

HARDWARE ACCELERATION FOR CST MICROWAVE STUDIO®

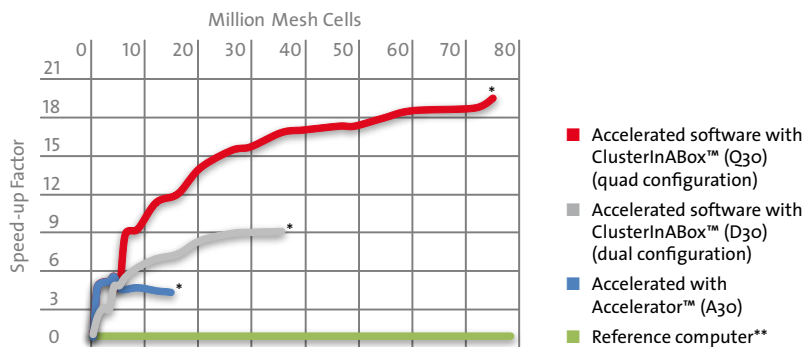
CST MICROWAVE STUDIO® is the market and technology leading time domain solver for high frequency electromagnetic field simulation. It is based on the Finite Integration Technique (FIT). With CST's proprietary PERFECT BOUNDARY APPROXIMATION (PBA)® technique CST MWS delivers unprecedented performance through the accuracy of a conformal method combined with efficient implementation. Now you can leap ahead using hardware acceleration solutions.

FIT in time domain has been efficiently implemented on various computer architectures. It is utilized in numerous disciplines of engineering and science such as the increasingly challenging problems in remote sensing, communications, optics, geophysical exploration, ground-penetrating radar, medical diagnosis, and non-destructive evaluation.

HARDWARE ACCELERATION TECHNOLOGY

CST's partnership with Acceleware has resulted in GPU based hardware acceleration for the renowned CST MICROWAVE STUDIO® Time Domain solver. This enables you to run more complex, compute-intensive simulations, faster than ever before. High performance computing has never been more readily available and affordable.

CELL PHONE MODEL SIMULATION



* Soft memory limit engagement point.

Soft memory limit extends the maximum simulation size beyond that of the memory on the Accelerator by sharing memory with the host computer. Performance will degrade based on the proportion of memory shared.

**The graphs compare the performance of simulation software integrated with Acceleware products to the performance of simulation software alone. Speed-up factors are compared against a two-socket, dual-core-per-socket system with Xeon 5150, 2.66 GHz Intel processors (1333MHz FSB) with PC2-5300 DDR-II (667 MHz) RAM with all cores engaged.



CHANGING THE STANDARDS

THE RIGHT PRODUCT FOR YOU

By using hardware acceleration, you can reduce your CST MICROWAVE STUDIO® simulation time significantly. Speed-up factors of up to 19 can be achieved.

Hardware Accelerator*	Speed-up Factor Achieved
Accelerator™	7x max.
ClusterInABox™ Dual	11x max.
ClusterInABox™ Quad	19x max.

The performance of different numerical solutions to Maxwell's equations ("solvers") can be compared best by the time required to reach a predefined level of simulation accuracy. There are many components which contribute to performance: quality of meshing, solver, hardware platform and any other features that may reduce the runtime. Accurate conformal methods like CST's PERFECT BOUNDARY APPROXIMATION (PBA)® may improve solver performance by orders of magnitude compared to standard approaches. Similarly, efficient implementation on powerful hardware can deliver a competitive edge.

CST MICROWAVE STUDIO® is a specialist tool for the fast and accurate 3D electromagnetic simulation of high frequency problems.

	Form Factor		Maximum Model Sizes** (Mcells)			Application Acceleration		
	PCI Express	Desktop	1-24	1-48	1-96	Up to 7x	Up to 11x	Up to 19x
Accelerator™	✓		✓			✓		
ClusterInABox™ Dual		✓		✓			✓	
ClusterInABox™ Quad		✓			✓			✓

** Before soft memory limit engages

MORE INFORMATION

For more information visit CST - Computer Simulation Technology at www.cst.com

* CST markets the following Acceleware (www.acceleware.com) products:
Accelerator™ (A30-FIT), ClusterInABox™ Dual (D30WL-FIT), ClusterInABox™ Quad (Q30WL-FIT)



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