

Clearspeed plans AMD chip link up

By David Manners

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Clearspeed, the Bristol parallel processor company, is in talks with AMD about developing a closely-coupled co-processor to soup up the AMD multi-core family of x86 processors.

"Clearspeed is talking to AMD about producing a closely-coupled co-processor," said Jeff Underhill, business development manager for 64-bit embedded applications at AMD.

Behind the talks are worries that it is not achieving sufficient performance out of its multi-core processors. Stoking those concerns was the stunning performance of the Sony/Toshiba/IBM micro-processor Cell.

"Cell was a wake up call. Absolutely, things are underway at AMD as a result in looking at future products," said Underhill.

The immediate future product for AMD is QuadCore, due out next year, a four-core

microprocessor delivering 20Gflops which doubles the performance of AMD's current two-core product, DualCore, which delivers 10Gflops.

However, the Quadcore/DualCore level of performance lags behind the blazing speed of Cell which uses 8 synergistic processors around a PowerPC core to deliver a quarter of a Teraflops or 256bn flops.

Of course, x86 is Cisc, and Cell is Risc and so can run faster, nonetheless the difference in performance between Cell and QuadCore is such that AMD has recognised that it needs to crank up the performance of its microprocessors.

Clearspeed's experience of producing ultra-high-speed accelerator chips to boost computing power, while maximising power per Watt, is the answer. Clearspeed's CSX600 chip has 96 processor cores, runs at 250MHz, dissipates 10W, and adds 25Gflops to a computer's performance.

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The problems in implementing multi-core processors in practice, according to Chris Rowen, CEO of Tensilica, which automates microprocessor

generation, are: "A need for new tools and software for application-centric energy management and processor programming; and improvements for low-voltage and capacitance."