RENESAS

Flexibly combining software through a GUI with powerful support functions

Smart Configurator

https://www.renesas.com/smart-configurator

Code generation aid tool based on a concept of "flexibly combining software"

The Smart Configurator is a tool for automatically generating initial configuration programs for microcontrollers. This tool provides basic pin configuration functions and a GUI that allows the easy addition and configuration of drivers and middleware, thus facilitating combination and configuration of software that is applicable to the application under development.

Middleware/driver/clock Configuration

Importing middleware/drivers

The Flexible Software Package (FSP) and Firmware Integration Technology (FIT) are provided as middleware and drivers. You can easily add and configure the highly functional peripherals through the GUI of the Smart Configurator.
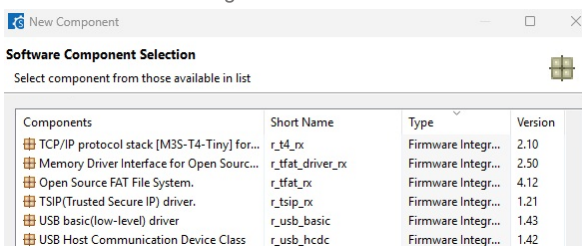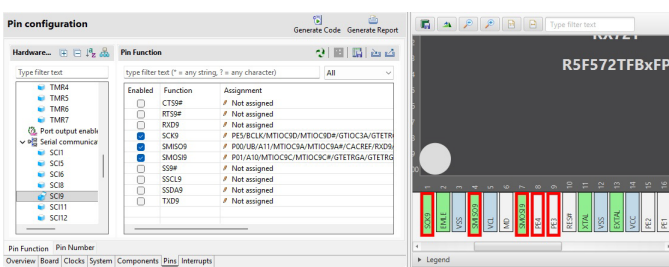

Pin Settings

Pin configuration through a GUI

You can verify and resolve conflicts between multiplexed pin functions.

[Pins Configuration] window

Used for configuring the pins to be used for each peripheral.

Clock settings

The [Clocks configuration] window allows you to configure clock settings while selecting from a block diagram in the GUI and confirming clock sources without the need for referring to the user's manual.
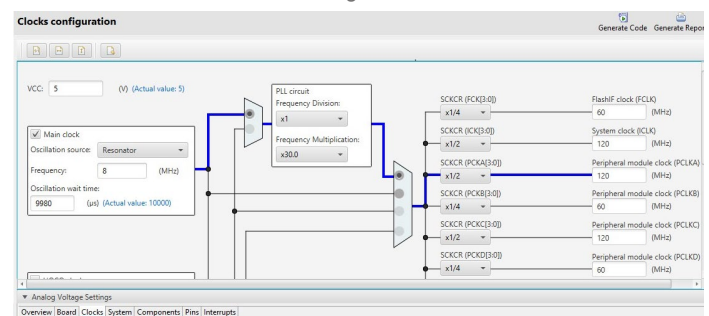

[MCU Package] window

Displays used pins, unused pins, and pins with conflicts of multiplexed functions in different colors for easy confirmation of the overall state. For conflicts between multiplexed pin functions, the pin assignment can be automatically changed to resolve the contention by a single click.
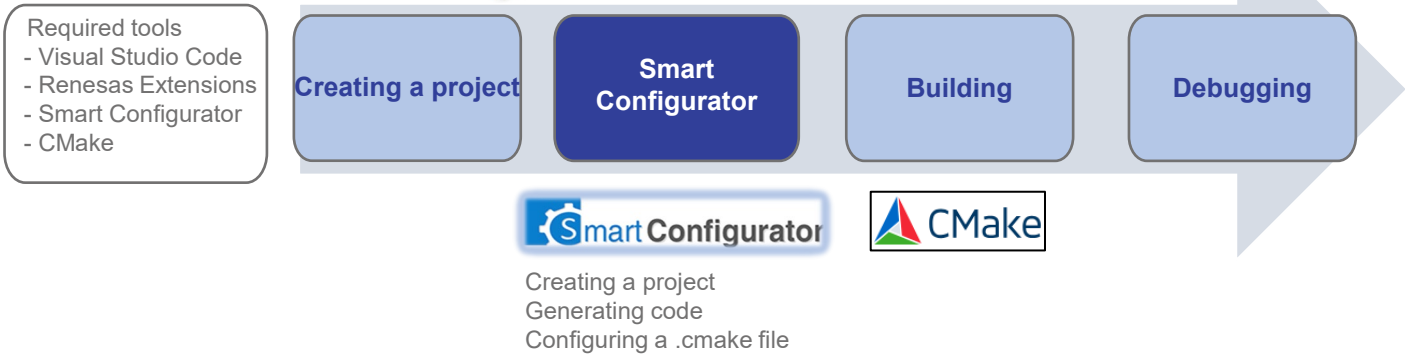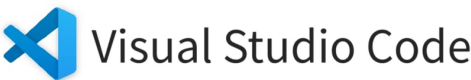

Code Generation

Source code that reflects the pin, clock, driver, and middleware configurations can be output.
If the IDEs are linked, the generated source code is automatically incorporated into the software project that is being edited.
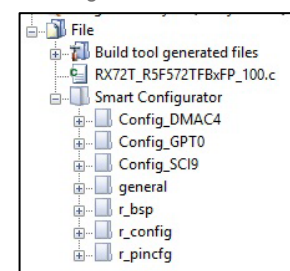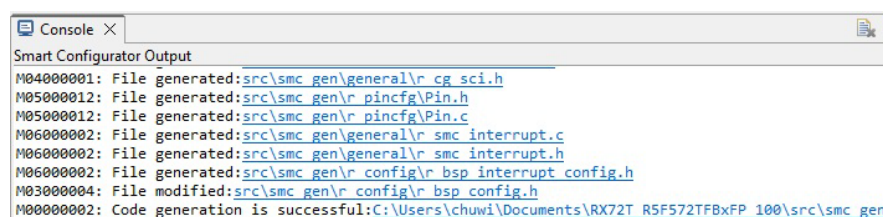
Working with Visual Studio Code

The Smart Configurator can also be made usable with Visual Studio Code by installing the build and debug extensions ([Renesas Extensions](#)) for Visual Studio Code and the other required tools listed below.

Visual Studio Code

Required tools
- Visual Studio Code
- Renesas Extensions
- Smart Configurator
- CMake

Creating a project → **Smart Configurator** → **Building** → **Debugging**

Smart Configurator / CMake

Creating a project
Generating code
Configuring a .cmake file

Editions provided for each version of the integrated development environment

e² studio plug-in	Optionally available version for CS+	Optionally available version for partner products	Optionally available version for RZ
RA, RZ, RL78, RX, RH850, RISC-V MCU	**RL78, RX, RH850**	**RA, RL78, RX, RH850, RZ (RZ/T2 and RZ/N2), RISC-V MCU**	**RZ**
e² studio includes the Smart Configurator. You can use the Smart Configurator by installing e² studio.	To use the Smart Configurator with CS+, you need to additionally install the optionally available version of the Smart Configurator.	To use the Smart Configurator with the partner IDEs (such as MULTI from Green Hills Software, Keil from Arm, or Embedded Workbench from IAR System), install the optionally available version of the Smart Configurator for the partner IDEs.	Only the setting of pins is handled. For Linux-based products, source code (a DTS file) that reflects pin settings can be output.
www.renesas.com/ e2studio_download	**www.renesas.com/smart-configurator** Note: Download Smart Configurator from the Smart Configurator page for the microcontroller.		

▶ Videos

For RX Family	www.renesas.com/rx-how-to-video
For RL78 Family	www.renesas.com/rl78-how-to-video
For RH850 Family	www.renesas.com/software-tool/rh850-smart-configurator#videos_training
For RISC-V MCU	www.renesas.com/software-tool/risc-v-smart-configurator#videos_training
For RA Family	www.renesas.com/ra-how-to-video
For RZ Family	www.renesas.com/software-tool/rz-smart-configurator#videos_training
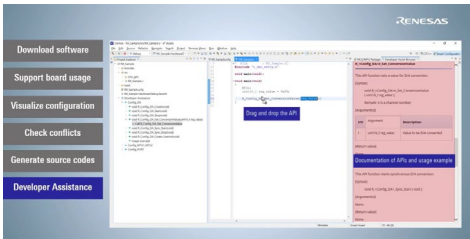
❓ **FAQ**   en-support.renesas.com/knowledgeBase

✅ **Community**   community.renesas.com

---

renesas.com

Renesas Electronics Corporation | Toyosu foresia 3-2-24,Toyosu, Koto-ku, Tokyo. 135-0061, Japan   **www.renesas.com**

Contact information
For further information on a product technology, to most up-to-date version of a document, or your nearest office, please visit **www.renesas.com/contact/**

R20CD0012EJ0400   2025.11