ATX's Radeon Xpress 200 CrossFire gives this motherboard dual graphics capabilities.

Big Bang For Expansion

ON TEST ASRock 939SLI32-eSATA2

BY RICHARD RAMOS AND ZACHARY CHAN

Bang For The Buck

When ULi first unveiled their M1695 HyperTransport PCI Express Tunnel Chip, we were impressed with its flexibility for delivering platform solutions. ULi has since then been acquired by NVIDIA, and mainstream players such as ASRock have produced ULi-based AMD solutions. ASRock's 939SLI32-eSATA2 is a fine example of this, a feature-rich PCI Express motherboard with a reasonable price. The ASRock 939SLI32-eSATA2 combines ULi's M1695 and M1697 chipsets into one board for superior graphics capabilities, with dual full-speed PCI Express x16 lanes and up to eight more configurable lanes for other devices. The board also supports SLI via ULi's PowerExpress Engine enabling driver, but older NVIDIA ForceWare driver sets (82.12 and below) must be loaded to use the board in SLI mode.

The board comes with three PCI slots and one open-ended PCIe x4 slot, instead of a fixed PCIe x1; depending on the graphics card used, slots beside the PCIe x16 might not be accessible. Two internal ports can be re-routed to enable eSATA functionality, but this reduces internal storage, and may create cable management problems. The board also features ASRock's Future CPU Port, and through a daughter card module, the board can be upgraded to support AMD's upcoming AM2 processor and DDR2 memory.

The upper portion of the motherboard revolves around the Future CPU Port, so the CPU socket, Northbridge and DIMM slots are pushed towards the front of the board. The board has room for two full-length graphics cards, and the two IDE connectors are located in front of the slots, with the Southbridge placed towards the bottom. There are frequency controls for the PCI and PCIe buses, but the board only has 'Low,' 'Normal,' or 'High' voltage settings. Thankfully, a BIOS configuration switch named 'Flexibility Option' exists. When this was set to 'Enabled,' we could easily hit 280MHz on the HTT bus. The ULi M1695-based ASRock 939Dual-SATA2 and the M1697-based EPoX EP-9U1697 GLI boards were used to gauge the performance of the ASRock 939SLI32-eSATA2. We also used a Chaintech VNF4 Ultra as a reference for mainstream nForce4 Ultra performance. The ASRock 939SLI32-eSATA2's performance was on par with past ULi based motherboards in the BAPCo SYSmark tests. Futuremark PCMark04 results then showed that the 939SLI32-eSATA2 has a (marginally) superior CPU and memory subsystem compared to the others. However, ASRock doesn't seem to have the same level of HDD performance as the EPoX EP-9U1697 GLI, though this is offset by the fact that the 939SLI32-eSATA2 managed to post some impressive AquaMark03 results, with a high CPU score and the strongest graphics results among the three ULi motherboards.

In A Nutshell

The ASRock has great expansion potential. However, it has no official support for any multi-GPU solution. If NVIDIA did not cripple SLI operation, the ASRock 939SLI32-eSATA2 would have been so much better.

OUR RESULTS

	Aquamark 3		SYSmark 2004	PCMark04		
	Graphics	CPU	Overall	CPU	Memory	HDD
ASRock 939SLI32-eSATA2	8265	10005	183	4136	5309	4508
ASRock 939Dual-SATA2	8241	9957	175	4088	5287	4323
EPoX EP-9U1697 GLI	8232	10052	183	4105	5261	4671
Chaintech VNF4 Ultra	8301	9980	184	4137	5259	4671

ASRock 939SLI32-eSATA2, ASRock 939Dual-SATA2 and EPoX EP-9U1697 GLI
Hardware: AMD Athlon 64 3500+ (2.2GHz 512KB L2 cache), 2 x 512MB Kingston DDR400 @ 6-3-3 CAS 2.5 CMD 1T, Seagate Barracuda 7200.7 80GB SATA hard disk drive (one single NTFS partition), Leadtek PX6600GT TDH Extreme 128MB
Software: NVIDIA Detonator XP 71.89 driver,ULi Integrated Drivers 2.13, Microsoft Windows XP Professional with Service Pack 1 (with DirectX 9.0c)
Chaintech VNF4 Ultra
Hardware: AMD Athlon 64 3500+ (2.2GHz 512KB L2 cache), 2 x 512MB Kingston DDR400 @ 6-3-3 CAS 2.5 CMD 1T, Seagate Barracuda 7200.7 80GB SATA hard disk drive (one single NTFS partition), Leadtek PX6600GT TDH Extreme 128MB
Software: NVIDIA Detonator XP 71.89 driver, NVIDIA nforce4 package 6.53,Microsoft Windows XP Professional with Service Pack 1 (with DirectX 9.00)

HWM's Rating

Features: 9.0
Performance: 8.0
Value: 9.0

This affordable board has a great expansion potential and high-end performance.

9.0

Overall Score — Out of 10