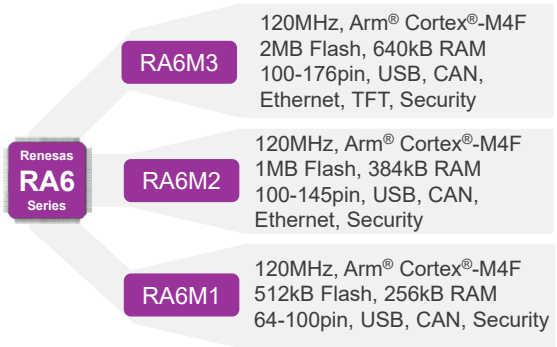


# 32-BIT MCU FAMILY

# RENESAS RA6M2 GROUP

## 120MHz Medium Size Memory Integration with Ethernet

The Renesas RA6M2 group uses the high-performance Arm® Cortex®-M4F core and offers a building Ethernet MAC with individual DMA, to ensure high data throughput. The RA6M2 is built on a highly efficient 40nm process and is supported by an open and flexible ecosystem concept—the Flexible Software Package (FSP) built on FreeRTOS—and is expandable to use other RTOSes and middleware. The RA6M2 is suitable for IoT application requiring Ethernet, Security, large embedded RAM and low active power consumption.



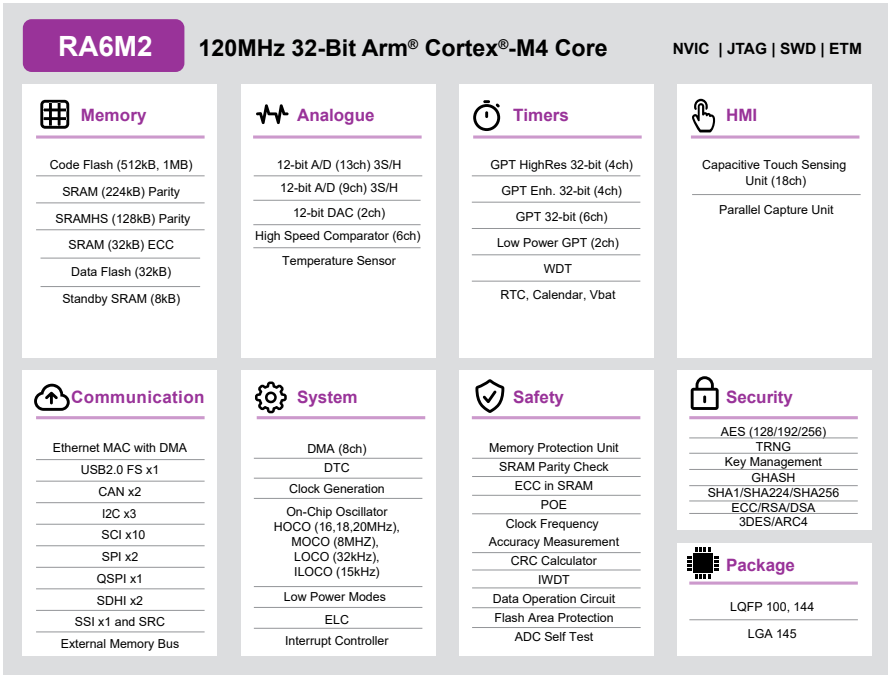
## Target Applications

- Wired Ethernet Applications
- Security (Fire Detection, Burglar Detection, Panel Control)
- Metering (Electricity, Automated Meter Reading)
- Industry (Robotics, Door Openers, Sewing Machines, Vending Machines, UPS)
- HVAC (Heating, Air Conditioning, Boiler Control)
- General Purpose

## Key Features

- 120MHz Arm® Cortex®-M4F
- 512kB-1MB Flash Memory and 384kB SRAM
- 32kB DataFlash to store data as in EEPROM
- Scalable from 100pin to 145pin Packages
- Ethernet Controller with DMA
- Capacitive Touch Sensing Unit
- USB2.0 Full Speed
- CAN 2.0B
- SCI (UART, Simple SPI, Simple I²C)
- SPI/ I²C Multimaster Interface
- SDHI

## Block Diagram



# RENESAS RA6M2 GROUP

## Benefits

- Integrated Crypto Module with several cryptography accelerators and Key management support
- Ethernet MAC with own DMA to ensure maximum data throughput
- Large 384kB embedded SRAM suitable for handling communication stacks.

## Tools and Support

### Integrated Development Environment (IDE)

- Renesas e<sup>2</sup> studio
- Keil MDK

### Compiler

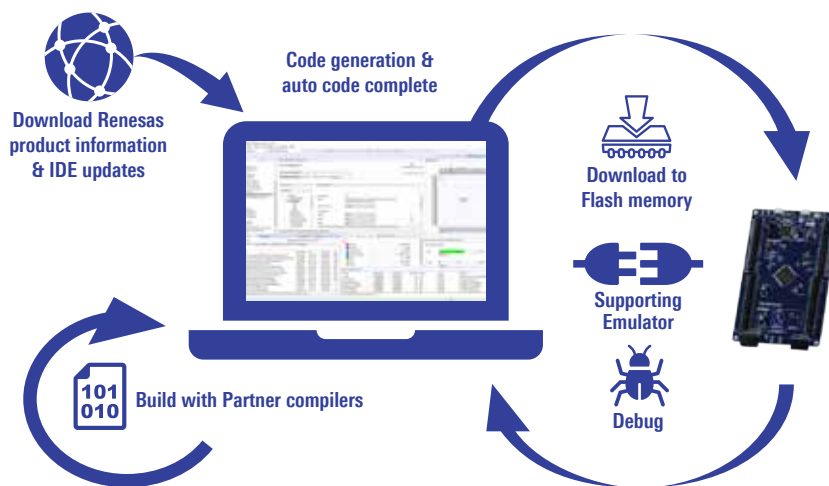
- GNU, Arm Compiler version 6

### Emulator

- Segger J-Link
- Renesas E2 emulator, E2 Lite emulator

### Flash Memory Programmer

- Renesas PG-FP6
- Third party solutions



### Evaluation Kit

- Full MCU evaluation including On-Chip debugger
  - Part name: **RTK7EKA6M2S00001BU**



Evaluation Kit: EK-RA6M2

## Ordering References

Part name	Flash	RAM	DataFlash	Operating Temperature	Package	Package dimensions	Pin Pitch
R7FA6M2AF2CLK	1MB	384kB	32kB	-40/+85°C	LGA 145pin	7x7mm body	0.5mm
R7FA6M2AF3CFB	1MB	384kB	32kB	-40/+105°C	LQFP 144pin	20x20mm body; (22x22mm)	0.5mm
R7FA6M2AF3CFP	1MB	384kB	32kB	-40/+105°C	LQFP 100pin	14x14mm body; (16x16mm)	0.5mm
R7FA6M2AD2CLK	512kB	384kB	32kB	-40/+85°C	LGA 145pin	7x7mm body	0.5mm
R7FA6M2AD3CFB	512kB	384kB	32kB	-40/+105°C	LQFP 144pin	20x20mm body; (22x22mm)	0.5mm
R7FA6M2AD3CFP	512kB	384kB	32kB	-40/+105°C	LQFP 100pin	14x14mm body; (16x16mm)	0.5mm

For more details, please visit [www.renesas.com/RA](http://www.renesas.com/RA)

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