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## SIS CHIP SET SUPPORTS PC1066 RDRAM

*By Tom R. Halfhill {9/9/02-02}*

Although the RDRAM bandwagon has few followers these days, Silicon Integrated Systems (SiS) hopes its new SiSR658 core-logic system chip set will attract customers looking for high-end memory performance. It's the first chip set that officially supports PC1066 Dual

RDRAM, and it's the only RDRAM-capable Pentium 4 chip set from a company other than Intel.

The SiSR658 north bridge chip supports up to 4GB of single- or dual-channel PC1066 RDRAM (133MHz bus frequency, quadruple-clocked, 2.1GB/s bandwidth per channel) or PC800 RDRAM (100MHz bus frequency, quadruple-clocked, 1.6GB/s bandwidth per channel). It works with a companion south bridge chip, the SiS963, over a proprietary 533MHz interface.

Currently, the fastest DDR-SDRAM memories are PC3200 modules (200MHz bus frequency, 400MHz DDR, 3.2GB/s bandwidth). Although the latest Pentium 4 front-side bus runs at a base clock frequency of only 133MHz, it is 64 bits wide and is quad-pumped to 533MHz, so it provides up to 4.2GB/s of memory bandwidth. That's 31% more bandwidth than single-channel PC3200 DDR-SDRAM or dual-channel PC800 RDRAM. Only dual-channel PC1066 RDRAM can deliver enough memory bandwidth (4.2GB/s) to keep up with the fastest available Pentium 4.

The SiSR658 chip set also supports AGP 8x, 10-100Mb/s Ethernet; dual-channel ATA133/100/66 IDE interfaces; six PCI slots; six USB 2.0 ports; 5.1-channel AC '97 2.2

audio; and HomePNA 2.0. SiS hasn't announced pricing or availability.

Intel's comparable chip set is the 850E, which doesn't officially support PC1066 RDRAM but has been tested successfully with it. When compared with the SiSR658, the 850E supports only half as much system memory (2GB vs. 4GB); has a slower disk I/O interface (ATA100 vs. ATA133); an older version of USB (four-port USB 1.1 vs. six-port USB 2.0); and a slower graphics interface (AGP 4x vs. AGP 8x). The 850E is an upgraded version of Intel's 850 chip set and was released in May to support the 2.53GHz Pentium 4 with 533MHz front-side bus.

SiS's new chip set won't breathe new life into RDRAM, which seems destined to forever play second fiddle to SDRAM. However, it does offer a new option for power users who are willing to pay a premium for high performance. Currently, 256MB of PC1066 RDRAM costs about 50% more than the same amount of PC3200 DDR-SDRAM. That sounds like a lot, but the actual difference at the retail level is only about \$50. That's not enough to discourage someone who lavishes much more money on the latest CPU, motherboard, graphics card, and other hot-rod accoutrements for PCs. ♦

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