

[Notes]

R20TS0635EJ0100

Rev.1.00

Nov. 01, 2020

Incomplete Startup Settings in RE Software Development Kit  
 RE01 1500KB Group CMSIS Driver Package Rev1.00,  
 Rev1.01, Rev1.10, Rev1.20, and RE01 256KB Group CMSIS Driver Package  
 Rev1.00

## Overview

When using any of the products in the title, note the following point.

1. Notes on Incomplete Settings When Energy Harvesting Control Circuit (EHC) is Not Used

## 1. Notes on Incomplete Settings When Energy Harvesting Control Circuit (EHC) is Not Used

### 1.1 Applicable Products

The following table lists the product names, revisions, and document numbers for the applicable RE01 1500KB group and RE01 256KB group CMSIS Driver Package.

Table 1. RE01 1500KB Group, RE01 256KB Group CMSIS Driver Package Applicable Products

Product name of the CMSIS Driver Package	Revision	Document number*
RE01 1500KB group CMSIS Driver Package Rev1.00	Rev1.00	R01AN4947
RE01 1500KB group CMSIS Driver Package Rev1.01	Rev1.01	R01AN5278
RE01 1500KB group CMSIS Driver Package Rev1.10	Rev1.10	R01AN5355
RE01 1500KB group CMSIS Driver Package Rev1.20	Rev1.20	R01AN5561
RE01 256KB group CMSIS Driver Package Rev1.00	Rev1.00	R01AN5473

\*: Only the first 9 digits are listed.

### 1.2 Applicable Devices

RE01 family: RE01 1500KB group, RE01 256KB group

### 1.3 Description and Conditions

The startup included in RE01 1500KB group CMSIS Driver Package and RE01 256KB group CMSIS Driver Package performs appropriate processing depending on whether the EHC function is used by the user or not.

When EHC is not used (\*), because register settings for stopping internal EHC functions are insufficient, the EHC draws unnecessary current, thus increasing current consumption by approximately 20nA (typ).

\*: When configuration "SYSTEM\_CFG\_EHC\_MODE" in configuration definition file "r\_core\_cfg.h" is set to "0".

### 1.4 Workaround

Add register settings to stop the internal EHC functions for the following function.

Product	Source file	Function
RE01 1500KB group CMSIS Driver Package	system_RE01_1500KB.c	SystemInit
RE01 256KB group CMSIS Driver Package	system_RE01_256KB.c	

[Modification example]

The parts to be added are indicated in red in the source files (after modification) below. Note that symbols for the added registers may vary depending on the product.

- Before modification: Common to RE01 1500KB group and RE01 256KB group

```
void SystemInit (void)
{
#if SYSTEM_CFG_EHC_MODE == 1
    /* Initialization the EHC module */
    r_ehc_Startup();
#endif

    /* Initialization the pin direction and other settings to a safe
condition. */
    BoardInit();

    /* Initialization the clock */
    system_clock_init();

    /* Setting of nonexistent ports */

} /* End of function SystemInit() */
```

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- After modification: RE01 1500KB group

```
void SystemInit (void)
{
#if SYSTEM_CFG_EHC_MODE == 1
    /* Initialization the EHC module */
    r_ehc_Startup();
#else
    SYSTEM->PRCR = 0xA502U;
    SYSTEM->EHCCR1_b.QUICKMODE = 1U;
    SYSTEM->PRCR = 0xA500U;
#endif

    /* Initialization the pin direction and other settings to a safe
condition. */
    BoardInit();

    /* Initialization the clock */
    system_clock_init();

    /* Setting of nonexistent ports */

} /* End of function SystemInit() */
```

- After modification: RE01 256KB group

```
void SystemInit (void)
{
#if SYSTEM_CFG_EHC_MODE == 1
    /* Initialization the EHC module */
    r_ehc_Startup();
#else
    SYSC->PRCR = 0xA502U;
    EHC->EHCCR1_b.QUICKMODE = 1U;
    SYSC->PRCR = 0xA500U;
#endif

    /* Initialization the pin direction and other settings to a safe
condition. */
    BoardInit();

    /* Initialization the clock */
    system_clock_init();

    /* Setting of nonexistent ports */

} /* End of function SystemInit() */
```

## 1.5 Schedule for fixing the problem

This problem will be fixed in the next version.

**Revision History**

Rev.	Date	Description	
		Page	Summary
1.00	Nov.01.20	-	First edition issued

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