New SOM based on Renesas RZ/G3E processor offers ready-made platform for industrial systems with advanced HMI

The RZ/G3E SOM from Virtium Embedded Artists provides dual HD display outputs, 3D graphics and high-speed connectivity backed by two options for local AI processing

Malmö, Sweden – 6 October 2025 – Virtium Embedded Artists, a trusted designer and manufacturer of industrial and edge AI computing solutions, today released the RZ/G3E SOM, a system-on-module (SOM) based on the Renesas RZ/G3E application processor which provides the compute, connectivity and graphics capabilities required in industrial and medical equipment's sophisticated human-machine interfaces (HMIs). The new RZ/G3E SOM will be on display at the Virtium Embedded Artists booth 7079 at Embedded World North America (Anaheim, California, 4-6 November 2025).

The SOM provides the interfaces, memory and storage required to support the RZ/G3E's compute engine, which features quad Arm® Cortex®-A55 CPU cores and a single Cortex-M33 CPU. The SOM can control two Full HD displays, and provides the developer with MIPI-DSI, dual LVDS and digital RGB interfaces. Its HMI capabilities also include H.264 and H.265 video codecs and a 3D graphics controller. High-speed connectivity features include a dual-data lane PCIe Gen 3 interface, single USB 3.2 and dual USB 2.0 interfaces, and a dual Gigabit Ethernet controller.

For developers who want to use the RZ/G3E application processor, the RZ/G3E SOM provides a comprehensive, ready-made hardware implementation in an 82mm x 50mm format compatible with an MXM3 connector. Use of the SOM substantially reduces system development time and accelerates OEMs' time to market.

Further design time savings are possible through the use of the RZ/G3E SOM development kit, which enables designers to rapidly develop prototypes based on the RZ/G3E and to validate new designs. OEMs can use the dev kit's carrier board as a

reference design, providing a blueprint for the interfaces required in their own system's carrier board.

The design support also extends to embedded software: the RZ/G3E SOM provides three options for the Linux® operating system – Linux BSP Plus, the Verified Linux Package, or a Software Development Kit – with varying levels of support for kernel updates and maintenance provided by Renesas.

Anders Rosvall, Managing Director of Virtium Embedded Artists, said: 'This latest SOM from Virtium Embedded Artists offers the fastest way to build the RZ/G3E processor into system designs that need its outstanding HMI capabilities. This SOM will help accelerate time to market for many mid-range industrial or medical products.'

The SOM is available in versions with a commercial (0°C to 70°C) or industrial (-40°C to 85°C) temperature range.

Options for implementing AI inference at the edge

The RZ/G3E SOM gives developers two options for edge AI processing. The RZ/G3E processor includes an integrated Arm Ethos™-U55 neural processing unit (NPU) core rated for 0.5 TOPS of inference performance, suitable for entry-level vision AI, voice AI and sensor data-based AI applications.

Virtium Embedded Artists also supplies the SOM in a version with a DeepX DX-M1 AI accelerator which offers an impressive 25 TOPS of AI performance, for highly sophisticated inference applications.

Virtium Embedded Artists is accepting orders for the RZ/G3E SOM now via its website at www.embeddedartists.com/products/rz-g3e-som (for the standard RZ/G3E SOM board), or www.embeddedartists.com/products/rz-g3e-dx-m1-som (for the DeepX-enabled RZ/G3E SOM board), and via its distributors, Arrow, Avnet and Future Electronics. Shipments are expected to start in November 2025.

For more information on the RZ/G3E SOM, contact Sales at Embedded Artists or visit Virtium.

About Virtium-Embedded Artists

Embedded Artists has been a part of Virtium since 2024.
Virtium is a trusted leader in the design and manufacturing of high-reliability industrial modular hardware solutions which enable embedded computing system manufacturers to get to market more quickly, with lower development risk, and to benefit from a streamlined supply chain. Virtium's products include industrial-grade SSDs, industrial-grade DDR memory modules, and computer systems-on-module (SOMs), including SOMs with on-board AI accelerator hardware.
The SOM products are marketed by Embedded Artists, a Virtium company. With over 25 years of experience, Virtium has earned a reputation for delivering high-quality products that meet the demanding requirements of global customers in industries such as networking, telecommunications, industrial OEMs, and embedded markets.
Virtium's commitment to innovation, long-term product availability, and customer support has made it a preferred partner for companies requiring mission-critical edge AI system solutions.

Editorial contacts

Etelka Zdechovanova, TKO Marketing Consultants
Email: etelka@tko.co.uk
Tel: +44 1444 473555

Hiep Pham
hiep.pham@virtium.com

Social media

X: @virtium
LinkedIn: www.linkedin.com/company/virtium