

32-BIT MCU FAMILY

RENESAS RA2L2 GROUP

48 MHz Arm® Cortex®-M23 Entry Level USB Ultra-Low Power General-Purpose Microcontroller

The RA2L2 group is the RA Family's entry-level single-chip microcontroller based on the 48MHz Arm® Cortex®-M23 core and up to 128KB code flash and 16KB SRAM memory. The optimized processing and Renesas' low power process technology make it the industry's most energy-efficient ultra-low power MCU.

The RA2L2 group supports a wide operating voltage range of 1.6V to 5.5V and it has rich serial communication functions such as I3C, SSI, Low power UART, CAN, USB FS without crystal and USB Type-C interface.

The RA2L2 provides pin and peripheral compatibility with the RA2L1 group, RA2E1 group and RA2A1 group and is ideal for battery-operated applications and other systems requiring high performance and low-energy consumption in space-constrained applications.

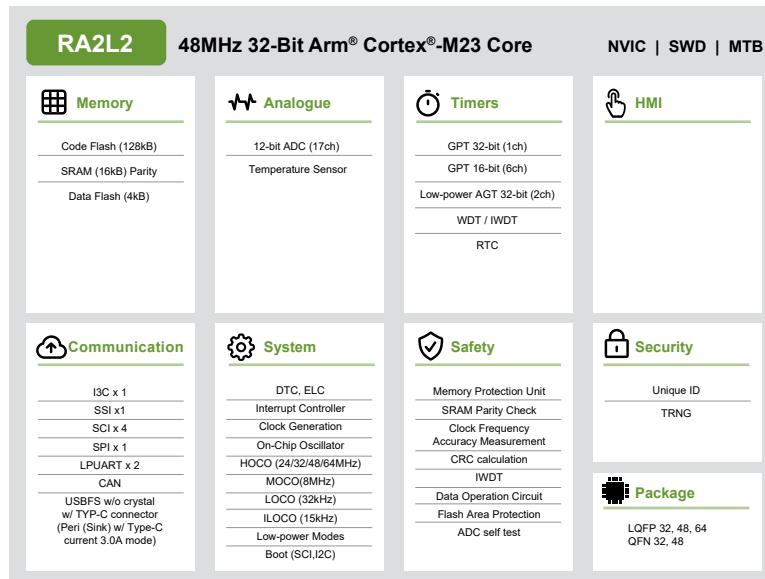
Key Features

- 48 MHz Arm Cortex-M23 core
- Up to 128KB Flash and 16KB SRAM
- 4KB data flash to store data as in EEPROM
- Scalable from 32-pin to 64-pin packages
- Wide operation temperature range from -40 to 125°C
- Wide voltage range of 1.6V to 5.5V
- $\pm 1\%$ High Accurate High speed on-chip oscillator
- 32-bit general PWM timer, low power asynchronous general-purpose timer
- 16-bit general PWM timer
- 12-bit A/D converter
- USB FS without crystal, USB Type-C interface
- SCI (UART, Simplified SPI, Simplified I²C, Smart card interface)
- Low Power UART
- I3C bus
- CAN
- SPI
- SSI (Serial sound interface)

Target Applications

- Audio streaming devices
- PC/POS system peripherals
- General purpose systems
- IoT devices
- Industrial automation and sensors
- Consumer applications
- Home appliances
- Building automation
- Medical & healthcare devices
- Wearable devices

Block Diagram

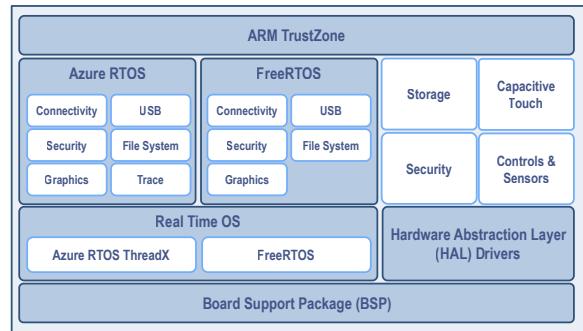


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Software Package

The Renesas Flexible Software Package (FSP) is designed to provide easy-to-use, scalable, high-quality software for embedded system designs using the Renesas RA family. FSP includes best-in-class HAL drivers with high performance and low memory footprint.

Based on an open software ecosystem, FSP provides customers with flexibility in product development, including the use of existing software assets and partner ecosystem solutions.



Tools and Support

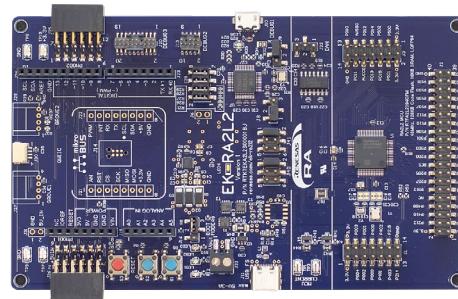
The e² studio IDE provides support with intuitive configurators and intelligent code generation to make programming and debugging easier and faster.

IDE	Renesas e ² studio	Keil MDK	IAR EWARM
Compiler	■ GCC ■ LLVM ■ Arm Compiler* ■ IAR Arm Compiler*	■ Arm Compiler*	■ IAR Arm Compiler*
Debug Probe	■ Renesas E2/E2 Lite ■ SEGGER J-Link	■ SEGGER J-Link ■ Keil ULINK / CMSIS-DAP (limited support)	■ IAR I-jet ■ SEGGER J-Link ■ Renesas E2/E2 Lite ■ CMSIS-DAP (limited support)
Production Programmer	■ Renesas PG-FP6	■ SEGGER J-Flash	■ Partner solutions

* Compiler must be purchased and licensed directly from third party

Evaluation Kit

- The RA2L2 Evaluation kit comes equipped with a RA2L2 MCU and is an evaluation board specialized for prototype development for a variety of applications.
- It has a built-in SEGGER J-Link™ emulator circuit so you can write/debug programs without additional tools.
- Development tools and software at: renesas.com/ek-ra2l2
- Orderable part number: **RTK7EKA2L2S00001BJ**



Ordering References

Flash/RAM	T _a	R7FA2L2094CNH	R7FA2L2094CFJ	R7FA2L2094CNE	R7FA2L2094CFL	R7FA2L2094CFM
128KB/16KB	-40 to 125 °C					
128KB/16KB	-40 to 105 °C	R7FA2L2093CNH	R7FA2L2093CFJ	R7FA2L2093CNE	R7FA2L2093CFL	R7FA2L2093CFM
64KB/16KB	-40 to 125 °C	R7FA2L2074CNH	R7FA2L2074CFJ	R7FA2L2074CNE	R7FA2L2074CFL	R7FA2L2074CFM
64KB/16KB	-40 to 105 °C	R7FA2L2073CNH	R7FA2L2073CFJ	R7FA2L2073CNE	R7FA2L2073CFL	R7FA2L2073CFM
Pin Count		32-pin	32-pin	48-pin	48-pin	64-pin
Package		HWQFN	LQFP	HWQFN	LQFP	LQFP
Package size (body)		5 x 5 mm	7 x 7 mm	7 x 7 mm	7 x 7 mm	10 x 10 mm
Pitch		0.5 mm	0.8 mm	0.5 mm	0.5 mm	0.5 mm

For more details, please visit: renesas.com/ra2l2



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Contact Information

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