CubeSuite+ RH850 Compiler CC-RH V1.01.00

Release Note

R20UT3035EJ0101
Rev.1.01
October 30, 2015

Contents

Chapter 1. Target Devices

The target devices supported by the CC-RH compiler are listed on the Website.

Please see the URL below.

CubeSuite+ Product Page:

http://www.renesas.com/cubesuite+

Chapter 2. User's Manuals

Please read the following user's manuals along with this document.

Manual Name	Document Number
CubeSuite+ V2.01.00 Integrated Development Environment User's Manual: RH850 Coding	R20UT2584EJ0101
CubeSuite+ V2.01.00 Integrated Development Environment User's Manual: RH850 Build	R20UT2585EJ0100
CubeSuite+ V2.02.00 Integrated Development Environment User's Manual: Message	R20UT2871EJ0100

Chapter 3. Keywords When Uninstalling the Product

There are two ways to uninstall this product.

- Use the integrated uninstaller (uninstalls all CS+ components)
- Use the Windows uninstaller (only uninstalls this product)

To use the Windows uninstaller, select “CubeSuite+ CC-RH V1.01.00” from “Programs and Features” of the control panel.

Chapter 4. Changes

This chapter describes changes to the CC-RH compiler.

4.1 Changes to the CC-RH Compiler

This section describes changes to the CC-RH compiler from V1.00.01 to V1.01.00.

4.1.1 Enhancement of Pipeline Optimization

Pipeline optimization has been enhanced. The execution speed may be improved when pipeline optimization is enabled.

4.1.2 Improvement in Structure Copying Processing

Structures were copied in 1-byte units in the former version, but the processing has been improved to copy them in an optimum size according to the alignment value. This improves the structure copying speed.

4.1.3 Acceleration of Mathematical Functions

The following mathematical functions have been accelerated.

- sinf()
- cosf()
- tanf()
- asinf()
- atanf()
- acosf()

4.1.4 Acceleration of Run-Time Functions

Run-time functions for long long-type division and remainder operations have been accelerated. A run-time function is a routine automatically called by CC-RH to execute calculation. It differs from a library function in that it is not written in C-language or assembly-language source files.

4.1.5 Changes in Specifications of Intrinsic Functions

For the following intrinsic functions, the range of the values specifiable for *selID* has been changed from 0 to 7 to 0 to 31.

- __ldsr_rh(*regID*, *selID*)
- __stsr_rh(*regID*, *selID*)

4.1.6 Expansion of -padding Option Specification

The specification of the "-padding" linker option, which fills in data at the ends of sections, has been changed. In V1.00.01, only sections that contained text data, const variables, or variables with initial values were padded. In V1.01.00, this option is also applicable to sections without initial values.

4.1.7 Correcting the Operation of the -Xunordered_cmpf Option

We have corrected the operation of the -Xunordered_cmpf option.

In V1.00.01, specifying the -Xunordered_cmpf option did not make the compiler generate cmpf.s and cmpf.d instructions to include comparison conditions for the detection of invalid operation exceptions.

In V1.01.00, -Xunordered_cmpf has now been corrected to operate as an option for selecting whether any of the values used in a floating-point comparison being a quiet NaN (qNaN) should be detected as an invalid operation exception. When -Xunordered_cmpf is specified, V1.01.00 generates cmpf.s and cmpf.d instructions that include comparison conditions for detecting invalid operation exceptions.

Chapter 5. Points for Caution

This chapter describes points for caution regarding CC-RH V1.01.00.

5.1 FE Level Exceptions

When an interrupt function is defined through a #pragma interrupt directive for FE level exceptions that cannot be restored or recovered — that is, when *priority* is set to FENMI or SYSERR — the exit code for the interrupt function is not output. Deal with this function appropriately in the program.

5.2 STARTOF and SIZEOF Operators

Even if a nonexistent section is specified as the parameter for the ”STARTOF” or ”SIZEOF” section aggregation operator of the assembler, no error will occur; CC-RH will just ignore the operator.

Notice

1. Descriptions of circuits, software and other related information in this document are provided only to illustrate the operation of semiconductor products and application examples. You are fully responsible for the incorporation of these circuits, software, and information in the design of your equipment. Renesas Electronics assumes no responsibility for any losses incurred by you or third parties arising from the use of these circuits, software, or information.
2. Renesas Electronics has used reasonable care in preparing the information included in this document, but Renesas Electronics does not warrant that such information is error free. Renesas Electronics assumes no liability whatsoever for any damages incurred by you resulting from errors in or omissions from the information included herein.
3. Renesas Electronics does not assume any liability for infringement of patents, copyrights, or other intellectual property rights of third parties by or arising from the use of Renesas Electronics products or technical information described in this document. No license, express, implied or otherwise, is granted hereby under any patents, copyrights or other intellectual property rights of Renesas Electronics or others.
4. You should not alter, modify, copy, or otherwise misappropriate any Renesas Electronics product, whether in whole or in part. Renesas Electronics assumes no responsibility for any losses incurred by you or third parties arising from such alteration, modification, copy or otherwise misappropriation of Renesas Electronics product.
5. Renesas Electronics products are classified according to the following two quality grades: "Standard" and "High Quality". The recommended applications for each Renesas Electronics product depends on the product's quality grade, as indicated below.
   "Standard": Computers; office equipment; communications equipment; test and measurement equipment; audio and visual equipment; home electronic appliances; machine tools; personal electronic equipment; and industrial robots etc.
   "High Quality": Transportation equipment (automobiles, trains, ships, etc.); traffic control systems; anti-disaster systems; anti-crime systems; and safety equipment etc.
   Renesas Electronics products are neither intended nor authorized for use in products or systems that may pose a direct threat to human life or bodily injury (artificial life support devices or systems, surgical implantations etc.), or may cause serious property damages (nuclear reactor control systems, military equipment etc.). You must check the quality grade of each Renesas Electronics product before using it in a particular application. You may not use any Renesas Electronics product for any application for which it is not intended. Renesas Electronics shall not be in any way liable for any damages or losses incurred by you or third parties arising from the use of any Renesas Electronics product for which the product is not intended by Renesas Electronics.
6. You should use the Renesas Electronics products described in this document within the range specified by Renesas Electronics, especially with respect to the maximum rating, operating supply voltage range, movement power voltage range, heat radiation characteristics, installation and other product characteristics. Renesas Electronics shall have no liability for malfunctions or damages arising out of the use of Renesas Electronics products beyond such specified ranges.
7. Although Renesas Electronics endeavors to improve the quality and reliability of its products, semiconductor products have specific characteristics such as the occurrence of failure at a certain rate and malfunctions under certain use conditions. Further, Renesas Electronics products are not subject to radiation resistance design. Please be sure to implement safety measures to guard them against the possibility of physical injury, and injury or damage caused by fire in the event of the failure of a Renesas Electronics product, such as safety design for hardware and software including but not limited to redundancy, fire control and malfunction prevention, appropriate treatment for aging degradation or any other appropriate measures. Because the evaluation of microcomputer software alone is very difficult, please evaluate the safety of the final products or systems manufactured by you.
8. Please contact a Renesas Electronics sales office for details as to environmental matters such as the environmental compatibility of each Renesas Electronics product. Please use Renesas Electronics products in compliance with all applicable laws and regulations that regulate the inclusion or use of controlled substances, including without limitation, the EU RoHS Directive. Renesas Electronics assumes no liability for damages or losses occurring as a result of your noncompliance with applicable laws and regulations.
9. Renesas Electronics products and technology may not be used for or incorporated into any products or systems whose manufacture, use, or sale is prohibited under any applicable domestic or foreign laws or regulations. You should not use Renesas Electronics products or technology described in this document for any purpose relating to military applications or use by the military, including but not limited to the development of weapons of mass destruction. When exporting the Renesas Electronics products or technology described in this document, you should comply with the applicable export control laws and regulations and follow the procedures required by such laws and regulations.
10. It is the responsibility of the buyer or distributor of Renesas Electronics products, who distributes, disposes of, or otherwise places the product with a third party, to notify such third party in advance of the contents and conditions set forth in this document, Renesas Electronics assumes no responsibility for any losses incurred by you or third parties as a result of unauthorized use of Renesas Electronics products.
11. This document may not be reproduced or duplicated in any form, in whole or in part, without prior written consent of Renesas Electronics.
12. Please contact a Renesas Electronics sales office if you have any questions regarding the information contained in this document or Renesas Electronics products, or if you have any other inquiries.

(Note 1) "Renesas Electronics" as used in this document means Renesas Electronics Corporation and also includes its majority-owned subsidiaries.

(Note 2) "Renesas Electronics product(s)" means any product developed or manufactured by or for Renesas Electronics.

RENESAS

SALES OFFICES Renesas Electronics Corporation http://www.renesas.com

Refer to "http://www.renesas.com/" for the latest and detailed information.

Renesas Electronics America Inc.
2801 Scott Boulevard Santa Clara, CA 95050-2549, U.S.A.
Tel: +1-408-588-6000, Fax: +1-408-588-6130

Renesas Electronics Canada Limited
9251 Yonge Street, Suite 8309 Richmond Hill, Ontario Canada L4C 9T3
Tel: +1-905-237-2004

Renesas Electronics Europe Limited
Dukes Meadow, Millboard Road, Bourne End, Buckinghamshire, SL8 5FH, U.K
Tel: +44-1628-585-100, Fax: +44-1628-585-900

Renesas Electronics Europe GmbH
Arcadiastrasse 10, 40472 Düsseldorf, Germany
Tel: +49-211-6503-0, Fax: +49-211-6503-1327

Renesas Electronics (China) Co., Ltd.
Room 1709, Quantum Plaza, No.27 ZhiChunLu Haidian District, Beijing 100191, P.R.China
Tel: +86-10-8235-1155, Fax: +86-10-8235-7679

Renesas Electronics (Shanghai) Co., Ltd.
Unit 301, Tower A, Central Towers, 555 Langao Road, Putuo District, Shanghai, P. R. China 200333
Tel: +86-21-2226-0888, Fax: +86-21-2226-0999

Renesas Electronics Hong Kong Limited
Unit 1601-1611, 16/F., Tower 2, Grand Century Place, 193 Prince Edward Road West, Mongkok, Kowloon, Hong Kong
Tel: +852-2265-6688, Fax: +852 2886-9022

Renesas Electronics Taiwan Co., Ltd.
13F, No. 363, Fu Shing North Road, Taipei 10543, Taiwan
Tel: +886-2-8175-9600, Fax: +886 2-8175-9670

Renesas Electronics Singapore Pte. Ltd.
80 Bendemeer Road, Unit #06-02 Hyflux Innovation Centre, Singapore 339949
Tel: +65-6213-0200, Fax: +65-6213-0300

Renesas Electronics Malaysia Sdn.Bhd.
Unit 1207, Block B, Menara Amcorp, Amcorp Trade Centre, No. 18, Jln Persiaran Barat, 46050 Petaling Jaya, Selangor Darul Ehsan, Malaysia
Tel: +60-3-7955-9390, Fax: +60-3-7955-9510

Renesas Electronics India Pvt. Ltd.
No.777C, 100 Feet Road, HALII Stage, Indiranagar, Bangalore, India
Tel: +91-80-67208700, Fax: +91-80-67208777

Renesas Electronics Korea Co., Ltd.
12F., 234 Teheran-ro, Gangnam-Gu, Seoul, 135-080, Korea
Tel: +82-2-558-3737, Fax: +82-2-558-5141

Colophon 5.0