

Outline

We will be revising the CS+ integrated development environment from V5.00.00 to V6.00.00.

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, and V5.00.00

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

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

2. Topics of Upgrade Description

In addition to upgrading of the basic features of the development environment, Smart Utility functions and the solutions that facilitate application development have been added in CS+ for CC.

- (1) Smart Manual (Applicable MCUs: RL78 family and RX family)

Smart Manual, which is a Smart Utility function, is now supported.

You can quickly view a description of a register displayed in a panel such as the Editor and SFR/IOR by simply moving the mouse cursor over the register.

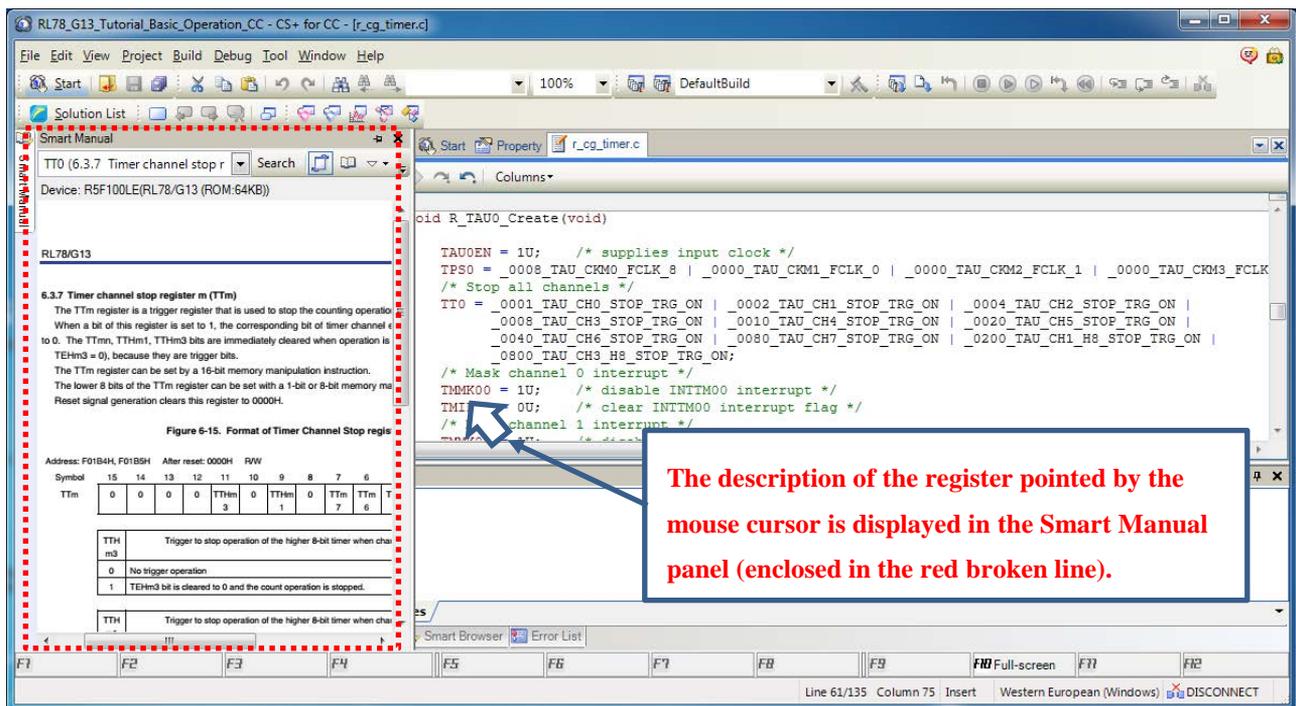


Figure 1 Smart Manual

(2) Current consumption tuning solution (Applicable products: RL78 family and E2 emulator)

Function of measuring current consumption has been added.

You can easily measure current drawn by a system by simply using the E2 emulator without using an ammeter.

You can also specify conditions (for example, if the current value exceeds a given value or if a predefined time has elapsed with a given value) to detect excessive current and stop the program.

You can use monitor points (colored vertical lines in Figure 2), in a similar manner to the setting of breakpoints, to monitor the relationship between the behavior of the program and change in the current consumption. This contributes to shortening of times required for the current-tuning process.

Monitor points are displayed as lines in different colors in the graph.

Data such as the average current or maximum current in the measurement range is displayed.

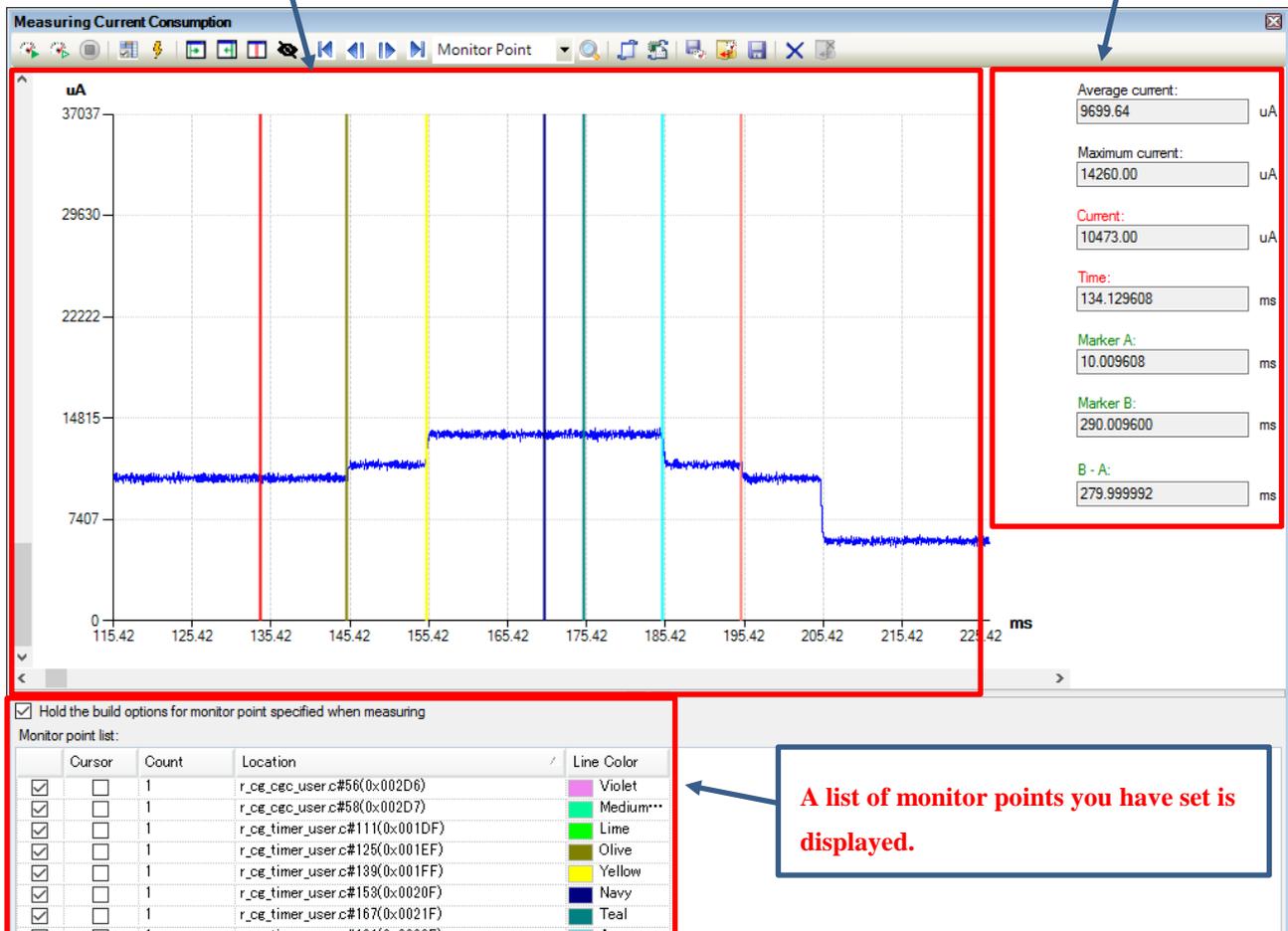


Figure 2 Function of Measuring Current Consumption

(3) CAN communication time measurement solution (Applicable products: RH850 family and E2 emulator)

The function of measuring CAN bus reception processing times has been added.

You can easily measure response times, which are important for CAN communications.

You can also specify settings to stop a program if the response time exceeds a design value. Therefore, you can check trace data and the history of CAN communications after the program has been stopped. This helps you identify problems in the early stages of development.

For an example of the measurement condition setting window and an example of the measurement results window, see the next page.

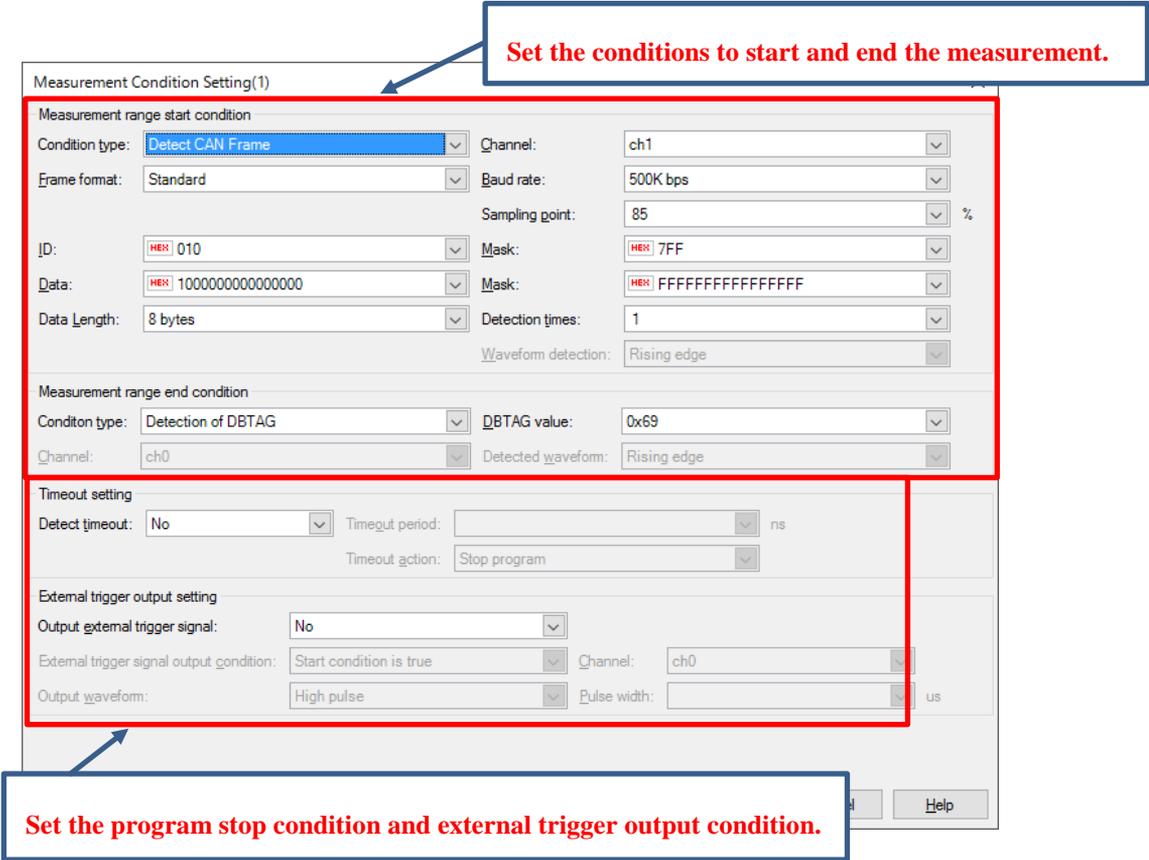


Figure 3 Window for Setting Measurement Conditions for Measuring CAN Bus Reception Processing Times

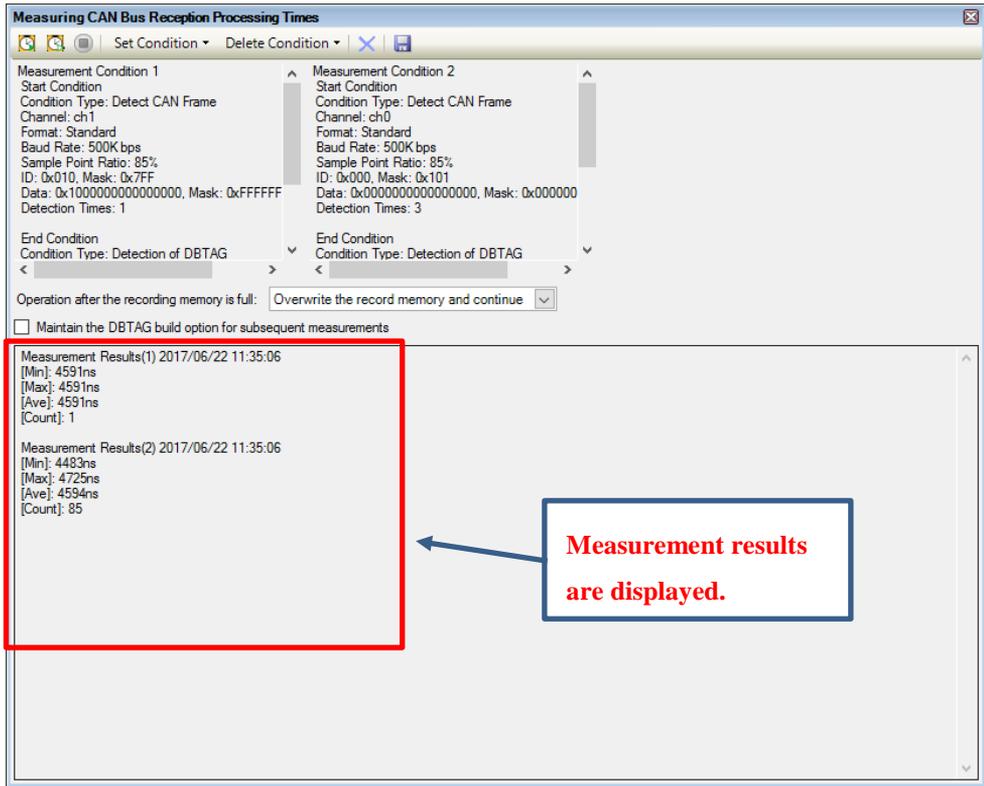


Figure 4 Window that Displays Measurement Results of Measuring CAN Bus Reception Processing Times

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 V5.00.00 to V6.00.00.
- The common programs of CS+ for CA,CX (for 78K, RL78, and V850) have been upgraded from V4.00.00 to V4.00.01.

The items updated in CS+ for CC V6.00.00 and CS+ for CA,CX V4.00.01 are as follows.

(1) Change of default setting for plug-in loading

The default plug-in loading operation was changed so that the plug-ins listed in the Additional Function tab on the Plug-in Manager dialog box are loaded.

When CS+ is installed and started for the first time, it operates in this default state.

(2) Support for Windows

With the expiration of support for Windows Vista, this version does not support Windows Vista.

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

The version has been upgraded from V5.00.00 to V6.00.00.

Main improvements are shown below. For more details, refer to the Release Notes (to be released on July 20).

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

CS+ for CC V6.00.00 Release Note

(a) Improvement of basic functions

- A CAN communication time measurement solution has been added.
(Applicable products: RH850 family and E2 emulator)
- A current consumption tuning solution has been added.
(Applicable products: RL78 family and E2 emulator)
- The E2 emulator now supports the RL78 family. (Applicable MCUs: RL78 family)
- Smart Manual has been added. (Applicable MCUs: RL78 family and RX family)
- The announcements feature on Smart Browser has been added.
- The function for starting the C source code converter in creating projects has been enhanced.
(Applicable MCUs: RL78 family)
- The function for starting the C source code converter in opening PM+ projects has been added.
(Applicable MCUs: RL78 family)

(b) Additions to the build tool

Support for the following versions of compilers has been added:

- CC-RH V1.06.00
- CC-RX V2.07.00
- CC-RL V1.05.00

(c) Improvement of the debugging tools

- The highlighting function of the current PC line in the Editor panel has been enhanced.
- A facility to display graphs of values for current consumption in simulation has been added.
(Applicable MCUs: RL78 family)
- Simulation of current consumption for RL78/G12 is now supported. (Applicable MCUs: RL78 family)
- The display of Run-Break time has been improved. (Applicable products: RL78 family, E1 emulator, E2 emulator Lite, and E20 emulator)
- The software trace (LPD) function has been added. (Applicable products: RH850 family and E2 emulator)

This function allows you to acquire trace information even from MCUs on which internal trace memory is not installed.

- The external trigger I/O functions have been added. (Applicable products: RL78 family, RH850 family, and E2 emulator)

To input and output an external trigger, use the test lead included with the E2 emulator.

By connecting the E2 emulator to the trigger output pin of the measuring instrument, you can stop a running program based on the signal status in the user system. You can also connect the E2 emulator to the trigger input pin to check the signal status in the user system in linkage with the status of the running program.

- The following problem (informed in RENESAS TOOL NEWS Document No. R20TS0165EJ0100) has been fixed.

1. Using an on-chip debugging emulator while the middle-speed on-chip oscillator of RL78 family products is being used

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

<https://www.renesas.com/search/keyword-search.html#genre=document&q=r20ts0165>

- The following problem (informed in RENESAS TOOL NEWS Document No. R20TS0163EJ0100) has been fixed.

1. Display and writing of I/O registers when the RX113 group is used

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

<https://www.renesas.com/search/keyword-search.html#genre=document&q=r20ts0163>

- The following problem (informed in RENESAS TOOL NEWS Document No. R20TS0157EJ0100) has been fixed. (Applicable MCUs: RL78 family and RH850 family)

1. Acquisition of information on symbols of static variables and static functions inside a file when using CC-RH and CC-RL

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

<https://www.renesas.com/search/keyword-search.html#genre=document&q=r20ts0157>

(d) Addition of features for the Python console

- The Python functions and Python classes for software trace (LPD output) have been added.
(Applicable products: RH850 family and E2 emulator)
- Support for the RL78/G12 by the Python functions and Python classes for simulation of current consumption has been added. (Applicable products: RL78 family and simulator)
- A Python property for emulator power supply has been added.
(Applicable emulators: E1 emulator, E2 emulator, and E2 emulator Lite)
- Python properties regarding the serial number settings of emulators have been added.
(Applicable emulators: E1 emulator, E2 emulator, and E2 emulator Lite)
- The function that outputs current consumption data to an XML file has been enhanced.
(Applicable products: RL78 family and simulator)

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

The version has been upgraded from V4.00.00 to V4.00.01.

Main improvements are shown below. For more details, refer to the Release Notes.

This information will be available from July 20.

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

CS+ for CA,CX V4.00.01 Release Note

(a) Improvement of the debugging tools

- The following problem (informed in RENESAS TOOL NEWS Document No. R20TS0165EJ0100) has been fixed.
 1. Using an on-chip debugging emulator while the middle-speed on-chip oscillator of RL78 family products is being used
For details about the problem, refer to the URL below.
<https://www.renesas.com/search/keyword-search.html#genre=document&q=r20ts0165>
- The following problems (informed in RENESAS TOOL NEWS Document No. R20TS0143EJ0100) have been fixed.
 1. Access data address and access data are not displayed in the Trace panel when IECUBE for V850 is used.
 2. DMA data is not displayed in the Trace panel when IECUBE for V850 is used.
 3. DMA data is not displayed in the Trace panel when IE850 (formerly IECUBE2) for V850E2 is used.

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

<https://www.renesas.com/search/keyword-search.html#genre=document&q=r20ts0143>

3.2 Build Tools

3.2.1 CC-RH (Compiler for RH850 Family)

The version has been upgraded from V1.05.00 to V1.06.00.

For details, go to: (to be updated on July 20)

https://www.renesas.com/cs+/eng/CSPlus_CC-RH.html

To use CC-RH V1.06.00, install V2.00.00 of License Manager.

3.2.2 CC-RX (Compiler for RX Family)

The version has been upgraded from V2.06.00 to V2.07.00.

For details, go to: (to be updated on July 20)

https://www.renesas.com/cs+/eng/CSPlus_CC-RX.html

To use CC-RX V2.07.00, install V2.00.00 of License Manager.

3.2.3 CC-RL (Compiler for RL78 Family)

The version has been upgraded from V1.04.00 to V1.05.00.

For details, go to: (to be updated on July 20)

https://www.renesas.com/cs+/eng/CSPlus_CC-RL.html

To use CC-RL V1.05.00, install V2.00.00 of License Manager.

3.3 Code Generators

3.3.1 CS+ code generator for RH850

The version has been upgraded from V1.01.00 to V1.02.00.

The update is due to version upgrade of CS+, and functionality is unchanged.

3.3.2 CS+ code generator for RX

The version has been upgraded from V1.13.00 to V1.14.00.

For details, go to: (to be updated on July 20)

- CS+ code generator for RX

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 V2.13.00 to V2.14.00.

For details, go to: (to 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

- CS+ code generator for RL78 (CS+ for CA,CX)

https://www.renesas.com/cs+/eng/CSPlus_CACX_Code_Generator_for_RL78.html

3.3.4 CS+ code generator for V850

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

The update is due to version upgrade of CS+, and functionality is unchanged.

3.3.5 CS+ code generator for 78K

The version has been upgraded from V2.05.00 to V2.06.00.

The update is due to version upgrade of CS+, and functionality is unchanged.

3.4 Device Information

3.4.1 Device information file managed by CS+ for the RH850 family

The version has been upgraded from V5.00.01 to V6.00.00.

The following revisions are made in V6.00.00.

(1) Addition of supported MCUs

The following MCUs have been added to the support line:

- RH850/F1KM group of MCUs (RH850 family)
- RH850/D1M group of MCUs (RH850 family)

(2) Modification of device information

The device information in the following MCU groups has been modified:

- RH850/D1M group of MCUs (RH850 family)
- RH850/D1L group of MCUs (RH850 family)

For details, go to: (to be updated on July 20)

https://www.renesas.com/cs+/eng/CSPlus_DevInfo_RH850.html

3.4.2 Device information file managed by CS+ for the RX family

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

The following revisions are made in V2.02.00.

(1) Modification of device information

Information on registers displayed in the I/O header file for the C language and in the IOR panel for debugging has been updated for the groups of MCUs listed below.

- RX113 group of MCUs (RX family)
- RX130 group of MCUs (RX family)
- RX21A group of MCUs (RX family)
- RX220 group of MCUs (RX family)
- RX230 group of MCUs (RX family)
- RX231 group of MCUs (RX family)

- RX630 group of MCUs (RX family)
- RX63T group of MCUs (RX family)
- RX651 group of MCUs (RX family)
- RX65N group of MCUs (RX family)

For details, go to: (to be updated on July 20)

https://www.renesas.com/cs+/eng/CSPlus_DevInfo_RX.html

3.4.3 Device information file managed by CS+ for the RL78 family

The version has been upgraded from V5.00.00 to V6.00.00.

The following revisions are made in V6.00.00.

- (1) Modification of SFR information

The SFR information relevant to the following MCUs has been modified:

- RL78/G11 group of MCUs (RL78 family)
- RL78/L1A group of MCUs (RL78 family)
- RL78/L1C group of MCUs (RL78 family)

For details, go to: (to be updated on July 20)

https://www.renesas.com/cs+/eng/CSPlus_DevInfo_RL78.html

3.5 Emulator Utility

The version has been upgraded from V1.01.00 to V1.02.00.

The following revisions are made in V1.02.00.

- (1) Update of a self-checking program

A self-checking program for the E2 emulator has been updated.

- (2) Update of user's manuals

User's manuals for the E2 emulator have been updated.

For details, go to: (to be updated on July 20)

https://www.renesas.com/cs+/eng/CSPlus_Emulator_Uilities.html

3.6 CS+ Utility

The version has been upgraded from V3.03.00 to V3.04.00.

For details, go to: (to be updated on July 20)

https://www.renesas.com/cs+/eng/CSPlus_Uilities.html

3.7 Quick and Effective tool solution (QE)

The version has been upgraded from V1.02.00 to V2.00.00.

The following revisions are made in V2.00.00.

- (1) The function of measuring current consumption has been added. (Applicable products: RL78 family and E2 emulator)
- (2) The function of measuring CAN bus reception processing times has been added. (Applicable products: RH850 family and E2 emulator)

For details, go to: (to be updated on July 20)

https://www.renesas.com/cs+/eng/CSPlus_QE.html

3.8 License Management Tool

3.8.1 License Manager

The version has been upgraded from V2.00.00 to V2.01.00.

The following revisions are made in V2.01.00.

- (1) Display of a license agreement

The time that the license agreement is displayed has been changed as follows.

[Before the change] When the license manager starts and when a floating license is enabled

[After the change] When a license key is registered

- (2) Version warning function

A function that displays a warning if the version of the license manager differs from the version of the floating license server has been added.

- (3) Notice of annual license expiration

The warning display when an annual license is about to expire has been improved. A notice of expiration is displayed one month prior, two weeks prior, and on the expiration day.

- (4) Correction of an E172007 error

An E172007 error sometimes occurred when a license was registered. This problem has been corrected.

3.8.2 Floating License Server

The version has been upgraded from V2.00.00 to V2.01.00.

The following revisions are made in V2.01.00.

- (1) Display of a license agreement

The time that the license agreement is displayed has been changed as follows.

[Before the change] When the license manager starts and when a floating license is enabled

[After the change] When a license key is registered

- (2) Support of License Manager V2.01.00

4. Updating Your Product

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

Note: 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 C compiler packages for RL78 and 78K families (CA78K0R, CA78K0).

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

Refer to section 6 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:

```
M0120001
"CubeSuiteW+.exe"
Installation is suspended because "CubeSuiteW+.exe" is running.
It will be resumed next time you start the tool.
```

- (2) Download the software tools you want from the web site at the URL below. The program will be available from July 20.

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

4.2 For CubeSuite+ V2.00.00 to 2.02.00

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 V6.00.00 or CS+ for CA,CX V4.00.01 from the following URL. The program will be available from July 20.

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

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

Note: Even if you have a license for V1 of the C compiler package for RL78 and 78K families (CA78K0R or CA78K0), the restrictions on the evaluation edition of V1 of the C compiler package for RL78 family (CC-RL) will not be lifted. If you wish to lift the restrictions, please purchase the commercial edition of V1 of the C compiler package for RL78 family (CC-RL).

6. Purchasing 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 the CS+ which is included with a compiler product might not be the latest version, you may need to update it with reference to section 4 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 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

C/C++ Compiler Package for RX Family: https://www.renesas.com/rx_c

C Compiler Package for RL78 Family: https://www.renesas.com/rl78_c

C Compiler Package for V850 Family: https://www.renesas.com/v850_c

C Compiler Package for RL78 and 78K Families: https://www.renesas.com/rl78_78k_c

Revision History

Rev.	Date	Description	
		Page	Summary
1.00	Jul. 16, 2017	-	First edition issued

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■Inquiry

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