

Scan 3XS Great White

Scan proves that Steven Spielberg chose the right fish to star in 'Jaws'

Price £11,162.49 inc VAT • Manufacturer www.scan.co.uk

The Great White is Scan's fourth entry into our annual Dream PC Labs test, and evidence of its evolution can be found in the company's earlier water-cooled systems. The Chameleon (2005) was sprayed with chromatic paint that changed colour as the case warmed up, and the Black Rhino (2006) was covered in imitation rhino skin, while the White Cobra (2007) was painted pearlescent white.

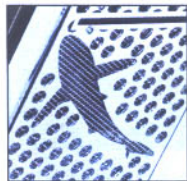
For its next big leap forward, Scan has electroplated the Silverstone TJ07 case with chromium to give it a lustrous chrome finish. The result is a visually stunning case that positively glows with energy and light. Chrome is much harder wearing than paint, so the finish should last a lot longer than a painted PC's. The only downside is that chrome attracts fingerprints like nectar attracts bees, although Scan has thoughtfully provided a jar of polish and a special cloth for cleaning the case. To achieve the high-quality finish, Scan has chrome-plated all the interior surfaces, too. Unlike a lot of Dream PCs, the Great White isn't adorned with coloured flashing lights. Instead, it uses clean white LEDs, and as they're all USB-powered, they can be turned on/off individually in Windows (except for the lights in the LED fans).

Out of the box, the SilverStone TJ07 is our favourite case for water cooling. However, Scan has made further improvements by enlarging the grille in the roof, providing space for a triple 120mm-fan radiator. Fitted with white LED fans, this radiator has the job of cooling the massively overclocked Core 2 Quad Q9650 CPU. It may seem a little strange to use a non-Extreme Edition CPU in a Dream PC, but as the Q9650 has a later stepping than the QX9650 Extreme Edition, it's a better overclocker. As a result, Scan has managed to overclock the Great White's Q9650 from its stock speed of 3GHz to 4.41GHz by raising the FSB from 333MHz to 490MHz. This necessitated boosting the vcore to 1.6125V, although under load, this appeared to droop by at least 0.1V. To ensure that the CPU has plenty of memory bandwidth, the Great White includes 4GB of Corsair DDR3 clocked to a heady 1.96GHz at 9-9-9-24 timings. DDR3 consumes less power than DDR2, but due to the hefty overclock in the Great White, the DIMMs need to be cooled by a Corsair Dominator fan module.



+ SHARK
Massively
overclocked CPU
and GPUs; 3D
monitor; chrome
finish

- BEAR
Very high power
consumption;
high operating
temperature



LOOP-THE-LOOP

To achieve such a high FSB, the Great White's EVGA nForce 790i Ultra SLI motherboard is fully water-cooled, with the Northbridge, Southbridge and VRMs all sitting under a combination of MIPs and Aqua Computer waterblocks. The waterblocks are cooled by a single 120mm fan-radiator that lurks in the lower section of the case. This radiator also has to cool the giant Aquadrive waterblock that cools the three 1TB Samsung SpinPoint F1 drives. The first two drives are configured in RAID 0 and have 64-bit Vista pre-installed, while the last drive acts as a backup. The 1TB SpinPoint F1 is one of the fastest hard disks available, but in case that isn't good enough for you, there are also two 64GB OCZ SSD flash drives arranged in RAID 0. The resulting 128GB array is perfect for installing games, as the SSDs are much quicker at reading data than hard disks. Crysis and ArmA, two games with particularly huge levels, loaded extremely quickly. If you're worried about your data being split across all those RAID 0 arrays,



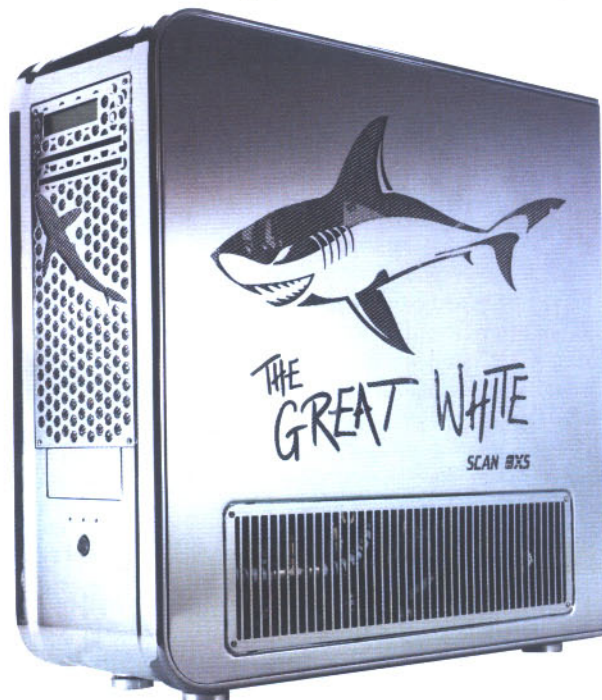
Scan also provides a fourth 1TB Samsung SpinPoint F1 in an external caddy for backing up your precious collection of photos of rare spores and fungi.

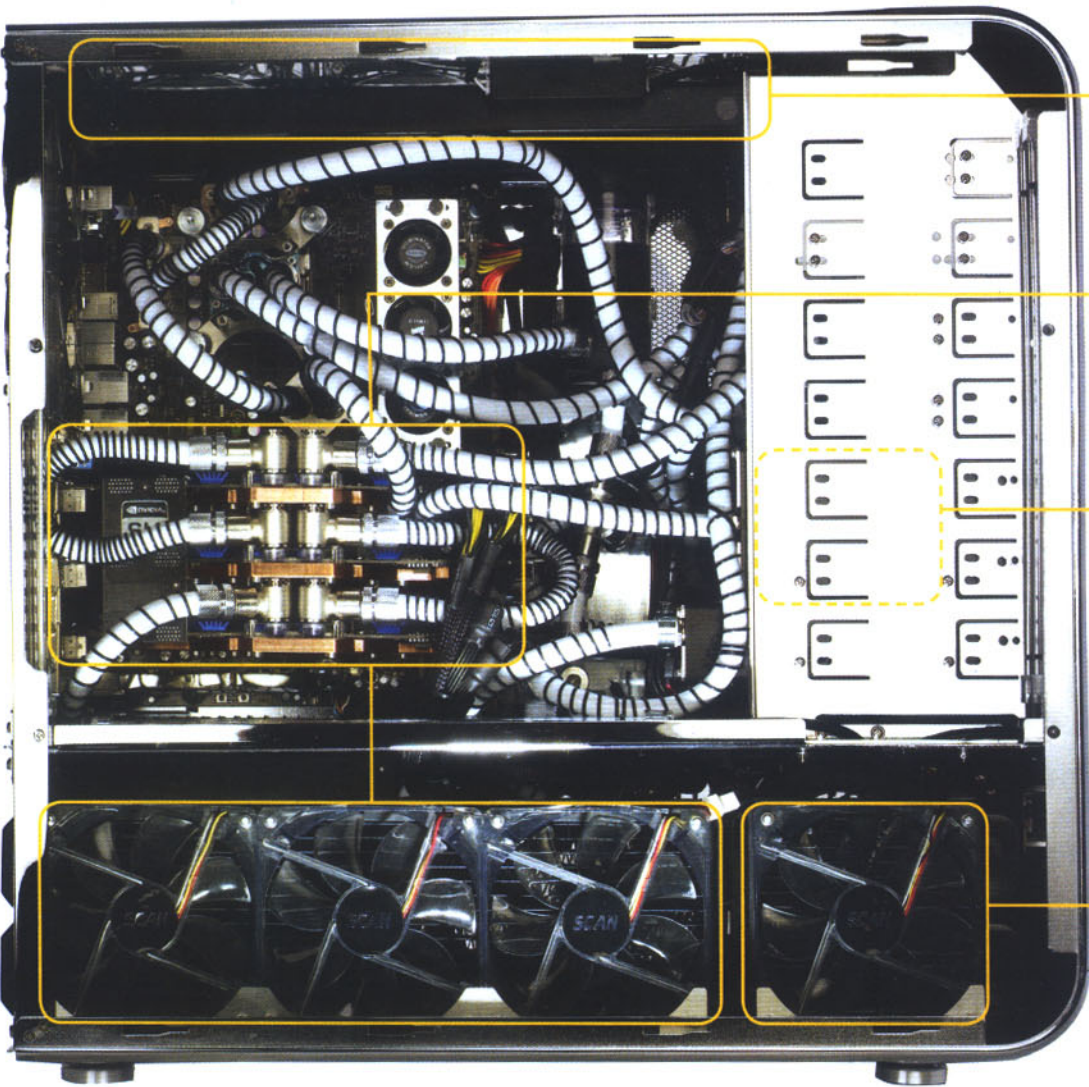
ATI has made a massive comeback with the HD 4000-series, but the Nvidia GeForce GTX 280 is still the ultimate GPU. Considering the pounding we gave 3-way SLI in July (see Issue 58, p62), fitting three GTX 280 cards in the Great White, as Scan has, is a brave step. All three are water-cooled, which is why the Great

White is so much quieter than the HP Blackbird. The full-coverage Aqua Computer waterblocks also enabled Scan to overclock the GPUs from 602MHz to 710MHz, the stream processors from 1.296GHz to 1.458GHz and the memory from 1.107GHz (2.214GHz effective) to 1.25GHz (2.5GHz effective). The cards are linked in the same water-cooling loop, and cooled by a triple 120mm-fan radiator in the bottom of the case.

Fitting three graphics cards usually means there's no room for other expansion cards, but Scan has managed to squeeze in two other cards. The first is a Killer NIC M1 networking card, a genuinely innovative product that decreases your ping in online games, while the second is the 1x PCI-E version of the Sound Blaster X-Fi Titanium Fatal1ty Pro. In order to squeeze in this last card, Scan has had to remove the black plastic shroud that usually covers the PCB, although as its presence is purely cosmetic, it's no great loss.

Unlike a lot of PCs, the monitor supplied with the Great White doesn't feel like an afterthought. The 24in Zalman Trimon ZM-M240W is a good deal smaller than the enormous 30in display supplied with the HP Blackbird, but it has an ace up its sleeve – stereoscopy. This technique uses the power of two slightly offset panels and a special pair of polarised glasses to trick the brain into seeing games and movies in true 3D. Not all games and movies support stereoscopy, but in the





Scan modified the roof of the case, making space for a triple 120mm-fan radiator for the CPU.

All three GTX 280 cards are water-cooled and overclocked.

Inside these drive bays lurk two super-fast 64GB OC2 flash drives in RAID 0.

This single 120mm-fan radiator cools the Northbridge, Southbridge, VRMs and hard disk waterblocks.

ever-increasing list of titles that do, such as Call of Duty 4, the effect is truly stunning. Support for 3D in games requires a compatible driver, but while in the past Nvidia has been lax at keeping its 3D monitor-supporting drivers up-to-date, the company seems far keener on doing so at the moment.

The Great White bundle also includes the updated version of the Logitech G15 keyboard, the ultimate gaming mouse – the Logitech G9, a set of Logitech Z-5500 Digital speakers and 5.1 SpeedLink Medusa headset. The entire system is powered by a 1kW Corsair HX1000W PSU, which won our recent PSU Labs test (see Issue 59, p67).

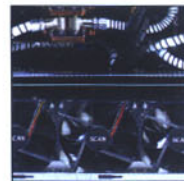
PERFORMANCE

With such a brutally overclocked CPU and DDR3 memory, you'd expect the Great White to be as ferocious with our benchmarks as the real Great White is with its prey. In reality, Scan's machine exceeded our expectations, completing the video encoding benchmark with a

score of 2,595 – just a couple of points shy of an overclocked Skulltrail rig. Combined with the image editing and multitasking test results, the Great White scored 1,772 overall, making it the fastest commercially available PC ever, and earning 19th place on the benchmark leaderboard (www.custompc.co.uk/benchmarks).

It would appear that Nvidia still has its work cut out with 3-way SLI – while the Great White rocketed through both 3DMark tests, its performance in games wasn't nearly as impressive. This doesn't mean it isn't fast, however; thanks to the massive overclock, it could play all our games at 1,920 x 1,200, and is a good deal faster than the HP Blackbird.

However, all that performance comes at a price. When fully stressed, the Great White draws an incredible 1,083W of electricity from the wall, while the CPU temperature peaked at an almost incandescent 93°C. Although the three water-cooling loops and the Corsair PSU kept the Great White perfectly stable throughout our stress tests, Scan has

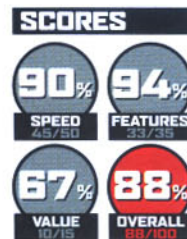


clearly pushed all the components to within a couple of atomic layers of their lives. Fortunately, the system's heady price includes a two-year warranty.

CONCLUSION

It's fairly common knowledge that the great white shark, or Carcharodon carcharias, is an apex predator and swims the world's oceans unchallenged. As the HP Blackbird is so underwhelming and Armari may not be able to mass-produce the XCP, the result of this year's Dream PCs Labs test is more clear-cut than ever before – the Great White wins hands down. This isn't to say that the Great White isn't an awesome system in its own right – the chrome finish and white LEDs give it a more grown-up feel than many of the excessively illuminated PCs we've seen. Our only concern is that the very high voltages and operating temperature may affect long-term reliability, although as with any 3XS system, the Great White is covered by a comprehensive warranty.

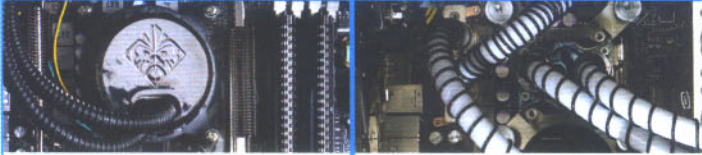
James gonbold



DREAM PC SHOWDOWN

All the dream PCs submitted for this year's Labs test are built to an extremely high standard, but we had to choose one ultimate winner. Here's how the final battle between the HP and the Scan shaped up in four key areas

CPU



HP

HP has fitted its PC with the most expensive Intel LGA775 CPU available, the 3.2GHz Core 2 Extreme QX9770, and overclocked it to 3.8GHz by raising the bus multiplier from 8 to 9.5.

SCAN

Scan has chosen a Core 2 Quad Q9650 instead of the pricier Extreme Edition CPU, as it's cheaper and a later stepping, so it overclocks better. Scan overclocked it from 3GHz to 4.41GHz.

WINNER: SCAN

The CPU in the Scan is not only cheaper, but is also a better overclocker, thanks to its later stepping.

CASE DESIGN



HP

The HP looks more like an industrial appliance than a PC, although the build quality is impeccable.

SCAN

The Scan's Silverstone TJ07 case has been modified with a new front panel and expanded air grille in the roof. It also sports shark silhouettes in the side panels and is chrome plated.

WINNER: SCAN

The Scan looks much more distinctive than the HP.

COOLING



HP

The CPU in the HP is cooled by an Asetek LCLC water-cooling loop with a dual 120mm-fan radiator.

SCAN

The Scan has three separate cooling loops, so the CPU, graphics cards, motherboard and disk drives are all independently cooled.

WINNER: SCAN

The CPU in the Scan runs a lot hotter but it's overclocked much further and is significantly quieter.

GRAPHICS CARDS



HP

The HP includes two GeForce GTX 280 graphics cards running together in SLI, but they're only fractionally overclocked.

SCAN

While 3-way SLI didn't make any games run faster, the Scan's GeForce GTX 280 cards are heavily overclocked to run games faster than the HP.

WINNER: SCAN

Although 3-way SLI scaling clearly still needs improving, the Scan is undeniably faster in games.

FINAL SCORE

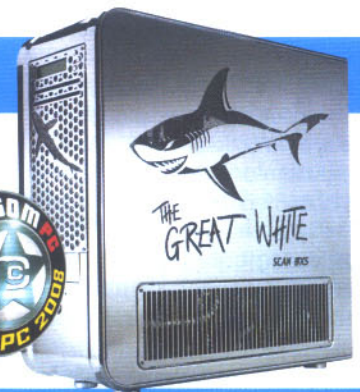


HP

0

SCAN

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WINNER: SCAN

Both PCs are incredibly fast and capable of running all games smoothly at extremely high resolutions, but the Scan is more distinctive-looking than the HP and a good deal quieter too.

SCAN GREAT WHITE

'The White Cobra is more awesome than an AH-1W Super Cobra attack helicopter.' – Custom PC, November 2007.

Time seems to have flown by since we won the Dream PC title last year, and being invited to participate in CPC Dream PC 2008 inspired mixed feelings. It would be great to win again and push hardware to a new limit while still being commercially viable, but how could we top what we did last year? What would the competition come up with? The pressure was on, as all the entrants for 2008's test had won Dream PC titles before.

After some soul-searching, the answer swam up from the depths of our minds. 'Guys, I can see it. Spray painting is dead. We need something that will blow people's minds. Pete, Ant, can you chrome-plate a case and give it a white glow? Laser cut a Great White shark with big teeth into the side panel, use the best hardware we can get our hands on and design the best cooling. Let's build a work of art.' Ant and Pete, Scan's two most talented system builders, knew they had the start of this year's creation.

Choosing the base hardware was pretty easy. The obvious choice was to partner with our loyal suppliers, Aqua-Computers, Corsair, EVGA, Intel, Nvidia, XFX and OCZ, who went to great lengths to get some SSDs at short notice.

During the initial tests, our overclocking was very fruitful. We managed a decent overclock that any enthusiast would be happy with on virtually all the CPUs, but found that some clocked better and had even more potential.

More extensive testing left us with a choice of two CPUs that shared the same initial clock speed, multiplier and amount of cache. Which would come out on top: the newer stepping Q9650 or its older sibling, the QX9650?

The decision was relatively simple. Not only did we push the Q9650 to 490MHz FSB using the standard multiplier of 9x, which equates to a clock speed of 4.41GHz (a huge 47 per cent overclock), but it was also £160 cheaper.

The schedule was tight. Nvidia had just released its GeForce GTX 280s and we had to jump through hoops to get a waterblock made. Our close partner, Aqua-Computers, designed and made the VGA blocks just in time. Along with excellent cooling properties, the waterblock changes the card from a dual-slot affair to a single-slot model, which made the system easier to build. It also let us push the GPU clock speed from an already high 670MHz to a whopping 710MHz while keeping the temperatures much lower than those of an air-cooled card.

The rest is history. Win or lose, we feel we have created a real monster.

alan naja, director, scan