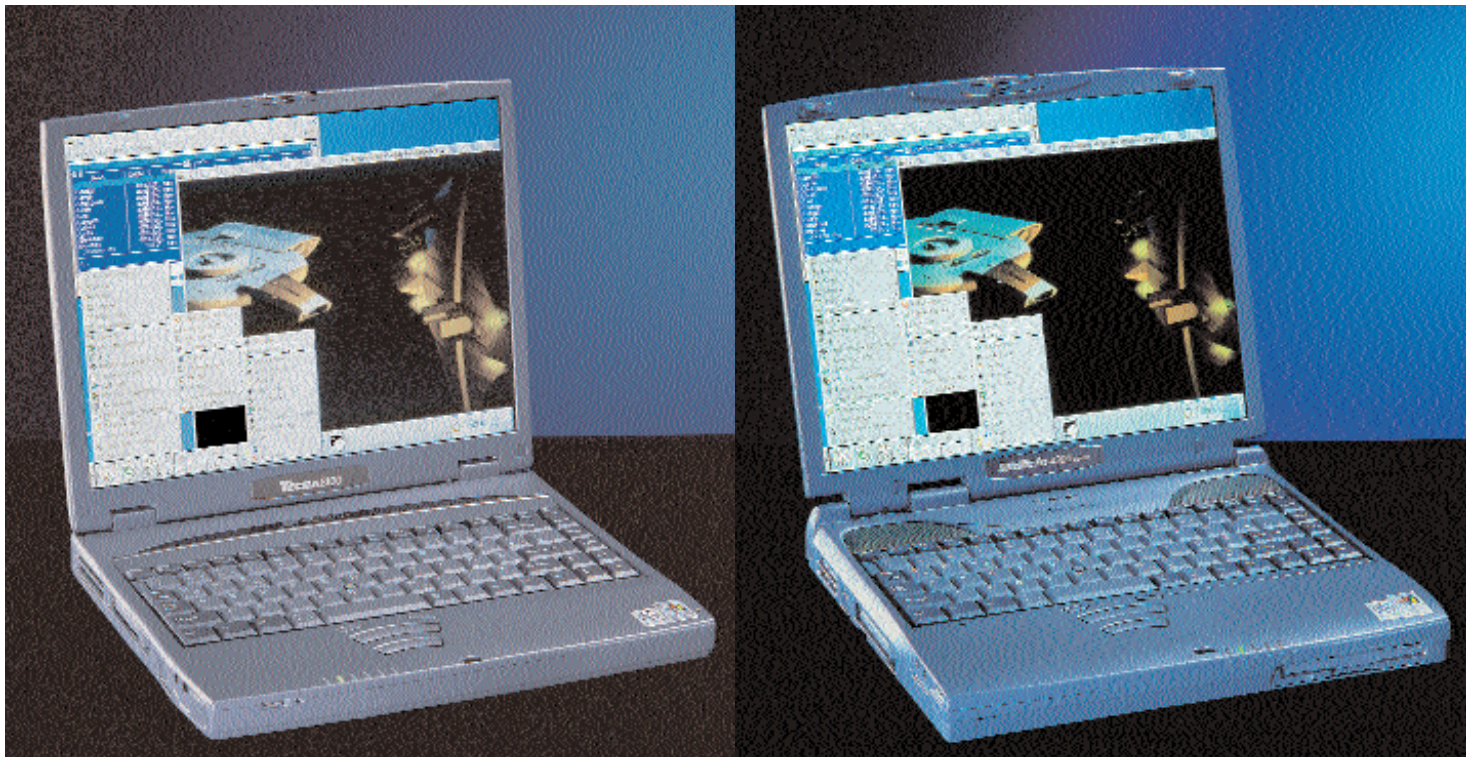


TOSHIBA TECRA 8100 AND SATELLITE PRO 4300



Toshiba is known for its robust and well manufactured notebooks. For this test we borrowed a machine from the top-of-the-range Tecra series and one from the company's Satellite Pro range.

We'll start with the little brother of the big bold Tecra – the Satellite Pro 4300. This comes into the high-end notebook category and is designed to replace a desktop PC. Accordingly, the disk drive and 8x DVD-ROM are permanently installed.

The plastic case is conventional in design but we would have liked an Ethernet connector as well as a line output from the sound card. However, Toshiba has added a reset button which is recessed into the case and has to be pressed using a pointed object such as a pen. The grille protection on the side air vent seemed a little delicate – it's merely a plastic cross just under a millimetre thick. Even a forgotten biro could easily penetrate it during transport in a carrying bag.

You won't need external speakers because two excellent and large loudspeakers have been installed in the Satellite Pro directly above the keyboard. These can make a fair old din if you want them to.

Toshiba Tecra 8100

The design of the Toshiba Tecra 8100 is, apart from the keyboard and mouse which are identical to the Satellite Pro, completely different. As an ultraportable device it is noticeably flatter but on the other hand it only has one drive slot. The DVD-ROM located there is identical to that of the Satellite Pro and in addition the notebook also comes with an external housing for the disk drive which is attached to a special port beneath the CardBus slots. Unlike its little brother, the loudspeakers are located on the left and right on the notebook at the front.

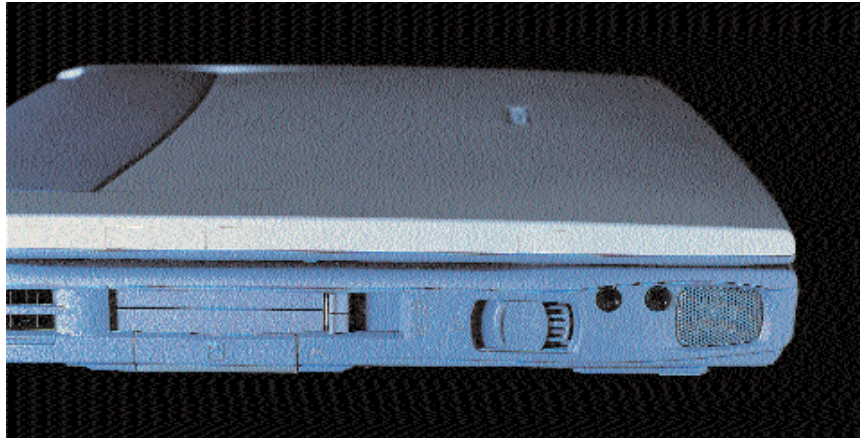
Whistle while you work

The speakers are just as loud but this causes its own problems – unlike the Satellite Pro, Toshiba has installed a microphone in the Tecra and this is also at front right, about one millimetre above the right loudspeaker. If the Tecra is allowed to run without any intervention, there is no feedback. But if an arm or hand covers the microphone slightly, there is a piercing whistle in the 8-kHz range.

This may sound petty but the Tecra costs around half the price of a small car so we expect more care in the design with respect to the microphone. Evidence this can be done better is proved by the HP Omnibook XE3 where the microphone sits centrally over the keyboard, with the loudspeakers in the front of the device. We therefore recommend simply sticking a headphone jack into the socket of the external microphone until the microphone channel has been turned down with a mixer program such as aumix or kmix.

Best Keyboard

Toshiba deserves praise for the unusual keyboard on both devices reviewed here – while the space bar is comparatively small, the cursor keys and [Ctrl], [Alt] and [Fn] are very large and easier to hit. Toshiba has moved the 'Windows' keys to the top right corner. This is where they should be because they're therefore out of the way. In all, we liked the Toshiba keyboards best, including the typing feel. The



application of the slanted [B] key on the Compaq Armada would have been the icing on the cake here and perhaps the Toshiba engineers might take a closer look at this trick.

The only real problem was that we constantly and inexplicably kept hitting the [Caps] key whilst typing – perhaps a general problem with keys not being quite where we expect them to be. However, a manual hack to solve this is easy. One can enter the following two lines into the keyboard table which is usually *us.map.gz*:

```
keycode 58 = Shift
control keycode 58 = Caps_Lock
```

This turns the [Caps] key into a normal [Shift] key, but by pressing [Ctrl]+ [Caps] the caps-lock function is activated. Due to lack of time we were unable to discover how to adjust the Ctrl-Caps function under X but the following commands turn the [Caps] at least into another [Shift] key:

```
xmodmap -e "remove Lock = Caps_Lock"
xmodmap -e "add Shift = Caps_Lock"
```

Linux times two

Apart from the variation in the processor clock frequency and the bigger hard disk in the Tecra, both devices have almost identical hardware, which is why we are describing them together.

The first thing to strike us was the unusually fast BIOS POST procedure. Scarcely had the Toshiba logo been displayed than LILO was up and running and then booted the installation system from DVD. Installation itself at first went uneventfully. Toshiba had even left space for our Linux system – Windows 2000 or Windows 98 respectively were accommodated in the first 5 GB. However, when in the final installation steps we wanted to select the X-server, YaST2 only offered us the XF86_VGA16 with 640x480 pixels.

The reason is that the Toshiba devices, like HP and Wortmann, use an S3 Savage MX (86C270-294) chipset and this cannot be activated with the XF86_SVGA server. You should therefore first completely skip the automated X-installation.

Like in a rocket silo – the on/off switch of the Tecra 8100 is secured with a sliding flap which prevents accidental use.

Toshiba Tecra 8100

- (+) very good processing
- (+) hardware almost fully supported
- (-) microphone-loudspeaker feedback
- (-) Irda-Port could not be installed
- (-) dearest device in the test

Toshiba Satellite Pro 4300

- (+) very good processing
- (+) hardware almost fully supported
- (-) no Ethernet connection
- (-) Irda-Port could not be installed



Not quite so obvious is the little catch under the switch on the Satellite Pro 4300.

Further along the installation line and the lack of an Ethernet card left just the configuration of the Yamaha YMF-744B, which went off smoothly. Like most of the other devices in the test the Toshiba's also have a Lucent WinModem, which as described above can be activated manually without demur.

X11 Installation

Despite documentation which says otherwise, in XFree86 4.0 the S3 Savage MX chipset is not supported by the XF86_SVGA server. What's needed is the X-server adapted specially for S3 cards by Tim Roberts, which can be obtained from <http://www.probo.com/timr/savagemx.html>. This is simply installed under `/usr/X11R6/bin`.

But SaX could not cope with the patched server so we used the XF86Setup which is tried and tested for notebooks. Since this is no longer included in SuSE 7.0, simply grab the package `xfsetup.rpm` from the series `x1` of SuSE 6.4 via your favourite FTP server. You can ignore any warnings at the start about incomplete documentation. In the selection of graphics cards you simply change to the more detailed set-up and enter the SVGA server direct. For the monitor it is best to choose *High-Frequency SVGA and 1024x768 @ 70 Hz*. But you can also simply set the corresponding link manually under `/var/X11R6/bin/X` and use `XF86Config` from our FTP server.

A notebook is not necessarily the right platform for 3D games but for the two Toshiba's a hardware accelerated 3D-server is offered from Xi Graphics. At <ftp://ftp.xig.com/pub/3Ddemos> you can obtain the X-server demos with a ten-minute time limit for both models. Using this the Q3-demo runs and delivers 22 or 19.7 fps respectively. The full version costs 129 dollars but with the notebooks device costing just around £2,500 or over £3,750 respectively, this should not be an issue!

Problematic Irda

Getting the infrared port up and running was a real headache. According to *findchip* the *irda-utils* in the Tecra 8100 is an SMC chip, while it was unable to determine that of the Satellite Pro. We anticipated Toshiba's own-make FIR chips being installed in both. Whatever the case may be, neither the *smc-ircc*- nor the *toshoboe* module could be made to run.

Since it was also impossible to activate an emulation as serial interface we gave up after two days and rated the IR port in the style of the Linux laptops sites as "unsupported".

TV output

There were no problems with the composite TV output of both devices – 640x480 and 800x600 were displayed without demur although at 1024x768 only the top left corner is displayed. The signal format can be changed in the BIOS, something which is activated by pressing the [Esc] key when switching on. Unfortunately we were unable to achieve simultaneous operation of TV and display and all in all, the TV picture was not great – the first character of every line disappeared on the text console and the whole picture is too far towards the top right of the screen.

Another problem occurred when switching from the graphical interface to text mode which involved changing to the internal display and then to the TV set, in order to get a stationary image again.

Conclusion

We very much liked the keyboards of both devices. One very good point is that there are accelerated X-servers for both notebooks and all in all the graphics chipsets may set any new benchmark records but they are adequate for short gaming experiences. The processing power in both devices is excellent and the hardware – apart from the Irda ports anyway – we found to be fully supported.

The big drawback is the price. Both notebooks are far more expensive than their counterparts and, we reckon, verge on unaffordable unless you have very deep pockets indeed. No only that but we have complaints that we shouldn't have with machines of this calibre, such as the quality of both displays – the lower corners of the image show a markedly poorer brightness than the rest of the display.

It is also interesting that Toshiba has installed its own SD-RAMS in the Tecra 8100 but the hard disk is bought in from competitor IBM despite Toshiba itself being one of the biggest hard disk manufacturers in the notebook sector. Considering the two notebooks are similarly specified, the Satellite Pro 4300 would be our choice but the Tecra is simply too expensive to warrant consideration. ■