



**A Programmer's Gift: J-Link Flash Breakpoints are available for free for use with NXP's LPC family of ARM microcontrollers**

Hilden, Germany – December 11<sup>th</sup>, 2009 – SEGGER Microcontroller and NXP Semiconductors agreed to provide J-Link's Flash Breakpoint option for free to NXP LPC1000 Cortex-M, LPC2000 ARM7 and ARM9 MCUs users.

The Flash Breakpoints can be used with GDB, IAR, KEIL and any RDI-compliant debugger. This option allows the user to set an unlimited number of breakpoints in the device internal flash memory. Debugging limitations given by the number of hardware breakpoints (2 on ARM7/9, 4 on Cortex-M0 and typically 6 on Cortex-M3) are completely removed.

The J-Link uses a RAM code which is specifically designed for the purpose of setting and removing breakpoints in flash. The software uses a mix of hardware and software breakpoints to optimize the number of memory write operations. A cache for the flash contents minimizes the time needed for a write operation when setting or removing a breakpoint. With the addition of instruction set simulation the actual memory access operations are reduced significantly. This presents a flash debugging environment which is virtually the same as that when debugging in RAM.



"Flash breakpoints significantly improve the debugging experience for any developer on flash based microcontrollers by adding unlimited breakpoints. With instruction set simulation we offer a solution unrivaled in the market to speed up the execution of the debugged code and increase the lifetime of flash memory," says Dirk Akemann, marketing manager of SEGGER.

"NXP is pleased to partner with Segger to offer this free innovative Flash Breakpoint option to our customers," said Geoff Lees, Vice President and General Manager, Microcontroller Product Line, NXP Semiconductors.

The software can be downloaded from [http://www.segger.com/download\\_jlink.html](http://www.segger.com/download_jlink.html). More information on Flash Breakpoints including a brand new demonstration video can be found at <http://www.segger.com/cms/j-link-arm-flash-breakpoints.html>.

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**About SEGGER**

**SEGGER Microcontroller** develops and distributes hardware and software development tools as well as software components for embedded systems. An "embedded system" is one in which a microprocessor and associated components are incorporated into a device helping to accomplish difficult and complex tasks in products such as cell phones, medical instruments, instrument clusters, measurement instruments, satellite radios, digital cameras etc.

SEGGER was founded in 1997, is privately held, has been profitable since its inception, and is growing steadily. Based in Hilden with distributors in all continents and a local office in Massachusetts, SEGGER offers its full product range worldwide.

SEGGER software products include: embOS (RTOS), emWin (GUI), emFile (File System), emUSB (USB host and device stack) and embOS/IP (TCP/IP stack). With the experience in



programming efficiently on embedded systems, SEGGER created highly integrated, cost-effective programming and development tools, such as the Flasher (stand-alone flash programmer) and the industry leading J-Link/J-Trace emulator.

SEGGER's intention is to cut software development time for embedded applications by offering affordable, high quality, flexible and easy-to-use tools and software components allowing developers to focus on their applications. Find out more at <http://www.segger.com>

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