

## SEGGER adds class-leading Arm Helium enhancements to JPEG decode for the Renesas RA8D1 MCU

Monheim am Rhein, Germany – December 12<sup>th</sup>, 2023

**SEGGER has made available hand-optimized extensions to their JPEG decode firmware to optimize Inverse Discrete Cosine Transform (IDCT) calculations based on the Arm Helium extension available in the new Renesas RA8D1 MCU group, built on the Arm Cortex-M85 processor.**

The new firmware extensions make it possible to accelerate the time-critical IDCT algorithms needed to decode JPEG images. The performance increase compared to MCUs without Helium is typically a factor of 3 times. When running on the RA8D1 at full speed, a JPEG decode can be reduced from 12 ms to 4 ms. When integrated with the SEGGER [emWin](#) graphics libraries, this means it is possible to achieve an excellent 40 frames per second (fps) decode on an 800 × 480 JPEG image.

“We were happy to be able to partner with Renesas to utilize the Arm Helium extension in the RA8D1 to deliver such high-performance graphics solutions,” says Rolf Segger, founder of SEGGER. “The Helium extension is perfect to accelerate the IDCT processing and largely removes the need for special hardware JPEG decoders.”

“Having a partner like SEGGER to help us unlock the full graphics potential of the RA8D1 is essential,” says Daryl Khoo, Vice President of the IoT Platform Division at Renesas. “The fact we have these firmware enhancements available from day one means we can confidently release the RA8D1 knowing we have a market-leading solution”

SEGGER's complete RA development tool suite includes ultra-fast debugging with the J-Link family of debug probes, the Embedded Studio IDE, including GCC and [SEGGER compilers](#), the full-featured [Ozone](#) graphical debugger, [SystemView](#) (real-time recording and visualization tool), and middleware extension solutions such as cycle-accurate [embOS-Ultra](#) and [emWin GUI](#). SEGGER complements the development cycle with the [Flasher](#) series of production programmers to provide end-to-end support for the entire RA series of MCUs.

###

### About SEGGER

SEGGER Microcontroller, now in its fourth decade in the embedded system industry, produces cutting-edge [RTOS and Software Libraries](#), the marketing-leading [J-Link and J-Trace debug and trace probes](#), a fast, robust, reliable, and easy-to-use family of [Flasher In-System Programmers](#) and second-to-none [software development tools](#).





SEGGER's all-in-one solution [emPower OS](#) provides an RTOS plus a complete spectrum of software libraries including communication, security, data compression and storage, user interface software and more. Using emPower OS gives developers a head start, benefiting from decades of experience in the industry.

SEGGER's professional embedded development software and tools are simple in design, optimized for embedded systems, and support the entire embedded system development process through affordable, high-quality, flexible, and easy-to-use tools.

The company was founded by Rolf Segger in 1992, is privately held, and is growing steadily. SEGGER also has a U.S. office in the Boston area and branch operations in Silicon Valley, Shanghai, and the UK, plus distributors on most continents, making SEGGER's full product range available worldwide.

For more information on SEGGER, please visit [www.segger.com](http://www.segger.com).

### Why SEGGER?

In short, SEGGER has a full set of tools for embedded systems, offers support through the entire development process, and has decades of experience as the Embedded Experts.

In addition, SEGGER software is not covered by an open-source or required-attribution license and can be integrated into any commercial or proprietary product, without the obligation to disclose the combined source.

Finally, SEGGER offers stability in an often-volatile industry, making SEGGER a very reliable partner for long-term relationships.

For additional information please visit: [www.segger.com](http://www.segger.com)

### Contact information:

Dirk Akemann

Marketing Manager

Tel: +49-2173-99312-0

E-mail: [info@segger.com](mailto:info@segger.com)



Issued on behalf of:

*SEGGER*

*Microcontroller GmbH*

Ecolab-Allee 5

40789 Monheim am Rhein

Germany

[www.segger.com](http://www.segger.com)

*SEGGER*

*Microcontroller Systems LLC*

Boston area

101 Suffolk Lane

Gardner, MA 01440

United States of America

Silicon Valley

Milpitas, CA 95035, USA

United States of America

[www.segger.com](http://www.segger.com)

*SEGGER*

*Microcontroller China Co., Ltd.*

Room 218, Block A,

Dahongqiaoguoji

No. 133 Xiulian Road

Minhang District, Shanghai 201199

China

[www.segger.cn](http://www.segger.cn)

All product and company names mentioned herein are the trademarks of their respective owners. All references are made only for explanation and to the owner's benefit.