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Hardware Review

Bargain Priced, Workstation-class Pentium Notebooks

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As in so many other Wintel matters, figuring out the Wintel end of notebook-format, workstation-class computers involves understanding the very complex Wintel market. Intel's current workstation-class processor, the Pentium II, has yet to come to notebooks. Should you wait for it, or are current best-of-breed Wintel offerings based on Pentium (P5) architecture up to the mark?

To find out, I spent some time with a Sceptre Soundx 5500. Built around an Intel Pentium/MMX 233MHz processor, the unit supplied for evaluation came equipped with a 1.63mb hard disk; as is the case for most notebooks, changing the drive to a more capacious version suited to CAD and other graphics applications is a matter of sliding it in. Otherwise, this system, from the same company that builds for companies such as Hewlett-Packard (HP's high-end Omnibook 3000 is actually the same system, in fact), was clearly a high-performance system.

For example, the Soundx 5500 sports a 13"-plus TFT display panel, supporting a very readable 1024x768 pixel resolution. [This is not surprising; Sceptre's parent company in Taiwan is also a manufacturer of monitors, including flat-panel models.]

Like desktop and -side workstation-class Wintel machines the Soundx 5500 sports a universal serial bus (USB) connector, and comes with the proper version of Microsoft Windows 95 to support it.

I did not have the opportunity to test this system for WinNT (a common workstation OS choice) compatibility; I am less than thrilled by that remarkably fussy part of the Microsoft line-up in any case, and recommend against it unless it's necessary and pre-installed by the system vendor.

However, this notebook appears sufficiently industry-standard that a WinNT installation should pose little problem.

Heat dissipation, a serious matter in high-end notebook computers, seems to have been managed very neatly. Sceptre includes a note about keeping the air-holes in the notebook base clear so air can circulate; this was not hard to do. I even used the machine on my lap, and found that it never got noticeably warmer (in fact, was probably a bit cooler) than earlier-generation 486 and Pentium notebooks.

I did experience some problems: The numeric "keypad" (that is, redefining standard keys for numeric input) use was far from intuitive. I had to hit numlock before using the Fn key to hit number keys. At one point, I had hit the Alt key as well, and things got locked in rather strangely; persistence finally got me back to status quo ante, but I am not quite sure why.... Then too, Sceptre's parent company, in concert with many other notebook makers, has adopted a touchpad mounted on a wide wrist-rest area "south" of the keyboard as the built-in pointer. Sorry, guys; no cigar on that from me. I find touch-pads finicky (though this one was substantially less so than those I have encountered on, e. g., Acer-built Extensa notebooks). I am a track-point fan, having found these generally more positive devices. This is a matter of taste it is also practical (the way I type, my thumb keeps hitting the touch pad, and moving the cursor to strange places when I am writing). In

any case, I'd suggest carrying a small-format digitizing tablet and stylus, for a whole lot of reasons (see sidebar).

The manual sent with the system was clearly intended for an earlier model; a couple of the system specifications simply didn't match the box I had. Most of the how-to stuff was right, though, and overall, the manual was well and clearly written. I had no difficulty getting answers to questions. The system was fast in the only way that really matters: front-of-screen performance. For all ordinary operations - writing this piece, for example - speed was well up to Pentium II levels.

Some graphics applications ran more slowly. Testing a couple of graphics programs showed the limits of the P5 architecture, even with MMX. Complex, fully rendered images in these programs took noticeably longer to load. Moving them was similarly slower than on the Intergraph TD225 Pentium II system with the Number Nine Revolution 3D. Our timing tests suggests speeds around 25-30 percent slower for the Soundx 5500 in these applications.

This is not unexpected: Overall graphics-subsystem performance was about 50 percent in all categories, when compared against the Pentium II TD225/#Nine bench system, running at comparable resolutions and color-depth. On the other hand, my preferred sketching and presentation applications did not crawl. Micrografx Designer and PowerPoint, for example, popped up even complex images with virtually no speed degradation. For most likely field uses - client presentations, on-site modification of developing designs, portable workspace for folks constantly on the go - performance proved entirely acceptable.

If you get the sense I liked this system, you gauge my reaction correctly. I seem to get new notebooks every two years, and generally, I have found they are good, but not enough to wean me from my desktop systems. This Sceptre Soundx 5500 was as useful as the latest of the bench systems, and as much fun to use. The larger screen size, with serious screen real estate was no small part of that.

So, do you buy a late-generation Pentium notebook now, or do you wait for the Pentium II systems to come to market? Most of the elements likely to be a part of such a Pentium II system are already available - the larger screen with greater resolution and color depth, the memory (32mb in this case), plenty of hard disk space. No special reason to wait there....

The Sceptre Soundx 5500 appeared sufficiently rugged for field use; I was impressed with the fit and finish, especially with the dockable CD-ROM drive (one worries about places where dust can get into these systems...). I also liked Sceptre's including a cable to hook in the removable floppy drive as an external device. This system certainly offered all the features expected of a portable workstation-class computer.

Prices for such Pentium-based notebooks are very attractive; there is an over-supply of systems in the channel. Systems in this class, from a variety of vendors, run between US\$3,000 and US\$4,000 - a third of the US\$10,000-US\$12,000 for a SPARC or HP RISC-based notebook-size systems.

On the other hand, most notebook vendors won't even talk about where they are with Pentium II designs. The folks at Sceptre (alert to these matters by virtue of being the sales organization of a major notebook maker) explained

that, while designs for such systems are on the drawing board, reliable systems are many months away, even assuming Intel was ready to start ramping up production of a notebook-ready Pentium II (also months away). When they come out, Pentium II systems will quickly eclipse Pentium systems for field use - but most applications will lag behind hardware for long enough that top-end Pentium-based systems will remain adequate for the next two to three years (by which time, 64bit processors will be in the pipeline, changing everything).

Circumstances vary, but there seems no great reason not to buy currently available high-end Pentium notebooks for field use. WinNT users want to be sure that OS is available and supported by the vendor or local reseller, but otherwise, Pentium notebooks appear to represent real value for graphics-using pros.

Portable Pointers

Notebook computers come with built-in pointers. The current fashion is for a trackpoint (essentially, a mini-joystick) or a touchpad. Each has pluses; each has proponents. Each also has negatives. In any case, neither is especially good in graphics applications.

I prefer a trackball; these pointers have largely disappeared from notebook computers, since they proved hard to keep clean. I have a left-over Microsoft portable trackball which sometimes finds its way into the bag; other "thumbballs" are similarly useful. A good mouse is also viable - generally not too large. Most of these devices plug into a PS/2 mouseport, and most notebooks come equipped to handle them.

Consider another option: the small-format (around 4"x5") digitizing tablet. I use a Calcomp UltraSlate, a smaller version of the tablet I have on my desk; I particularly like the Calcomp stylus with its three-button design. Other tablet vendors have similar products. These have been promoted mostly to artists, for whom larger format tablets are generally overkill.

Plug the tablet into the notebook's serial port, and install to take advantage of dual-pointer WinTab functionality. Use the notebook's built-in pointer for normal stuff, and the tablet with its stylus for detail work.

The value of a tablet in drawing is fairly obvious. Less obvious: A tablet is a better pointer for presentations. In PowerPoint, it is really super. Use right-button controls on the stylus to turn on the pen mode, and annotate on-screen "slide shows", or even switch to a blank screen for additional ad hoc information. If you do on-line conferences in a program like Microsoft Netmeeting, conversation may not be practical, but whiteboards are, and again, a stylus is more useful than a mouse or other pointer.

A small format tablet costs about US\$125., is about seven inches square and not more than three-eighths of an inch thick, is marvelously light and easily fits in a notebook computer bag.