# EM Photonics Releases CULA R12 to Support CUDA 4.0 from NVIDIA

*Introduces the new link-compatible interface for zero-effort porting of existing LAPACK codes*

**Newark, Delaware — May 27, 2011—** EM Photonics, Inc., announced today the general availability of CULA R12, its GPU-accelerated linear algebra library used by thousands of developers and scientists from all over the world. In addition to fully supporting NVIDIA's CUDA 4.0 software, the new version introduces an entirely new link-compatible interface that allows users to port existing LAPACK routines with zero-effort.  With no modifications to their code, users can take advantage of CULA's GPU accelerated routines in their programs by simply changing the linking settings of their application. This is the easiest way to "swap" out their current package for a GPU accelerated one.

"The key feature of CULA R12 for our current users is support for CUDA 4.0. The new CUDA version's aim was to make programming for multiple threads and/or multiple GPUs much easier for the programmer. CULA leveraged these features to catch user errors more easily, allowing the user's experience to be more robust. The user will also notice a significant reduction in GPU memory usage, especially if they are taking advantage of multiple GPUs or threads," said John Humphrey, head of the CULA product development team. "For new users, our link-compatible interface allows them to simply re-link their existing LAPACK/BLAS programs to instantly try out CULA without changing a single line of code. After previewing it in this manner, they can optionally make code changes for potentially even more performance gains!"

**New in R12: Link Interface**

The CULA engineers put a tremendous amount of work into ensuring that R12 would support all of the end user needs.  Having link compatibility is a stepping stone towards some amazing applications. For example, using CULA's Link Interface, scientists and developers can use GPU accelerated functions in Matlab with nearly zero-effort.  Below is just a sampling of CULA's new Link Interface capabilities:

- **GPU acceleration with a single code path**. The link interface intercepts all LAPACK and BLAS calls and then dispatches them appropriately. If an accelerated version of a called function is available and the parameters are a sensible combination for GPU acceleration, then the CULA version is called. If not, or the user does not have a GPU, the function will run on the CPU.

- **All functions are available**. The link interface provides definitions for all of the functions in LAPACK and BLAS. Users don't have to know which are GPU-accelerated, and which are not, to use the interface because the link interface handles that for them.

- **Choose which functions are GPU accelerated and which are not**. The link interface supports a configuration file with which users can override defaults for determining which functions they would like to issue to the GPU and which to the CPU.

- **Accelerated level 3 BLAS is supported**. In addition to LAPACK, our link interface provides GPU accelerated definitions for functions such as matrix multiply, which can benefit from GPU acceleration.

- **Coexists peacefully with other packages**. If developers would like to use CULA for one part of their application but rely on other packages for different functionality, they can rest assured that CULA can coexist with other packages like MKL or ACML.

**Pricing & Availability**

CULA Basic is free of charge and includes six of the most popular LAPACK routines in single and single-complex precisions.  CULA Premium costs $395 and is a significantly more robust version with additional routines in single, double, single-complex, and double-complex precisions.  For complete details, including academic pricing, site licenses, and reseller discounts, please visit www.culatools.com.

**About EM Photonics**

EM Photonics specializes in maximizing the performance of applications via algorithm modification, tuning for the HPC environment, or the exploitation of GPU coprocessing. Our solvers can be easily and effectively integrated into our customers' systems and optimized for their needs. Whether CPU, GPU, FPGA, or supercomputers, we maximize any platform to create novel solutions for our clients. EM Photonics provides off-the-shelf tools such as our CULA product line, as well as tailored solutions for our customers in areas such as computational fluid dynamics, computational electromagnetics, life sciences, finance, and signal processing.

**For more information, contact:**

Liana Barbedo

(302) 456-9003

barbedo@emphotonics.com