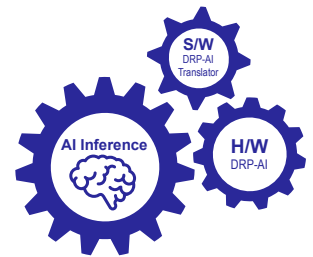


Highly Power-Efficient Embedded AI MPUs for Vision AI

RENESAS RZ/V SERIES

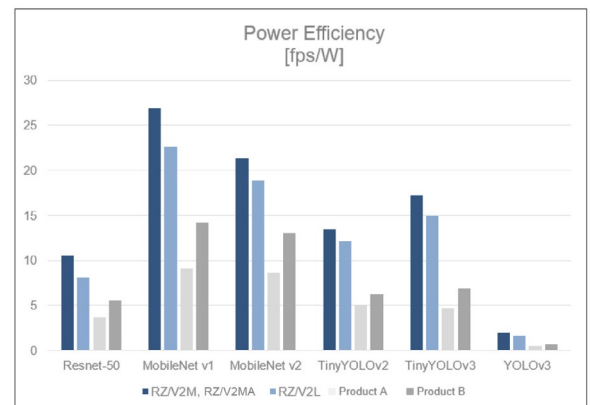
The Renesas RZ/V series of microprocessors (MPUs) for vision AI incorporate Renesas' exclusive DRP-AI AI accelerator delivering excellent AI inference performance and low power consumption.

The RZ/V series consists of three products. The RZ/V2L with 3D graphics engine and highly versatile peripheral functions is suitable for a wide range of applications. The RZ/V2M features a high-performance image signal processor (ISP) with 4K/30fps support. To enable existing systems to easily implement AI function, the RZ/V2MA is embedded with high-speed interfaces such as PCIe and USB3.1. Also, the embedded OpenCV accelerator can increase the speed of existing image processing algorithm in addition to AI.



Features

- The DRP-AI, AI inference hardware, utilizes dynamically reconfigurable technology exclusive to Renesas to deliver design flexibility, fast AI processing, and very high power efficiency.
- Combination of hardware (DRP-AI) and software (DRP-AI translator) results in high power efficiency.
- DRP-AI translator provides the capability to expand to more complex AI models without requiring hardware change.
- Deliver excellent inference performance and power efficiency, irrespective of complexity and size of the AI model (right figure).



Applications

- Security cameras
- POS systems
- Intercom systems
- Smart cameras
- Robot vacuum cleaners
- Smart appliances
- AI gateway
- Entrance/Exit management system
- Infrastructure monitoring
- Retail
- Logistic

Advantages

- No heat sink or cooling fan is needed, enabling reduced product size & BOM costs.
- RZ/V2L enables building of a vision AI system using an inexpensive camera module without an external ISP.
- RZ/V2M provides "Tuned ISP" for growing list of sensors to use highest quality images without needing labor intensive ISP parameter tuning.
- High-speed interfaces (PCIe, Gb Ether, USB3.1) enable adding on AI functions in existing system.
- RZ/V2MA provides OpenCV Accelerator (DRP) to accelerate image processing other than AI.

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