

RoweBots Announces Unison RTOS for Renesas' RZ/A Microprocessor Series

WATERLOO, Ontario, Canada, Sept. 21, 2016 (SEND2PRESS NEWSWIRE) – Today, RoweBots Ltd announced the availability of its Unison RTOS for Renesas Electronics' RZ/A Series of microprocessors (MPUs). Designers working with the Renesas Starter Kit+ for RZ/A1H, the Renesas High Resolution Embedded GUI Solution Kit for RZ/A1H YLCDRZA1H evaluation board, or customized RZ/A1 hardware running the Unison RTOS can take advantage of off-the-shelf "Instant On" or near zero boot time with an embedded Linux-compatible applications programming interface (API).



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This combination provides a real-time Linux upgrade to improve performance while slashing bill of materials (BOM) and optimization costs. Unison OS can be easily run using only on-chip RAM and provides support for all of the peripherals of the RZ/A MPU, enabling easy porting of multi-threaded Linux applications to RZ/A MPUs under Unison.

"Embedded Linux programmatic compatibility, BOM cost reduction, and Instant-On features are highly desired features for embedded system designers," said Kim Rowe, CEO of RoweBots Limited. "For example, replacing an (ARM® Cortex) A9 System on Module running Linux with an in-house RZ/A1 design with external SPI flash and Unison RTOS can reduce the (per-unit) BOM cost by \$40 USD or more."

“The extensive features on the Unison RTOS offer exciting new capabilities and options to designers working with Renesas MCUs and MPUs, and the RZ/A MPUs in particular,” said Semir Haddad, Director of Marketing, MCU and MPU Product Solutions, Renesas Electronics America Inc. “This hardware and software combination enables customers to improve their time to market, performance, and BOM costs with minimal effort, particularly those currently developing embedded Linux or POSIX applications.”

By significantly reducing or eliminating boot time and providing embedded Linux compatibility along with improved performance and real-time scheduling, Renesas and RoweBots offer a very effective development platform to upgrade embedded Linux systems or develop new systems based on single-process, multi-threaded Linux or POSIX applications. The platform enables designers to remove real-time restrictions, eliminate expensive optimizations, improve overall throughput, reduce BOM costs, and accelerate time-to-market cycles. With minimal effort, systems are instantly on and perform better.

The Unison RTOS and the Renesas RZ/A MPU design goals are aligned for overall user benefits in both hardware and software. Both designs emphasize easy development, great HMI capabilities, and minimum total cost of ownership, making the platform ideal for those seeking these qualities in a design platform. Users can develop simpler, more adaptable systems with great HMIs with less effort, reducing time to market and costs, while enhancing adaptability using a modular, open standards-based approach.

Software support includes upper-level protocols in addition to device drivers for the various peripherals. The core software support includes I/O and core protocols: Serial I/O, TCP/UDP/IPv4/IPv6 with DHCP client, IPsec and TLS, and various file systems. The advanced networking includes a full spectrum of higher-level protocols, including high-level security protocols such as SFTP and SSH, as well as Bluetooth, HTTP, MQTT, and HTTP/REST. Lower-level protocols include CoAP, PPP, Wi-Fi, 802.15.4, UHF, 2G, and 3G. The full complement of security protocols is filled out with secure SMTP, secure boot, and remote field service, secure login, and encryption algorithms. Additional support includes CAN, audio, A/D, timer and QT graphics support for a fully supported set of RZ/A MPU capabilities. Learn more:
<http://rowebots.com/en/partners/hardware-partners/renesas>.

About Renesas' RZ/A Series of MPUs:

Renesas' RZ/A Series of MPUs combines a high-performance ARM® Cortex-A9 CPU core with up to 10MB of on-chip RAM. The large on-chip RAM, combined with the ability to execute code in-place from cost-effective QSPI flash memory, eliminates the need for external SDRAM, enabling low-power, cost-effective embedded display applications. The RZ/A MPUs can also drive two simultaneous displays at up to WXGA resolution, using on-chip SRAM for the graphics frame buffers.

About Unison:

RoweBots offers the open standard based, Linux compatible, ultra tiny, modular, adaptable, POSIX-compliant Unison RTOS. Additional add on support for a variety of wireless modules for WiFi, Zigbee, 6LoWPAN, UHF, GPRS, 3G and GPS provide developers of machine-to-machine (M2M) networks with wireless connectivity and extensive POSIX applications programming interfaces for fast and easy development. And, of course, Unison RTOS provides a complete set of security protocols to allow your MCU, FPGA, MPU, DSP or DSC system to be locked down.

About RoweBots:

RoweBots has 28 years of experience in embedded operating systems and POSIX compliant systems. RoweBots is developing the next generation of modular system on chip ultra tiny embedded Linux software for embedded OEM for the Internet of Things and M2M communication for extremely small wearable devices and for a broad set of other embedded applications. RoweBots offers one stop shopping for the IoT, M2M and product developing using Unison RTOS. The company is based in Waterloo, Canada. For more information, visit the RoweBots web site <http://www.rowebots.com/>.

Product Briefs:

[Here is video demonstration of a concussion management system prototype:](#)
<https://youtu.be/B73l-SgT8lU>.

[White Paper “Build Embedded Devices on a Solid Foundation: The Unison RTOS”](#)
(for registered users only):
<http://rowebots.com/en/documents-reg/white-papers-reg>.

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(VIDEO/YouTube)

