

C Compiler Package for RL78 Family V1.13.00

Release Note

Thank you for using our product.

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

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1. User's Manuals

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

Name	Document Number
CC-RL Compiler User's Manual	R20UT3123EJ0113
CS+ Integrated Development Environment User's Manual: CC-RL Build Tool Operation	R20UT3284EJ0112

2. Changes

This section describes changes to CC-RL from V1.12.01 to V1.13.00.

2.1 Rectification of the -P option

If a file other than a C source file was used as the input when the -P option has been specified, preprocessing is executed with this input file handled as a C source file, and in such cases, this would almost always lead to an error. This problem has been rectified by including a check of the filename extension of the input file to make sure that only C source files are subject to preprocessing.

2.2 Addition of the -ALLOW_OPTIMIZE_ENTRY_BLOCK option

The -ALLOW_OPTIMIZE_ENTRY_BLOCK option, which specifies the entry address of the execution program as a target for optimization, was added to the linker. Use of this option may enlarge the scope of optimization at the time of linkage.

2.3 Modification of the specifications of the -RRM option

The specifications were modified so that the area starting at the address specified with the -RRM option of the linker becomes a reserved area in order to prevent the placement of other data in that area.

2.4 Modification of the specifications of the -ROM option

The specifications were modified so that wildcard characters can be specified for the -ROM option of the linker.

2.5 Rectification of the -VFINFO option

In V1.11.00 and later versions of the CC-RL, an extra underscore (`_`) was prefixed to the symbol names in the variable information and function information that are output when the -VFINFO option is specified. This problem has been rectified.

2.6 Rectification of the intrinsic function `__mulsl` or `__mulul`

The problem of an unnecessary error (E0520020) occurring when using the intrinsic function `__mulsl` or `__mulul` with the -lang=c99 and -strict_std options specified has been rectified.

2.7 Addition of the library generator

The library generator enabling the configuration of the standard library according to the specified options was added.

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Revision History

Rev.	Date	Description	
		Page	Summary
1.00	Dec.01.23		Newly created.

General Precautions in the Handling of Microprocessing Unit and Microcontroller Unit Products

The following usage notes are applicable to all Microprocessing unit and Microcontroller unit products from Renesas. For detailed usage notes on the products covered by this document, refer to the relevant sections of the document as well as any technical updates that have been issued for the products.

1. Precaution against Electrostatic Discharge (ESD)

A strong electrical field, when exposed to a CMOS device, can cause destruction of the gate oxide and ultimately degrade the device operation. Steps must be taken to stop the generation of static electricity as much as possible, and quickly dissipate it when it occurs. Environmental control must be adequate. When it is dry, a humidifier should be used. This is recommended to avoid using insulators that can easily build up static electricity.

Semiconductor devices must be stored and transported in an anti-static container, static shielding bag or conductive material. All test and measurement tools including work benches and floors must be grounded. The operator must also be grounded using a wrist strap. Semiconductor devices must not be touched with bare hands. Similar precautions must be taken for printed circuit boards with mounted semiconductor devices.

2. Processing at power-on

The state of the product is undefined at the time when power is supplied. The states of internal circuits in the LSI are indeterminate and the states of register settings and pins are undefined at the time when power is supplied. In a finished product where the reset signal is applied to the external reset pin, the states of pins are not guaranteed from the time when power is supplied until the reset process is completed. In a similar way, the states of pins in a product that is reset by an on-chip power-on reset function are not guaranteed from the time when power is supplied until the power reaches the level at which resetting is specified.

3. Input of signal during power-off state

Do not input signals or an I/O pull-up power supply while the device is powered off. The current injection that results from input of such a signal or I/O pull-up power supply may cause malfunction and the abnormal current that passes in the device at this time may cause degradation of internal elements. Follow the guideline for input signal during power-off state as described in your product documentation.

4. Handling of unused pins

Handle unused pins in accordance with the directions given under handling of unused pins in the manual. The input pins of CMOS products are generally in the high-impedance state. In operation with an unused pin in the open-circuit state, extra electromagnetic noise is induced in the vicinity of the LSI, an associated shoot-through current flows internally, and malfunctions occur due to the false recognition of the pin state as an input signal become possible.

5. Clock signals

After applying a reset, only release the reset line after the operating clock signal becomes stable. When switching the clock signal during program execution, wait until the target clock signal is stabilized. When the clock signal is generated with an external resonator or from an external oscillator during a reset, ensure that the reset line is only released after full stabilization of the clock signal. Additionally, when switching to a clock signal produced with an external resonator or by an external oscillator while program execution is in progress, wait until the target clock signal is stable.

6. Voltage application waveform at input pin

Waveform distortion due to input noise or a reflected wave may cause malfunction. If the input of the CMOS device stays in the area between V_{IL} (Max.) and V_{IH} (Min.) due to noise, for example, the device may malfunction. Take care to prevent chattering noise from entering the device when the input level is fixed, and also in the transition period when the input level passes through the area between V_{IL} (Max.) and V_{IH} (Min.).

7. Prohibition of access to reserved addresses

Access to reserved addresses is prohibited. The reserved addresses are provided for possible future expansion of functions. Do not access these addresses as the correct operation of the LSI is not guaranteed.

8. Differences between products

Before changing from one product to another, for example to a product with a different part number, confirm that the change will not lead to problems. The characteristics of a microprocessing unit or microcontroller unit products in the same group but having a different part number might differ in terms of internal memory capacity, layout pattern, and other factors, which can affect the ranges of electrical characteristics, such as characteristic values, operating margins, immunity to noise, and amount of radiated noise. When changing to a product with a different part number, implement a system-evaluation test for the given product.

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(Rev.5.0-1 October 2020)

Corporate Headquarters

TOYOSU FORESIA, 3-2-24 Toyosu,
Koto-ku, Tokyo 135-0061, Japan
www.renesas.com

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