





INTRODUCING THE RA FAMILY

Delivering the Ultimate Promise of IoT with Software Flexibility





Strong Security

- Secure Crypto Engine (SCE) IP
- An extra level of embedded hardware security providing tamper detection and resistance to side-channel attacks
- Integrated Arm v8-M TrustZone®



Flexible Software Solution

- Supported by an open and flexible ecosystem concept, the Flexible Software Package (FSP)
- Can be replaced and expanded by any other RTOS or middleware



Arm Core

 Based on Arm's next-generation Cortex-M23/M33 processor cores and Cortex-M4 core



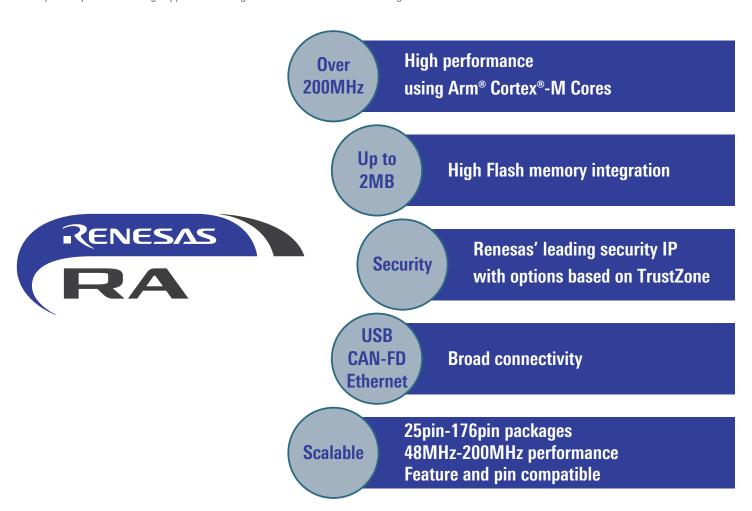
Best-in-Class Peripheral IP

- Excellent HMI capacitive touch technology
- The industry's highest code flash memory capacity
- Wide range of connectivity solutions

What is the Renesas RA Family?

The flexible Renesas Advanced (RA) 32-bit MCUs are industry leading 32-bit MCUs with the Arm® Cortex®-M33, -M23 and -M4 processor cores and PSA Certified™ assurance. RA delivers key advantages compared to competitive Arm Cortex-M MCUs by providing stronger embedded security, superior CoreMark® performance, and ultra-low power operation. PSA Certified provides customers the confidence and assurance to quickly deploy secure IoT endpoint and edge devices, and smart factory equipment for Industry 4.0.

- Renesas Advanced: Innovative market-leading products based on Arm Cortex-M cores
- Ultimate promise of IoT security by further enhancing Renesas' popular Secure Crypto Engine (SCE) IP
- Best-in-class peripheral IP provided by Renesas
- Easy development of IoT edge applications using the new Flexible Software Package





RA Family Overview

The Renesas RA Family lineup can be separated into four product series. Each of these series has a unique feature set, making it ideal for various applications and market needs.

The RA8 Series is the top-end product series, aiming for the highest integration and the highest performance. We position this category with over 200MHz single or dual core, with largest Flash and RAM integration to suit applications where performance really matters most.

The RA6 Series offers the widest integration of communication interfaces, with integrated Ethernet and TFT display drivers. Memory densities range from 256KB Flash to 2MB Flash. The RA6 Series offers up to 200MHz performance running on the Cortex-M4 or Cortex-M33 core with TrustZone. The RA6 Series supports full security integration, making these devices widely desired for security applications.

The RA4 Series bridges the needs of reasonably low power with the demand for connectivity. It offers up to 1MB Flash and a wide range of communication interfaces. The utilized core is the Cortex-M4 or Cortex-M33 with TrustZone and additional security IP integration. Memory densities range from 256KB Flash up to 1MB Flash. These devices provide a CPU frequency of up to 100MHz.

On the lower end is the RA2 Series, where the low power requirements of an application matters most for these device definitions. To achieve the best performance, special power-down modes are provided, making these devices well suited for battery-powered applications. The RA2 Series provides memory densities of up to 256KB embedded Flash and a wide single voltage supply range of 1.6 to 5.5V. These devices use the Cortex-M23 core at up to 48MHz.

Ser	ries / Perform		eries icators	Series Memory Ranges	ASSP Extensions
Renesas RA8 Series	Over 200MF	Highest per HMI, Conno Security, A	ectivity,	Highest memory integration: 2MB Flash, 1MB SRAM	HMI Analog
Renesas RA6 Series	Up to 200MHz	Advanced perfor Connectivity, Security, Scalabi	inte	h memory gration: up to 2MB sh, 640KB SRAM	Motor/Inverter Control HMI
Renesas RA4 Series	Up to 100MHz	Excellent power/ high-performance mi Security	ix, integrati	memory ion: up to 1MB 8KB SRAM	Sensor Wireless
	Jp to OMHz	Low power, Capacitive Touch	Small mem integration Flash, 32KB	: 256KB An	ch nalog ireless

Target Applications and Markets

The Renesas RA Family targets various application fields. Due to its scalability, the RA Family offers parts which cover many different applications and customer needs.

The feature set of the Renesas RA Family is well suited for industrial applications due to its long product life with the default 105° Celsius support. With dedicated analog feature integration like ADC, PGA, and comparators, combined with powerful and flexible timers, the RA Family is an ideal fit for motor control applications.

Features like connectivity peripherals, hardware-accelerated cryptography, and scalability makes the whole RA Family a perfect fit for a customer within the Connectivity as well as the Building Automation application area.

Customers with Electricity Metering applications will like the scalability and long product life of the RA Family, in addition to the on-chip Secure Crypto Engine.

The integrated Capacitive Touch interface, combined with the scalability of the RA Family, make the RA Family an ideal fit for white goods applications, enabling innovative HMI designs.

		Best Suitable Product Series	Application	Examples
Industrial Automation	000	Renesas RA2 Series RA4 Series Renesas RA6 Series Series	RoboticsDoor OpenersAC Drive	AC ServoUPSFunctional Safety
Building Automation	₩	Renesas Rade RAG Series RAG Series	Fire PanelsHVACBoiler Control	Vending MachinesMotion DetectionMonitoring Systems
Metering		RAA4 RAA6 Saries	Electricity MetersAutomated Meter ReadingNetwork Cards	Flow MetersPower Meters
Home Appliance	<u> </u>	Renesas RA2 Series RA4 Series	HVACAir CleanersCoffee Machines	Vacuum CleanersCleaning RobotsWhite Goods
Connectivity	4	RAA4 RAG Series	ASi5 / IO-Link GatewaysCommunication GatewaysData Concentrators	Wired EthernetFleet Tracking
Security	£	RAA Renesas RAG Series	Fire DetectorsBurglar DetectionPanel Control	Door OpenersMonitoring SystemsAccess Control
Motor Control	<u></u>	Renesas RAG Series	Brushless DC MotorsInduction MotorsStepper Motors	Magetic EncodersOptical EncodersHall Sensors
Low Power		Renesas RA2 Series RA4 Series	IO-Link SensorsHeat Cost AllocatorsPortable Audio Devices	Smoke DetectorsIoT Sensing NodesWearable Devices
НМІ		Renesas RA2 RA6 Series Series	Voice RecognitionCapacitive Touch PanelsPrinters	Vending MachinesHome AppliancesMedical Equipment
Wireless	% ®	Renesas RA4 Series	Wearable DevicesHealthcarePanel Control	Gateway UnitsDoor OpenersSmart Home



RA2 Series

The RA2 Series is the RA Family's entry-level 32-bit MCU, offering excellent cost, performance, and ultra-low power consumption. It delivers up to 48MHz of CPU performance using an Arm® Cortex®-M23 core with up to 256KB of embedded flash memory and a wide single voltage supply range from 1.6V to 5.5V. With cutting-edge peripherals like high accuracy analog and capacitive touch sensing, the RA2 Series is ideal for system control or user interface applications such as healthcare devices, home appliances, office equipment, and measuring equipment.

Series Group Features 48MHz, Cortex-M23, up to 256KB Flash, 32KB RAM, 48-100 pins, CAN, 32ch Capacitive Touch, Security RAZE1 48MHz, Cortex-M23, up to 128KB Flash, 16KB RAM, 25-64 pins, 30ch Capacitive Touch, Security 48MHz, Cortex-M23, up to 128KB Flash, 16KB RAM, 25-64 pins, 30ch Capacitive Touch, Security 48MHz, Cortex-M23, 256KB Flash, 32KB RAM, 32-64 pins, USB, CAN, 24-bit Sigma Delta ADC, 16-bit ADC, Security

RA2 Series Benefits

- Large product lineup is starting with 25pin up to 100pin and Flash memory size starting from 32KB up to 128KB, including some very small package options, including QFN, LGA, BGA and smallest WLCSP
- Ultra-low power consumption delivering an operating current of 64µA/MHz and software standby current of 250nA with less than 5µs fast wakeup
- On-chip analog components include a high accuracy 16-bit ADC, 24-bit sigma-delta ADC, fast response 12-bit DAC, rail-to-rail low-offset operational
 amplifiers, and high-speed/low-power comparators
- Reduced cost with on-chip peripheral functions, including high precision (1.0%) high-speed oscillator, temperature sensor, multiple power supply interface
 ports, analog elements and background operation data flash supporting 1 million erase/program cycles
- Enhanced capacitive touch sensing unit (CTSU) with high sensitivity and high noise immunity that realizes intuitive, high-quality HMI designs
- Various communication I/F such as USB and CAN, which support IoT applications

RA4 Series

The RA4 Series bridges the need for reasonable low power with the demand for connectivity and performance. These MCUs deliver up to 100MHz of CPU performance using an Arm® Cortex®-M33 core or M4 core with up to 1MB of embedded flash memory. The series offers a wide set of peripherals, including USB, CAN, ADC, Bluetooth Low Energy 5.0, capacitive touch, segment LCD controller, and additional security IP integration, making it suitable for IoT, industrial equipment, home appliances, office equipment, healthcare products, and meters.

RA4 Series Product Groups Series Group **Features** 48MHz, Cortex-M4, 256KB Flash, 32KB RAM, RA4M1 40-100 pins, USB, CAN, Security 100MHz, Cortex-M33, up to 512KB Flash, 128KB RAM, Kenesas RA4M2 48-100 pins, USB, CAN, Advanced Security with TrustZone 100MHz, Cortex-M33, up to 1MB Flash, 128KB RAM, RA4M3 64-144 pins, USB, CAN, Advanced Security with TrustZone 48MHz, Cortex-M4, 512KB Flash, 96KB RAM, RA4W1 QFN56, Bluetooth 5.0, USB, CAN, Security

RA4 Series Benefits

- Secure element functionality providing better performance, unlimited secure key storage, key management, and lower BOM cost
- High-performance and low power at the same time with 81µA/MHz while running the CoreMark algorithm from flash at 100MHz
- High-integration up to 512KB code flash memory with background operation and flash block SWAP operation for flexible and memory optimized firmware updates, 8KB data flash memory, and 128KB SRAM with Parity/ECC
- Rich connectivity with Bluetooth 5.0, USB 2.0 Full-Speed, CAN, SDHI, QSPI, and advanced analog



RA6 Series

The RA6 Series offers the widest integration of communication interfaces as well as the best performance level. These MCUs deliver up to 200MHz of CPU performance using an Arm® Cortex®-M4 or M33 core and a memory range from 256KB to 2MB Flash. The series offers Ethernet, USB Full Speed and High Speed, QSPI, OctaSPI, CAN/CAN FD, and TFT display driver integration. The embedded Secure Crypto Engine is full of features you can leverage in your higher-level solutions with secure element services. The RA6 Series addresses a broad range of applications for IoT endpoints such as white goods, meters, and other industrial and consumer applications.

RA6 Series Product Groups Series Group **Features** 120MHz, Cortex-M4, 512KB Flash, 256KB RAM, RA6M1 64-100 pins, USB, CAN, Security 120MHz, Cortex-M4, up to 1MB Flash, 384KB RAM. RA6M2 100-145 pins, USB, CAN, Ethernet, Security 120MHz, Cortex-M4, up to 2MB Flash, 640KB RAM, Renesas RA6M3 100-176 pins, USB, CAN, Ethernet with IEEE 1588 PTP Control, TFT, Security 120MHz, Cortex-M4, up to 512KB Flash, 64KB RAM, 64-100 pins, USB, CAN, ADC with S/H, Timer, PGA, RA6T1 **High Speed Comparators** 200MHz, Cortex-M33, up to 1MB Flash, 256KB RAM, RA6M4 64-144 pins, USB, CAN, Ethernet, OctaSPI, Advanced Security with TrustZone 200MHz, Cortex-M33, up to 2MB Flash, 512KB RAM, RA6M5 100-176 pins, USB, CAN FD, Ethernet, OctaSPI, Advanced Security with TrustZone

RA6 Series Benefits

- Secure element functionality providing better performance, unlimited secure key storage, key management, and lower BOM cost
- High-performance and low-power with 99µA/MHz while running the CoreMark algorithm from flash at 200MHz
- High-integration up to 2MB code flash memory with background operation, Dual-bank, and flash block SWAP operation for extremely flexible and memory optimized firmware updates, 8KB Data flash memory, and 512KB SRAM with Parity/ECC
- Rich connectivity with Ethernet MAC controller, CAN FD, USB 2.0 High-Speed and Full-Speed, SDHI, Quad and Octa SPI, and advanced analog with three sample and hold per ADC, PGA and high-speed comparators

Functional Safety Solution for Industrial Automation



In the industrial equipment field, the importance of "functional safety," which aims to maintain safety even when malfunctions occur, is increasing recognized as a way to prevent the adverse effect of breakdowns and accidents on plant operation, the adverse effect of injuries to personnel on society, and the associated economic losses.

The European Union's Machinery Directive requires that equipment meet functional safety standards.

In response to the need for functional safety certification in a range of industrial fields, Renesas provides an RA Functional Safety Library designed to reduce the burden on customers at the development and functional safety certification stages.

This RA Functional Safety Library consists of the Self-diagnostic library itself, a safety manual, and a user guide that includes IEC 61508 SIL3 certification document by TÜV Rheinland.

IEC 60730 Safety Classes Support



The IEC/UL 60730 is the harmonized safety standard for household appliances.

It describes requirements for automatic controls including heating and air-conditioning applications. Renesas offers for the RA Family a self-test library to fulfill Class B requirements of the IEC 60730 standard, as this is most commonly used requirement.

The related Appendix H lists all the specific faults that must be tested and details the needs to place the equipment into a safe state for any single point failure.

In response to the need of designing IEC/UL 60730 certified applications, Renesas provides an RA Family IEC 60730 Self-Test Library designed to reduce the burden on customers developing their own solutions. The package comes with the sample code and the certification done by VDE.

Integrated Hardware-based Security

In the rapidly growing area of IoT and highly-connected devices, increasing consumer awareness and government legislation is forcing embedded device manufacturers to take the topic of security seriously. Already under the constraints of needing to create cost- and energy-efficient solutions, developers nowadays are required to design and implement security with limited additional time and budget.

The RA Family was designed with security in mind, with scalable hardware-based security features including:

- Isolated cryptographic operations with integrated Secure Crypto Engines
- Unlimited secure key storage
- Hardware-enforced isolation using Arm TrustZone technology

The Flexible Software Package provides integrated, easy-to-configure support for these features, and a collection of Application Projects enables you to easily incorporate them into your design.

The RA Family has achieved the following certifications, providing assurance of these security capabilities and giving you confidence in your product's security.

- PSA Certified Level 1 and Level 2
- SESIP
- NIST CAVP



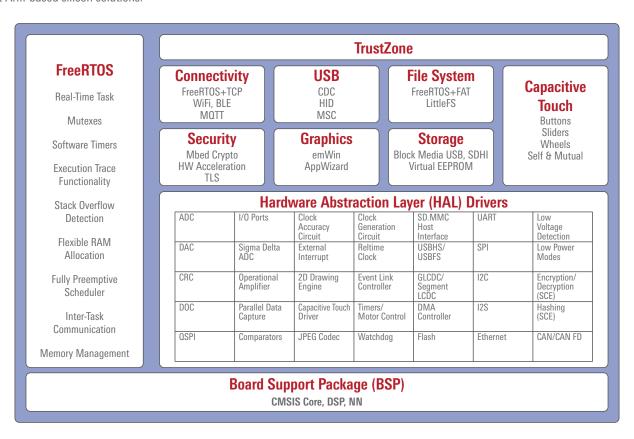


Flexible Software Package

Along with RA MCUs, we are introducing our next generation Arm software - the Flexible Software Package (FSP). The Flexible Software Package includes an openly available, royalty free RTOS (FreeRTOS), portable middleware stacks, HAL drivers, and additional software solutions from Arm ecosystem partners, all supported by a graphical configurator. The FSP is an excellent solution for customers who value a flexible open architecture solution where they can reuse their legacy code, but also optionally combine with valuable software examples from Renesas that will help speed implementation time of complex areas like connectivity and security.

The FSP's included RTOS, FreeRTOS, can be replaced and expanded by any other RTOS or middleware to meet the user's need.

The combination of the Flexible Software Package plus the wide choice of 3rd party solutions as part of the Arm ecosystem increases the range of choice for application development. This means that developers can choose the software model that best suits their needs while utilizing Renesas's excellent Arm-based silicon solutions.



Benefits

- Provides an easy-to-use, scalable, high-quality software for embedded system designs using the Renesas RA Family of Arm microcontrollers
- Includes best-in-class HAL drivers with high performance and low memory footprint
- Middleware stacks with FreeRTOS integration are included to ease the implementation of complex modules like communication and security
- The e² studio IDE provides support with intuitive configurators and intelligent code generation to make programming and debugging easier and faster
- Uses an open software ecosystem and provides flexibility in using bare-metal programming, included FreeRTOS, your preferred RTOS, legacy code, and third-party ecosystem solutions
- Integrated package with all required components for easy setup and starting development (single installer with e² studio, CMSIS packs, tool chain and Segger J-Link drivers)
- Complete source code available through GitHub

Development Environment

The RA family development environment offers flexibility in terms of different supported on-chip debuggers, IDEs, and compilers. Customers can use the Renesas e² studio, Keil MDK and IAR Embedded Workbench. All tools can use the RA configurators for FSP driver and middleware selection and configuration, in addition to pin mapping and clock tree configuration.

Overview

	Renesas e ² studio	IAR Systems Embedded Workbench for Arm	Keil Microcontroller Development Kit
Compilers	- GCC v9 or later - IAR v8.50 or later * - Arm v6.12 or later *	- IAR v8.50 or later *	- Arm v6.12 or later *
Debugger probes	- Renesas E2/E2 Lite - SEGGER J-Link	- IAR I-Jet - SEGGER J-Link	- SEGGER J-Link - Keil ULINK (limited support)
Smart Configurator	Built-in - BSP - Clock - Pin - Drivers - Interrupts	Supplied as RASC - BSP - Clock - Pin - Drivers - Interrupts	Supplied as RASC - BSP - Clock - Pin - Drivers - Interrupts
Application specific configurator	- QE for Capacitive Touch - QE for BLE - QE for AFE - Motor Control Workbench	Under consideration	Under consideration

^{*:} Compiler needs to be purchased and licensed directly from third-party.

Benefits

The eclipse-based e² studio along with a GCC compiler and SEGGER J-Link debugger is the primary development solution for RA MCUs and Flexible Software Package (FSP). e² studio offers a complete development flow from initial project generators, graphical FSP configuration and comprehensive debugger options.

As the RA MCU family includes TrustZone-enabled devices, new configuration options ensure that a development engineer can concentrate on the application rather than the underlying technology.

Renesas recognizes that Arm based MCUs benefit from a wide ecosystem, so we have worked with Keil and IAR Systems to develop the RA Smart Configurator (RASC) that inherits all the FSP configurator options from e² studio to extend the rich development options into the MDK and EWARM IDEs. To complement the powerful SEGGER J-Link probes, RA MCUs have been ported to the Renesas E2 and E2 Lite debuggers.

Production programming options are available from Renesas (RFP and PG-FP6) in addition to numerous third-party solutions such as SEGGER Flasher. Please contact your preferred partner to request RA production device programing support.



Evaluation Kits

The RA MCU evaluation kits enable users to effortlessly evaluate the features of different RA MCU Groups and develop embedded systems applications using the Flexible Software Package (FSP) and e² studio IDE. You can utilize rich on-board features along with your choice of popular ecosystem add-ons to bring your big ideas to life.

Overview

Series	Group	Kit Name	MP Kit Orderable Part Number
RA6	RA6M5	EK-RA6M5	RTK7EKA6M5S00001BE
	RA6M4	EK-RA6M4	RTK7EKA6M4S00001BE
	RA6M3	EK-RA6M3	RTK7EKA6M3S00001BU
		EK-RA6M3G	RTK7EKA6M3S01001BU
	RA6T1	RA6T1 Motor RSSK	RTK0EMA170S00020BJ
	RA6M2	EK-RA6M2	RTK7EKA6M2S00001BU
		RA6M2 Touch RSSK	RTK0EG0021S01001BJ
	RA6M1	EK-RA6M1	RTK7EKA6M1S00001BU

Series	Group	Kit Name	MP Kit Orderable Part Number
RA4	RA4M3	EK-RA4M3	RTK7EKA4M3S00001BE
	RA4M2	EK-RA4M2	RTK7EKA4M2S00001BE
	RA4M1	EK-RA4M1	RTK7EKA4M1S00001BU
	RA4W1	EK-RA4W1	RTK7EKA4W1S00000BJ
RA2	RA2A1	EK-RA2A1	RTK7EKA2A1S00001BU
	RA2E1	EK-RA2E1	RTK7EKA2E1S00001BE
	RA2L1	EK-RA2L1	RTK7EKA2L1S00001BE
		RA2L1 Touch RSSK	RTK0EG0022S01001BJ

Key Features

Ecosystem and System Control Access

- USB Full Speed Host & Device
- Multiple Power Sources, 2A max. LDO Current
- Multiple Debug Modes (On-board, Out, In)
- Multiple User LEDs and Buttons
- Popular Ecosystem Expansion Connectors
- Boot Configuration

Special Feature Access

- Ethernet
- Octo-SPI and Quad-SPI
- CAN Flexible Data-rate (FD)
- USB High-Speed Host & Device

Native MCU Pin Access

- RA MCU
- Prototyping-Friendly Male Pin Headers
- MCU Current Consumption
- USB Current Consumption

Benefits

The kits are based on a novel architecture that provides an unparalleled combination of standardization and flexibility. The kit design helps users shorten the learning curve and up development, providing more time for differentiating innovation or taking products to market faster. The kits also feature multiple debugging modes that allow users to debug the RA microcontroller on the kit or their custom board. The kits are also compatible with popular ecosystems. The expansion ports allow users to conveniently enhance the functionality of the kits by simultaneously connecting several third-party add-ons to implement custom functionality necessary to put together a variety of sophisticated, real-world end-applications.















RA Partners

Renesas enables a comprehensive partner ecosystem to deliver an array of software and hardware building blocks that will work out-of-the-box with Renesas RA Family MCUs. The Renesas RA ecosystem will help accelerate development of IoT applications, including core technologies such as security, safety, connectivity, and HMI among others.

RA

KEY TECHNOLOGIES

Security & Safety
Connectivity & Cloud
Artificial Intelligence & Machine Learning
Human Machine Interface
Sensing & Control
Application Specific/Emerging
Tools & User Experience





Develop Plug & Play S/W Building Blocks Complement & Expand Renesas Offering Accelerate Customer Development Multi-Region Support

STRATEGIC PARTNERSHIP







Close Collaboration with Customers
Priority on Time-to-Market
Market Driven Use Cases
Focus on Problem Solving

CUSTOMER CENTRICITY

Joint Promotion with Partners **ENABLEMENT AT SCALE**

Excellent Out-Of-Box Experience

Market Ready Promotion & Launches

Partner Overview

The partner overview shown might not be complete since the partner network is extending almost daily. For best reference and latest data we recommend checking our webpage at:

www.renesas.com/ra-partners





RA Family Selection Guide

											0		Syst	tem				Timers				041		Ana	alog			
	p Orderable Part Number		Max. Freq (MHz)	Code Flash (KB)	Data Flash (KB)	SRAM (KB)	Package Type	Pin Count	I/O Ports	Operating Voltage Range (V)	Operating Temperature Range (°C)	External Memory Bus (bit)	Floating Point Unit	DMA/ DTC	External Interrupt Pins	32-bit High Res Timer (ch)	Enhanced	32-bit GP Timer (ch)	16-bit Timer		WDT I	24-bit Sigma- DeltaA/D Converter (ch)	16-bit A/D Converter (ch)	14-bit A/D Converter (ch)	12-bit A/D Converter (ch)	12-bit D/A Converter (ch)	8-bit D/A Converter (ch)	
	R7FA2A1AB2CBT#AC0	Arm CM23	48	256	8	32	LFBGA	36	22	1.6 - 5.5	-40 to 85	No	No	0/1	8	0	0	1	3	2	2	2	5	5	0	1	2	
	R7FA2A1AB3CFJ#AA0	Arm CM23	48	256	8	32	LQFP	32	20	1.6 - 5.5	-40 to 105	No	No	0/1	8	0	0	1	4	2	2	2	5	5	0	1	2	
RA2A		Arm CM23	48	256	8	32	LFQFP	64	49	1.6 - 5.5	-40 to 105	No	No	0/1	8	0	0	1	6	2	2	8	17	17	0	1	2	
	R7FA2A1AB3CNE#AC0 R7FA2A1AB3CNF#AC0	Arm CM23 Arm CM23	48	256	8	32	HWQFN	48	33 25	1.6 - 5.5	-40 to 105	No No	No No	0/1	8	0	0	1	D //	2	2	D //	8	12	0	1	2	+
	R7FA2L1AB3CFP#AA0	Arm CM23	48	256	8	32	LQFP	100	85	1.6 - 5.5	-40 to 105	No	No	0/1	8	0	0	4	6	2	2	0	0	0	19	1	0	
	R7FA2L1AB3CFN#AA0	Arm CM23	48	256	8	32	LQFP	80	69	1.6 - 5.5	-40 to 105	No	No	0/1	8	0	0	4	6	2	2	0	0	0	17	1	0	
	R7FA2L1AB3CFM#AA0	Arm CM23	48	256	8	32	LQFP	64	53	1.6 - 5.5	-40 to 105	No	No	0/1	8	0	0	4	6	2	2	0	0	0	13	1	0	
	R7FA2L1AB3CFL#AA0	Arm CM23	48	256	8	32	LQFP	48	37	1.6 - 5.5	-40 to 105	No	No	0/1	8	0	0	4	3	2	2	0	0	0	13	1	0	
	R7FA2L1AB3CNE#AA0	Arm CM23	48	256	8	32	QFN	48	37	1.6 - 5.5	-40 to 105	No	No	0/1	8	0	0	4	3	2	2	0	0	0	13	1	0	4
	R7FA2L1A93CFP#AA0 R7FA2L1A93CFN#AA0	Arm CM23 Arm CM23	48	128	8	32	LQFP	100	85 69	1.6 - 5.5 1.6 - 5.5	-40 to 105	No	No No	0/1	8	0	0	4	6	2	2	0	0	0	19 17	1	0	+
	R7FA2L1A93CFM#AA0	Arm CM23	48	128	8	32	LUFP	64	53	1.6 - 5.5	-40 to 105	No No	No	0/1	8	0	0	4	6	2	2	0	0	0	13	1	0	Н
	R7FA2L1A93CFL#AA0	Arm CM23	48	128	8	32	LQFP	48	37	1.6 - 5.5	-40 to 105	No	No	0/1	8	0	0	4	3	2	2	0	0	0	13	1	0	
DAGI	R7FA2L1A93CNF#AA0	Arm CM23	48	128	8	32	QFN	48	37	1.6 - 5.5	-40 to 105	No	No	0/1	8	0	0	4	3	2	2	0	0	0	13	1	0	
RA2L	R7FA2L1AB2DFP#AA0	Arm CM23	48	256	8	32	LQFP	100	85	1.6 - 5.5	-40 to 85	No	No	0/1	8	0	0	4	6	2	2	0	0	0	19	1	0	
	R7FA2L1AB2DFN#AA0	Arm CM23	48	256	8	32	LQFP	80	69	1.6 - 5.5	-40 to 85	No	No	0/1	8	0	0	4	6	2	2	0	0	0	17	1	0	
	R7FA2L1AB2DFM#AA0	Arm CM23	48	256	8	32	LOFP	64	53	1.6 - 5.5	-40 to 85	No	No	0/1	8	0	0	4	6	2	2	0	0	0	13	1	0	H
	R7FA2L1AB2DFL#AA0 R7FA2L1AB2DNE#AA0	Arm CM23 Arm CM23	48	256 256	8	32	LQFP QFN	48	37	1.6 - 5.5	-40 to 85	No No	No No	0/1	8	0	0	4	3	2	2	0	0	0	13	1	0	H
	R7FA2L1A92DFP#AA0	Arm CM23	48	128	8	32	LQFP	100	85	1.6 - 5.5	-40 to 85	No	No	0/1	8	0	0	4	6	2	2	0	0	0	19	1	0	F
	R7FA2L1A92DFN#AA0	Arm CM23	48	128	8	32	LQFP	80	69	1.6 - 5.5	-40 to 85	No	No	0/1	8	0	0	4	6	2	2	0	0	0	17	1	0	
	R7FA2L1A92DFM#AA0	Arm CM23	48	128	8	32	LQFP	64	53	1.6 - 5.5	-40 to 85	No	No	0/1	8	0	0	4	6	2	2	0	0	0	13	1	0	
	R7FA2L1A92DFL#AA0	Arm CM23	48	128	8	32	LQFP	48	37	1.6 - 5.5	-40 to 85	No	No	0/1	8	0	0	4	3	2	2	0	0	0	13	1	0	
	R7FA2L1A92DNE#AA0	Arm CM23	48	128	8	32	QFN	48	37	1.6 - 5.5	-40 to 85	No	No	0/1	8	0	0	4	3	2	2	0	0	0	13	1	0	1
	R7FA2E1A93CFM#AA0 R7FA2E1A93CFK#AA0	Arm CM23 Arm CM23	48	128	4	16	LQFP	64	56 56	1.6 - 5.5	-40 to 105 -40 to 105	No No	No No	No No	8	0	0	1	6	2	2	0	0	0	13	0	0	H
	R7FA2E1A93CFL#AA0	Arm CM23	48	128	4	16	LOFP	48	40	1.6 - 5.5	-40 to 105	No	No	No	8	0	0	1	6	2	2	0	0	0	13	0	0	Н
	R7FA2E1A93CNE#AA0	Arm CM23	48	128	4	16	QFN	48	40	1.6 - 5.5	-40 to 105	No	No	No	8	0	0	1	6	2	2	0	0	0	13	0	0	
	R7FA2E1A93CFJ#AA0	Arm CM23	48	128	4	16	LQFP	32	26	1.6 - 5.5	-40 to 105	No	No	No	4	0	0	1	6	2	2	0	0	0	10	0	0	
	R7FA2E1A93CNH#AA0	Arm CM23	48	128	4	16	QFN	32	26	1.6 - 5.5	-40 to 105	No	No	No	4	0	0	1	6	2	2	0	0	0	10	0	0	
	R7FA2E1A93CBU#AC0	Arm CM23	48	128	4	16	BGA	64	56	1.6 - 5.5	-40 to 105	No	No	No	8	0	0	1	6	2	2	0	0	0	13	0	0	4
	R7FA2E1A93CLM#AC0	Arm CM23	48	128	4	16 16	LGA	36	30	1.6 - 5.5	-40 to 105	No	No	No	6	0	0	1	6	2	2	0	0	0	12 8	0	0	
	R7FA2E1A93CBV#HC0 R7FA2E1A73CFM#AA0	Arm CM23 Arm CM23	48	128 64	4	16	ULCSP	25 64	25 56	1.6 - 5.5	-40 to 105	No No	No No	No No	8	0	0	1	6	2	2	n n	0	0	13	0	0	Н
	R7FA2E1A73CFK#AA0	Arm CM23	48	64	4	16	LQFP	64	56	1.6 - 5.5	-40 to 105	No	No	No	8	0	0	1	6	2	2	0	0	0	13	0	0	Н
	R7FA2E1A73CFL#AA0	Arm CM23	48	64	4	16	LQFP	48	40	1.6 - 5.5	-40 to 105	No	No	No	8	0	0	1	6	2	2	0	0	0	13	0	0	
	R7FA2E1A73CNE#AA0	Arm CM23	48	64	4	16	QFN	48	40	1.6 - 5.5	-40 to 105	No	No	No	8	0	0	1	6	2	2	0	0	0	13	0	0	4
	R7FA2E1A73CFJ#AA0	Arm CM23	48	64	4	16	LQFP	32	26	1.6 - 5.5	-40 to 105	No	No	No	4	0	0	1	6	2	2	0	0	0	10	0	0	
	R7FA2E1A73CNH#AA0 R7FA2E1A73CBU#AC0	Arm CM23 Arm CM23	48	64	4	16 16	QFN BGA	32 64	26 56	1.6 - 5.5	-40 to 105	No No	No No	No No	8	0	0	1	6	2	2	0	0	0	10	0	0	
	R7FA2E1A73CLM#AC0	Arm CM23	48	64	4	16	LGA	36	30	1.6 - 5.5	-40 to 105	No	No	No	6	0	0	1	6	2	2	0	0	0	12	0	0	
	R7FA2E1A73CBV#HC0	Arm CM23	48	64	4	16	WLCSP	25	25	1.6 - 5.5	-40 to 105	No	No	No	7	0	0	1	6	2	2	0	0	0	8	0	0	
	R7FA2E1A53CFL#AA0	Arm CM23	48	32	4	16	LQFP	48	40	1.6 - 5.5	-40 to 105	No	No	No	8	0	0	1	6	2	2	0	0	0	13	0	0	
	R7FA2E1A53CNE#AA0	Arm CM23	48	32	4	16	QFN	48	40	1.6 - 5.5	-40 to 105	No	No	No	8	0	0	1	6	2	2	0	0	0	13	0	0	4
	R7FA2E1A53CFJ#AA0	Arm CM23	48	32	4	16 16	LQFP	32	26	1.6 - 5.5	-40 to 105	No	No	No	4	0	0	1	6	2	2	0	0	0	10	0	0	-
	R7FA2E1A53CNH#AA0 R7FA2E1A53CLM#AC0	Arm CM23 Arm CM23	48	32	4	16	LGA	36	26 30	1.6 - 5.5 1.6 - 5.5	-40 to 105	No No	No No	No No	6	0	0	1	6	2	2	n n	0	0	10	0	0	H
Date	R7FA2F1A53CRV#HC0	Arm CM23	48	32	4	16	WLCSP	25	21	1.6 - 5.5	-40 to 105	No	No	No	7	0	0	1	6	2	2	0	0	0	8	0	0	
RA2E	1 R7FA2E1A92DFM#AA0	Arm CM23	48	128	4	16	LQFP	64	56	1.6 - 5.5	-40 to 85	No	No	No	8	0	0	1	6	2	2	0	0	0	13	0	0	
	R7FA2E1A92DFK#AA0	Arm CM23	48	128	4	16	LQFP	64	56	1.6 - 5.5	-40 to 85	No	No	No	8	0	0	1	6	2	2	0	0	0	13	0	0	1
	R7FA2E1A92DFL#AA0	Arm CM23	48	128	4	16	LQFP	48	40	1.6 - 5.5	-40 to 85	No No	No	No No	8	0	0	1	6	2	2	0	0	0	13	0	0	-
	R7FA2E1A92DNE#AA0 R7FA2E1A92DFJ#AA0	Arm CM23 Arm CM23	48	128	4 4	16 16	QFN LQFP	48	40	1.6 - 5.5	-40 to 85	No No	No No	No No	8	0	0	1	6	2	2	0	0	0	13	0	0	H
	R7FA2E1A92DNH#AA0	Arm CM23	48	128	4	16	QFN	32	26	1.6 - 5.5	-40 to 85	No	No	No	4	0	0	1	6	2	2	0	0	0	10	0	0	H
	R7FA2E1A92DBU#AC0	Arm CM23	48	128	4	16	BGA	64	56	1.6 - 5.5	-40 to 85	No	No	No	8	0	0	1	6	2	2	0	0	0	13	0	0	
	R7FA2E1A92DLM#AC0	Arm CM23	48	128	4	16	LGA	36	30	1.6 - 5.5	-40 to 85	No	No	No	6	0	0	1	6	2	2	0	0	0	12	0	0	
	R7FA2E1A92DBV#HC0	Arm CM23	48	128	4	16	WLCSP	25	25	1.6 - 5.5	-40 to 85	No	No	No	7	0	0	1	6	2	2	0	0	0	8	0	0	1
	R7FA2E1A72DFM#AA0	Arm CM23	48	64	4	16	LOFP	64	56	1.6 - 5.5	-40 to 85	No	No	No	8	0	0	1	6	2	2	0	0	0	13	0	0	F
	R7FA2E1A72DFK#AA0 R7FA2E1A72DFL#AA0	Arm CM23 Arm CM23	48	64	4	16 16	LOFP	64 48	56 40	1.6 - 5.5	-40 to 85 -40 to 85	No No	No No	No No	8	0	0	1	6	2	2	0	0	0	13	0	0	H
	R7FA2E1A72DNE#AA0	Arm CM23		64	4	16	QFN	48	40	1.6 - 5.5	-40 to 85	No	No	No	8	0	0	1	6	2	2	0	0	0	13	0	0	
	R7FA2E1A72DFJ#AA0	Arm CM23		64	4	16	LQFP	32	26	1.6 - 5.5	-40 to 85	No	No	No	4	0	0	1	6	2	2	0	0	0	10	0	0	
	R7FA2E1A72DNH#AA0	Arm CM23	48	64	4	16	QFN	32	26	1.6 - 5.5	-40 to 85	No	No	No	4	0	0	1	6	2	2	0	0	0	10	0	0	
	R7FA2E1A72DBU#AC0	Arm CM23		64	4	16	BGA	64	56	1.6 - 5.5	-40 to 85	No	No	No	8	0	0	1	6	2	2	0	0	0	13	0	0	1
	R7FA2E1A72DLM#AC0	Arm CM23		64	4	16	LGA	36	30	1.6 - 5.5	-40 to 85	No No	No No	No	6	0	0	1	6	2	2	0	0	0	12	0	0	
	R7FA2E1A72DBV#HC0 R7FA2E1A52DFL#AA0	Arm CM23 Arm CM23	48	64 32	4	16 16	WLCSP LQFP	25 48	25 40	1.6 - 5.5 1.6 - 5.5	-40 to 85 -40 to 85	No No	No No	No No	7 8	0	0	1	6	2	2	0	0	0	13	0	0	H
	R7FA2E1A52DFL#AA0	Arm CM23	48	32	4	16	QFN	48	40	1.6 - 5.5	-40 to 85	No	No	No	8	0	0	1	6	2	2	0	0	0	13	0	0	
	R7FA2E1A52DFJ#AA0	Arm CM23		32	4	16	LQFP	32	26	1.6 - 5.5	-40 to 85	No	No	No	4	0	0	1	6	2	2	0	0	0	10	0	0	Ħ
	R7FA2E1A52DNH#AA0	Arm CM23	48	32	4	16	QFN	32	26	1.6 - 5.5	-40 to 85	No	No	No	4	0	0	1	6	2	2	0	0	0	10	0	0	
	N/FAZETADZUNH#AAU																											

	Ana	log								Commur	nication							НМІ			Security	
High- Speed Analog Comparator (ch)	Low- Power Analog Comparator	PGA (ch)	OPAMP (ch)	Temp. Sensor (ch)	Ethernet	USBFS (ch)	CAN (ch)	CAN FD (ch)	SCI (ch)	SPI (ch)	I2C (ch)						Segment LCD	Graphic LCD	Capacitive Touch (ch)	ECC SRAM		Suggested Kits
(ch)	(ch)	0	1	1	No	1	1	0	3	1	2	0	No	No	0	0	No	No	9	Yes		
1	2	0	1	1	No	1	1	0	3	2	2	0	No	No	0	0	No	No	11	Yes	128-bit Unique ID	
1	2	0	3	1	No No	1	1	0	3	2	2	0	No	No No	0	0	No No	No No	26	Yes	TRNG AES(128/256)	EK-RA2A1
1	2	0	1	1	No No	1	1	0	3	2	2	0	No No	No No	0	0	No No	No No	16 11	Yes Yes	AE3(120/230)	
0	2	0	0	1	No	0	1	0	5	2	2	0	No	No	0	0	No	No	32	Yes		
0	2	0	0	1	No	0	1	0	5	2	2	0	No	No	0	0	No	No	32	Yes		
0	2	0	0	1	No No	0	1	0	5 5	2	2	0	No No	No No	0	0	No No	No No	30 20	Yes Yes		
0	2	0	0	1	No	0	1	0	5	2	2	0	No	No	0	0	No	No	20	Yes		
0	2	0	0	1	No	0	1	0	5	2	2	0	No	No	0	0	No	No	32	Yes		
0	2	0	0	1	No No	0	1	0	5 5	2	2	0	No No	No No	0	0	No No	No No	32 30	Yes Yes		
0	2	0	0	1	No	0	1	0	5	2	2	0	No	No	0	0	No	No	20	Yes		
0	2	0	0	1	No	0	1	0	5	2	2	0	No	No	0	0	No	No	20	Yes	128-bit Unique ID TRNG	EK-RA2L1 or
0	2	0	0	1	No No	0	1	0	5 5	2	2	0	No No	No No	0	0	No No	No No	32 32	Yes Yes	AES(128/256)	RA2L1 Touch RSSK
0	2	0	0	1	No	0	1	0	5	2	2	0	No	No	0	0	No	No	30	Yes		
0	2	0	0	1	No	0	1	0	5	2	2	0	No	No	0	0	No	No	20	Yes		
0	2	0	0	1	No No	0	1	0	5 5	2	2	0	No No	No No	0	0	No No	No No	20 32	Yes Yes		
0	2	0	0	1	No	0	1	0	5	2	2	0	No	No	0	0	No	No	32	Yes		
0	2	0	0	1	No	0	1	0	5	2	2	0	No	No	0	0	No	No	30	Yes		
0	2	0	0	1	No No	0	1	0	5 5	2	2	0	No No	No No	0	0	No No	No No	20	Yes Yes		
0	2	0	0	1	No	0	1	0	4	1	1	0	No	No	0	0	No	No	30	No		
0	2	0	0	1	No	0	1	0	4	1	1	0	No	No	0	0	No	No	30	No		
0	2	0	0	1	No No	0	1	0	4	1	1	0	No No	No No	0	0	No No	No No	20	No No		
0	2	0	0	1	No	0	1	0	3	1	1	0	No	No	0	0	No	No	11	No		
0	2	0	0	1	No	0	1	0	3	1	1	0	No	No	0	0	No	No	11	No		
0	2	0	0	1	No No	0	1	0	3	1	1	0	No No	No No	0	0	No No	No No	30 14	No No		
0	2	0	0	1	No	0	1	0	3	1	1	0	No	No	0	0	No	No	10	No		
0	2	0	0	1	No	0	1	0	4	1	1	0	No	No	0	0	No	No	30	No		
0	2	0	0	1	No No	0	1	0	4	1	1	0	No No	No No	0	0	No No	No No	30 20	No No		
0	2	0	0	1	No	0	1	0	4	1	1	0	No	No	0	0	No	No	20	No		
0	2	0	0	1	No No	0	1	0	3	1	1	0	No	No No	0	0	No No	No No	11	No No		
0	2	0	0	1	No No	0	1	0	3	1	1	0	No No	No No	0	0	No No	No No	11 30	No No		
0	2	0	0	1	No	0	1	0	3	1	1	0	No	No	0	0	No	No	14	No		
0	2	0	0	1	No No	0	1	0	3	1	1	0	No No	No No	0	0	No No	No No	10 20	No No		
0	2	0	0	1	No	0	1	0	4	1	1	0	No	No	0	0	No	No	20	No		
0	2	0	0	1	No	0	1	0	3	1	1	0	No	No	0	0	No	No	11	No		
0	2 2	0	0	1	No No	0	1	0	3	1	1	0	No No	No No	0	0	No No	No No	11 14	No No		
0	2	0	0	1	No	0	1	0	3	1	1	0	No	No	0	0	No	No	10	No	128-bit Unique ID TRNG	EK-RA2E1
0	2	0	0	1	No	0	1	0	4	1	1	0	No No	No	0	0	No	No	30	No	AES(128/256)	ER-NAZE I
0	2 2	0	0	1	No No	0	1	0	4	1	1	0	No No	No No	0	0	No No	No No	30 20	No No		
0	2	0	0	1	No	0	1	0	4	1	1	0	No	No	0	0	No	No	20	No		
0	2	0	0	1	No	0	1	0	3	1	1	0	No	No	0	0	No	No	11	No		
0	2	0	0	1	No No	0	1	0	4	1	1	0	No No	No No	0	0	No No	No No	11 30	No No		
0	2	0	0	1	No	0	1	0	3	1	1	0	No	No	0	0	No	No	14	No		
0	2	0	0	1	No No	0	1	0	3	1	1	0	No No	No No	0	0	No No	No No	10 30	No No		
0	2	0	0	1	No	0	1	0	4	1	1	0	No	No	0	0	No	No	30	No		
0	2	0	0	1	No	0	1	0	4	1	1	0	No	No	0	0	No	No	20	No		
0	2	0	0	1	No No	0	1	0	3	1	1	0	No No	No No	0	0	No No	No No	20	No No		
0	2	0	0	1	No	0	1	0	3	1	1	0	No	No	0	0	No	No	11	No		
0	2	0	0	1	No	0	1	0	4	1	1	0	No	No	0	0	No	No	30	No		
0	2	0	0	1	No No	0	1	0	3	1	1	0	No No	No No	0	0	No No	No No	14 10	No No		
0	2	0	0	1	No	0	1	0	4	1	1	0	No	No	0	0	No	No	20	No		
0	2	0	0	1	No	0	1	0	4	1	1	0	No No	No	0	0	No	No	20	No		
0	2	0	0	1	No No	0	1	0	3	1	1	0	No No	No No	0	0	No No	No No	11	No No		
0	2	0	0	1	No	0	1	0	3	1	1	0	No	No	0	0	No	No	14	No		
0	2	0	0	1	No	0	1	0	3	1	1	0	No	No	0	0	No	No	10	No		



RA Family Selection Guide

													Syst	tem				Timers						Ana	log		
			Max.	Code	Data	SRAM	Package		1/0	Operating	Operating Temperature	External	Floating					32-bit				24-bit Sigma-	16-bit	14-bit	12-bit		8-bit
Group	Orderable Part Number	CPU	Freq (MHz)	Flash (KB)		(KB)		Count		Voltage Range (V)	Range	External Memory	Point	DMA/ DTC	Interrupt	High Res Timer	Enhanced	GP Timer	16-bit Timer			Delta A/D	A/D Converter	A/D Converter	A/D Convertor	D/A Converter	D/A Convertor
										ridinge (*)	(°C)	Bus (bit)	Unit			(ch)	(ch)	(ch)				Converter	(ch)	(ch)	(ch)	(ch)	(ch)
	B7FA4M1AB2CLJ#AC0	Arm CM4	48	256	8	32	TFLGA	100	84	1.6 - 5.5	-40 to 85	No	Yes	4/1	15	0	0	2	6	2	2	(cn)	0	25	0	1	2
	R7FA4M1AB3CFL#AA0	Arm CM4	48	256	8	32	LFQFP	48	36	1.6 - 5.5	-40 to 105	No	Yes	4/1	15	0	0	2	4	0	2	0	0	14	0	1	2
	R7FA4M1AB3CFM#AA0	Arm CM4	48	256	8	32	LFQFP	64	52	1.6 - 5.5	-40 to 105	No	Yes	4/1	15	0	0	2	6	2	2	0	0	18	0	1	2
RA4M1	R7FA4M1AB3CFP#AA0	Arm CM4	48	256	8	32	LFQFP	100	84	1.6 - 5.5	-40 to 105	No	Yes	4/1	15	0	0	2	6	2	2	0	0	25	0	1	2
	R7FA4M1AB3CNB#AC0	Arm CM4	48	256	8	32	HWQFN	64	52	1.6 - 5.5	-40 to 105	No	Yes	4/1	15	0	0	2	6	2	2	0	0	18	0	1	2
	R7FA4M1AB3CNE#AC0	Arm CM4	48	256	8	32	HWQFN	48	36	1.6 - 5.5	-40 to 105	No	Yes	4/1	15	0	0	2	4	0	2	0	0	14	0	1	2
	R7FA4M1AB3CNF#AC0	Arm CM4	48	256	8	32	HWQFN	40	28	1.6 - 5.5	-40 to 105	No	Yes	4/1	15	0	0	2	2	0	2	0	0	11	0	1	2
	R7FA4M2AD3CFP#AA0	Arm CM33	100	512	8	128	LQFP	100	78	2.7 - 3.6	-40 to 105	No	Yes	8/1	16	0	0	4	4	6	2	0	0	0	12	2	0
	R7FA4M2AD3CFM#AA0	Arm CM33 Arm CM33	100	512	8	128	LQFP	64	44	2.7 - 3.6	-40 to 105	No	Yes	8/1	16	0	0	4	4	6	2	0	0	0	/	2	0
	R7FA4M2AD3CFL#AA0 R7FA4M2AD3CNE#AA0	Arm CM33	100	512 512	8	128	LQFP QFN	48	30	2.7 - 3.6	-40 to 105	No No	Yes Yes	8/1	16 16	0	0	4	4	6	2	0	0	0	4	2	0
	R7FA4M2AC3CFP#AA0	Arm CM33	100	384	8	128	LQFP	100	78	2.7 - 3.6	-40 to 105	No	Yes	8/1	16	0	0	4	Α.	6	2	0	0	0	12	2	0
	R7FA4M2AC3CFM#AA0	Arm CM33	100	384	8	128	LOFP	64	44	2.7 - 3.6	-40 to 105	No	Yes	8/1	16	0	0	4	4	6	2	0	0	0	7	2	0
RA4M2	R7FA4M2AC3CFL#AA0	Arm CM33	100	384	8	128	LQFP	48	30	2.7 - 3.6	-40 to 105	No	Yes	8/1	16	0	0	4	4	6	2	0	0	0	4	2	0
	R7FA4M2AC3CNE#AA0	Arm CM33	100	384	8	128	QFN	48	30	2.7 - 3.6	-40 to 105	No	Yes	8/1	16	0	0	4	4	6	2	0	0	0	4	2	0
	R7FA4M2AB3CFP#AA0	Arm CM33	100	256	8	128	LQFP	100	78	2.7 - 3.6	-40 to 105	No	Yes	8/1	16	0	0	4	4	6	2	0	0	0	12	2	0
	R7FA4M2AB3CFM#AA0	Arm CM33	100	256	8	128	LQFP	64	44	2.7 - 3.6	-40 to 105	No	Yes	8/1	16	0	0	4	4	6	2	0	0	0	7	2	0
	R7FA4M2AB3CFL#AA0	Arm CM33	100	256	8	128	LQFP	48	30	2.7 - 3.6	-40 to 105	No	Yes	8/1	16	0	0	4	4	6	2	0	0	0	4	2	0
	R7FA4M2AB3CNE#AA0	Arm CM33	100	256	8	128	QFN	48	30	2.7 - 3.6	-40 to 105	No	Yes	8/1	16	0	0	4	4	6	2	0	0	0	4	2	0
RA4W1	R7FA4W1AD2CNG#AA0	Arm CM4	48	512	8	96	HWQFN	56	34	1.8 - 3.6	-40 to 85	No	Yes	4/1	12	0	0	4	3	2	2	0	0	8	0	1	2
	DDF1 4140 4 F0 0 FD 4 4 0	4 01400	400	4004	050		LOFE		440	0.7.00	40 - 405		.,	0.14	40						_						
	R7FA4M3AF3CFB#AA0	Arm CM33	100	1024	-	8	LQFP	144	110	2.7 - 3.6	-40 to 105	No	Yes	8/1	16	0	0	4	4	6	2	0	0	0	22	2	0
	R7FA4M3AF3CFP#AA0	Arm CM33	100	1024	256	8	LQFP	100	76	2.7 - 3.6	-40 to 105	No	Yes	8/1	16	0	0	4	4	6	2	0	0	0	20	2	0
	R7FA4M3AF3CFM#AA0	Arm CM33	100	1024	256	8	LQFP	64	42	2.7 - 3.6	-40 to 105	No	Yes	8/1	16	0	0	4	4	6	2	0	0	0	11	2	0
RA4M3	R7FA4M3AE3CFB#AA0	Arm CM33	100	768	256	8	LQFP	144	110	2.7 - 3.6	-40 to 105	No	Yes	8/1	16	0	0	4	4	6	2	0	0	0	22	2	0
	R7FA4M3AE3CFP#AA0	Arm CM33	100	768	256	8	LQFP	100	76	2.7 - 3.6	-40 to 105	No	Yes	8/1	16	0	0	4	4	6	2	0	0	0	20	2	0
	R7FA4M3AE3CFM#AA0	Arm CM33	100	768	256	8	LQFP	64	42	2.7 - 3.6	-40 to 105	No	Yes	8/1	16	0	0	4	4	6	2	0	0	0	11	2	0
	R7FA4M3AD3CFB#AA0	Arm CM33	100	512	256	8	LQFP	144	110	2.7 - 3.6	-40 to 105	No	Yes	8/1	16	0	0	4	4	6	2	0	0	0	22	2	0
	R7FA6M1AD2CLJ#AC0	Arm CM4	120	512	200	256	TFLGA	100	76	2.7 - 3.6	-40 to 105	8	Yes	8/1	14	4	4	5	0	2	2	0	0	0	19	2	0
	R7FA6M1AD3CFM#AA0	Arm CM4	120	512	8	256	LFQFP	64	40	2.7 - 3.6	-40 to 105	No	Yes	8/1	14	4	3	4	0	2	2	0	0	0	10	2	0
RA6M1	R7FA6M1AD3CFP#AA0	Arm CM4	120	512	8	256	LFQFP	100	76	2.7 - 3.6	-40 to 105	8	Yes	8/1	14	4	4	5	0	2	2	0	0	0	19	2	0
	R7FA6M1AD3CNB#AC0	Arm CM4	120	512	8	256	HWQFN	64	40	2.7 - 3.6	-40 to 105	No	Yes	8/1	14	4	3	4	0	2	2	0	0	0	10	2	0
	R7FA6M2AD2CLK#AC0	Arm CM4	120	512	32	384	TFLGA	145	110	2.7 - 3.6	-40 to 85	16/8	Yes	8/1	16	4	4	6	0	2	2	0	0	0	22	2	0
	R7FA6M2AD3CFB#AA0	Arm CM4	120	512	32	384	LFQFP	144	110	2.7 - 3.6	-40 to 105	16/8	Yes	8/1	16	4	4	6	0	2	2	0	0	0	22	2	0
RA6M2	R7FA6M2AD3CFP#AA0	Arm CM4	120	512	32	384	LFQFP	100	76	2.7 - 3.6	-40 to 105	8	Yes	8/1	16	4	4	5	0	2	2	0	0	0	19	2	0
	R7FA6M2AF2CLK#AC0	Arm CM4	120	1024	32	384	TFLGA	145	110	2.7 - 3.6	-40 to 85	16/8	Yes	8/1	16	4	4	6	0	2	2	0	0	0	22	2	0
	R7FA6M2AF3CFB#AA0 R7FA6M2AF3CFP#AA0	Arm CM4 Arm CM4	120	1024	32	384	LFQFP LFQFP	144	110 76	2.7 - 3.6	-40 to 105	16/8	Yes Yes	8/1	16 16	4	4	6 5	0	2	2	0	0	0	22 19	2	0
	R7FA6M3AF2CBG#AC0	Arm CM4	120	1024		640	LFUFF	176	133	2.7 - 3.6	-40 to 103	16/8	Yes	8/1	16	4	4	6	0	2	2	0	0	0	24	2	0
	R7FA6M3AF2CLK#AC0	Arm CM4	120	1024	64	640	TFLGA	145	110	2.7 - 3.6	-40 to 85	16/8	Yes	8/1	16	4	4	6	0	2	2	0	0	0	22	2	0
	R7FA6M3AF3CFB#AA0	Arm CM4	120	1024	64	640	LFQFP	144	110	2.7 - 3.6	-40 to 105	16/8	Yes	8/1	16	4	4	6	0	2	2	0	0	0	22	2	0
	R7FA6M3AF3CFC#AA0	Arm CM4	120	1024	64	640	LFQFP	176	133	2.7 - 3.6	-40 to 105	16/8	Yes	8/1	16	4	4	6	0	2	2	0	0	0	24	2	0
RA6M3	R7FA6M3AF3CFP#AA0	Arm CM4	120	1024	64	640	LFQFP	100	76	2.7 - 3.6	-40 to 105	8	Yes	8/1	16	4	4	5	0	2	2	0	0	0	19	2	0
117 101110	R7FA6M3AH2CBG#AC0	Arm CM4	120	2048	64	640	LFBGA	176	133	2.7 - 3.6	-40 to 85	16/8	Yes	8/1	16	4	4	6	0	2	2	0	0	0	24	2	0
	R7FA6M3AH2CLK#AC0	Arm CM4	120	2048	64	640	TFLGA	145	110	2.7 - 3.6	-40 to 85	16/8	Yes	8/1	16	4	4	6	0	2	2	0	0	0	22	2	0
	R7FA6M3AH3CFB#AA0 R7FA6M3AH3CFC#AA0	Arm CM4 Arm CM4	120	2048	64	640	LFQFP	144	110	2.7 - 3.6	-40 to 105	16/8	Yes	8/1	16 16	4	4	6	0	2	2	0	0	0	22	2	0
	R7FA6M3AH3CFP#AA0	Arm CM4	120	2048	64	640	LFQFP	176 100	76	2.7 - 3.6	-40 to 105	16/8	Yes Yes	8/1	16	4	4	5	0	2	2	0	0	0	19	2	0
	R7FA6M4AD3CFM#AA0	Arm CM33	200	512	8	256	LFQFP	64	42	2.7 - 3.6	-40 to 105	No	Yes	8/1	16	0	0	4	6	6	2	0	0	0	11	2	0
	R7FA6M4AD3CFP#AA0	Arm CM33	200	512	8	256	LFQFP	100	76	2.7 - 3.6	-40 to 105	8	Yes	8/1	16	0	0	4	6	6	2	0	0	0	20	2	0
	R7FA6M4AD3CFB#AA0	Arm CM33	200	512	8	256	LFQFP	144	110	2.7 - 3.6	-40 to 105	16/8	Yes	8/1	16	0	0	4	6	6	2	0	0	0	22	2	0
	R7FA6M4AE3CFM#AA0	Arm CM33	200	768	8	256	LFQFP	64	42	2.7 - 3.6	-40 to 105	No	Yes	8/1	16	0	0	4	6	6	2	0	0	0	11	2	0
RA6M4	R7FA6M4AE3CFP#AA0	Arm CM33	200	768	8	256	LFQFP	100	76	2.7 - 3.6	-40 to 105	8	Yes	8/1	16	0	0	4	6	6	2	0	0	0	20	2	0
	R7FA6M4AE3CFB#AA0	Arm CM33	200	768	8	256	LFQFP	144	110	2.7 - 3.6	-40 to 105	16/8	Yes	8/1	16	0	0	4	6	6	2	0	0	0	22	2	0
	R7FA6M4AF3CFM#AA0 R7FA6M4AF3CFP#AA0	Arm CM33 Arm CM33	200	1024	8	256	LFQFP	100	42 76	2.7 - 3.6	-40 to 105	No 8	Yes Yes	8/1	16 16	0	0	4	6	6	2	0	0	0	20	2	0
	R7FA6M4AF3CFP#AA0	Arm CM33	200	1024		256	LFQFP	144		2.7 - 3.6		16/8	Yes	8/1	16	0	0	4	6	6	2	0	0	0	22	2	0
	R7FA6M5AH2CBG#AC0	Arm CM33	200	2048	8	512	FBGA	176	133	2.7 - 3.6		16/8	Yes	8/1	16	0	0	4	6	6	2	0	0	0	29	2	0
	R7FA6M5AH3CFC#AA0	Arm CM33	200	2048	8	512	LFQFP	176	133	2.7 - 3.6	-40 to 105	16/8	Yes	8/1	16	0	0	4	6	6	2	0	0	0	29	2	0
	R7FA6M5AH3CFB#AA0	Arm CM33	200	2048	8	512	LFQFP	144	110	2.7 - 3.6		16/8	Yes	8/1	16	0	0	4	6	6	2	0	0	0	25	2	0
	R7FA6M5AH3CFP#AA0	Arm CM33	200	2048		512	LFQFP	100	76	2.7 - 3.6	-40 to 105	16/8	Yes	8/1	16	0	0	4	6	6	2	0	0	0	20	2	0
	R7FA6M5AG2CBG#AC0	Arm CM33	200	1536	8	512	FBGA	176	133	2.7 - 3.6	-40 to 105	16/8	Yes	8/1	16	0	0	4	6	6	2	0	0	0	29	2	0
	R7FA6M5AG3CFC#AA0 R7FA6M5AG3CFB#AA0	Arm CM33	200	1536		512	LFQFP	176	133	2.7 - 3.6		16/8	Yes	8/1	16	0	0	4	6	6	2	0	0	0	29	2	0
	R7FA6M5AG3CFB#AA0 R7FA6M5AG3CFP#AA0	Arm CM33 Arm CM33	200	1536 1536	8	512 512	LFQFP LFQFP	144	110 76	2.7 - 3.6	-	16/8 16/8	Yes Yes	8/1	16 16	0	0	4	6	6	2	0	0	0	25 20	2	0
	R7FA6M5BH2CBG#AC0	Arm CM33	200	2048	8	512	FBGA	176	133	2.7 - 3.6		16/8	Yes	8/1	16	0	0	4	6	6	2	0	0	0	29	2	0
	R7FA6M5BH3CFC#AA0	Arm CM33	200	2048	8	512	LFQFP	176	133	2.7 - 3.6	-40 to 105	16/8	Yes	8/1	16	0	0	4	6	6	2	0	0	0	29	2	0
RA6M5	R7FA6M5BH3CFB#AA0	Arm CM33	200	2048	8	512	LFQFP	144	110	2.7 - 3.6	-	16/8	Yes	8/1	16	0	0	4	6	6	2	0	0	0	25	2	0
	R7FA6M5BH3CFP#AA0	Arm CM33	200	2048		512	LFQFP	100	76	2.7 - 3.6	-40 to 105	16/8	Yes	8/1	16	0	0	4	6	6	2	0	0	0		2	0
	R7FA6M5BG2CBG#AC0	Arm CM33	200	1536	8	512	FBGA	176		2.7 - 3.6	-40 to 105	16/8	Yes	8/1	16	0	0	4	6	6	2	0	0	0	29	2	0
	R7FA6M5BG3CFC#AA0	Arm CM33	200	1536		512	LFQFP	176		2.7 - 3.6		16/8	Yes	8/1	16	0	0	4	6	6	2	0	0	0	29	2	0
	R7FA6M5BG3CFB#AA0	Arm CM33	200	1536		512	LFQFP	144	110	2.7 - 3.6	-40 to 105	16/8	Yes	8/1	16	0	0	4	6	6	2	0	0	0	25	2	0
	R7FA6M5BG3CFP#AA0 R7FA6M5BF2CBG#AC0	Arm CM33 Arm CM33	200	1536 1024		512 512	LFQFP FBGA	100 176	76 133	2.7 - 3.6	-40 to 105	16/8	Yes Yes	8/1	16 16	0	0	4	6	6	2	0	0	0	20	2	0
	R7FA6M5BF3CFC#AA0	Arm CM33	200	1024		512	FEGE	176	133	2.7 - 3.6		16/8	Yes	8/1	16	0	0	4	6	6	2	0	0	0	29	2	0
	R7FA6M5BF3CFB#AA0	Arm CM33	200	1024		512	LFQFP	144	110	2.7 - 3.6		16/8	Yes	8/1	16	0	0	4	6	6	2	0	0	0	25	2	0
	R7FA6M5BF3CFP#AA0	Arm CM33	200	1024		512	LFQFP	100	76	2.7 - 3.6	-	16/8	Yes	8/1	16	0	0	4	6	6	2	0	0	0	20	2	0
	R7FA6T1AB3CFM#AA0	Arm CM4	120	256	8	64	LFQFP	64	40	2.7 - 3.6	-40 to 105	No	Yes	8/1	14	4	3	4	0	2	2	0	0	0	10	2	0
RA6T1	R7FA6T1AB3CFP#AA0	Arm CM4	120	512	8	64	LFQFP	100	76	2.7 - 3.6	-40 to 105	No	Yes	8/1	14	4	4	5	0	2	2	0	0	0	19	2	0
HOUTT	R7FA6T1AD3CFM#AA0	Arm CM4	120	256	8	64	LFQFP	64	40	2.7 - 3.6	-40 to 105	No	Yes	8/1	14	4	3	4	0	2	2	0	0	0	10	2	0
														_													

	Ana	alog								Commur	nication							НМІ			Security	
High- Speed Analog Comparator (ch)	Low- Power Analog Comparator (ch)	PGA (ch)	OPAMP (ch)	Temp. Sensor (ch)	Ethernet	USBFS (ch)	CAN (ch)	CAN FD (ch)	SCI (ch)	SPI (ch)	I2C (ch)						Segment LCD	Graphic LCD	Capacitive Touch (ch)	ECC SRAM	Encryption	Suggested Kits
0 0 0 0 0 0	2 2 2 2 2 2 2	0 0 0 0 0 0	4 1 3 4 3 1 0	1 1 1 1 1 1	No No No No No No	1 1 1 1 1 1	1 1 1 1 1 1	0 0 0 0 0	4 4 4 4 4 4	2 2 2 2 2 2 2	2 2 2 2 2 2 2 2	1 0 0 1 0 0 0	No No No No No No	No No No No No No	0 0 0 0 0 0	0 0 0 0 0 0	Yes No Yes Yes Yes No No	No No No No No No	27 15 24 27 24 15 10	Yes	128-bit Unique ID TRNG AES(128/256) GHASH	EK-RA4M1
0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 0 0 0 0 0	1 1 1 1 1 1 1 1 1 1 1	No N	1 1 1 1 1 1 1 1 1 1 1 1	1 1 1 1 1 1 1 1 1 1 1 1	0 0 0 0 0 0 0 0 0 0	6 6 6 6 6 6 6 6 6	1 1 1 1 1 1 1 1 1 1 1 1	2 2 1 1 2 2 1 1 2 2 1 1 1 2 2 1	1 0 0 0 1 1 0 0 0 1 1 0 0	Yes	No N	1 0 0 0 1 0 0 0 0 1 0 0 0	0 0 0 0 0 0 0 0 0 0	No N	No N	12 7 4 4 12 7 4 4 12 7 4 4	Yes	128-bit Unique ID TRNG AS(128/192/256) ECC/RSA(4K//DSA SHAZ24/SHAZ56 GHASH Tamper Detection Arm TrustZone	EK-RA4M2
0	1	0	1	1	No	1	1	0	4	2	2	0	No	No	0	0	Yes	No	11	Yes	TRNG AES(128/256) GHASH	EK-RA4W1
0	0	0	0	1	No No	1	2	0	6	1	2	1	Yes Yes	No No	1	0	No No	No No	20	Yes Yes	128-bit Unique ID	
0	0	0	0	1	No	1	2	0	6	1	2	0	Yes	No	0	0	No	No	7	Yes	TRNG AES(128/192/256)	
0	0	0	0	1	No No	1	2	0	6	1	2	1	Yes	No No	1	0	No N-	No No	20	Yes	ECC/RSA(4K)/DSA SHA224/SHA256	EK-RA4M3
0	0	0	0	1	No No	1	2	0	6	1	2	0	Yes Yes	No No	0	0	No No	No No	12 7	Yes Yes	GHASH Tamper Detection	
0	0	0	0	1	No	1	2	0	6	1	2	1	Yes	No	1	0	No	No	20	Yes	Arm TrustZone	
6	0	6	0	1	No No	1	2	0	7	2	2	1 0	Yes Yes	No No	2	1	No No	No No	12	Yes Yes		
6	0	6	0	1	No	1	2	0	7	2	2	1	Yes	No	2	1	No	No	12	Yes		EK-RA6M1
6	0	6	0	1	No	1	2	0	7	2	2	0	Yes	No	0	1	No	No	7	Yes		
 6	0	0	0	1	Yes Yes	1	2	0	10 10	2	3	1	Yes Yes	No No	2	1	No No	No No	18	Yes Yes		
6	0	0	0	1	Yes	1	0	0	10	2	2	1	Yes	No	2	1	No	No	12	Yes	128-bit Unique ID	EK-RA6M2 or
6	0	0	0	1	Yes Yes	1	2	0	10	2	3	1	Yes Yes	No No	2	1	No No	No No	18 18	Yes Yes	TRNG	RA6M2 Touch RSSK
6	0	0	0	1	Yes	1	2	0	10	2	2	1	Yes	No	2	1	No	No	12	Yes	AES(128/192/256) 3DES/ARC4	
 6	0	6	0	1	Yes Yes	2	2	0	10	2	3	2	Yes Yes	No No	2	1	No No	Yes Yes	13 18	Yes Yes	ECC/RSA/DSA	
6	0	6	0	1	Yes	1	2	0	10	2	3	2	Yes	No	2	1	No	Yes	18	Yes	SHA1/SHA224/SHA256/MD5 GHASH	
 6	0	6	0	1	Yes Yes	2	2	0	10	2	3	2	Yes Yes	No No	2	1	No No	Yes Yes	13 12	Yes Yes		
6	0	6	0	1	Yes	2	2	0	10	2	3	2	Yes	No	2	1	No	Yes	13	Yes		EK-RA6M3
 6	0	6	0	1	Yes Yes	1	2	0	10	2	3	2	Yes Yes	No No	2	1	No No	Yes Yes	18 18	Yes Yes		
6	0	6	0	1	Yes	2	2	0	10	2	3	2	Yes	No	2	1	No	Yes	13	Yes		
6	0	6	0	1	Yes	1	2	0	10	2	2	1	Yes	No	2	1	No	Yes	12	Yes		
0	0	0	0	1	No Yes	1	2	0	10	2	2	0	Yes Yes	Yes Yes	0	0	No No	No No	12	Yes Yes		
0	0	0	0	1	Yes	1	2	0	10	2	2	1	Yes	Yes	1	0	No	No	20	Yes		
0	0	0	0	1	No Yes	1	2	0	10	2	2	0	Yes Yes	Yes Yes	0	0	No No	No No	7 12	Yes Yes		EK-RA6M4
0	0	0	0	1	Yes	1	2	0	10	2	2	1	Yes	Yes	1	0	No	No	20	Yes		
0	0	0	0	1	No Yes	1	2	0	10	2	2	0	Yes Yes	Yes Yes	0	0	No No	No No	7 12	Yes Yes		
0	0	0	0	1	Yes	1	2	0		2	2	1	Yes	Yes	1	0	No	No	20	Yes		
0	0	0	0	1	Yes Yes	2	2	0	10	2	3	1	Yes Yes	Yes Yes	1	0	No No	No No	20	Yes Yes		
0	0	0	0	1	Yes	2	2	0	10	2	3	1	Yes	Yes	1	0	No	No	20	Yes	128-bit Unique ID	
0	0	0	0	1	Yes	2	2	0	10 10	2	3	1	Yes	Yes	1	0	No	No	12	Yes	TRNG AES(128/192/256)	
0	0	0	0	1	Yes Yes	2	2	0	10	2	3	1	Yes Yes	Yes Yes	1	0	No No	No No	20	Yes Yes	ECC/RSA(4K)/DSA SHA224/SHA256	
0	0	0	0	1	Yes	2	2	0	10	2	3	1	Yes	Yes	1	0	No	No	20	Yes	GHASH	
0	0	0	0	1	Yes Yes	2	2	2	10	2	3	1	Yes Yes	Yes Yes	1	0	No No	No No	12	Yes Yes	Tamper Detection Arm TrustZone	
0	0	0	0	1	Yes	2	0	2	10	2	3	1	Yes	Yes	1	0	No	No	20	Yes		EK-RA6M5
0	0	0	0	1	Yes Yes	2	0	2	10 10	2	3	1	Yes Yes	Yes Yes	1	0	No No	No No	20	Yes Yes		
0	0	0	0	1	Yes	2	0	2	10	2	3	1	Yes	Yes	1	0	No	No	20	Yes		
0	0	0	0	1	Yes Yes	2	0	2	10 10	2	3	1	Yes Yes	Yes Yes	1	0	No No	No No	20	Yes Yes		
0	0	0	0	1	Yes	2	0	2	10	2	3	1	Yes	Yes	1	0	No	No	12	Yes		
0	0	0	0	1	Yes Yes	2	0	2	10	2	3	1	Yes Yes	Yes Yes	1	0	No No	No No	20	Yes Yes		
0	0	0	0	1	Yes	2	0	2	10	2	3	1	Yes	Yes	1	0	No	No	20	Yes		
0	0	0	0	1	Yes	2	0	2	10	2	3	1	Yes	Yes	1	0	No	No	12	Yes		
6	0	0	0	1	No	0	1	0	7	2	2	0	No	No	0	1	No	No	0	No	128-bit Unique ID TRNG	DT//051111
6	0	0	0	1	No	0	1	0	7	2	2	0	No	No	0	1	No	No	0	No	AES(128/192/256) 3DES/ARC4	RTK0EMA170S00020BJ (RSSK Kit consit of
6	0	0	0	1	No	0	1	0	7	2	2	0	No	No	0	1	No	No	0	No	ECC/RSA/DSA SHA1/SHA224/SHA256/MD5	RA6T1 CPU Card and inverter board)
6	0	0	0	1	No	0	1	0	7	2	2	0	No	No	0	1	No	No	0	No	GHASH	



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