**News Release**

No.: REN2508(A)

**Renesas Extends Mid-Class AI Processor Line-Up with RZ/V2N Integrating DRP-AI Accelerator for Smart Factories and**

**Intelligent Cities of Tomorrow**

*Realizing Advanced Endpoint Vision AI While Reducing System Size and Cost with a Power-Efficient MPU that Eliminates the Need for Cooling Fans*

**NUREMBERG, Germany and TOKYO, Japan, March 11, 2025 ―** Renesas Electronics Corporation (TSE:6723), a premier supplier of advanced semiconductor solutions, today expanded its RZ/V Series of microprocessors (MPUs) with a new device that targets the high-volume vision AI market. Similar to its high-end device, the RZ/V2H, the new RZ/V2N MPU comes with Renesas’ proprietary AI accelerator, DRP (Dynamically Reconfigurable Processor)-AI3, boasting 10 TOPS/W (Tera Operations Per Second Per Watt) power efficiency and an AI inference performance of up to 15 TOPS through its advanced pruning (Note 1) technology. With the latest addition of the RZ/V2N, the RZ/V series has now expanded to cover a full range of markets, from the low-end [RZ/V2L](https://www.renesas.com/products/microcontrollers-microprocessors/rz-mpus/rzv2l-general-purpose-microprocessor-equipped-renesas-original-ai-accelerator-drp-ai-12ghz-dual-core-arm?utm_campaign=mpu_rzv2n-empr&utm_source=null&utm_medium=pr&utm_content=pp&type=feat&utm_term=portfolio_prd) (0.5TOPS) to the high-end [RZ/V2H](https://www.renesas.com/products/microcontrollers-microprocessors/rz-mpus/rzv2h-quad-core-vision-ai-mpu-drp-ai3-accelerator-and-high-performance-real-time-processor?utm_campaign=mpu_rzv2n-empr&utm_source=null&utm_medium=pr&utm_content=pp&type=feat&utm_term=portfolio_prd) (up to 80 TOPS).

The new MPU is significantly smaller than the RZ/V2H, with its package area measuring only 15 mm square, reducing the area required for mounting by 38%. Inheriting the advanced features of the RZ/V series, the RZ/V2N combines high AI performance with low power consumption. These optimized features suppress heat generation, eliminating the need for additional cooling fans and reducing the size and cost of embedded systems. Developers can easily implement vision AI in a wide range of applications, from AI cameras for traffic and congestion analysis in commercial facilities, industrial cameras for visual inspection on production lines, to driver monitoring systems for behavior analysis.

Renesas will showcase a live demonstration of the RZ/V2N at embedded world 2025 in Nuremberg, Germany, March 11-13, 2025, at the Renesas booth, Hall 1 Stand 234 (1-234).

**Double-angle image processing with two cameras**

Similar to the RZ/V2H, the new RZ/V2N is equipped with four best-in-class Arm® Cortex®-A55 CPU cores and a single Cortex-M33 core, coupled with a high-quality image signal processor (ISP), Arm Mali-C55. The RZ/V2N also has two channels of MIPI camera interfaces, which allow two cameras to be connected to capture double-angle images. The two-camera system significantly improves spatial recognition performance compared to a single camera system and enables more precise human motion line analysis and fall detection. Furthermore, the dual-camera system captures images from different locations, allowing a single chip to count cars in a parking lot and recognize license plates efficiently.

“Since launching the RZ/V2H last year to target next-generation robotics requiring vision AI and real-time control, we have received tremendous interest in using the Renesas DRP-AI accelerator,” said **Daryl Khoo, VP of Embedded Processing at Renesas.** “With the addition of the RZ/V2N, sharing the same lineage as the RZ/V2H, we are extending our reach to address mid-range applications, particularly endpoint vision AI that does not need to be realized with power hungry designs. I am excited that our customers will be able to select the best AI MPU from Renesas that meets their system and budget requirements.”

“Vision AI applications across markets including smart city, enterprise and industrial are broad and varied, but all demand sustained performance and efficient processing,” said **Paul Williamson, senior vice president and general manager, IoT Line of Business at Arm**. “Renesas’ new RZ/V2N MPU leverages the leading-edge capabilities of the Arm compute platform to deliver against the performance and efficiency needs of next generation vision AI use cases.”

**Comprehensive development environment**

The RZ/V2N will be available with the Renesas evaluation board kit and a software development environment, along with various AI applications covering more than 50 use cases that are provided in the [AI Applications and AI SDK (GitHub).](https://renesas-rz.github.io/rzv_ai_sdk/5.00/?utm_campaign=mpu_rzv2n-empr&utm_source=null&utm_medium=pr&utm_content=other&type=feat) The SDK assists users without in-depth AI knowledge to quickly evaluate and develop AI applications, shortening time to market. Additionally, partner companies will provide a SOM (system-on-module) board, SBC (single board computers), camera modules, and other products that incorporate the Renesas RZ/V2N. This reduces hardware design work, allowing developers to focus on AI application development and bring their products to market rapidly.

**AI Camera Solution Winning Combination**

Renesas has developed the [AI Camera Solution](https://www.renesas.com/applications/consumer-electronics/cameras/ai-dash-camera?utm_campaign=mpu_rzv2n-empr&utm_source=null&utm_medium=pr&utm_content=wc&type=feat), which targets a variety of applications, including factories, public facilities, and commercial facilities. This solution consists of the RZ/V2N, power management IC, and real-time clock IC, and can be used as a reference for AI camera systems. Winning Combinations are technically vetted system architectures from mutually compatible devices that work together seamlessly to bring an optimized, low-risk design for faster time to market. Renesas offers more than 400 Winning Combinations with a wide range of products from the Renesas portfolio to enable customers to speed up the design process and bring their products to market more quickly. They can be found at [renesas.com/win](https://www.renesas.com/applications?utm_campaign=mpu_rzv2n-empr&utm_source=null&utm_medium=pr&utm_content=lp&type=feat&utm_term=wc).

**Availability**

The RZ/V2N will be available from Renesas and its authorized distributors starting March 19. For more information, please visit: [https://www.renesas.com/rzv2n](https://www.renesas.com/products/microcontrollers-microprocessors/rz-mpus/rzv2n-15tops-quad-core-vision-ai-mpu-2-camera-connection-and-excellent-power-efficiency?utm_campaign=mpu_rzv2n-empr&utm_source=null&utm_medium=pr&utm_content=pp&type=feat)

**About Renesas Electronics Corporation**

Renesas Electronics Corporation ([TSE: 6723](http://www.jpx.co.jp/english/)) empowers a safer, smarter and more sustainable future where technology helps make our lives easier. A 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](http://www.renesas.com/). Follow us on [LinkedIn](https://www.linkedin.com/company/renesas/), [Facebook](https://www.facebook.com/RenesasElectronics/), [X](https://twitter.com/renesasglobal), [YouTube](https://www.youtube.com/user/RenesasPresents), and [Instagram](https://www.instagram.com/renesas_global/).

###

(Remarks) All names of products or services mentioned in this press release are trademarks or registered trademarks of their respective owners.

Note 1: Pruning: Pruning technology reduces memory usage and improves actual computing performance by omitting part of the computation in AI inference processing.

**Media contact for further information, text and graphics or to discuss feature article opportunities:**

Alexandra Janetzko / Martin Stummer

HBI Communication Helga Bailey GmbH(PR agency), Hermann-Weinhauser-Str. 73, 81673 Munich, Germany

Tel.: +49 89 99 38 87-32 / -34

Email: [alexandra\_janetzko@hbi.de](mailto:alexandra_janetzko@hbi.de) / [martin\_stummer@hbi.de](mailto:martin_stummer@hbi.de)

Web: [www.hbi.de](http://www.hbi.de/)