# NVIDIA® TESLA™ C2075 COMPANION PROCESSOR
## CALCULATE RESULTS EXPONENTIALLY FASTER

Tesla companion processors bring the power of high performance computing to the workstation.

With 448 application-acceleration cores per board, Tesla processors offload parallel computations from the CPU to dramatically accelerate the floating point calculation performance. By adding a Tesla processor, engineers, designers, and content creation professionals accelerate some of the most complex tools exponentially faster than by adding a second CPU. It's an unbeatable solution for getting more done in less time.

Take advantage of the newest analysis, simulation, and rendering tools within industry-leading applications and see results in as little as half the time. Tesla C2075 companion processors deliver parallel processing power right at the desk, capable of streamlining the way users work every day. This means you can now explore, discover and deliver higher-quality projects faster than you ever thought possible.
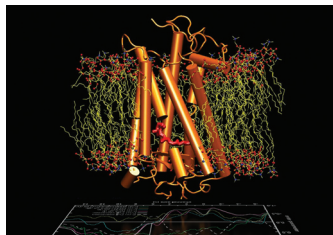
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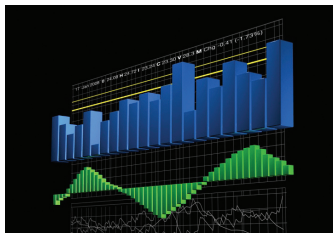
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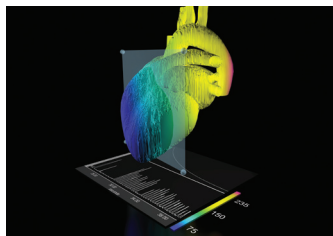
MEDICAL

TECHNICAL SPECIFICATIONS

FORM FACTOR
> 9.75" PCIe x16 form factor

 # OF CUDA CORES
> 448

FREQUENCY OF CUDA CORES
> 1.15 GHz

DOUBLE PRECISION FLOATING POINT PERFORMANCE (PEAK)
> 515 Gflops

SINGLE PRECISION FLOATING POINT PERFORMANCE (PEAK)
> 1.03 Tflops

TOTAL DEDICATED MEMORY
> 6GB GDDR5*

MEMORY SPEED
> 1.5 GHz

MEMORY INTERFACE
> 384-bit

MEMORY BANDWIDTH
> 144 GB/sec

POWER CONSUMPTION
> 225W TDP

SYSTEM INTERFACE
> PCIe x16 Gen2

THERMAL SOLUTION
> Active Fansink

DISPLAY SUPPORT
> Dual-Link DVI-I: 1
> Maximum Display Resolution 1600x1200

*Note: With ECC on, a portion of the dedicated memory is used for ECC bits, so the available user memory is reduced by 12.5%. (e.g. 6.144 GB total memory yields 5.376 GB of user available memory.)

FEATURES AND BENEFITS

448 CUDA CORES	Tesla C2075 delivers up to 515 Gigaflops of double-precision peak performance in each GPU, enabling a single workstation to deliver a Teraflop or more of performance.
ECC MEMORY	Meets a critical requirement for computing accuracy and reliability for workstations. Offers protection of data in memory to enhance data integrity and reliability for applications. Register files, L1/L2 caches, shared memory, and DRAM all are ECC protected.
UP TO 6GB OF GDDR5 MEMORY PER GPU	Maximizes performance and reduces data transfers by keeping larger data sets in local memory that is attached directly to the GPU.
NVIDIA PARALLEL DATACACHE™	Accelerates algorithms such as physics solvers, ray-tracing, and sparse matrix multiplication where data addresses are not known beforehand. This includes a configurable L1 cache per Streaming Multiprocessor block and a unified L2 cache for all of the processor cores.
NVIDIA GIGA THREAD™ ENGINE	Maximizes the throughput by faster context switching that is 10X faster than previous architecture, concurrent kernel execution, and improved thread block scheduling.
DUAL COPY ENGINE ENABLES TRUE ASYNCHRONOUS DATA TRANSFER	Turbocharges system performance by transferring data over the PCIe bus while the computing cores are crunching other data. Even applications with heavy data-transfer requirements, such as seismic processing, can maximize the computing efficiency by transferring data to local memory before it is needed
CUDA PROGRAMMING ENVIRONMENT WITH BROAD SUPPORT OF PROGRAMMING LANGUAGES AND APIs	Choose C, C++, OpenCL, DirectCompute, or Fortran to express application parallelism and take advantage of the "Fermi" GPU's innovative architecture. NVIDIA Parallel Nsight GPU debugging tool is available for Microsoft Visual Studio developers.
HIGH SPEED, PCIe GEN 2.0 DATA TRANSFER	Maximizes bandwidth between the host system and the Tesla processors. Enables Tesla products to work with virtually any PCIe-compliant host system with an open PCIe x16 slot.

DRIVERS AND DOWNLOADS

> Tesla C2075 is supported under
  - Linux 32-bit and 64-bit
  - Windows XP, Windows Vista, Windows 7
    (32-bit and 64-bit)
> Vertical Solutions and Software page:
  www.nvidia.com/object/vertical_solutions.html
> Software for Tesla C2075
  - Download latest driver at
    www.nvidia.com/Download/index.aspx?lang=en-us
  - Software development tools is available at
    www.nvidia.com/object/tesla_software.html

SUPPORT

> HARDWARE SUPPORT
  For RMA requests, replacements and warranty issues regarding your NVIDIA based product, please contact the OEM or the reseller that you purchased it from.
> KNOWLEDGEBASE
  Our knowledgebase is available online 24x7x365 and contains answers to the most common questions and issues: http://nvidia.custhelp.com/app/answers/list
> USER FORUMS
  Discuss Tesla products, talk about CUDA development, and share interesting issues, tips and solutions with your fellow NVIDIA Tesla users on the CUDA discussion forums:
  http://forums.nvidia.com/
> PRE-PURCHASING SUPPORT
  Pre-purchasing support is available to assist you in deciding which Tesla unit to purchase for your application: www.nvidia.com/object/tesla_assistance.html

To learn more about NVIDIA workstation solutions, go to **www.nvidia.com/workstation**

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