**News Release**

No.: REN2223(A)

**Renesas Releases Its Highest-Performance RZ/T2M Motor Control MPU Enabling Fast, High-Precision Control of Servo Motors**

*Combines Motor Control and TSN-Compliant Industrial Ethernet Network on a Single-Chip while Also Supporting Functional Safety*

**Düsseldorf, June 7, 2022 ―** Renesas Electronics Corporation (TSE:6723), a premier supplier of advanced semiconductor solutions, today announced Renesas’ highest-perfomance RZ/T2M motor control microprocessor units (MPUs) for applications such as AC servo drives and industrial robots. The RZ/T2M combines fast and highly precise realtime motor control capabilities and the latest industrial Ethernet on a single-chip, while also supporting functional safety operation. By providing all essential peripheral functions for motor control, the RZ/T2M enables customers to reduce the number of external components, thereby decreasing BOM costs and product size.

“There is growing demand for factory automation and the deployment of industrial robots to boost productivity,” **said Toshihide Tsuboi, Vice President of Industrial Automation Business Division at Renesas.** “The RZ/T2M is capable of controlling the servo motors that drive robots at extremely high speed and with high precision. I anticipate that it will contribute to the development and widespread adoption of sophisticated industrial robots that can work safely alongside humans.”

**Boosting Realtime Control Performance**

The RZ/T2M is built around two Arm® Cortex®-R52 cores with a maximum operating frequency of 800 MHz. Connecting the peripheral functions used for motor control to a dedicated bus linked directly to the CPU enables the CPU to access these functions with low latency. In addition, the large memory capacity (576 KB) is tightly coupled with the CPU, reducing the fluctuation in execution time that can occur when cache memory is used and delivering deterministic, fast-response processing. These advantages enable the RZ/T2M to deliver rapid and highly precise control for applications that require high performance such as AC servos, inverters, and industrial robots.

**Support for Multiple Industrial Ethernet Protocols and Next-Generation TSN Networks**

In addition to major industrial networking protocols such as EtherCAT, PROFINET RT, and EtherNet/IP, Renesas has added support for the PROFINET IRT protocol in the RZ/T2M. The new MPU also includes an Ethernet switch that supports the next-generation Time-Sensitive Networking (TSN) standard, allowing multiple devices to operate in precise synchronization.

**Support for Functional Safety**

In most cases, building industrial equipment that complies with functional safety requirements involves the addition of two external MCUs for safety monitoring, which increases BOM costs. The RZ/T2M has a hardware configuration designed with functional safety operation in mind, so only one external MCU is needed to implement functional safety. The RZ/T2M can perform functional safety operation in parallel with motor control and network communication. In addition, later this year Renesas plans to release functional safety solutions, including a SIL3-certified software kit combination that includes a self-test software kit enabling failure self-diagnosis by the RZ/T2M, and a SIL3 system software kit for mutual diagnosis and software isolation functionality. IAR Embedded Workbench for Arm Functional Safety Edition, an integrated development environment certified for functional safety-related development and an essential tool for deploying the above software, will support the new RZ/T2M processors.

“Functional safety continues to be an important requirement for many of our customers,” **said Anders Holmberg, CTO at IAR Systems.** “Companies choosing the new Renesas’ RZ/T2M in their next design can be sure that IAR Systems will support them with certified development tools and professional technical support globally, substantially reducing both design time and project cost.”

**Winning Combinations**

Renesas offers Winning Combination for [Motor Control System with Industrial Network and Functional Safety](https://www.renesas.com/application/key-technology/motor-control-robotics/motor-control-system-industrial-network-and-functional-safety?utm_campaign=soc_rzt2m&utm_source=press_release&utm_medium=press_release&utm_content=rzt2m_wc) that combine the RZ/T2M with complementary Renesas components that work together seamlessly. This includes a high-precision current detection solution combining the RZ/T2M with an isolated ΔΣ modulator, a high-precision rotational position detection solution combining the RZ/T2M with an RS-485 device and photocouplers, a functional safety solution combining the RZ/T2M with an MCU for mutual monitoring, and an optimized power supply configuration. Renesas offers more than 300 Winning Combinations with compatible devices from the Renesas product portfolio to enable customers to speed up the design process and bring products to market more quickly. They can be found at [https://www.renesas.com/win](https://www.renesas.com/win?utm_campaign=soc_rzt2m&utm_source=press_release&utm_medium=press_release&utm_content=wc).

**Availability**

The RZ/T2M is available now. For futher information please visit

[https://www.renesas.com/rzt2m](https://www.renesas.com/products/microcontrollers-microprocessors/rz-mpus/rzt2m-high-performance-multi-function-mpu-realizing-high-speed-processing-and-high-precision-control?utm_campaign=soc_rzt2m&utm_source=press_release&utm_medium=press_release&utm_content=rzt2m_lp).

The [Renesas Starter Kit+ for RZ/T2M](https://www.renesas.com/products/microcontrollers-microprocessors/rz-mpus/rtk9rzt2m0s00000be-renesas-starter-kit-plus-rzt2m?utm_campaign=soc_rzt2m&utm_source=press_release&utm_medium=press_release&utm_content=rzt2m_rsk), an evaluation board suitable for initial evaluation of the RZ/T2M, is also available today.

**About Renesas Electronics Corporation**

Renesas Electronics Corporation ([TSE: 6723](http://www.jpx.co.jp/english/)) delivers trusted embedded design innovation with complete semiconductor solutions that enable billions of connected, intelligent devices to enhance the way people work and live. A [global](https://www.renesas.com/about/company/profile/global.html) leader in microcontrollers, analog, power, and SoC products, Renesas provides comprehensive solutions for a broad range of automotive, industrial, Infrastructure, and IoT applications that help shape a limitless future. Learn more at [renesas.com](http://www.renesas.com/). Follow us on [LinkedIn](https://www.linkedin.com/company/renesas/), [Facebook](https://www.facebook.com/RenesasElectronics/), [Twitter](https://twitter.com/renesasglobal), [YouTube](https://www.youtube.com/user/RenesasPresents) and [Instagram](https://www.instagram.com/renesas_global/).

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