AN INTRODUCTION TO
GENERAL-PURPOSE
RA MCU KITS
renesas.com/ra/kits

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AGENDA

Renesas Advanced MCU Kits
Vision, Objective & Strategy

Innovation Enablement & Product Lineup

Getting Started Is Easy!

More Information & Support

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VISION OF RENESAS ADVANCED MCU KITS

Deliver an **unmatched innovation experience** through scalable, flexible & ecosystem-ready Renesas Advanced MCU kits that enable users to **bring their innovative products to market faster**.
OBJECTIVE

To enable a large number of use cases so customers, engineers, developers, distributors, partners, etc. can do more
STRATEGY

Complexity of a MCU kit

Number of business enablement use-cases supported

Size of the circle => Number of MCU features supported by the kit
All MCU features

Typical Development Kit
Typical Starter Kit
Typical Breakout Board Kit
RA Kits

Business
- Serve global customer base
- Facilitate cross-selling
- Lower NRE & faster time to market

Technical
- Useful for innovation
- Support prioritized MCU peripherals
- Ecosystem ready

User Experience
- Delightful to use
- Beautifully designed & presented
DIFFERENTIATION THAT SETS YOU APART

Innovation Ready
A winning combination of standardization & flexibility

Ecosystem Ready
Enhance functionality on your terms

World Ready
Compliant with many international standards

Fun Ready
Take the guesswork out of your innovation experience
INNOVATION READY

A winning combination of standardization & flexibility that enables shorter learning curve & faster time to market

System & Control
- User buttons & LEDs
- MCU current measurement

Debugging
- Debug On-Board
- Debug In

Connectivity
- USB FS (Device)
- SPI, UART, I2C

MCU Access
- Male pin headers
- Basic prototyping

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**Standardized feature set across most RA kits**

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<th>Feature Set</th>
<th>Debugging</th>
<th>Connectivity</th>
<th>MCU Access</th>
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<td>Debug In</td>
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**Additional feature set available on some RA kits**

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<td>Capacitive touch button</td>
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<td>USB HS (Host &amp; Device)</td>
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ECOSYSTEM READY

Enhance functionality on your terms & choose from hundreds of 3rd party add-ons from popular ecosystems

Connect RA kits with add-ons and prototyping board
Compliant with many international standards

Documentation available in English & Japanese

EMC/EMI Standards
- FCC Notice (Class A) – Part 15
- Innovation, Science & Economic Development Canada ICES-003 Compliance: CAN ICES-3 (A)/NMB-3(A)
- Taiwan Chinese National Standard 13438, C6357 compliance, Class A limits
- Australia/New Zealand AS/NZS CISPR 32:2015, Class A

Waste, Recycling & Material Selection
- EU RoHS
- China SJ/T 113642014, 10-year environmental protection use period

Safety Standards
- UL 94V-0

User’s manual & quick start guide
FUN READY!

Take the guesswork out of your innovation experience for an unmatched, systematic & methodical approach to start developing

Watch the video

Click the image to watch the video
RA KITS - PRODUCT PORTFOLIO

General-Purpose MCU Kits

- Differentiated functionality
- Remarkable ease-of-use
- Broad ecosystem support
- Multiple debugging modes
- Feature standardization and scalability across RA8, RA6, RA4, and RA2 MCU Series

- Basic MCU pin access
- Limited ecosystem support
- On-board debugging only
- Design reuse across various Renesas MCU families: Synergy, RA, and RL78

3rd Party/Partner Kits

- Access to partner’s ecosystem & tools

A sampling of general-purpose RA MCU Evaluation Kits
PRODUCT LINE UP

Differentiated Functionality with Remarkable Ease-of-Use
Feature Standardization and Scalability across RA8, RA6, RA4, and RA2 MCU Series
FEATURED INNOVATION KITS - ARCHITECTURE

Key Features of Architecture

- Scalable design framework
- Feature access organization
- On-board access to most-popular ecosystems

Benefits of Architecture

- Applicable across RA MCUs – new kits
- Shorter learning curve for users
- Improved user experience
- Maximize hardware design reuse
- Lower NRE
- Faster time to market
- Brings more innovation to users
- Allows for vast functionality expansion
- Fuels partner engagement and ecosystem utilization
FEATURED INNOVATION KITS - ARCHITECTURE

- Power
- Debug
- Ecosystem expansion
- Basic connectivity
- User I/Os
- Kit Information

- High value functionality
- MCU pins
- MCU current measurement
- Other MCU dependent functionality

Ecosystem & System Control Access Area

Special Feature Access Area (optional)

MCU Native Pin Access Area

Standard section

Flexible section (MCU dependent)

EK-RA8M1 Board
EK-RA6M5 Board
EK-RA4M2 Board
EK-RA2E1 Board
EK-RA8D1
EVALUATION KIT FOR RA8D1 MCU GROUP

Key Features

Special Feature Access
- MIPI DSI & Parallel Graphics Expansion Ports
- Camera Expansion Port
- Ethernet
- USB High Speed Host & Device
- 64 MB SDRAM
- 64 MB External Octo-SPI Flash

MCU Native Pin Access
- R7FA8D1BHECBD MCU
- 480 MHz, Arm Cortex®-M85 core
- 2 MB Code Flash, 1 MB SRAM
- 224 pins, BGA package
- Native pin access
- MCU & USB current measurement
- DC/DC mode configuration

Ecosystem & System Control Access
- USB Full Speed Host & Device
- 5 V input through USB (Debug, FS, HS) or external power supply
- Debug on-board (Segger J-Link®)
- Debug in (ETM, SWD & JTAG)
- Debug out (SWD)
- 3 User LEDs & 2 User buttons
- 2 SeeedGrove® system (I3C & analog)
- 2 Digilent Pmod™ (SPI & UART)
- Arduino™ (Uno R3)
- MikroElektronika™ mikroBUS
- SparkFun® Qwiic® (I2C)
- MCU boot configuration jumper

renesas.com/ra/ek-ra8d1
(User manual, quick start guide, development tools, schematics, design files & example projects)

RTK7EKA8D1S01001BE
(Orderable part number)
EK-RA8D1
EVALUATION KIT FOR RA8D1 MCU GROUP

… continued

Key Features
MIPI Graphics Expansion Board
- 4.5 Inch backlit TFT display, 16.7M display colors
- 480x854 pixels resolution
- 2-lane MIPI interface
- Capacitive touch overlay (I2C)

Camera Expansion Board
- Off-the-shelf Arducam CMOS OV3640 Camera Module
- ¼ Inch 3.1 Megapixel image sensor
- Up to 15 fps in QXGA (2048x1536 pixels) resolution

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(User manual, quick start guide, development tools, schematics, design files & example projects)

RTK7EKA8D1S01001BE
(Orderable part number)
EK-RA8M1
EVALUATION KIT FOR RA8M1 MCU GROUP

Key Features
Special Feature Access
- Ethernet
- USB High Speed Host & Device
- 64 MB External Octo-SPI Flash
- CAN FD PHY

MCU Native Pin Access
- R7FA8M1AHECBD MCU
- 480 MHz, Arm Cortex®-M85 core
- 2 MB Code Flash, 1 MB SRAM
- 224 pins, BGA package
- Native pin access
- MCU & USB current measurement
- DC/DC mode configuration

Ecosystem & System Control Access
- USB Full Speed Host & Device
- 5 V input through USB (Debug, FS, HS) or external power supply
- Debug on-board (Segger J-Link®)
- Debug in (ETM, SWD & JTAG)
- Debug out (SWD)
- 3 User LEDs & 2 User buttons
- 2 SeeedGrove® system (I2C/I3C)
- 2 Digilent Pmod™ (SPI & UART)
- Arduino™ (Uno R3)
- MikroElektronika™ mikroBUS
- SparkFun® Qwiic® (I2C)
- MCU boot configuration jumper

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(User manual, quick start guide, development tools, schematics, design files & example projects)

RTK7EKA8M1S00001BE
(Orderable part number)
EK-RA6M5
EVALUATION KIT FOR RA6M5 MCU GROUP

Key Features
Special Feature Access
- Ethernet
- USB High Speed Host & Device
- 64 MB External Octo-SPI Flash
- 32 MB External Quad-SPI Flash
- CAN FD

MCU Native Pin Access
- R7FA6M5BH3CFC MCU
- 200 MHz, Arm Cortex®-M33 core
- 2 MB Code Flash, 512 KB SRAM
- 176 pins, LQFP package
- Native pin access
- MCU & USB current measurement points

Ecosystem & System Control Access
- USB Full Speed Host & Device
- 5 V input through USB (Debug, FS, HS) or external power supply
- Debug on-board (Segger J-Link®)
- Debug in (ETM, SWD & JTAG)
- Debug out (SWD)
- 3 User LEDs & 2 User buttons
- 2 SeeedGrove® system (I2C & analog)
- 2 Digilent Pmod™ (SPI & UART)
- Arduino™ (Uno R3)
- MikroElektronika™ mikroBUS
- SparkFun® Qwiic® (I2C)
- MCU boot configuration jumper

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(User manual, quick start guide, development tools, schematics, design files & example projects)

RTK7EKA6M5S00001BE
(Orderable part number)
EK-RA6M4
EVALUATION KIT FOR RA6M4 MCU GROUP

Key Features

Special Feature Access
- Ethernet
- 64 MB External Octo-SPI Flash
- 32 MB External Quad-SPI Flash

MCU Native Pin Access
- R7FA6M4AF3CFB MCU
- 200 MHz, Arm Cortex®-M33 core
- 1 MB Code Flash, 256 KB SRAM
- 144 pins, LQFP package
- Native pin access
- MCU & USB current measurement points

Ecosystem & System Control Access
- USB Full Speed Host & Device
- 5 V input through USB (Debug, FS) or external power supply
- Debug on-board (Segger J-Link®)
- Debug in (ETM, SWD & JTAG)
- Debug out (SWD)
- 3 User LEDs & 2 User buttons
- 2 SeeedGrove® system (I2C & analog)
- 2 Digilent Pmod™ (SPI & UART)
- Arduino™ (Uno R3)
- MikroElektronika™ mikroBUS
- SparkFun® Qwiic® (I2C)
- MCU boot configuration jumper

renesas.com/ra/ek-ra6m4
(User manual, quick start guide, development tools, schematics, design files & example projects)

RTK7EKA6M4S00001BE
(Orderable part number)
EK-RA6M3
EVALUATION KIT FOR RA6M3 MCU GROUP

Key Features

Special Feature Access
- Ethernet
- USB High Speed Host & Device
- 32 MB External QSPI Flash

MCU Native Pin Access
- R7FA6M3AH3CFC MCU
- 120 MHz, Arm Cortex®-M4 core
- 2 MB Code Flash, 640 KB SRAM
- 176 pins, LQFP package
- Native pin access through 4x 40-pin male headers
- MCU & USB current measurement points

Ecosystem & System Control Access
- USB Full Speed Host & Device
- 5 V input through USB (Debug, FS, HS) or external power supply
- Debug on-board (Segger J-Link®)
- Debug in (ETM, SWD & JTAG)
- Debug out (SWD)
- 3 User LEDs & 2 User buttons
- 2 SeeedGrove® system (I2C)
- 2 Digilent Pmod™ (SPI & UART)
- Arduino™ (Uno R3)
- MikroElektronika™ mikroBUS
- MCU boot configuration jumper
EK-RA6M3G
GRAPHICS EVALUATION KIT FOR RA6M3 MCU GROUP

Key Features
Special Feature Access
- 4.3” 480x272 px color TFT LCD with capacitive touch
- Ethernet
- USB High Speed Host & Device
- 32 MB External QSPI Flash

MCU Native Pin Access
- R7FA6M3AH3CFC MCU
- 120 MHz, Arm Cortex®-M4 core
- 2 MB Code Flash, 640 KB SRAM
- 176 pins, LQFP package
- Native pin access through 4x 40-pin male headers
- MCU & USB current measurement points

Ecosystem & System Control Access
- USB Full Speed Host & Device
- 5 V input through USB (Debug, FS, HS) or external power supply
- Debug on-board (Segger J-Link®)
- Debug in (ETM, SWD & JTAG)
- Debug out (SWD)
- 3 User LEDs & 2 User buttons
- 2 SeeedGrove® system (I2C)
- 2 Digilent Pmod™ (SPI & UART)
- Arduino™ (Uno R3)
- MikroElektronika™ mikroBUS
- MCU boot configuration jumper

Featured Software Library
- Segger™ emWin Embedded GUI

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(User manual, quick start guide, development tools, schematics, design files & example projects)

RTK7EKA6M3S01001BU
(Orderable part number)
EK-RA6E2
EVALUATION KIT FOR RA6E24 MCU GROUP

Key Features

Special Feature Access
- 32 MB External Quad-SPI Flash
- CAN FD PHY

MCU Native Pin Access
- R7FA6E2BB3CFM MCU
- 200 MHz, Arm Cortex®-M33 core
- 256 KB Code Flash, 40 KB SRAM
- 64 pins, LQFP package
- Native pin access through male pin headers
- MCU & USB current measurement

Ecosystem & System Control Access
- USB Full Speed Host & Device
- 5 V input through USB (Debug, FS) or external power supply
- Debug on-board (Segger J-Link®)
- Debug in (ETM, SWD & JTAG)
- Debug out (SWD)
- 3 User LEDs & 2 User buttons
- 2 SeeedGrove® system (I2C & analog)
- 2 Digilent Pmod™ (SPI & UART)
- Arduino™ (Uno R3)
- MikroElektronika™ mikroBUS
- SparkFun® Qwiic® (I2C)
- MCU boot configuration jumper

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(User manual, quick start guide, development tools, schematics, design files & example projects)

RTK7EKA6E2S00001BE
(Orderable part number)
EK-RA4M3
EVALUATION KIT FOR RA4M3 MCU GROUP

Key Features

Special Feature Access
- 32 MB External QSPI Flash

MCU Native Pin Access
- R7FA4M3AF3CFB MCU
- 100 MHz, Arm Cortex®-M33 core
- 1 MB Code Flash, 128 KB SRAM
- 144 pins, LQFP package
- Native pin access through male pin headers
- MCU & USB current measurement points

Ecosystem & System Control Access
- USB Full Speed Host & Device
- 5 V input through USB (Debug, FS) or external power supply
- Debug on-board (Segger J-Link®)
- Debug in (ETM, SWD & JTAG)
- Debug out (SWD)
- 3 User LEDs & 2 User buttons
- 2 SeeedGrove® system (I2C & analog)
- 2 Digilent Pmod™ (SPI & UART)
- Arduino™ (Uno R3)
- MikroElektronika™ mikroBUS
- SparkFun® Qwiic® (I2C)
- MCU boot configuration jumper

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(User manual, quick start guide, development tools, schematics, design files & example projects)

RTK7EKA4M3S00001BE
(Orderable part number)
EK-RA4M2
EVALUATION KIT FOR RA4M2 MCU GROUP

Key Features

Special Feature Access
- 32 MB External QSPI Flash

MCU Native Pin Access
- R7FA4M2AD2CFP MCU
- 100 MHz, Arm Cortex®-M33 core
- 512 KB Code Flash, 64 KB SRAM
- 100 pins, LQFP package
- Native pin access through male pin headers
- MCU & USB current measurement points

Ecosystem & System Control Access
- USB Full Speed Host & Device
- 5 V input through USB (Debug, FS) or external power supply
- Debug on-board (Segger J-Link®)
- Debug in (ETM, SWD & JTAG)
- Debug out (SWD)
- 3 User LEDs & 2 User buttons
- 2 SeeedGrove® system (I2C & analog)
- 2 Digilent Pmod™ (SPI & UART)
- Arduino™ (Uno R3)
- MikroElektronika™ mikroBUS
- SparkFun® Qwiic® (I2C)
- MCU boot configuration jumper

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(User manual, quick start guide, development tools, schematics, design files & example projects)

RTK7EKA4M2S00001BE
(Orderable part number)
EK-RA4E2
EVALUATION KIT FOR RA4E2 MCU GROUP

Key Features

Special Feature Access
- CAN FD PHY

MCU Native Pin Access
- R7FA4E2B93CFM MCU
- 100 MHz, Arm Cortex®-M33 core
- 128 KB Code Flash, 40 KB SRAM
- 64 pins, LQFP package
- Native pin access through male pin headers
- MCU & USB current measurement

Ecosystem & System Control Access
- USB Full Speed Host & Device
- 5 V input through USB (Debug, FS) or external power supply
- Debug on-board (Segger J-Link®)
- Debug in (ETM, SWD & JTAG)
- Debug out (SWD)
- 3 User LEDs & 2 User buttons
- 2 SeeedGrove® system (I2C & analog)
- 2 Digilent Pmod™ (SPI & UART)
- Arduino™ (Uno R3)
- MikroElektronika™ mikroBUS
- SparkFun® Qwiic® (I2C)
- MCU boot configuration jumper

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RTK7EKA4E2S00001BE
(Orderable part number)
EK-RA2L1
EVALUATION KIT FOR RA2L1 MCU GROUP

Key Features
MCU Native Pin Access
- R7FA2L1AB2DFP MCU
- 48 MHz, Arm Cortex®-M23 core
- 256 KB Code Flash, 32 KB SRAM
- 100 pins, LQFP package
- Native pin access through male pin headers
- MCU current measurement points

Ecosystem & System Control Access
- 5 V input through USB (Debug) or external power supply
- Debug on-board (Segger J-Link®)
- Debug in (SWD)
- Debug out (SWD)
- 3 User LEDs & 2 User buttons
- 2 SeeedGrove® system (I2C & Analog)
- 2 Digilent Pmod™ (SPI & UART)
- Arduino™ (Uno R3)
- MikroElektronika™ mikroBUS
- SparkFun® Qwiic® (I2C)
- MCU boot configuration jumper

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(User manual, quick start guide, development tools, schematics, design files & example projects)

RTK7EKA2L1S00001BE
(Orderable part number)
EK-RA2E1
EVALUATION KIT FOR RA2E1 MCU GROUP

Key Features

MCU Native Pin Access
- R7FA2E1A92DFM MCU
- 48 MHz, Arm Cortex®-M23 core
- 128 KB Code Flash, 16 KB SRAM
- 64 pins, LQFP package
- Native pin access through male pin headers
- MCU current measurement points
- DC/DC mode configuration

Ecosystem & System Control Access
- 5 V input through USB (Debug) or external power supply
- Debug on-board (Segger J-Link®)
- Debug in (SWD)
- Debug out (SWD)
- 3 User LEDs & 2 User buttons
- 2 SeeedGrove® system (I2C & Analog)
- 2 Digilent Pmod™ (SPI & UART)
- Arduino™ (Uno R3)
- MikroElektronika™ mikroBUS
- SparkFun® Qwiic® (I2C)
- MCU boot configuration jumper

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RTK7EKA2E1S00001BE
(Orderable part number)
EK-RA2E2
EVALUATION KIT FOR RA2E2 MCU GROUP

Key Features

MCU Native Pin Access
- R7FA2E2A72DNK MCU
- 48 MHz, Arm Cortex®-M23 core
- 64 KB Code Flash, 8 KB SRAM
- 24 pins, HWQFN package
- Native pin access through male pin headers
- MCU current measurement points
- DC/DC mode configuration

Ecosystem & System Control Access
- 5 V input through USB (Debug) or external power supply
- Debug on-board (Segger J-Link®)
- Debug in (SWD)
- Debug out (SWD)
- 3 User LEDs & 2 User buttons
- 2 SeeedGrove® system (I2C & Analog)
- 2 Digilent Pmod™ (SPI & UART)
- Arduino™ (Uno R3)
- MikroElektronika™ mikroBUS
- SparkFun® Qwiic® (I2C)
- MCU boot configuration jumper

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RTK7EKA2E2S00001BE
(Orderable part number)
BASIC PIN-OUT KITS – PRODUCT LINE UP

RA6 Series MCUs
- EK-RA6M2
- EK-RA6M1
- FPB-RA6E1
- EK-RA6E2

RA4 Series MCUs
- EK-RA4M1
- EK-RA4W1
- FPB-RA4E1
- FPB-RA4E2

RA2 Series MCUs
- EK-RA2A1
- FPB-RA2E1
- FPB-RA2E2

Basic MCU Pin Access
Design reuse across various Renesas MCU families: Synergy, RA, and RL78
EK-RA6M2
EVALUATION KIT FOR RA6M2 MCU GROUP

Key Features
- R7FA6M2AF3CFB MCU
- 120 MHz, Arm Cortex®-M4 core
- 1 MB Code Flash, 384 KB SRAM
- 144 pins, LQFP package
- Native pin access through 4x 40-pin male headers
- MCU current measurement points
- USB Full Speed Device
- 5 V input through USB Debug
- Debug on-board (Segger J-Link®)
- Debug in (SWD & JTAG)
- 2 Digilent Pmod™ (SPI & UART)
- User LED
- Mechanical user button
- Capacitive user button
- MCU boot configuration jumper

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(User manual, quick start guide, development tools, schematics, design files & example projects)

RTK7EKA6M2S00001BU
(Orderable part number)
**EK-RA6M1**
**EVALUATION KIT FOR RA6M1 GROUP**

**Key Features**

- R7FRA6M1AD3CFP MCU
- 120 MHz, Arm Cortex®-M4 core
- 512 KB Code Flash, 256 KB SRAM
- 100 pins, LQFP package
- Native pin access through 4x 40-pin male headers
- MCU current measurement points
- USB Full Speed Device
- 5 V input through USB Debug
- Debug on-board (Segger J-Link®)
- Debug in (SWD & JTAG)
- 2 Digilent Pmod™ (SPI & UART)
- User LED
- Mechanical user button
- Capacitive user button
- MCU boot configuration jumper

[renesas.com/ra/ek-RA6M1](https://renesas.com/ra/ek-RA6M1)
(User manual, quick start guide, development tools, schematics, design files & example projects)

**RTK7EKA6M1S00001BU**
(Orderable part number)
FPB-RA6E2
FAST PROTOTYPING BOARD FOR RA6E1 MCU GROUP

Key Features
- R7FA6E2BB3CFM MCU
- 200 MHz, Arm Cortex®-M33 core
- 256 KB Code Flash, 40 KB SRAM
- 64 pins, LQFP package
- Native pin access through male pin headers
- MCU current measurement points
- 5 V input through USB (Debug) or external power supply
- Debug on-board (Segger J-Link®)
- 2 User LEDs & 1 User button
- 2 Digilent Pmod™ (SPI & UART)
- Arduino™ (Uno R3)
- MCU boot configuration jumper

renesas.com/ra/fpb-ra6e2
(User manual, quick start guide, development tools, schematics, design files & example projects)

RTK7FPA6E2S00001BE
(Orderable part number)
FPB-RA6E1
FAST PROTOTYPING BOARD FOR RA6E1 MCU GROUP

Key Features

- R7FA6E10F2CFP MCU
- 100 MHz, Arm Cortex®-M33 core
- 1 MB Code Flash, 256 KB SRAM
- 100 pins, LQFP package
- Native pin access through male pin headers
- MCU current measurement points
- 5 V input through USB (Debug) or external power supply
- Debug on-board (Segger J-Link®)
- 2 User LEDs & 1 User button
- 2 Digilent Pmod™ (SPI & UART)
- Arduino™ (Uno R3)
- MCU boot configuration jumper

renesas.com/ra/fpb-ra6e1
(User manual, quick start guide, development tools, schematics, design files & example projects)

RTK7FPA6E1S00001BE
(Orderable part number)
EK-RA4M1
EVALUATION KIT FOR RA4M1 MCU GROUP

Key Features
- R7FA4M1AB3CFP MCU
- 48 MHz, Arm Cortex®-M4 core
- 256 KB Code Flash, 32 KB SRAM
- 100 pins, LQFP package
- Native pin access through 4x 40-pin male headers
- MCU current measurement points
- USB Full Speed Device
- 5 V input through USB Debug
- Debug on-board (Segger J-Link®)
- Debug in (SWD & JTAG)
- 2 Digilent Pmod™ (SPI & UART)
- User LED
- Mechanical user button
- Capacitive user button
- MCU boot configuration jumper

renesas.com/ra/ek-ra4m1
(User manual, quick start guide, development tools, schematics, design files & example projects)

RTK7EKA4M1S00001BU
(Orderable part number)
EK-RA4W1
EVALUATION KIT FOR RA4W1 MCU GROUP

Key Features

- R7FA4W1AD2CNG MCU
- 48 MHz, Arm Cortex®-M4 core
- 512 KB Code Flash, 96 KB SRAM
- 56 pins, QFN package
- MCU headers: 28 pins x2
- MCU current measurement points
- USB Full Speed device
- 5 V input through USB debug
- Debug on-board (Segger J-Link®)
- Digilent Pmod™ (SPI)
- Arduino™ (Uno R3)
- User LED
- Mechanical user button
- MCU boot configuration jumper

renesas.com/ra/ek-ra4w1
(User manual, quick start guide, development tools, schematics, design files & example projects)

RTK7EKA4W1S00000BJ
(Ordersable part number)
FPB-RA4E2
FAST PROTOTYPING BOARD FOR RA4E1 MCU GROUP

Key Features
- R7FA4E2B93CFM MCU
- 100 MHz, Arm Cortex®-M33 core
- 128 KB Code Flash, 40 KB SRAM
- 64 pins, LQFP package
- Native pin access through male pin headers
- MCU current measurement points
- 5 V input through USB (Debug) or external power supply
- Debug on-board (Segger J-Link®)
- 2 User LEDs & 1 User button
- 2 Digilent Pmod™ (SPI & UART)
- Arduino™ (Uno R3)
- MCU boot configuration jumper

renesas.com/ra/fpb-ra4e2
(User manual, quick start guide, development tools, schematics, design files & example projects)

RTK7FPA4E2S00001BE
(Orderable part number)
FPB-RA4E1
FAST PROTOTYPING BOARD FOR RA4E1 MCU GROUP

Key Features
- R7FA4E10D2CFM MCU
- 100 MHz, Arm Cortex®-M33 core
- 512 KB Code Flash, 128 KB SRAM
- 64 pins, LQFP package
- Native pin access through male pin headers
- MCU current measurement points
- 5 V input through USB (Debug) or external power supply
- Debug on-board (Segger J-Link®)
- 2 User LEDs & 1 User button
- 2 Digilent Pmod™ (SPI & UART)
- Arduino™ (Uno R3)
- MCU boot configuration jumper

[Image of FPB-RA4E1]

renesas.com/ra/fpb-ra4e1
(User manual, quick start guide, development tools, schematics, design files & example projects)

RTK7FPA4E1S00001BE
(Orderable part number)
EK-RA2A1
EVALUATION KIT FOR RA2A1 MCU GROUP

Key Features

- R7FA2A1AB3CFM MCU
- 48 MHz, Arm Cortex®-M23 core
- 256 KB Code Flash, 32 KB SRAM
- 64 pins, LQFP package
- Native pin access through 4x 40-pin male headers
- MCU current measurement points
- USB Full Speed Device
- 5 V input through USB Debug
- Debug on-board (Segger J-Link®)
- Debug in (SWD & JTAG)
- 2 Digilent Pmod™ (SPI & UART)
- User LED
- Mechanical user button
- Capacitive user button
- MCU boot configuration jumper

renesas.com/ra/ek-ra2a1
(User manual, quick start guide, development tools, schematics, design files & example projects)

RTK7EKA2A1S00001BU
(Orderable part number)
FPB-RA2E2
FAST PROTOTYPING BOARD FOR RA2E1 MCU GROUP

Key Features

- R7FA2E2A74CNK MCU
- 48 MHz, Arm Cortex®-M23 core
- 64 KB Code Flash, 64 KB SRAM
- 24 pins, HWQFN package
- Native pin access through male pin headers
- MCU current measurement points
- 5 V input through USB (Debug) or external power supply
- Debug on-board (Renesas E2 Lite)
- 2 User LEDs & 1 User button
- 2 Digilent Pmod™ (SPI & UART)
- Arduino™ (Uno R3)
- MCU boot configuration jumper

renesas.com/ra/fpb-ra2e2
(User manual, quick start guide, development tools, schematics, design files & example projects)

RTK7FPA2E2S00001BE
(Orderable part number)
FPB-RA2E1
FAST PROTOTYPING BOARD FOR RA2E1 MCU GROUP

Key Features

- R7FA2E1A93CFM MCU
- 48 MHz, Arm Cortex®-M23 core
- 128 KB Code Flash, 16 KB SRAM
- 64 pins, LQFP package
- Native pin access through male pin headers
- MCU current measurement points
- 5 V input through USB (Debug) or external power supply
- Debug on-board (Renesas E2 Lite)
- 2 User LEDs & 1 User button
- 2 Digilent Pmod™ (SPI & UART)
- Arduino™ (Uno R3)
- MCU boot configuration jumper

renesas.com/ra/fpb-ra2e1
(User manual, quick start guide, development tools, schematics, design files & example projects)

RTK7FPA2E1S00001BE
(Orderable part number)
MIKROE RA4M1 CLICKER
COMPACT STARTER BOARD FOR RA4M1 MCU GROUP

Key Features
MCU Native Pin Access
- R7FA4M1AB3CFP MCU
- 48 MHz, Arm Cortex®-M4 core
- 256 KB Code Flash, 32 KB SRAM
- 100 pins, LQFP package

Ecosystem & System Control Access
- 5 V input through USB-C(Debug)
- Debug on-board (Segger J-Link®)
- 2 User LEDs & 2 User buttons
- Reset button
- MikroElektronika™ mikroBUS

mikroe.com/ra4m1-clicker
(User manual, quick start guide, schematics, design files & example project)

MIKROE-4350
(Orderable part number)

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Deep-dive presentations are available on renesas.com/ra/<kit-name>
For example: renesas.com/ra/ek-ra6m3
TOP NOTCH COLLATERAL – BLOGS

Blogs are available on renesas.com/ra/<kit-name>
For example: renesas.com/ra/ek-ra6m3
TOP NOTCH COLLATERAL – GETTING STARTED VIDEOS

Available on renesas.com/ra/kits and on renesas.com/ra/<kit-name>. For example: renesas.com/ra/ek-ra6m3
MANY USEFUL VIDEOS BY PARTNERS & DISTRIBUTORS

Sampling of videos. Click the captions to view videos.
MANY USEFUL VIDEOS BY PARTNERS & DISTRIBUTORS

- HMI Solutions using EK-RA6M3G
- eProsima EK-RA6M5: Publisher demo with timer and LED blinking
- eProsima EK-RA6M5: Service demo with LEDs
- ARM Pelion Device Management for EK-RA6M3
- PR TechTalk EK-RA6M3 as External Debugger
- EK-RA6M3 Multizone® Security Demo
- eProsima EK-RA6M5: Demo parameters
- eProsima EK-RA6M5: Getting started with micro-ROS
- PR TechTalk EK-RA6M3 Segger RTT installation
- PR TechTalk EK-RA2L1 Getting Started

Sampling of videos. Click the captions to view videos.
TOP NOTCH COLLATERAL – ENGINEERING

Design Package

Quick start guide
User’s manual
Schematics
Bill of Materials
Design & manufacturing files
Example Projects

All items available on kit website renesas.com/ra/<kit-name>
For example: renesas.com/ra/ek-ra6m3
GETTING STARTED IS EASY!

1. Choose your favorite kit

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<thead>
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Sampling of RA kits. Full table is available on renesas.com/ra/kits
GETTING STARTED IS EASY!

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<td>1</td>
<td>Get your kit</td>
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<tr>
<td>2</td>
<td>Familiarize with your kit</td>
</tr>
<tr>
<td>3</td>
<td>Download &amp; install software &amp; tools</td>
</tr>
<tr>
<td>4</td>
<td>Explore &amp; customize example projects</td>
</tr>
<tr>
<td>5</td>
<td>Expand functionality</td>
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</table>

II. Order it from one of the leading global or regional distributors

Sampling of distributors

(List subject to change; please refer to renesas.com/ra/<kit-name> for the list of distributors stocking the kit)
GETTING STARTED IS EASY!

I. Obtain the quick start guide & user’s manual for your kit from renesas.com/ra/<kit-name>

<table>
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<tr>
<th>Kit Name</th>
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</table>

II. Run the Quick Start (QS) example project (EP) that is pre-programmed on the kit

1. Get your kit
2. Familiarize with your kit
3. Download & install software & tools
4. Explore & customize example projects
5. Expand functionality
GETTING STARTED IS EASY!

1. Get your kit
2. Familiarize with your kit
3. Download & install software & tools
4. Explore & customize example projects
5. Expand functionality

I. Download & install software & tools using the *FSP with e² studio installer* that includes:
   - **Flexible Software Package** – includes Hardware Abstraction Layer (HAL) drivers, Board Support Package (BSP), libraries, etc.
   - **e2 studio** – Integrated Development Environment

<table>
<thead>
<tr>
<th>Item</th>
<th>Download page</th>
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</thead>
<tbody>
<tr>
<td>FSP with e² studio installer</td>
<td>renesas.com/ra/fsp</td>
</tr>
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</table>

II. Need help anytime?
   - Ask questions, get answers from experts & collaborate with community renesas.com/ra/forum
GETTING STARTED IS EASY!

1. **Explore & customize Quick Start Example Project**
   - Visit kit page, for example, EK-RA6M3 webpage [renesas.com/ra/ek-ra6m3](renesas.com/ra/ek-ra6m3) and scroll down to “Documentation & Downloads” section
   - Download EK-RA6M3 Example Project Bundle
   - Extract the downloaded file xxxx-ek-ra6m3-exampleprojects.zip
   - Browse to xxxx-ek-ra6m3-exampleprojects\ek_ra6m3\_quickstart\quickstart_ek_ra6m3_ep to locate the source code of the QS EP
   - Refer to the quick start guide for instructions on modifying, rebuilding & programming the QS EP on your kit

2. **Explore & customize additional Example Projects**
   - In the EK-RA6M3 Example Project Bundle downloaded in the step above, browse to xxxx-ek-ra6m3-exampleprojects\ek_ra6m3\ to locate the example projects provided for this kit
   - Open xxxx-ek-ra6m3-exampleprojects.pdf to view the list of tool chain supported for each example project and additional reference documents
GETTING STARTED IS EASY!

1. Get your kit
2. Familiarize with your kit
3. Download & install software & tools
4. Explore & customize example projects
5. Expand functionality

I. Choose from hundreds of add-on modules from the supported ecosystems to build custom proof-of-concept hardware

II. Choose from numerous software IPs from Renesas ecosystem partners for additional features

III. Refer to the kit design package to develop your custom board with feature enhancements

Schematics  BOM  Design & manufacturing files
USEFUL RESOURCES

Ordering & Documentation
User Manual, Design Package, Quick Start Guide
renesas.com/ra/<kit-name>

Example Projects
Access FSP and Example Projects for RA Kits
renesas.com/ra/kitEP

Video Library
Learn more about RA MCU, Kits, FSP, and Tools
renesas.com/ra/videos

Support Community
Ask questions from experts
Collaborate with community
renesas.com/ra/forum

Feedback & Feature Requests
Tell us how we are doing and how can enhance your experience
renesas.com/ra/kitFeedback
BRING YOUR BIG IDEAS TO LIFE

Unmatched Innovation Experience

renesas.com/ra/kits