# C Compiler Package for RH850 Family V2.04.00 Release Note

R20UT5085EJ0100
Rev.1.01
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Thank you for using our product.

This document describes the restrictions and points for caution. Read this document before using the product.

# Chapter 1. User's Manuals

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

| Name | Document Number |
|---|---|
| CC-RH Compiler User's Manual | R20UT3516EJ0109 |
| CS+ Integrated Development Environment User's Manual:<br>CC-RH Build Tool Operation | R20UT3283EJ0110 |

# Chapter 2. Changes

This chapter describes changes to the CC-RH compiler from V2.03.00 to V2.04.00.

## 2.1 Addition of the -misalign option

The -misalign option has been added for the generation of code that applies the hardware function of misaligned access to memory by the MCU.
When using this option, refer to the description of the function for misaligned access to memory in the hardware manual of the target MCU.

## 2.2 Addition of the -Xpatch=br option

The parameter "br" has been added for the -Xpatch option.

When this option is not specified, br disp9 instructions are not generated under certain conditions.

To have the compiler generate br disp9 instructions in the same way as in the earlier versions, either of the following conditions must be satisfied.

- This option -Xpatch=br is specified.
- A parameter other than "g3m" is specified in the -Xcpu option.

In the CS+ integrated development environment, this option can be specified in the following field in the Property panel.

Build Tool > Compile Options > Others > Other additional options

## 2.3 Addition of the .dbl_size directive

The .dbl_size directive has been added to allow locating the information regarding the setting by the -Xdbl_size option of the compiler in the object code.
When this directive is used, an error will occur if the setting of the -Xdbl_size option for one module to be linked differs from that in another module to be linked.

| |
|---|
| E0562436:Size of double/long double (value="value1") in "file1" conflicts with that in another file(value="value2") |

## 2.4 Addition of a character that can be specified in symbol names

The character '$' can now be specified in symbol names. Note, however, that a symbol name must not begin with '$'.

## 2.5 Improvement of messages regarding the compiler license

The target type of license and the required actions have been added to messages regarding the compiler license.

| Message number | Message |
|---|---|
| E0511178 | "*string*" option is unavailable because the license of CC-RH V2 Professional edition is not found. Please consider purchasing the product of Professional edition. |
| W0511180 | The evaluation period of CC-RH V2 has expired. |
| W0511185 | The trial period for the features of the Professional edition expires in *number* days. Please consider purchasing the product of Professional edition. |
| W0561016 | The evaluation version of CC-RH V2 is valid for the remaining *number* days. After that, link size limit (256 Kbyte) will be applied. Please consider purchasing the product. |
| W0561017 | The evaluation period of CC-RH V2 has expired. Please consider purchasing the product. |
| F0563430 | The total section size exceeded the limit of the evaluation version of CC-RH V2. Please consider purchasing the product. |

## 2.6 Modification of the storage duration of variables

The function for improving the efficiency of reference to variables defined with the storage class specifier "static" has been enhanced.

The storage duration of such variables is changed from static to automatic for acceleration.

To enable this function, specify either of the following options.

- -Osize or -Ospeed

The following source code shows how this reduces the code size and improves the execution speed.

Example of source code

```
unsigned id(unsigned parameter){
    static unsigned result;
    result = parameter;
    return result;
}
```

Code output

| V2.03 (-Osize) | V2.04 (-Osize) |
|---|---|
| .section .text, text<br>_id:<br>.stack _id = 0<br>movhi HIGHW1(#_result.1.id), r0, r2<br>st.w r6, LOWW(#_result.1.id)[r2]<br>mov r6, r10<br>jmp [r31]<br>.section .bss, bss<br>.align 4<br>_result.1.id:<br>.ds (4) | .section .text, text<br>_id:<br>.stack _id = 0<br>mov r6, r10<br>jmp [r31] |

## 2.7 Rectified points for caution

The following points for caution no longer apply. For details, refer to Tool News.

- Use of struct/union type arguments (No.34)
- Cast from pointer type to other type (No.35)
- Use of an anonymous struct/union (No. 36)
- Use of an address read from memory after writing the address to the memory (No.37)
- Reference to global/static variables (No.38)

## Revision History

| Rev. | Date | Description | |
|---|---|---|---|
| | | Page | Summary |
| Rev1.00 | Dec 01, 2021 | | First Edition issued |

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