Integrated development environment provides ease, security, and comfort

CS+

https://www.renesas.com/cs+

Supporting embedded software development simply, securely, and comfortably

The CS+ integrated development environment provides simplicity, security, and ease of use in developing software. You can use the basic software tools for developing software for Renesas MCUs immediately after the initial installation. CS+ is also compatible with Renesas hardware tools including the debugging emulators (sold separately), which facilitates advanced debugging. Abundant extensions and functions for user support ensure a dependable environment for all users.

CS+ for ease, security, and comfort

Simply

Try out the functions of CS+ now!

Tutorial

Everyone can readily experience CS+ by operating according to the tutorial procedure from creation to debugging of a program.

Supported MCUs: RL78 Family / RX Family / RH850 Family
V850 Family / 78K0R / 78K0

Easy install of Renesas drivers in the system

Smart Configurator

GUI-based tool for configuring driver peripherals, installing middleware, and assigning pins are available as an extended function.

Supported MCUs: RL78 Family / RX Family / RH850 Family

Detail: www.renesas.com/smart-configurator

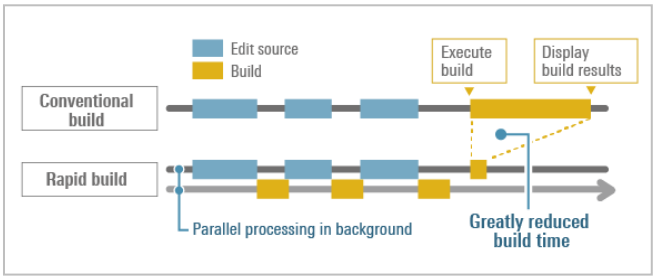
Comfortably

Drastically reducing build time

Rapid build

The CS+ is equipped with a "rapid build function" that automatically executes build in the background each time a source file is modified or stored. This function significantly shortens the build time compared to the method of editing all source files and then executing build collectively in the conventional development environment.

Supported MCUs: RL78 Family / RX Family / RH850 Family
V850 Family / 78K Family



Securely

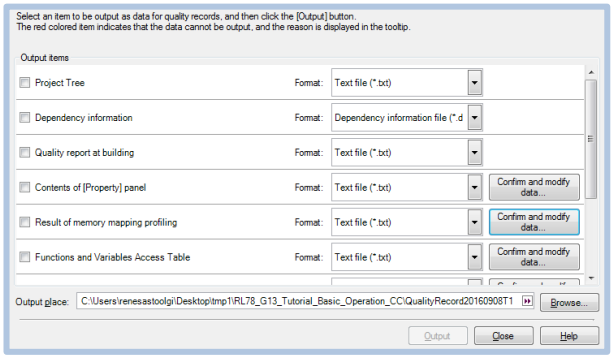
Collective output of quality-related information

Smart Reports

You can use this feature for the collective output of quality-related information such as listings of source files, build option settings, information on functions and variables, and coverage rates. (Only available in CS+ for CC). CS+ supports the output of information on various items, which is useful in verifying the security of user-created programs.

[Types of information that can be output]

- Project trees, lists of dependencies, contents of the [Property] panel
- Quality reports on building
- Results of profiling of memory maps
- Lists of functions and variables, analysis charts, call graphs, and tables of access to functions and variables
- Build-tool information for compiler qualification service



Supported MCUs: RL78 Family / RX Family / RH850 Family

Extensive solutions supporting development

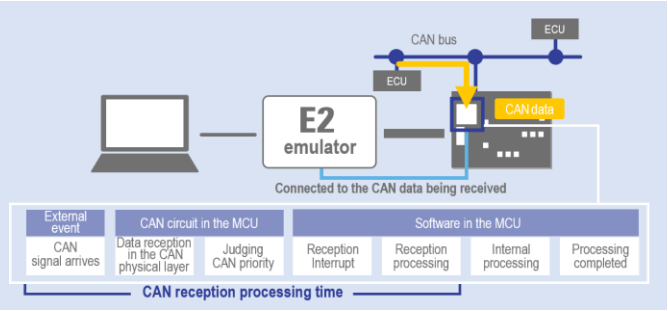
Measuring the response time in CAN communication*

CAN Communication Time Measurement Solution

You can measure the CAN communications response times with the use of an E2 emulator, eliminating the need for an expensive CAN analyzer. This helps in the detection of problems at early stages.

- Response times are important in CAN communications. This facility makes measuring response times easy.
- A program can be made to stop when the response time is not within the allowable range.
- After stopping the program, you can check the trace data or the history of CAN communications.

* Time up to start of post-reception program

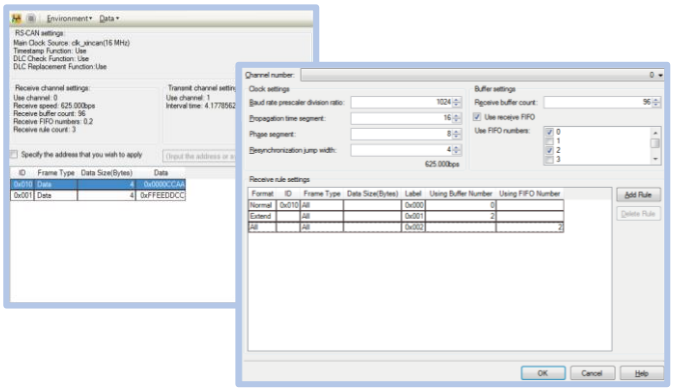


Supported MCUs RH850 Family

Debugging of communication without the communication partner

Network Verification

The network verification solution can debug CAN communication without peripheral equipment of the communication partner, enabling network debugging in the early stages of development. Data can be received programmatically, simply by setting the data to be received and the channel. Furthermore, test data can be created by importing and exporting transmit data.



Supported MCUs RH850 Family

Checking whether variables were changed in access-prohibited sections is possible

Verification of Safety

This solution can check whether the exclusive control for arbitrary variables is operating correctly during execution in a specific section, and can check the function that accessed the specified variable in a table. Furthermore, errors in writing to an arbitrary variable during execution of the specified function can be detected (while displaying the respective error for debugging*1).

*1 Only RH850 Family

Supported MCUs RH850 Family / RL78 Family / RX Family

Causing an abnormal state that cannot be created in the system to occur

Verification Through Fault Injection

The fault injection function enables effective debugging in detection of errors that are typically difficult to generate in the system. It is possible to simulate microcomputer ECC errors, lockstep errors, etc., and debug the program operation after the error occurs.

Supported MCUs RH850 Family

Download

The latest version of CS+ and compilers can be downloaded for immediate use.

CS+ **www.renesas.com/cs+_download**

Compiler **www.renesas.com/cc-guide**

Video

Tutorial videos for microcontrollers are available:

For RL78 Family www.renesas.com/rl78-how-to-video

For RX Family www.renesas.com/rx-how-to-video

FAQ en-support.renesas.com/knowledgeBase

Community community.renesas.com

Supported MCUs

CS+ for CC RL78 Family RX Family RH850 Family

CS+ for CACX V850 Family 78K0R 78K0

Operating environment

Windows® 11
Windows® 10 (64-bit version)

Detail www.renesas.com/system-requirements

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

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