Looking cool: an LCD gives real-time temperature information and more.

74fps; we suspect that this is in fact a CPU-limited score. Over to Doom 3 – at which most systems with decent graphics capabilities would score about 35fps – the White Cobra screams through at 98fps, leading to involuntary exclamations of amazement from our usually jaded Labs staff.

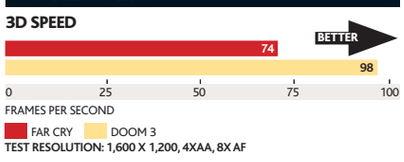
Because of the last-minute nature of this machine, it wasn't configured exactly as it will be when sold. So we refrained from running our usual real-world application benchmarks. As this review went to press, Scan was busy preparing a fully configured system on which to run our complete suite of tests. We'll bring you concrete figures next month.

THE FUTURE OF SLI

For now, SLI is of course confined completely to the high end and many will condemn it as a rich man's folly. At the moment that's certainly the case: it's a brand-new technology and you'll pay a premium to begin with. Added to that is higher manufacturing costs: the Asus board fitted to the White Cobra has a special multipin terminator card to select between either single or SLI graphics.

But it's tempting to consider nVidia's claim that two 6600 GT cards in SLI are as fast as a single 6800 Ultra – and cost less too. This brings the prospect of an easy and cost-effective upgrade path if and when SLI boards become the norm: just plonk another card in next to your existing one. And since the AGP interface isn't suitable for implementing the system, SLI is easily the most compelling reason yet for upgrading to PCI Express.

RESULTS



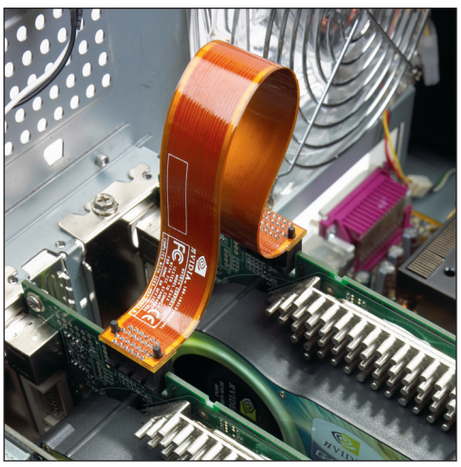
All about SLI

The basic principle of SLI isn't new: the ancient king of the graphics castle, 3dfx, first introduced dual 3D cards in 1997 with the Voodoo SLI board. In those days, however, SLI stood for Scan Line Interleaving, not Scalable Link Interface. Remember that this was in the dark time before hardware T&L (transform and lighting), when a PC's CPU rather than the graphics GPU had to perform most of the geometry calculations for setting up a scene. This geometry was then passed to the graphics card, which handled texturing and blitting the resulting frame to the monitor; each card handled an alternate scan line, hence Scan Line Interleaving.

The upshot of this was that 3dfx SLI only had an effect on raw fill rates, not geometry performance. Basically, it allowed you to run higher resolutions with no drop in frame rate, but didn't allow games to increase actual geometric scene detail. Voodoo was also an odd technology that bypassed the standard graphics card in 3D mode and had its own DAC (Digital-to-Analog Convertor). Voodoo cards came with a short passthrough cable: you took the output from your regular 2D graphics card and plugged it into the Voodoo via the passthrough, then plugged the monitor itself into the Voodoo's output port. Ordinarily, the standard graphics card's analog output was routed straight through (with some drop in quality at high resolutions due to the extra cabling and connections), and when you fired up a 3D game, the Voodoo took over.

nVidia's SLI improves on the 3dfx technique primarily by scaling geometry performance as well as fill rate for a uniform speed increase. Second, the driver support is more sophisticated, with each GPU being assigned differing shares of the graphics processing load according to need, much like a load-balanced network setup.

As far as application support is concerned, this isn't an issue: SLI is application transparent and implemented entirely through driver support. This covers both DirectX and OpenGL applications: it just works, as our performance results testify. As for SLI support in its future chipsets, nVidia currently claims that, 'SLI will be offered on certain high-end PCI Express product offerings from nVidia going forward'. We're willing to bet it will find its way into lower-cost mid-range cards before too long, however.



Two GeForce 6800 Ultra cards power the White Cobra's graphics, connected by a ribbon cable.

CONCLUSION

As for the White Cobra itself: rarely has a PC generated so much interest and excitement in *PC Pro*'s labs. By that metric alone it deserves a place on our A List, but when you add the stunning 3D performance there's absolutely no room for argument. Even taking the price into account – and that doesn't include a monitor or any peripherals – this is a superb PC.

DAVID FEARON

PC PRO RATINGS

PERFORMANCE	★★★★★★
FEATURES & DESIGN	★★★★★★
VALUE FOR MONEY	★★★★½☆
OVERALL	★★★★★½

SPECIFICATIONS 2.6GHz Athlon 64 FX-55; 2GB Corsair XMS PC3200 DDR SDRAM; 2 x 74GB Western Digital Raptor, 300GB Maxtor DiamondMax 10 hard disk; dual 256MB GeForce 6800 Ultra SLI graphics; Asus A8N-E motherboard; Plextor 712A DVD writer; Plextor DVD-ROM; Sound Blaster Audigy 2 ZS 7.1 sound card; Windows XP Professional.