

## COMPUTER CHIPS BUILT FOR SPEED

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The mantra of the Technology Age is clear — the faster the better. In a world of high-speed trains, high-speed digital cameras and high-speed Internet access, the race is on for the next technological advance. But the latest BIG thing is a tiny computer chip made with copper.

This isn't exactly new territory. IBM first caught on to the benefits of copper in 1997, when it replaced aluminum pathways with copper in some of its computer chips. Since then, Motorola, Texas Instruments, AMD, Intel and other manufacturers have taken advantage of copper's physical properties.

Why use copper wire paths to link transistors in chips? For starters, copper caters to the need for speed. Its superior electrical conductivity allows conductors to be reduced in size, providing for greater circuit integration and shorter circuit pathways. That results in faster operating speeds and enables more than 400 million transistors to fit on a single chip — now that's BIG.

Copper is the answer to another problem plaguing the computer industry: heat. The more components on a chip, the hotter it gets, and heat can damage electronic devices and cause data loss. Since copper dissipates heat more rapidly than aluminum, chips wired with copper can run cooler than ever before. A couple of added bonuses: chips incorporating copper, rather than aluminum, require less power to operate and are cheaper to produce. **Cu**