

## EMBEDDED PERFORMANCE

### Small form factor; High Performance Computing

ClearSpeed's Advance™ CSX700 based products are ideal for use with the latest set of small form factor computers. With the ever decreasing geometry of silicon wafer processing, a range of highly integrated, compact, low power, low cost PCs have become available. Mini-, Nano- and Pico- prefix the descriptions of a plethora of diminutive commercial PC motherboards available today from a wide range of vendors.

These motherboards are ideal platforms to use alongside ClearSpeed's SIMD technology; they provide a fast path to next generation embedded system development, providing:

- X86 development environment
- Linux / Windows Support
- Small form factor
- Low Power
- Light weight

Paired together, the technology frees the designer to explore new products whilst employing off the shelf components:

- Battery powered, man-portable super-computing, for image and signal processing on the move.
- Solar powered super-computing, for remote site high performance processing.
- Automotive super-computing, enabling improved in-vehicle safety and navigational systems
- Ultra-compact, systems delivering over 1TFlop, weighing less than 2.5lbs, consuming under 250W and occupying 0.3cu ft.

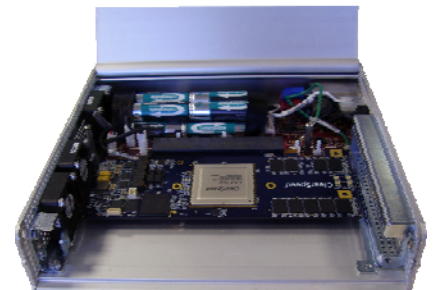
The ClearSpeed Advance e710 is the latest product to bring all the benefits of ClearSpeed's technology to the newest generation of multi-core industry standard processor platforms.

The CSX700 is the newest member of the ClearSpeed processor family and is the world's most power-efficient 64-bit floating point accelerator.

### Why choose ClearSpeed Advance Products?

- High reliability RAS features
- Performance: upto 150 GFLOPS of double precision floating point (peak).
- Precision: Native 64 bit floating point, IEEE 754 compatible.
- Energy efficient: ~6 GFLOPS per watt
- Easy to use: standard libraries for DGEMM and FFT.
- Easy to program: Full SDK supports ANSI C with parallel programming extensions.

Visit [www.clearspeed.com](http://www.clearspeed.com) for the latest performance and product information



**An Advance e710 mounted in a Magma ExpressBox**

## Advance e710 Specifications

### Operational Characteristics

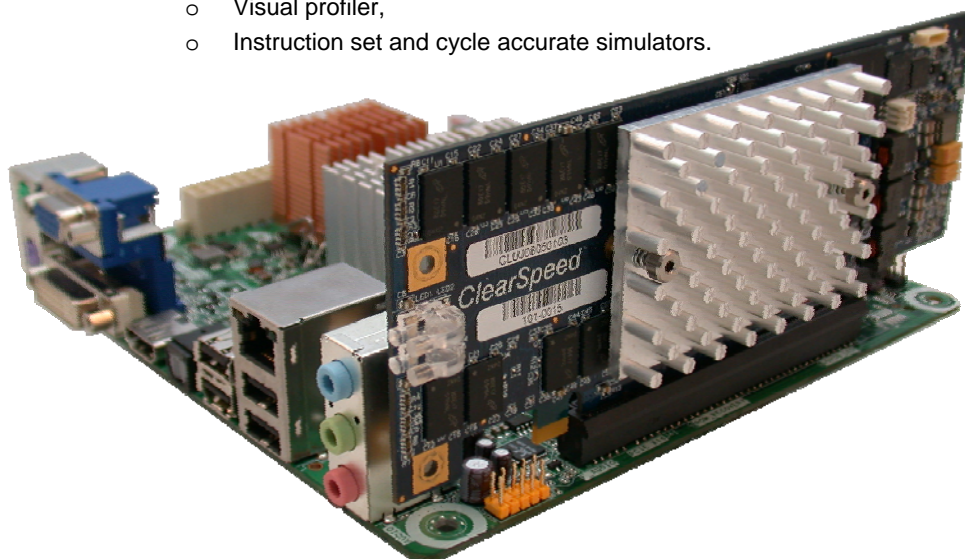
- **Performance:** upto 150 GFLOPS of double precision floating point (peak).
- **Precision:** 64 and 32 bit floating point, IEEE 754 compatible.
- **Energy efficiency:** ~6 GFLOPS per watt.

### Specifications

- **Features:** 1 x ClearSpeed CSX700 processor.
- **Size:** PCI low profile form factor: length: 167.7 mm (6.6 in), height: 68.9 mm (2.7 in).
- **Host interface:** PCIe x8, PCIe 1.1 specification.
- **Memory:** 2 Gbytes DDR2-533 SDRAM, ECC support on both the DRAM and CSX700 memories: single-bit correct; multi-bit detect. Error correcting scrubbing hardware.

### Software

- Available for Microsoft Windows, Red Hat®, SUSE™, Debian and Fedora Linux® operating systems.
- Base software including:
  - CSXL math library for accelerating BLAS and LAPACK functions.
- Software Development Kit available:
  - C compiler with parallel programming extensions,
  - Standard C libraries,
  - Vector math library,
  - Random number generator library,
  - FFT library,
  - Industry standard GDB debugger,
  - Visual profiler,
  - Instruction set and cycle accurate simulators.



A ClearSpeed Advance e710 paired with a Dual-Core Intel Atom CPU  
on an Nvidia ION, Mini-ITX motherboard.

17 x 17 x 8 cm; 47W (wall socket system power); delivering >60GFlops DGEMM

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