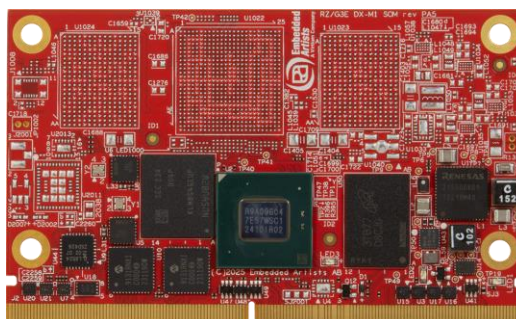


Unleash the RZ/G3E for Edge Computing



Experience a new level of intelligent performance with our new RZ/G3E System-on-Module, integrating the versatile graphical capabilities with an on-chip Ethos-U55 0.5 TOPS AI accelerator and high-speed communication interfaces. This powerful combination delivers exceptional processing capabilities for HMI and Edge computing applications!

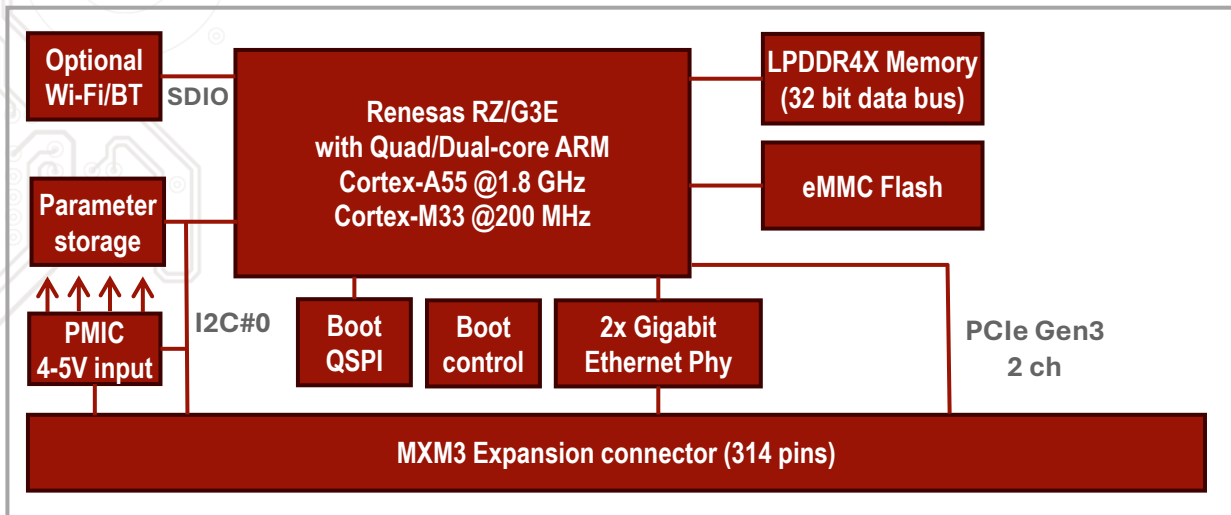
The Renesas RZ/G3E application processor features high-end dual-display graphics capabilities with both 3D and 2D engines and hardware accelerators for H.264 1080p60 and H.265 4Kp30 video decoding and encoding. With MIPI-DSI, LVDS and parallel RGB display outputs, MIPI-CSI camera input, flexible audio interfaces and comprehensive communication features, the RZ/G3E is ideal for Industrial, User Interface (HMI) and Multimedia applications.

Unlock the full potential of Edge computing with our **RZ/G3E System-on-Module!**

Specification

Processor	Cores	Renesas RZ/G3E Dual/Quad-core ARM Cortex-A55 and Cortex-M33
	Frequency	1.8 GHz on Cortex-A55, 200 MHz on Cortex-M33
Memory	SDRAM	1/2 GByte LPDDR4 3200 MT/s, 32-bit/2ch databus
	NAND FLASH	8/16 GByte eMMC NAND Flash for OS and bootloader
Graphics output	MIPI-DSI	4 lanes with resolution up to 1920x1080 at 60 Hz (1080p60), max 1920x1200 at 60 Hz
	LVDS	2 ch., single link: WXGA up to 1366x768/1280x800 60Hz, dual link: up to 1920x1200 60Hz
	Parallel RGB	18/24 bit up to WXGA, 1280x800 at 60 Hz (720/800p60)
	Video Engine	Decode/Encode H.264/H.265: 1080p60/2160p30
	3D Graphics Engine	Mali-G52 @630 MHz supporting Vulkan 1.2, OpenGL ES 1.1/2.0/3.2 and OpenCL 2.0 full
Graphics input	Camera interface	1x MIPI-CSI2, 4 lanes, max 2.1Gbps per lane
On-chip AI	NPU	Optional Ethos-U55 @ 1GHz, 256MAC, 0.5 TOPS
High-Speed Communication	Ethernet	2x Gigabit Ethernet interface with on-board Ethernet PHYs
	Wi-Fi/BT	Optional Murata LBEE5HY2FY (2FY), 802.11a/b/g/n/ac/ax SISO, Wi-Fi 6E and 5.4 BR/EDR/BLE, SDIO interface, based on Infineon chipset CYW55513
	PCIe	PCIe Gen3, dual data channels
	USB	1x USB3.2 (Host only), 1x USB2 (Host only), 1x USB2 (Host/Device)
Power	Supply voltage	4-5V
	Power Consumption	7-9 Watts peak (TBD)
Mechanical	Dimensions (W x H x D)	82 x 50 x 5 mm, EACOM form factor
Expansion		MXM3 format, 314 positions

Block Diagram



Ordering Information

Part No. ^[1]	CPU	Ethos-U55 NPU	Cortex-A55	SDRAM/ eMMC	Wi-Fi/BT	Operating Temp.
EAC00559	R9A09G047E27GBG	No	2x @1.8GHz	1/8 GByte	No	0 - 70° C
EAC00560	R9A09G047E27GBG	No	2x @1.8GHz	1/8 GByte	No	-40 - 85° C
EAC00527	R9A09G047E57GBG	Yes	4x @1.8GHz	2/16 GByte	No	0 - 70° C
EAC00528	R9A09G047E57GBG	Yes	4x @1.8GHz	2/16 GByte	No	-40 - 85° C

^[1] Standard configuration listed. Wi-Fi/BT, other memory configurations and temperature ranges on request

Support and Customization

Embedded Artists is a reliable and competent development partner - we help you become successful!

- Professional and responsive support
- Pre-designed standard Carrier boards for integration
- Custom Carrier board design
- Customization
 - Different form factor, different pinning, supply voltage, memory sizes, etc.
 - Single Board Computer (SBC) solutions
- Display solutions
- Mechanical solutions
- Schematic review of customer carrier board designs
- Driver and application development

Development Kit

The RZ/G3E SOM is supported by the RZ/G3E Kit that provides a quick path to get started with development and integration work.

The kit provides reference implementations of key interfaces. Ordering part # EAK00534

