, printer and more – ideal if you wish to make the Q10 your main PC. Another very useful inclusion is integrated 802.11b for access to wireless networks.

Samsung's generosity doesn't end there. It bundles a 350,000-pixel USB digital camera for basic snaps, and this also records video – although you'll need an external microphone for audio. What's more, along with the standard 3,600mAH battery, it bundles a second 7,800mAH unit. This increases the Q10's weight from 1.35kg to 1.6kg and its depth from 234mm to 278mm, but in return the battery life more than doubles. In our vigorous test, the standard unit lasted for 93 minutes, and the high-capacity for 213 minutes. If you're just tapping away in Word, you can expect around six hours from the two combined.

So far, so good, but the Q10 didn't stun our panel of judges when it came to build quality. This was partially due to the silver plastic finish, which doesn't offer the same level of protection against hard knocks as metal alloy. The same finish cost this notebook in the style ratings. Our judges weren't overly fond of the TFT panel either, which looks washed out compared to its rivals. To round things off, the keyboard was too rattly for our taste, while the right-Shift key is in an annoying position for touch typists.

Unfortunately for Samsung, these problems were enough to wreck its chances for an award; it's Dell's strong performance in each of those categories that ultimately won it this Labs. But there's no denying that the Q10 includes plenty of hardware for your money.

PPM	OVERALL	○○○○○○
	PERFORMANCE	○○○○○○
	FEATURES	○○○○○○
	VALUE FOR MONEY	○○○○○○

results


Sharp Muramasa PC-UM10

verdict It's sleek, gorgeous and has a respectable battery life. If you want an ultra, ultra-portable notebook, buy the Muramasa.

price £1,349 (£1,585 inc VAT) **supplier** dabs.com 0800 138 5182

If this Labs was decided by style alone, the Muramasa would be the winner – only the Portégé 2000 offers any serious competition. From its incredible 20mm sleekness to the way the keyboard raises itself when you open the lid, from the brushed aluminium and magnesium alloy chassis to the low 1.3kg weight, the PC-UM10 stands out from this month's crowd.

Of course, there's no room in such a compact notebook for any frills, and Sharp concentrates on the basics here. Accompanying the 600MHz ULV (ultra low voltage) Pentium III processor is a non-expandable 128Mb of RAM, a 20Gb hard disk, and that's it. There's an integrated modem and network adaptor, but no extras like 802.11b or Bluetooth.

The number of ports has also been cut down, with just one USB port and one Type II PC Card slot; the VGA out is available via the bundled adaptor, while infrared is jettisoned altogether. If you're intending to use this as your main PC, we recommend you buy the optional port bar (£97) together with the CD-ROM (£153) at time of purchase.

The minimalist specification means the Muramasa is never going to amaze with its performance, but a score of 1.69 in our benchmarks is respectable enough. The ULV processor also helped the Muramasa to eke out 107 minutes in our intensive battery test, which translates into a very respectable two and a half hours in general use.

Our panel of judges had mixed feelings about this notebook's screen, with the Black TFT – to use Sharp's marketing term – offering only average viewing angles and contrast. The 12.1in diagonal is generous considering this machine's weight, however, so even after staring at the screen for an hour you won't feel any eyestrain. The keyboard again came in for some criticism from our judges, partially because the cursor keys aren't separated out, but we found it comfortable in use.

Unfortunately, the Sharp's sleek design and low weight weren't enough to counteract its lack of features in this Labs, despite a reasonable price, although remember to add on the extra £153 for a CD-ROM drive. We would also have preferred Windows XP Professional to Windows 2000. But there's no denying the Muramasa's great styling, and if you don't need the Dell's features, performance or extra battery life, the PC-UM10 is a great choice.

PPM	OVERALL	○○○○○○
	PERFORMANCE	○○○○○○
	FEATURES	○○○○○○
	VALUE FOR MONEY	○○○○○○

results




Toshiba Portégé 2000

verdict An incredibly thin and light notebook that looks fantastic, but it's let down by a lack of battery life and a high price.

price £1,595 (£1,874 inc VAT) **supplier** dabs.com 0800 138 5182

The Portégé 2000, together with Sharp's Muramasa, signals a new era in the realm of ultra portables, with dual emphasis placed on 'light' and 'thin'. The stats tell just half the story, with the 2000's 17mm height and 1.15kg weight only brought home when you actually lift it up – amazing is the only word. If you want your notebook to attract covetous glances, the Portégé 2000 again fits the bill. The brushed metal alloy on the outside is contrasted by the all-black interior, with the silver touchpad adding a splash of contrast.

Unlike the Muramasa, Toshiba doesn't lift the keyboard from the chassis base for extra travel, giving the keystroke a clipped feel, but it's still pleasant enough to use, thanks in part to the machine's width, which gives plenty of space for the keys. The screen forms the other half of a notebook's ergonomic equation, and we've few complaints about the Portégé 2000's. True, it can't match the Dell for contrast, but it boasts good viewing angles and is evenly lit.

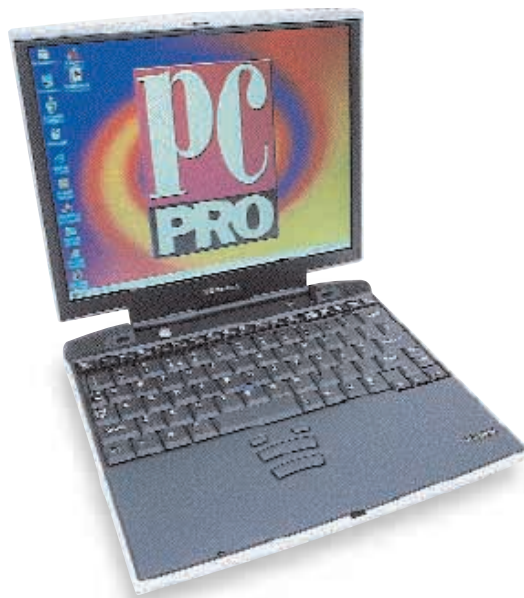
Toshiba claims the screen uses less power than ever before, so we were interested to see how long the Portégé 2000 lasted in our battery tests. The answer is not terribly well: when pushed to the max, it lasted for a mere 63 minutes, while more sedate usage only extended its life to 105 minutes. Thank goodness Toshiba will be bundling a second, high-capacity battery as standard.

The ultra low-voltage processor was another factor in this machine's long life, and it beats away at 750MHz on full power. This, together with a generous 256Mb of RAM, helped the Portégé to 1.95 in our benchmarks.

In an ultra portable, features are arguably more important than speed, and the Portégé 2000's secret weapon is 802.11b. You can add Bluetooth via a PC Card (there's one spare slot), and there are even plans to release a SecureDigital Bluetooth adaptor in the summer – as with the 4000, a slot is built in. It's also good to see the VGA out included here, and it's kept company by an infrared and two USB ports.

What's not so good to see is the price. That £1,595 doesn't include a floppy drive or optical drive, and you'll have to buy generic USB or PC Card drives if you want them. The poor value for money together with poor battery life prevent the Portégé 2000 from winning this Labs, but the hardware itself is simply phenomenal.

RESULTS	OVERALL	○○○○○○
	PERFORMANCE	○○○○○○
	FEATURES	○○○○○○
	VALUE FOR MONEY	○○○○○○



Toshiba Portégé 4000

verdict If you want an integrated DVD-ROM while keeping the weight to 2kg, it's a fine but expensive choice.

price £1,499 (£1,761 inc VAT) **supplier** dabs.com 0800 138 5182

After the anorexic Portégé 2000, Toshiba goes to the other extreme of ultra portable with the 4000. It's the heaviest notebook on test at 2kg, but is unique here in integrating a DVD-ROM drive – replacing this with the supplied weight saver reduces the weight to 1.75kg. Toshiba's proud boast is that you can watch a DVD movie on the move, and we can confirm that this is indeed the case – we managed just under two hours of movie-watching before the gauge dropped to 5 per cent.

Don't expect crystal-clear pictures, though, as the display showed obvious artefacts and occasionally dropped frames. But, uniquely this month, the speakers are high quality enough to enjoy both the movies and music. The only surprise is the lack of a video output. At least the Portégé offers two Type II PC Card slots rather than one, and the SD slot is another potentially useful inclusion.

The long battery life is symptomatic of Toshiba's excellent power management features, which are given a helping hand by the 750MHz ULV Pentium III processor. The Portégé 4000 was a star in both our demanding and undemanding battery tests, lasting 154 minutes and 211 minutes respectively. With just 128Mb of RAM, however, the Portégé shined rather less in our performance benchmarks, scoring just 1.76.

Of course, not many people need huge amounts processing power with their ultra portables, and Toshiba will argue that having Bluetooth and 802.11b integrated is more important – and we'd tend to agree. The Portégé boasts an unusual design to accompany these unusual features, with an all-black interior and an eye-catching silver exterior. Our judges had mixed feelings about the 4000's looks, but the majority liked it.

We also liked the keyboard, with a nice feel matched by large keys and a sensible layout – only the spacebar has suffered in its sizing. The TFT is another high-quality affair; although its viewing angles are nothing special, it's evenly lit and pleasant to work on.

So in terms of hardware and design, there's actually very little to criticise the Portégé 4000 for. But it does have a problem: value for money. Last month, we saw the Hi-Grade Notino 2200-1GHz (see *Labs*, issue 90, p80) that lacked refined features and design, but included a DVD-ROM and 1GHz Pentium III processor in an ultra-portable chassis weighing 1.9kg – and Hi-Grade charges just £999.

RESULTS	OVERALL	○○○○○○
	PERFORMANCE	○○○○○○
	FEATURES	○○○○○○
	VALUE FOR MONEY	○○○○○○