

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

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 gualification service

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



Select an item to be output as data for quality records, and then or The red colored item indicates that the data cannot be output, an	lick the [Output] d the reason is d	button. isplayed in the tooltip.		
Output items				
Project Tree	Format:	Text file (*.bxt)	•	Â
Dependency information	Format:	Dependency information file (*	.d 💌	
Quality report at building	Format:	Text file (*.txt)	-	E
Contents of [Property] panel	Format:	Text file (*.txt)	•	Confirm and modify data
Result of memory mapping profiling	Format:	Text file (*.txt)	•	Confirm and modify data
E Functions and Variables Access Table	Format:	Text file (*.txt)	•	Confirm and modify data
Output place: C:\Users\renesastoolgi\Desktop\tmp1\RL78_G	i13_Tutorial_Ba	sic_Operation_CC\QualityReco	rd20160	008T1 IM Browse
		Output		Qose <u>H</u> elp

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



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

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

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.

RS-CAN settings Nain Clock Source: clk_xincan(16 MHz) Imestantp Function: Use LC Check Function: Use UC Replacement Function:Use												
Provide advantage of the second	Transfer Street of the	ghannel n	umber:									
Necerve channel settings. Ise channel: 0	Transmt, charves settin Use channel: 1 Interval time: 4.1778562	Cook settings Buffer set				Hettings						
eceive speed: 625.000bps		gaud rate prescaer division ratio <u>P</u> ropagation time segment: Phage segment: <u>B</u> esynchronization jump width:		16 ÷		Use receive FIFO Use FIFO numbers:				30		
ceive FIFO numbers: 0.2												
ceive rule court: 3.								V 0				
Spaceholike address that upon with to apply						4.0-			¥ 2			
special and appress and los man to addid					625.000bps		625.000bps			2		
		Normal Extend All	0x010	Al Al Al		0x000 0x001 0x002		02		2		Quinto P.
										ok 🗌	Cancel	Help

RH850 Family Supported MCUs

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

Video

Tutorial videos for microcontrollers are available:



www.renesas.com/rl78-how-to-video 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

Trademarks

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

Contact information

Renesas and Renesas logo are trademarks of Renesas Electronics Corporation. All trademark and registered trademark are the property of their respective owners.

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/