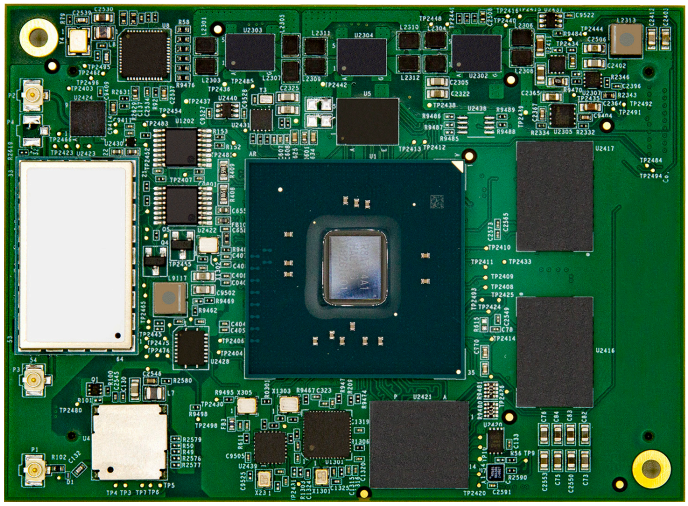
beacon EmbeddedWorks

RZ/G2 SOM Series

Configurable from dual-core up to octa-core, includes on-board Wi-Fi 5, Bluetooth 4.2, and a LTE CAT M1/NB1 Radio

Beacon EmbeddedWorks' RZ/G2 series of SOMs are high-performance and full featured for the most demanding embedded applications. There are multiple processor options in the RZ/G2 series of SOMs from dual-core all the way up to octa-core. The RZ/G2 SOM goes beyond the basic wired and wireless connectivity with optional LTE Cat M1 and NB-IoT cellular capabilities built-in. The flexibility in performance and connectivity makes it easy to develop a portfolio of secure devices on a single hardware design. The RZ/G2 series of SOMs are perfectly suited for high-performance multimedia processing including 3D graphics, high-definition video, and displays for next generation medical, military, aerospace, and industrial applications.

RZ/G2 SOM

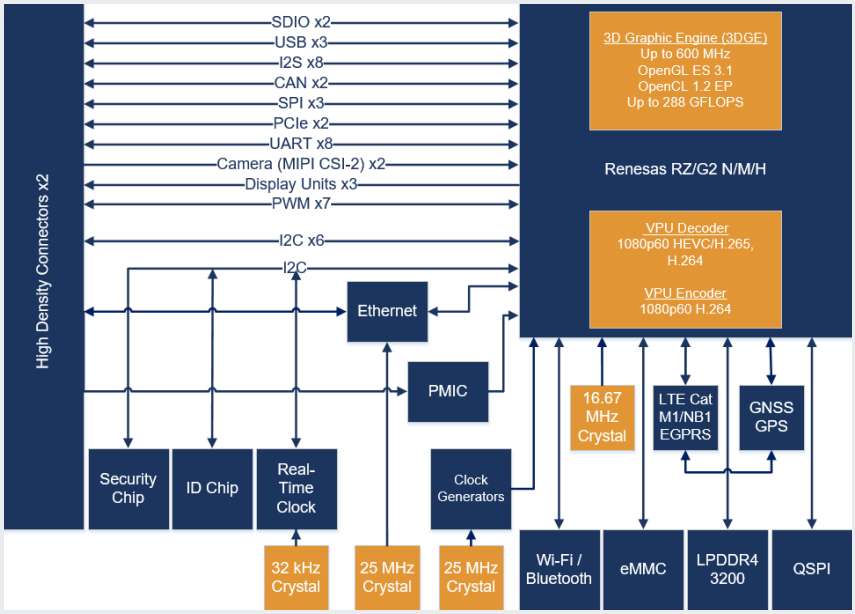


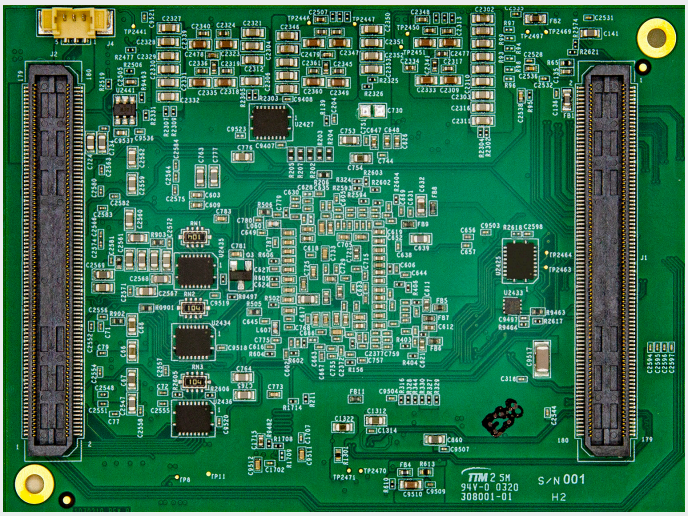
**Top side image to scale*

The design, development, manufacturing, and ongoing support of embedded technology is a complex and time-consuming process without the right expertise. At Beacon EmbeddedWorks, we elevate your product development with custom SOM solutions and high-performance application development kits. Beacon EmbeddedWorks is a leader in designing and developing SOMs with wireless technologies including Wi-Fi 5, Bluetooth, and LTE Cat M1/NB1 cellular. We have the experience and knowledge to help you select the right SOM, integrate the SOM into your product design, or develop a customized SOM to meet the needs of your application.

Beacon EmbeddedWorks can also help at any stage in the product lifecycle, so our expertise and assistance doesn't end when you've completed your hardware design. Beacon EmbeddedWorks provides continuation support including obsolescence management and application engineering for any product with one of our SOMs embedded. We also continually update our board support package (BSP) options with the latest versions of Linux, Android, and real-time operating systems.

RZ/G2 SOM Block Diagram





Bottom View ▸ Actual Size

RZ/G2 SOM Ordering Information

MODEL NUMBER	LPDDR4 (GB)	eMMC (GB)	WI-FI 5	ETHERNET PHY	TEMP. (°C)
Coming Soon					

PRODUCT FEATURES

Processor
- RZ/G2N: Dual ARM® Cortex™-A57 cores running up to 1.5 GHz
- RZ/G2M: Dual ARM® Cortex™-A57 cores running up to 1.5 GHz plus quad ARM® Cortex™-A53 cores running up to 1.2GHz
- RZ/G2H: Quad ARM® Cortex™-A57 cores running up to 1.5 GHz plus quad ARM® Cortex™-A53 cores running up to 1.2GHz

Graphics
- PowerVR 3D Graphics Engine (3DGE)
- H.264 encode/decode and H.265 decode Video Codecs
- Up to seven 500Mpix/s video signal processors (VSP)

Embedded Memory
- RZ/G2N: Up to 2GB of 32-bit wide LPDDR4 memory
- RZ/G2M and RZ/G2H: Up to 4GB of 64-bit wide LPDDR4 memory
- eMMC, configurable (Up to 64GB)
- Quad SPI NOR Flash, configurable (Up to 64MB)

Network Connectivity and Positioning
- Wi-Fi 5 (802.11a/b/g/n/ac)
- Bluetooth 4.2 and BLE
- Ethernet 10/100/1000 MAC + PHY
- LTE Cat M1 / NB1 and EGPRS Cellular Radio
- GNSS (GPS)

Security
- NXP A71CH Plug and Trust IC

USB
- USB 2.0 high-speed On-the-Go controller and PHY
- USB 2.0 high-speed Host controller and PHY
- USB 3.0 DRD controller and PHY

Display
- HDMI 1.4b (1080p60 /4Kp30)
- LVDS
- Parallel RGB (up to 24-bit)

Camera
- One MIPI CSI-2 (4 lanes)
- One MIPI CSI-2 (2 lanes)

Audio
- Up to eight I2S ports
- Direct Memory Access Controller (DMAC)
- Mixer, Sample Rate Converter, Digital Volume and Mute

PCIe
- Two single lane x1 PCIe Gen 2.0

Serial I/O
- Up to eight UART interfaces, five with flow control
- Up to six I2C interfaces
- Up to three SPI interfaces operating as either master or slave
- Two CAN 2.0B ports

GPIO
- Additional multiplexed GPIOs supporting various peripherals such as PWMs, SDIO, UART, SPI, and I2C

RTC
- On-board ultra-low power real-time clock (RTC)

Debug
- JTAG support

Mechanical
- Dimensions: 90mm x 66mm
- Weight: 39.8 grams

RoHS Compliant

beacon EmbeddedWorks

6201 Bury Dr.
Eden Prairie, MN 55346
beaconembedded.com

T (612) 436-9724
F (612) 672-9489

Beacon Website | **System on Modules**
Products: *beaconembedded.com/system-on-modules*
Technical Support: *support.beaconembedded.com*
Sales: *beaconembedded.com/contact*

© 2020 Compass Electronics Group, LLC PN: 1030544 Rev A