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[Upgrade to version]

R20TS0320EJ0100

Rev.1.00

CS+ Integrated Development Environment V7.00.00

Jul. 16, 2018

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## Outline

We will be revising the CS+ integrated development environment from V6.01.00 to V7.00.00.

### 1. Products and Versions to Be Updated

- CubeSuite+ Common Programs V1.00.00 to V1.03.00 and V2.00.00 to V2.02.00
- CS+ Common Programs V3.00.00 to V3.03.00, V4.00.00 to V4.01.00, V5.00.00, and V6.00.00 to V6.01.00

For details about how to confirm which version you currently have, refer to the following URL.

[https://www.renesas.com/cs+\\_ver](https://www.renesas.com/cs+_ver)

### 2. Topics of Upgrade Description

MCUs equipped with the G4MH core of the RH850 family are now supported.

In addition, the functions described below have been newly added to CS+ for CC.

- Function for saving results of measurement by the optimization performance comparison tool
- Simulation of current consumption (Applicable MCUs: RL78 family\*)
  - \* The RL78/G14 group has been added to supported MCUs.
- C source code converter function when reusing a PM+ project (Applicable MCUs: RL78 family)

For details about each function, refer to the following description.

#### (1) Function for saving results of measurement by the optimization performance comparison tool

The optimization performance comparison tool is a solution function for displaying a list of build results with multiple build option patterns (such as code sizes and execution times) by clicking a button.

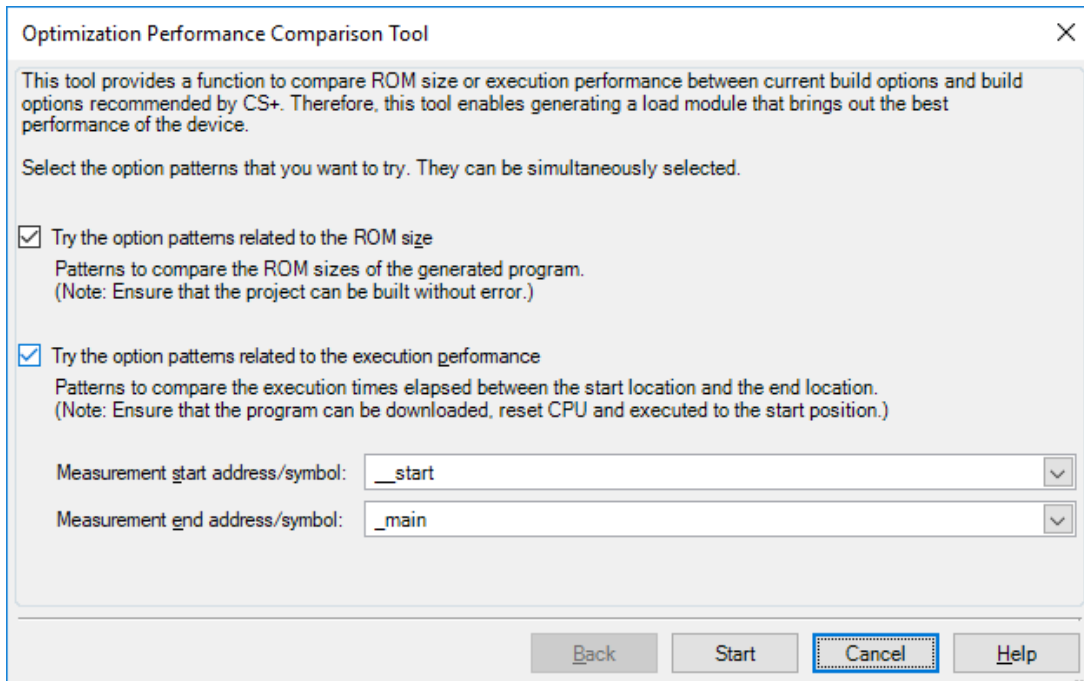
As an enhancement of the optimization performance comparison tool, a function for saving (as a document) the results of measurement by this tool has been added.

This function provides easier management, and efficient use of measurement results, such as checking and comparing the difference of optimization performance between different projects.

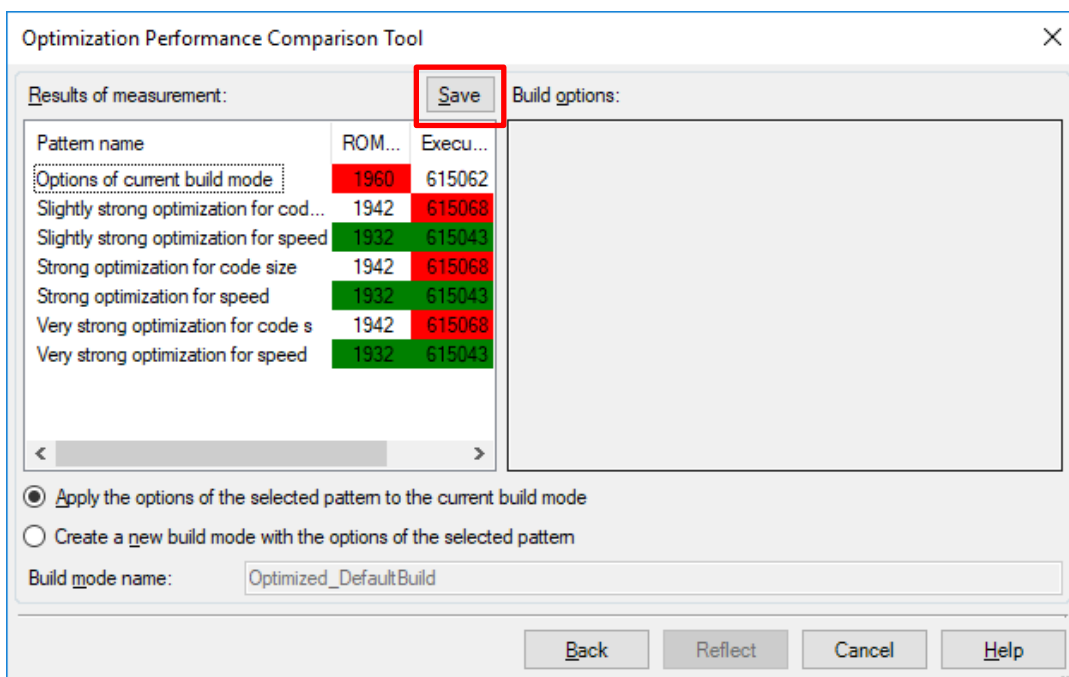
A choice of three types of extension (.txt, .csv, and .xls) is available to use for saving documents.

- Example procedure for saving the results of measurement by using the optimization performance comparison tool

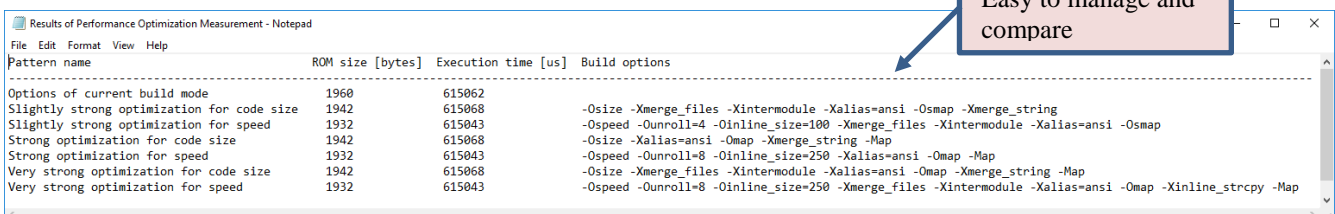
Step 1: Start the optimization performance comparison tool.



Step 2: Save the results of measurement.



Step 3: Check the results of optimization performance measurement.



(2) Simulation of current consumption (Applicable MCUs: RL78 family)

The RL78/G14 group is now available for checking operations and simulation of current consumption for modules (including peripheral functions) in a virtual environment on a PC.

For simulation of peripheral functions, components such as LED, Buzzer, and Meter can be used, and I/O waveforms and serial communication waveforms of an MCU can also be checked.

This function is also applicable for RL78/G10, RL78/G12, and RL78/G13 groups.

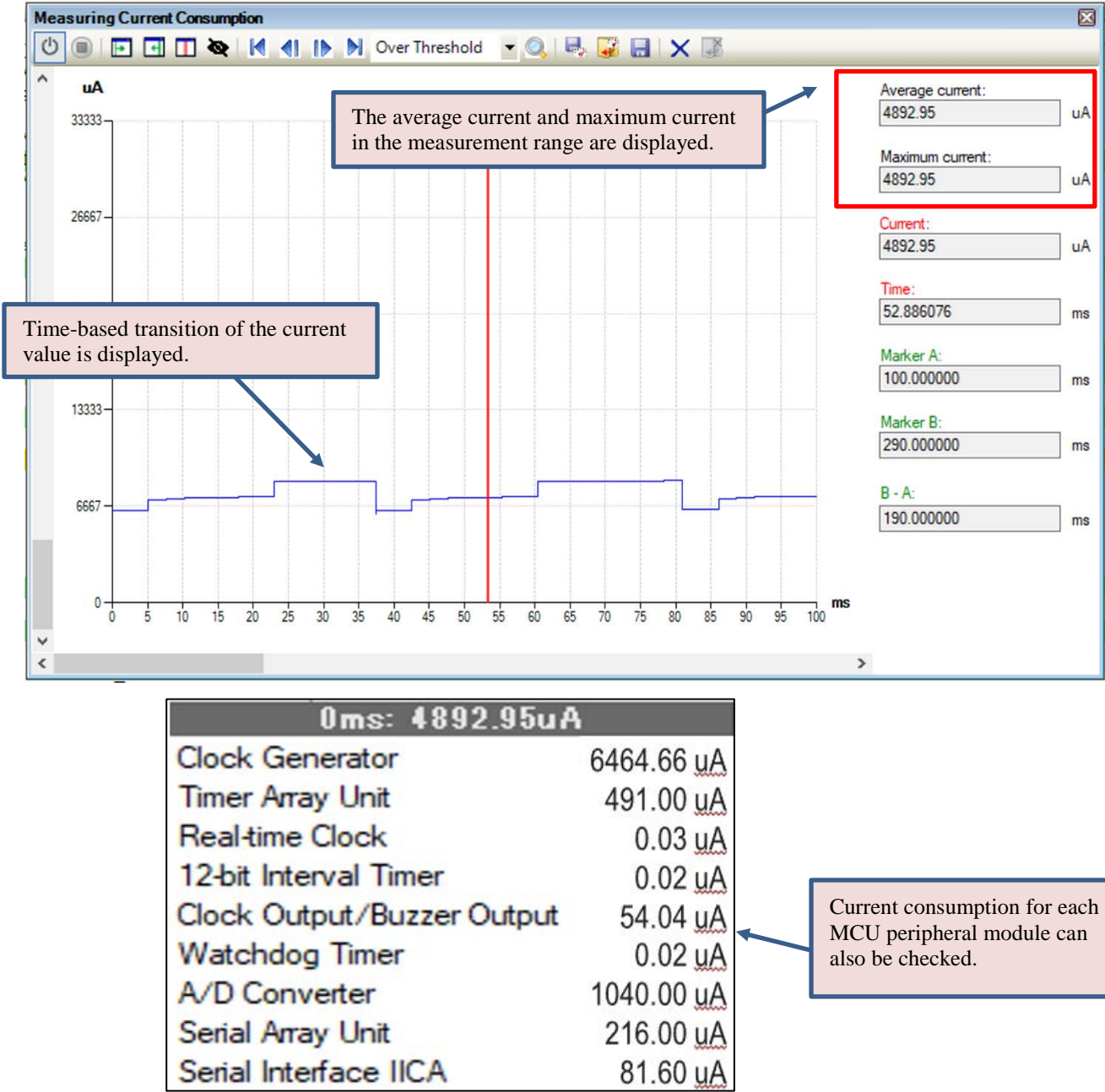


Figure 2-1 Results of measurement of the simulation of current consumption

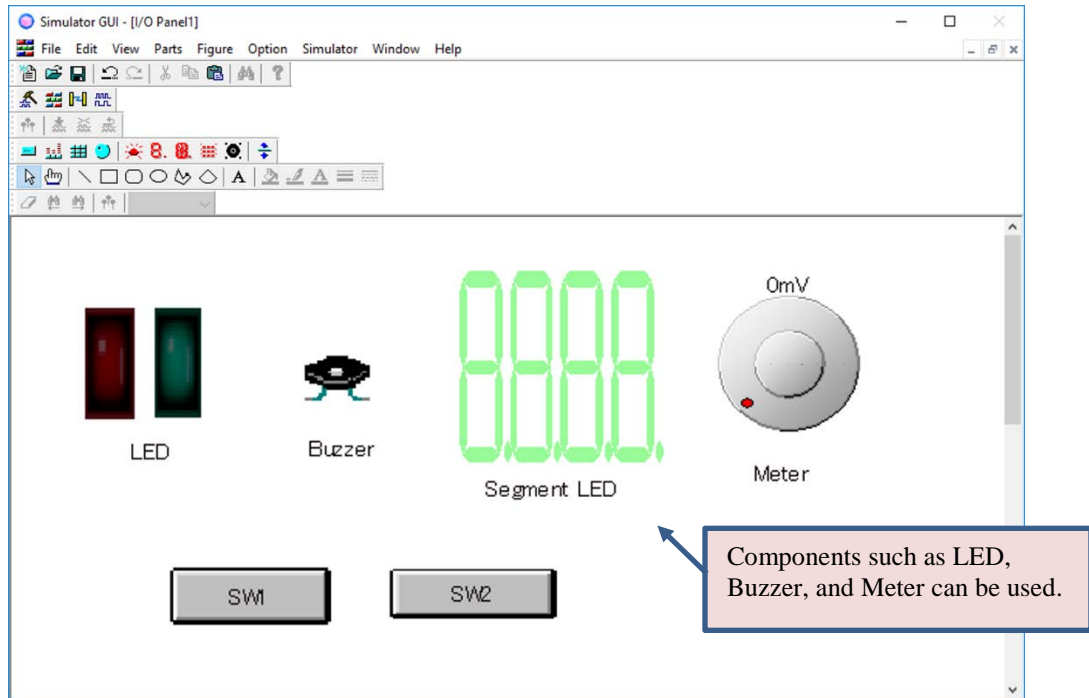


Figure 2-2 Simulator GUI

(3) Addition of applicable projects by the C source code converter when reusing a PM+ project (Applicable MCUs: RL78 family)

When a project is converted from PM+ integrated development environment (CC78K0R/RA78K0R) to CS+ (CC-RL), the source code converter automatically starts and converts the C source for CC-RL. This reduces the number of operations required for project migration from PM+ to CS+.

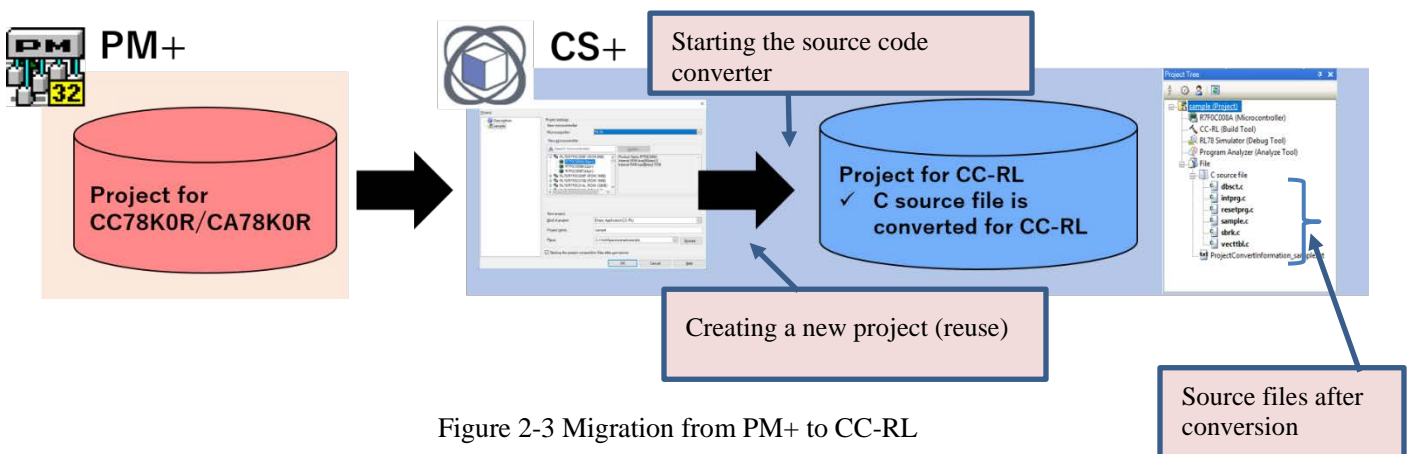


Figure 2-3 Migration from PM+ to CC-RL

### 3. Description of Upgrade

#### 3.1 CS+ Common Programs (with building, debugging, analysis, and other capabilities)

- The common programs of CS+ for CC (for RX, RH850, and RL78) have been upgraded from V6.01.00 to V7.00.00.
- The common programs of CS+ for CA,CX (for 78K, RL78, and V850) have been upgraded from V4.01.00 to V4.02.00.

The main items updated in CS+ for CC V7.00.00 and CS+ for CA,CX V4.02.00 are as follows.

##### (1) CS+ for CC (for RX family, RH850 family, and RL78 family)

The version has been upgraded from V6.01.00 to V7.00.00.

Main improvements are shown below. For more details, refer to the Release Note.  
This information will be available from July 20.

<https://www.renesas.com/cs+ document>

CS+ for CC V7.00.00 Release Note

##### (a) Improvement of basic functions

In addition to Topics of Upgrade Description, the following functions have been added and modified.

- A list of supported devices has been added in Smart Manual.  
By referring to this list, the devices supported in Smart Manual can be confirmed from CS+. (Applicable MCUs: RX family and RL78 family)
- RX65N has been added to as a sample project.  
This project allows for easy checking of the performance and functions of RX65N by using Renesas Starter Kit for RX65N-2MB (included in CS+ and E2 Lite).
- The Microsoft Visual C++ 2015 (from Microsoft) runtime library has been added.
- The display of the product license in the [Version Information] dialog box has been changed. The version information and description corresponding to each module of CS+ are displayed in tabular format.
- The following problem (informed in RENESAS TOOL NEWS Document No. R20TS0288EJ0100) has been fixed.

##### 1. Optimization Performance Comparison Tool

For details about the problem, refer to the URL below.

<https://www.renesas.com/search/keyword-search.html#genre=document&q=r20ts0288>

##### (b) Additions to the build tool

(b-1) Support for the following versions of compilers has been added:

- CC-RH V2.00.00
- CC-RL V1.07.00

(b-2) Support for the RH850 compiler from Green Hills Software, Inc. has been added.

The versions of the supported compilers are as follows:

- January 5, 2017
- May 5, 2016

For details about the GHS compiler, refer to the following URL:

<http://www.adac.co.jp/>

(c) Additions of features to the I/O header file generation tool

A function for outputting array data for I/O registers and modules having a number that begins with "0" has been added. This enables access to array-format I/O registers and modules, thus facilitating coding programs.

(d) Improvement of the debugging tools

- The RH850 instruction simulator has been upgraded from V4.02.00 to V4.03.00. For more details, refer to the Release Note. This information will be available from July 20.

[https://www.renesas.com/cs+\\_document](https://www.renesas.com/cs+_document)

CS+ RH850 Instruction Simulator V4.03.00 Release Note

- The RX instruction simulator has been upgraded from V2.06.00 to V3.00.00. For more details, refer to the Release Note. This information will be available from July 20.

[https://www.renesas.com/cs+\\_document](https://www.renesas.com/cs+_document)

CS+ RX Simulator V3.00.00 Release Note

- A function for displaying I/O module details has been added.
- Support for the RH850 compiler from Green Hills Software, Inc. has been added.

The versions of the supported compilers are as follows:

- January 5, 2017
- May 5, 2016
- The following problem (informed in RENESAS TOOL NEWS Document No. R20TS0301EJ0100) has been fixed.

1. When Erasing the Data Flash Area of 256KB or Greater in the RH850 Family

For details about the problem, refer to the URL below.

<https://www.renesas.com/search/keyword-search.html#genre=document&q=r20ts0301>

- The following problem (informed in RENESAS TOOL NEWS Document No. R20TS0278EJ0100) has been fixed.

1. Using Hot Plug-in Connection for RX Family

For details about the problem, refer to the URL below.

<https://www.renesas.com/search/keyword-search.html#genre=document&q=r20ts0278>

(2) CS+ for CA,CX (for 78K, RL78 family, and V850 family)

The version has been upgraded from V4.01.00 to V4.02.00.

Main improvements are shown below. For more details, refer to the Release Note. This information will be available from July 20.

[https://www.renesas.com/cs+\\_document](https://www.renesas.com/cs+_document)

CS+ for CA,CX V4.02.00 Release Note

## (a) Improvement of basic functions

- The Microsoft Visual C++ 2015 (from Microsoft) runtime library has been added.
- The display of the product license in the [Version Information] dialog box has been changed.

## 3.2 Build Tools

### 3.2.1 CC-RH (Compiler for RH850 Family)

The version has been upgraded from V1.07.00 to V2.00.00.

For details, refer to the URL below. This information will be updated on July 20.

[https://www.renesas.com/cs+/eng/CSPlus\\_CC-RH.html](https://www.renesas.com/cs+/eng/CSPlus_CC-RH.html)

To use CC-RH V2.00.00, install V2.01.00 or later of License Manager.

### 3.2.2 CC-RL (Compiler for RL78 Family)

The version has been upgraded from V1.06.00 to V1.07.00.

For details, refer to the URL below. This information will be updated on July 20.

[https://www.renesas.com/cs+/eng/CSPlus\\_CC-RL.html](https://www.renesas.com/cs+/eng/CSPlus_CC-RL.html)

To use CC-RL V1.07.00, install V2.00.00 or later of License Manager.

## 3.3 Code Generators

### 3.3.1 CS+ Code Generator for RH850

The version has been upgraded from V1.03.00 to V1.04.00.

For details, refer to the URL below. This information will be updated on July 20.

- CS+ code generator for RH850  
[https://www.renesas.com/cs+/eng/CSPlus\\_Code\\_Generator\\_for\\_RH850.html](https://www.renesas.com/cs+/eng/CSPlus_Code_Generator_for_RH850.html)

### 3.3.2 CS+ Code Generator for RX

The version has been upgraded from V1.15.00 to V1.16.00.

For details, refer to the URL below. This information will be updated on July 20.

- RX code generator for CS+  
[https://www.renesas.com/cs+/eng/CSPlus\\_Code\\_Generator\\_for\\_RX.html](https://www.renesas.com/cs+/eng/CSPlus_Code_Generator_for_RX.html)

### 3.3.3 CS+ Code Generator for RL78

The version has been upgraded from V2.15.00 to V2.16.00.

For details, refer to the URL below. This information will be updated on July 20.

- CS+ code generator for RL78 (CS+ for CC)  
[https://www.renesas.com/cs+/eng/CSPlus\\_CC\\_Code\\_Generator\\_for\\_RL78.html](https://www.renesas.com/cs+/eng/CSPlus_CC_Code_Generator_for_RL78.html)
- CS+ code generator for RL78 (CS+ for CA,CX)  
[https://www.renesas.com/cs+/eng/CSPlus\\_CACX\\_Code\\_Generator\\_for\\_RL78.html](https://www.renesas.com/cs+/eng/CSPlus_CACX_Code_Generator_for_RL78.html)

### 3.4 Device Information

#### 3.4.1 RH850 Device Information File Managed by CS+

The version has been upgraded from V6.01.01 to V7.00.00.

The following revisions are made in V7.00.00.

##### (1) Addition of Supported Devices

Support for devices in the following series has been added:

- RH850/E2x series

##### (2) Modification of Device Information

The device information in the following groups has been modified:

- RH850/F1KM group
- RH850/P1H-C group
- RH850/P1M-C group
- RH850/P1L-C group

For details, refer to the URL below. This information will be updated on July 20.

[https://www.renesas.com/cs+/eng/CSPlus\\_DevInfo\\_RH850.html](https://www.renesas.com/cs+/eng/CSPlus_DevInfo_RH850.html)

#### 3.4.2 RX Device Information File Managed by CS+

The version has been upgraded from V2.03.00 to V2.04.00.

The following revisions are made in V2.04.00.

##### (1) Addition of Supported Devices

Support for devices in the following groups has been added:

- RX130 group

#### 3.4.3 RL78 Device Information File Managed by CS+

The version has been upgraded from V6.01.00 to V7.00.00.

The following revisions are made in V7.00.00.

##### (1) Addition of Supported Devices

Support for devices in the following group has been added:

- RL78/F1E group

##### (2) Modification of Device Information

The device information in the following groups has been modified:

- RL78/G11 group
- RL78/G14 group

For details, refer to the URL below. This information will be updated on July 20.

[https://www.renesas.com/cs+/eng/CSPlus\\_DevInfo\\_RL78.html](https://www.renesas.com/cs+/eng/CSPlus_DevInfo_RL78.html)



### 3.5 Quick and Effective tool solution (QE)

The version has been upgraded from V3.00.00 to V3.01.00.

For details, refer to the URL below. This information will be updated on July 20.

[https://www.renesas.com/cs+/eng/CSPlus\\_QE.html](https://www.renesas.com/cs+/eng/CSPlus_QE.html)

### 3.6 License Manager

The version has been upgraded from V2.01.00 to V2.02.00.

For details, refer to the URL below. This information will be updated on July 20.

[https://www.renesas.com/cs+/eng/CSPlus\\_License\\_Manager.html](https://www.renesas.com/cs+/eng/CSPlus_License_Manager.html)

### 3.7 Floating License Server

The version has been upgraded from V2.01.00 to V2.02.00.

License Manager V2.02.00 is supported.

## 4. Updating Your Product

Online updating is available free of charge. The method of updating depends on the edition of CS+.

**Notes 1. An evaluation edition of the CC-RL build tool is included if you update from CubeSuite+ to CS+ V3.01.00 or later.**

**However, we are unable to lift the restrictions on the evaluation edition of CC-RL in response to customers holding licenses for earlier RL78, 78K family C compiler packages (CA78K0R, CA78K0). You need to purchase the commercial edition of RL78 family C compiler package (with IDE) V1 (CC-RL), if you wish to have the restrictions on the CC-RL evaluation edition lifted.**

**2. Even if you have a license for RH family C compiler package V1 (CC-RH), the restrictions on the evaluation edition of RH family C compiler package V2 (CC-RH) will not be lifted.**

**If you wish to lift the restrictions on the evaluation edition of RH850 family C compiler package V2 (CC-RH), please purchase the commercial edition of RH850 family C compiler package V2 (CC-RH).**

3. Refer to section 6, How to Purchase the Product for details.

#### 4.1 For CS+ V3.00.00 or Later

To update your program, use either of the following methods:

- (1) On the Start menu, select Programs and then Renesas Electronics CS+ to start the Update Manager. This service will be available from July 20.

**Note: If your CS+ has been launched with rapid startup enabled, exit the CS+ once, and then run the Update Manager.**

**If the CS+ is resident in the notification area of Windows (system tray) due to rapid startup, an error occurs and produces the following message:**

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M0120001

Installation is suspended because "CubeSuiteW+.exe" is running.

It will be resumed next time you start the tool.

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(2) Download and install the desired software tools from the following URL:

The program will be available from July 20.

[https://www.renesas.com/cs+\\_download](https://www.renesas.com/cs+_download)

## 4.2 For CubeSuite+ V2.00.00 to V2.02.00

Update this in the same way as is described in 4.1 above.

## 4.3 For CubeSuite+ V1.03.00 or Earlier

Download and install the evaluation edition of CS+ for CC V7.00.00 or CS+ for CA,CX V4.02.00 from the following URL:

The program will be available from July 20.

[https://www.renesas.com/cs+\\_download](https://www.renesas.com/cs+_download)

## 5. Evaluation Edition

Before purchasing the compiler product, you can evaluate its performance and functionality by using the evaluation edition.

Download the evaluation edition of CS+ for CC or CS+ for CA,CX from the following URL:

This installer will be available from July 20.

[https://www.renesas.com/cs+\\_download](https://www.renesas.com/cs+_download)

You can turn the evaluation edition into the commercial edition when installing the evaluation edition, by inputting a license for CubeSuite, CubeSuite+, or a compiler product.

**Notes 1. We are unable to lift the restrictions on the evaluation edition of RL78 family C compiler package V1 (CC-RL) in response to customers holding licenses for RL78, 78K family C compiler packages V1 (CA78K0R, CA78K0).**

**You need to purchase the commercial edition of RL78 family C compiler package V1 (CC-RL), if you wish to have the restrictions on the evaluation edition of RL78 family C compiler package V1 (CC-RL) lifted.**

**2. Even if you have a license for RH family C compiler package V1 (CC-RH), the restrictions on the evaluation edition of RH family C compiler package V2 (CC-RH) will not be lifted.**

**If you wish to lift the restrictions on the evaluation edition of RH850 family C compiler package V2 (CC-RH), please purchase the commercial edition of RH850 family C compiler package V2 (CC-RH).**

## 6. How to Purchase the Product

Purchase a compiler product which includes CS+.

For product ordering, contact your local Renesas Electronics marketing office or distributor with the following information.

For product pricing, make inquiries in the same manner.

The compiler products which include CS+ are as follows.

- C Compiler and IDE for RH850 Family Professional edition
- C Compiler and IDE for RH850 Family Standard edition
- C/C++ Compiler and IDE for RX Family Professional edition
- C/C++ Compiler and IDE for RX Family Standard edition
- C Compiler and IDE for RL78 Family Professional edition
- C Compiler and IDE for RL78 Family Standard edition
- C Compiler and IDE for RL78, 78K Family
- C Compiler and IDE for V850 Family

**Note: Since CS+ (included with a compiler product) might not be the latest version, you may need to update it with reference to 4. Updating Your Product, before using it.**

Although CS+ is not included with a compiler product with an annual license, you can use CS+ by installing an evaluation edition of CS+ for CC. For details about how to download an evaluation edition, refer to section 4.

For orderable part names, refer to the product page at the URL below.

C Compiler Package for RH850 Family: [https://www.renesas.com/rh850\\_c](https://www.renesas.com/rh850_c)

C/C++ Compiler Package for RX Family: [https://www.renesas.com/rx\\_c](https://www.renesas.com/rx_c)

C Compiler Package for RL78 Family: [https://www.renesas.com/rl78\\_c](https://www.renesas.com/rl78_c)

C Compiler Package for V850 Family: [https://www.renesas.com/v850\\_c](https://www.renesas.com/v850_c)

C Compiler Package for RL78 and 78K Families: [https://www.renesas.com/rl78\\_78k\\_c](https://www.renesas.com/rl78_78k_c)

**Revision History**

Rev.	Date	Description	
		Page	Summary
1.00	Jul. 16, 2018	-	First edition issued

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■Inquiry

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