NEWS RELEASE

Renesas’ New 16-bit RL78/G24 MCU Delivers Top-Class Performance for Motor Control and Power Supply Control Systems

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New Device Achieves the Highest Performance in the RL78 Family by Combining an Application-Specific Accelerator and a Fast 48MHz CPU

TOKYO--(BUSINESS WIRE)-- Renesas Electronics Corporation (TSE:6723), a premier supplier of advanced semiconductor solutions, today announced a new addition to its popular RL78 microcontroller (MCU) Family that includes 8- and 16-bit devices for power-sensitive applications. The RL78/G24 features the highest performance among all the devices in the RL78 family, boosting its performance with an application-specific Flexible Application Accelerator (FAA) and a fast CPU that can achieve an operating frequency of 48MHz. The device’s enhanced peripheral functions, including analog and timer capabilities, are ideal for motor control, power supply control, and lighting control. In particular, by using the FAA, the device can distribute tasks such as inverter control, encryption, sensing, and arithmetic operations efficiently and independently of the CPU, thus substantially boosting processing speed.

(Graphic: Business Wire)

“We are thrilled to introduce the top-of-the-line product from the popular RL78 Family, which holds the world's largest share in the 16-bit MCU market today,” said Toshihiko Seki, Vice President of MCU Device Solution Division at Renesas. “With an extensive range of features and specifications, the RL78 Family empowers our customers to achieve the highest performance, while minimizing costs.”

“Traditionally, processing was done only by the CPU core and a significant burden was placed on the CPU. Tuning to achieve a balance between high-speed processing and CPU load took a considerable amount of time,” said Osamu Ogura, Software Development Manager, Industrial System Development Division of TESSERA TECHNOLOGY INC., a Renesas eco-system partner. “With the FAA capability that comes with the RL78/G24, we were able to divide the communication processing for the CPU and power control as with the FAA. This allowed us to shorten the development time overall.”

“Our collaboration with Renesas enables developers to use Model-Based Design to improve their system performance and identify issues before implementing on the MCU,” said Brian McKay, Global Strategic Partner Manager, MathWorks. “Mutual customers can use RL78 virtual models in Simulink to gain a variety of capabilities, including generating production-quality code, Processor-in-the-Loop testing, and maintaining a digital thread.”

Key Features of the RL78/G24 Series

- CPU operating at 48 MHz (max.) and FAA operating independently from the CPU
- 12-bit A/D converter capable of simultaneous sampling of 3 channels with a maximum conversion speed of 1 µs (microsecond)
- High-speed comparator with a latency of 50 ns (nanosecond) typ.
- Equipped with DALI-2 function for lighting communication standard
- High temperature support up to 125°C
- Compact package offering, with the smallest 3 mm x 3 mm package option

The RL78/G24 offers a standby function to reduce power consumption. Customers can choose from two modes, HALT mode, which cuts power consumption by 60% compared to normal operation mode, and STOP mode, which reduces power consumption by 99% compared to HALT mode. These power-saving modes allow the device to use less power overall.

Development Environment

Developers developing with the RL78/G24 can use the Smart Configurator to easily generate driver code for peripheral functions via a graphical user interface (GUI), similar to other RL78 devices. Renesas also offers Model-Based Design using MATLAB and Simulink. As an evaluation environment, users can take advance of the Fast Prototyping Board (FPB), which comes with Arduino Uno and Pmod™ Type 6A interfaces and Grove connectors for access to all pins. In addition, they can debug and program the device using only a USB cable. Evaluation kits for motor applications and power/lighting applications are also available, which are ideal for initial evaluation of individual applications.

About the RL78 Family

In addition to the high-end RL78/G24 device released today, the low-power **RL78 Family** also offers the RL78/G23, a new-generation standard model; the RL78/G22, a small-pin, small-memory version with enhanced capacitive touch functionality and lower power consumption; and the RL78/G15 and RL78/G16 that support an ambient operating temperature of 125°C for the 8-bit, small-pin MCU market. The RL78/G16, for example, is available in a 10-pin package and a 3mm x 3mm package, which is the smallest pin count option with high-sensitivity touch keys. With its operational tolerance across a wide temperature range, the RL78/G16 can be mounted in high-temperature locations, enabling smaller systems and more flexible designs.

Winning Combinations

Renesas has combined the RL78/G24 with the RAA227063 smart gate driver and other analog and power products to create the **Portable Power Tools Solution**. This turnkey solution integrates a motor driver, battery pack, and battery charger, which enables highly efficient motor drive operation with accurate and reliable battery management. This is part of Renesas' Winning Combinations, which optimally combine mutually compatible Renesas devices that work together seamlessly to reduce user design risk and shorten time to market. Renesas offers more than 400 other Winning Combinations with a wide range of products from its portfolio. More information is available at: **https://www.renesas.com/win**.

Availability

The RL78/G24 is available today. More information about the device and its development tools is available at: **www.renesas.com/rl78g24**.

Renesas MCU Leadership

Renesas is the industry's #1 supplier of MCUs, shipping more than 3.5 billion units per year, with approximately 50% of shipments serving the automotive industry, and the remainder supporting industrial and Internet of Things applications as well as data center and communications infrastructure. Renesas has the broadest portfolio of 8-, 16- and 32-bit devices, delivering unmatched quality and efficiency with exceptional performance. As a trusted supplier, Renesas has decades of experience designing smart, secure MCUs, backed by a dual-source production model, the industry's most advanced MCU process technology and a vast network of more than 200 ecosystem partners. For more information about Renesas MCUs, visit **renesas.com/MCUs**.

About Renesas Electronics Corporation

Renesas Electronics Corporation (**TSE: 6723**) empowers a safer, smarter and more sustainable future where technology helps make our lives easier. The leading global provider of microcontrollers, Renesas combines our expertise in embedded processing, analog, power and connectivity to deliver complete semiconductor solutions. These Winning Combinations accelerate time to market for automotive, industrial, infrastructure and IoT applications, enabling billions of connected, intelligent devices that enhance the way people work and live. Learn more at **renesas.com**. Follow us on **LinkedIn**, **Facebook**, **Twitter**, **YouTube**, and **Instagram**.

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