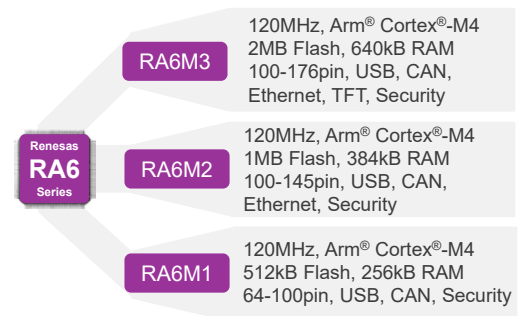


32-BIT MCU FAMILY

RENESAS RA6M2 GROUP

120MHz Medium Size Memory Integration with Ethernet

The Renesas RA6M2 group uses the high-performance Arm® Cortex®-M4 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.



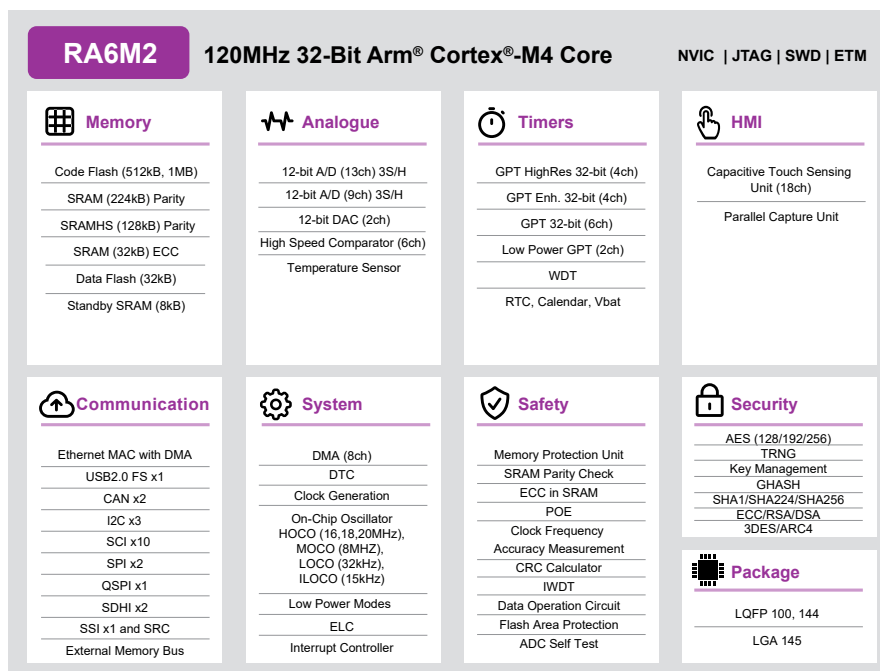
Target Applications

- 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®-M4
- 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



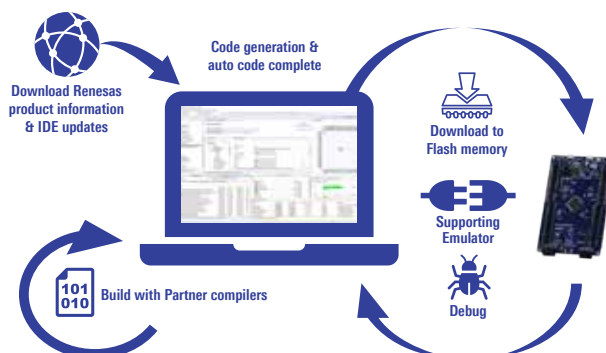
RENESAS RA6M2 GROUP

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

| IDE | Renesas e ² studio | Keil MDK | IAR EWARM |
|------------|---|---|--|
| Compiler | <ul style="list-style-type: none"> ■ GCC ■ Arm Compiler | <ul style="list-style-type: none"> ■ Arm Compiler | <ul style="list-style-type: none"> ■ IAR Arm Compiler |
| Debugger | <ul style="list-style-type: none"> ■ Renesas E2/E2 Lite ■ SEGGER J-Link | <ul style="list-style-type: none"> ■ SEGGER J-Link | <ul style="list-style-type: none"> ■ IAR I-Jet ■ SEGGER J-Link |
| Programmer | <ul style="list-style-type: none"> ■ Renesas PG-FP6 ■ SEGGER J-Flash ■ 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

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