

Software to maximize RX Family performance

RX Family Software

<https://www.renesas.com/rx-software>

Easy program development by combining software

The RX Family provides everything required for immediate start, including board-dependent programs, peripheral drivers, middleware, and respective usage documents.

The customer can easily develop a program by combining and customizing software.

The RX Family also provides a software package containing all the necessary items.



User-code templates

Task function templates can be output. Users can create a customized template (by using their own code) for easy creation of a user system.



Configured realtime OS

A realtime OS (FreeRTOS or AzureRTOS) can be imported, thus allowing for easy development of a cloud-based system.



Configured peripheral drivers and middleware

A wide variety of peripheral drivers and standardized data processing middleware can be readily incorporated as required.



Configured board-specific programs

The need for complicated configurations such as microcontroller pin configuration can be eliminated by using board-dependent programs.

Program configuration can be completed with only 4 steps

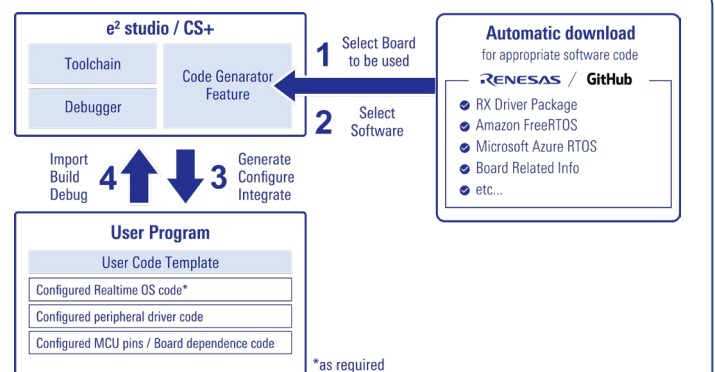
Select the board you are using and the necessary software in the Renesas integrated development environment (e² studio or CS+). The appropriate software (realtime OS, peripheral drivers, middleware, board-dependent programs) is automatically downloaded from GitHub.

After that, you need only configure the software, download it to RX, and debug it. The software can be configured as a user program in a very short time.

The integrated development environment also provides a variety of functions that aid migration of a project from an evaluation board to a user system board. With these functions, you can immediately start evaluation using the user system board after completing initial evaluation.

4 steps to configure a program

- ① Select the name of the board you are using.
- ② Select the software modules you wish to use.
- ③ Set up the software modules.
- ④ Download the software modules to the RX MCU and start debugging.



Software Package

[Detail](#) www.renesas.com/fit

Two types of software packages that include peripheral drivers and middleware are available for the RX Family: the Code Generator and FIT software modules.

The Code Generator automatically generates drivers from simple parameter settings made through its GUI. FIT software modules, on the other hand, are part of a set of modules compliant with the Firmware Integration Technology (FIT) specifications and provided in the Renesas Driver Package. Integrating these FIT software modules is also easy.

The Code Generator and FIT software modules can be used via the Smart Configurator, which is included in each of the IDEs. The Code Generator and FIT software modules have different advantages, and you can also choose to use both of them for different aspects of a project.

	Code Generator	FIT software module
Advantages	The generated code is simple, compact, highly readable, and efficient in terms of low memory usage. The generated code is customizable to suit the upper layers of user applications.	Shifting to another RX MCU is easy since the interfaces with user programs that the FIT software modules provide are common to all RX MCUs. *You can switch to another RX MCU by simply replacing the FIT software modules, without having to modify the body of the user program.
Suitable types of system	For use with facilities that can be applied with the use of the MCU alone, such as A/D converter and timer control	Involving the integration of multiple software modules such as realtime OS and middleware
	Developed by one person or a few people	Developed by multiple people

Software Module Package

RX Driver Package

[Detail](#) www.renesas.com/rdp



RX Driver package (RDP) is a common software platform for RX microcontrollers that contributes to reduction of a customer's system development period.

This software module package (based on the FIT specifications) provides basic functions such as microcontroller initialization, flash self-programming, timer control, UART communication, A/D conversion, and application functions, based on USB or Ethernet.

Package contents

- FIT middleware module
- FIT peripheral function module
- Board support package (BSP) module

Download

Downloadable for immediate use.

IDE

[e² studio](http://www.renesas.com/e2studio_download)

www.renesas.com/e2studio_download

[CS+](http://www.renesas.com/cs+_download)

www.renesas.com/cs+_download

Software Module Package

[RX Driver Package](http://www.renesas.com/rdp_download)

www.renesas.com/rdp_download

Video

We provide various tutorial and tip videos related to development environments for the RX Family, including getting-started videos for beginners.

www.renesas.com/rx-how-to-video

FAQ

en-support.renesas.com/knowledgeBase



Community

community.renesas.com

renesas.com

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