Smart Configurator for RH850 Plug-in in e^2 studio 2025-01
Smart Configurator for RH850 V1.13.0

Release Note

Introduction

Thank you for using the Smart Configurator for RH850.
This document describes the restrictions and points for caution. Read this document before using the product.

Contents

1. Introduction

Smart Configurator is a utility for combining software to meet your needs. It supports the following three functions related to the embedding of Renesas drivers in your systems: importing middleware, generating driver code, and setting pins.

1.1 System Requirements

The operating environment is as follows.

1.1.1 Window PC

- System: x64/x86 based processor
  Windows® 11
  Windows® 10 (64-bit version)
- Memory capacity: We recommend 4 GB or more
- Capacity of hard disk: At least 500 MB of free space.
- Display: Graphics resolution should be at least 1024 x 768, and the mode should display at least 65,536 colors.
- Processor: 1 GHz or higher (must support hyper-threading, multi-core CPUs)

1.1.2 Linux PC

Smart Configurator for RH850 plug-in in e2 studio 2024-04 or later is supported on Linux OS.

- System: x64 based processor, 2 GHz or faster (with multicore CPUs)
  Ubuntu 22.04 LTS Desktop (64-bit version)
  Ubuntu 20.04 LTS Desktop (64-bit version)
- Memory capacity: We recommend 2 GB or more.
- Capacity of hard disk: At least 2 GB of free space.

1.1.3 Development Environments

- Renesas electronics Compiler for RH850 [CC-RH] V2.07.00 or later
- GHS Multi V8.1.4 or later
- IAR Embedded Workbench for RH850 V3.10.1 Note or later
- CS+ for CC V8.13.00 or later (Windows PC)

- **Note:**
1. IAR Embedded Workbench for RH850 V3.10.1 doesn't support RH850/U2B and RH850/U2C yet, so Smart Configurator doesn't support creating RH850/U2B and RH850/U2C IAR project and generate code.

2. Support List

2.1 Support Devices List

Below is a list of devices supported by the Smart Configurator for RH850 V1.13.0.

Table 2-1 Support Devices

Group (HW Manual number)	PIN	Device name (Device file version)
RH850/F1KM-S1 Group (R01UH0684EJ0130)	48pin	R7F701693, R7F701694, R7F701695 (V1.40)
	64pin	R7F701690, R7F701691, R7F701692 (V1.40)
	80pin	R7F701687, R7F701688, R7F701689 (V1.40)
	100pin	R7F701684, R7F701685, R7F701686 (V1.40)
RH850/F1KM-S2 Group (R01UH0684EJ0130)	100pin	R7F701760 (V1.40)
	144pin	R7F701762 (V1.40)
	176pin	R7F701764 (V1.40)
RH850/F1KM-S4 Group (R01UH0684EJ0130)	100pin	R7F701760, R7F701644, R7F701645 (V1.40)
	144pin	R7F701762, R7F701646, R7F701647 (V1.40)
	176pin	R7F701764, R7F701648, R7F701649 (V1.40)
	232pin	R7F701650, R7F701651 (V1.40)
	272pin	R7F701652, R7F701653 (V1.40)
RH850/U2A16 Group (R01UH0864EJ0130)	292pin	R7F702300 (V1.50), R7F702300A (V1.40), R7F702300B (V1.30)
	373pin	R7F702300 (V1.50), R7F702300A (V1.40), R7F702300B (V1.30)
	516pin	R7F702300 (V1.50), R7F702300A (V1.40), R7F702300B (V1.30)
RH850/U2A8 Group (R01UH0864EJ0130)	292pin	R7F702301 (V1.30), R7F702301A (V1.40), R7F702301B (V1.30)
	373pin	R7F702301 (V1.30), R7F702301A (V1.40), R7F702301B (V1.30)
RH850/U2A6 Group (R01UH0864EJ0130)	144pin	R7F702302 (V1.40)
	156pin	R7F702302 (V1.40)
	176pin	R7F702302 (V1.40)
	292pin	R7F702302 (V1.40)
RH850/F1KH-D8 Group (R01UH0684EJ0111)	176pin	R7F701708, R7F701709 (V1.20)
	233pin	R7F701710, R7F701711 (V1.20)
	324pin	R7F701714, R7F701715 (V1.20)
RH850/C1M-A2 Group (R01UH0607EJ0120)	252pin	R7F701275 (V1.10)
RH850/U2B6 Group (R01UH0923EJ0050)	292pin	R7F70255x (V1.40), R7F70255xA (V1.40), R7F70255xB (V1.40)
RH850/U2B10 Group (R01UH0923EJ0050)	292pin	R7F70254x (V1.30), R7F70254xA (V1.30)
	373pin	R7F70254x (V1.30), R7F70254xA (V1.30)
	468pin	R7F70254x (V1.30), R7F70254xA (V1.30)

Table 2-2 Support Devices

Group (HW Manual number)	PIN	Device name (Device file version)
RH850/U2C8 Group (R01UH1018EJ0080)	292pin	R7F702600A (V1.00)
RH850/U2C4 Group (R01UH1018EJ0080)	292pin	R7F702606A, R7F702613A, R7F702616A (V1.00)
	144pin	R7F702606A, R7F702614A, R7F702616A (V1.00)
	100pin	R7F702606A, R7F702613A, R7F702616A (V1.00)
RH850/U2C2 Group (R01UH1018EJ0080)	144pin	R7F702615 (E0.80a)*1
	100pin	R7F702608 (E0.80a)*1

Note1:
Currently CS+ and e2studio do not support RH850/U2C2 devices.
To use RH850/U2C2, please run the standalone version of Smart Configurator alone or use the version of the IDEs that support RH850/U2C2.

2.2 Support Components List

Below is a list of Components supported by the Smart Configurator for RH850 V1.13.0.

Table 2-3 Support Components

✓: Support, -: Non-support

No	Components	Mode	RH850/ F1KM	RH850/ U2A	RH850/ F1KH	RH850/ C1M	RH850/ U2B	RH850/ U2C	Remarks
1	A/D Converter	-	✓	✓	✓	✓	✓	✓	
2	CSI Master	Master Transmit	✓	-	✓	✓	-	-	
		Master Receive	✓	-	✓	✓	-	-	
		Master Transmit/Receive	✓	-	✓	✓	-	-	
3	CSI Slave	Slave Transmit	✓	-	✓	✓	-	-	
		Slave Receive	✓	-	✓	✓	-	-	
		Slave Transmit/Receive	✓	-	✓	✓	-	-	
4	Data CRC	-	✓	✓	✓	✓	-	✓	
5	DMA Controller	-	✓	✓	✓	✓	✓	✓	
6	DTS Controller	-	-	✓	-	✓	-	✓	
7	Error Control Module	-	-	✓	-	✓	-	✓	
8	ATOM Signal Output Mode Compare	-	-	✓	-	-	-	-	
9	ATOM Signal Output Mode Immediate	-	-	✓	-	-	-	-	
10	ATOM Signal Output Mode PWM	-	-	✓	-	-	-	-	
11	ATOM Signal Output Mode Serial	-	-	✓	-	-	-	-	
12	Dead Time Module	-	-	✓	-	-	-	-	
13	GTM Clock	-	-	✓	-	-	-	-	
14	TIM Bit Compression Mode	-	-	✓	-	-	-	-	

Table 2-4 Support Components

✓: Support, -: Non-support

No	Components	Mode	RH850/F1KM	RH850/U2A	RH850/F1KH	RH850/C1M	RH850/U2B	RH850/U2C	Remarks
15	TIM Gated Periodic Sampling Mode	-	-	✓	-	-	-	-	
16	TIM Input Event Mode	-	-	✓	-	-	-	-	
17	TIM Input Prescaler Mode	-	-	✓	-	-	-	-	
18	TIM Pulse Integration Mode	-	-	✓	-	-	-	-	
19	TIM PWM Measurement Mode	-	-	✓	-	-	-	-	
20	TIM Serial Shift Mode	-	-	✓	-	-	-	-	
21	Time Base Unit	-	-	✓	-	-	-	-	
22	Interrupt Controller	-	✓	✓	✓	✓	✓	✓	Only table reference method
23	Key Return	-	✓	-	✓	-	-	-	
24	MSPI Master	Transmit	-	✓	-	-	✓	✓	No support LVDS mode
		Receive	-	✓	-	-	✓	✓	
		Transmit/Receive	-	✓	-	-	✓	✓	
25	MSPI Slave	Transmit	-	✓	-	-	✓	✓	
		Receive	-	✓	-	-	✓	✓	
		Transmit/Receive	-	✓	-	-	✓	✓	
26	OS Timer	-	✓	✓	✓	✓	-	✓	
27	Ports	-	✓	✓	✓	✓	✓	✓	
28	Real-Time Clock	-	✓	✓	✓	-	-	✓	
29	RIIC Master	-	✓	✓	✓	✓	✓	✓	
30	RIIC Slave	-	✓	✓	✓	✓	✓	✓	

Table 2-5 Support Component

✓: Support, -: Non-support

No	Components	Mode	RH850/F1KM	RH850/U2A	RH850/F1KH	RH850/C1M	RH850/U2B	RH850/U2C	Remarks
31	SCI3 Asynchronous Mode	Transmission	-	✓	-	✓	-	-	
		Reception	-	✓	-	✓	-	-	
		Transmission / Reception	-	✓	-	✓	-	-	
		Multi-processor Transmission	-	✓	-	✓	-	-	
		Multi-processor Reception	-	✓	-	✓	-	-	
		Multi-processor Transmission / Reception	-	✓	-	✓	-	-	
32	SCI3 Clock Synchronous Mode	Transmission	-	✓	-	✓	-	-	
		Reception	-	✓	-	✓	-	-	
		Transmission / Reception	-	✓	-	✓	-	-	
33	Stand-by Controller	-	✓	✓	✓	-	-	-	Only Stop and DeepStop mode
34	Clock Divider	-	✓	✓	✓	✓	✓	✓	
35	Delay Count	-	✓	✓	✓	✓	✓	✓	
36	External Event Count	-	✓	✓	✓	✓	✓	✓	
37	Input Interval Timer	-	✓	✓	✓	✓	✓	✓	
38	Input Period Count Detection	-	✓	✓	✓	✓	✓	✓	
39	Input Position Detection	-	✓	✓	✓	✓	✓	✓	
40	Input Pulse Interval Judgment	-	✓	✓	✓	✓	✓	✓	
41	Input Pulse Interval Measurement	-	✓	✓	✓	✓	✓	✓	
42	Input Signal Width Judgement	-	✓	✓	✓	✓	-	✓	
43	Input Signal Width Measurement	-	✓	✓	✓	✓	-	✓	
44	Interval Timer	-	✓	✓	✓	✓	✓	✓	
45	One-Pulse Output	-	✓	✓	✓	✓	✓	✓	

Table 2-6 Support Components

✓: Support, -: Non-support

No	Components	Mode	RH850/ F1KM	RH850/ U2A	RH850/ F1KH	RH850/ C1M	RH850/ U2B	RH850/ U2C	Remarks
46	One-Shot Pulse output	-	✓	✓	✓	✓	✓	✓	
47	Overflow Interrupt Output (Input Period Count Detection)	-	✓	✓	✓	-	-	✓	
48	Overflow Interrupt Output (Width Measurement)	-	✓	✓	✓	-	✓	✓	
49	PWM Output	-	✓	✓	✓	✓	✓	✓	
50	Triangle PWM Output	-	✓	✓	✓	✓	-	✓	
51	Triangle PWM Output with Dead Time	-	-	✓	✓	✓	✓	✓	
52	UART Interface	Transmission	✓	✓	✓	✓	✓	✓	
		Reception	✓	✓	✓	✓	✓	✓	
		Transmission / Reception	✓	✓	✓	✓	✓	✓	
53	Window Watchdog Timer	-	✓	✓	✓	✓	-	✓	
54	ADC Boundary Flag Generator	-	-	-	-	-	✓	-	

2.3 New Support

2.3.1 Support new packages RH850/U2C4 and RH850/U2C2

From Smart Configurator for RH850 V1.13.0, RH850/U2C4 and RH850/U2C2 devices are supported.
See Table 2-2 Support Devices for details on supported device information.

2.3.2 Support new H850/U2B devices

From Smart Configurator for RH850 V1.13.0, R7F70255xA, R7F70255xB and R7F70254xA devices are supported.
See Table 2-1 Support Devices for details on supported device information.

2.3.3 Support CMake generation for Smart Configurator with Visual Studio Code

From Smart Configurator for RH850 V1.13.0, when using Visual Studio Code with Renesas Debug extension v25.3.0 or later to create RH project by choosing “Renesas: Create RH850 project with Smart Configurator”, CMake project is generated for easier build the driver code generated by Smart Configurator for RH850 on Visual Studio Code.
Only Renesas CCRH850 toolchain is supported for CMake generation.
For detailed how to use the CMake generation for Smart configurator, please refer to Renesas VS Code Extensions User Guide.

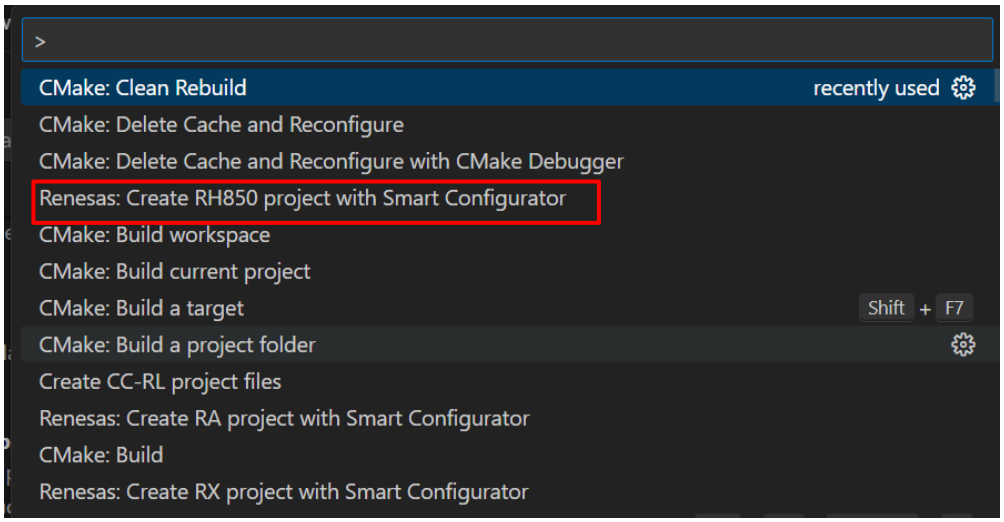

Figure 2-1 Select “Renesas: Create RH850 project with Smart Configurator” in VS Code

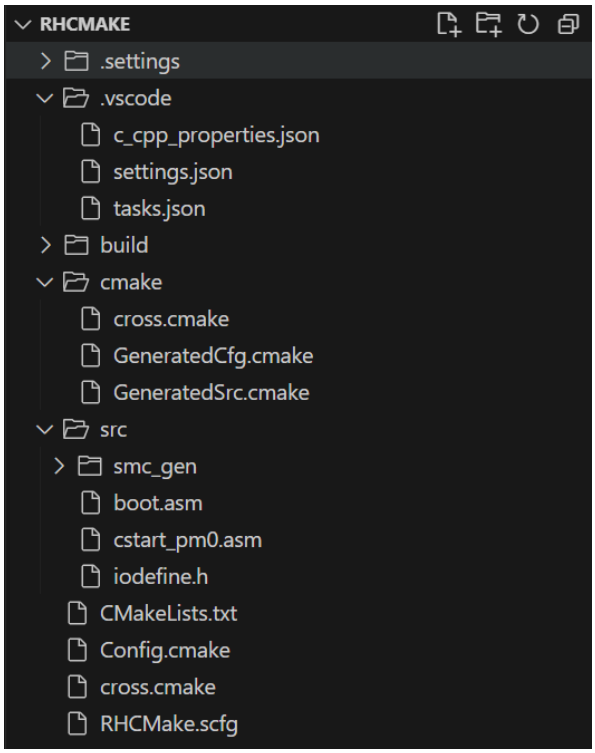

Figure 2-2 CMake project created for VS Code

3. Changes

This chapter describes changes to the Smart Configurator for RH850 V1.13.0.

3.1 Correction of Issues/Limitations

Table 3-1 List of Correction of Issues/Limitations

✓: Applicable, -: Not Applicable

No	Description	RH850 F1KM	RH850 U2A	RH850 F1KH	RH850 C1M	RH850 U2B	RH850 U2C	Remarks
1	Fixed the issue of the incorrect text color in some components UI on Linux	✓	✓	✓	✓	✓	✓	

3.1.1 Fixed the issue of the incorrect text color in some components UI on Linux

When using below components in Linux environment, the text color on GUI is purple and is not correct.
Components: Dead Time Module, Time Base Unit Triangle PWM Output, PWM Output, Triangle PWM Output with Dead Time, One-Shot Pulse Output.
From Smart Configurator for RH850 V1.13.0, the issue is fixed.

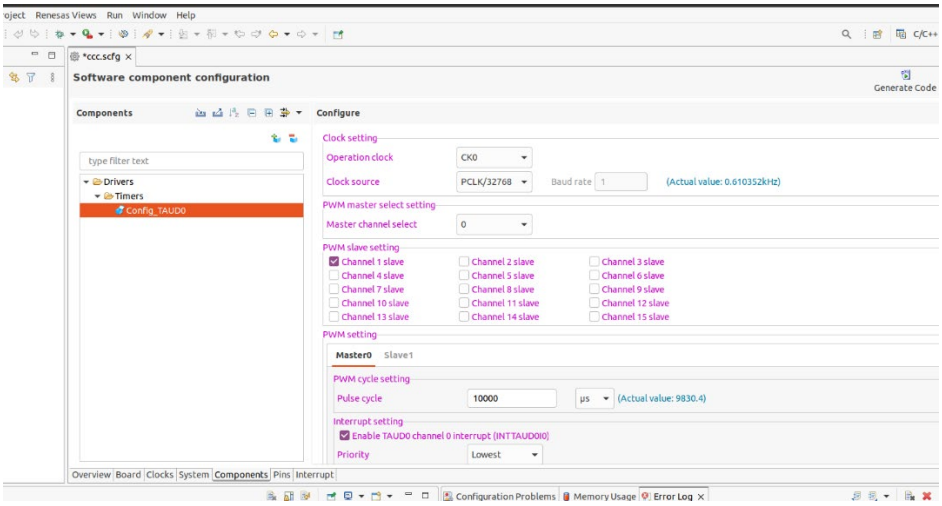

Figure 3-1 Incorrect text color in UI on Linux is purple

3.2 Specification Changes

Table 3-2 List of Specification Changes

✓: Applicable, -: Not Applicable

No	Description	RH850 F1KM	RH850 U2A	RH850 F1KH	RH850 C1M	RH850 U2B	RH850 U2C	Remarks
1	Improved the toolchain selection	-	-	-	-	-	✓	

3.2.1 Improved the toolchain selection

From Smart Configurator for RH850 V1.13.0, IAR RH850 Toolchain is removed from “New Smart Configuration File” view because IAR Embedded Workbench for RH850 V3.10.1 doesn’t support RH850/U2C.

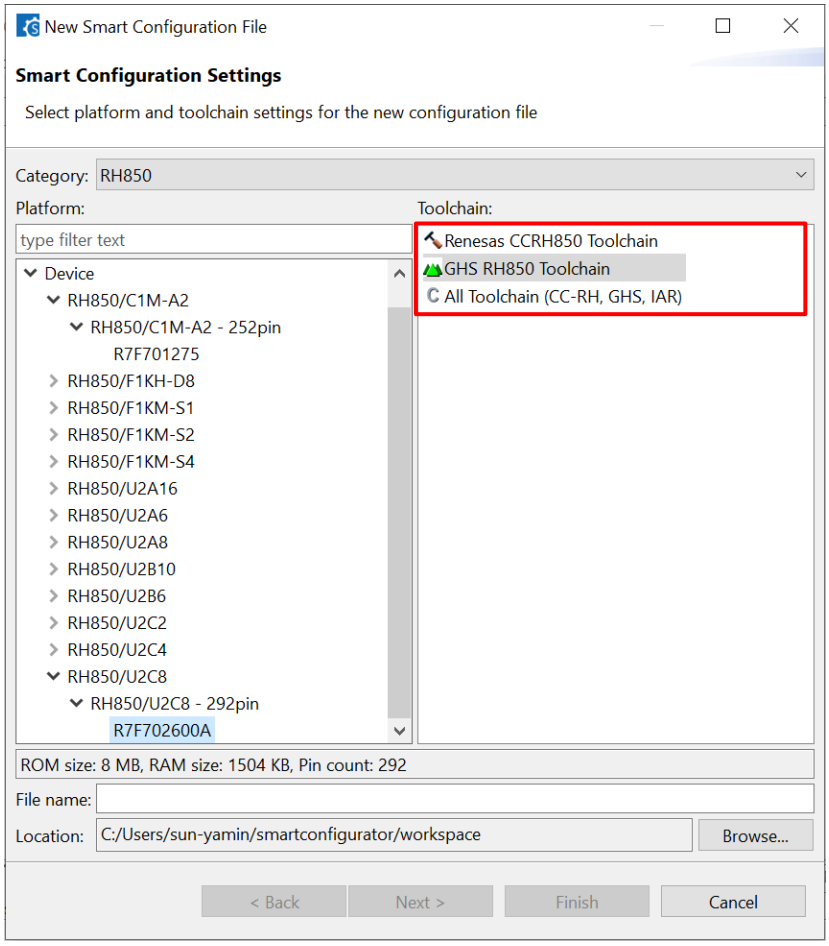

Figure 3-2 Toolchain list for RH850/U2C

Note: All Toolchain (CC-RH, GHS, IAR) still including “IAR” is a limitation, please refer to: 5.2.3 Note on using All Toolchain (CC-RH, GHS, IAR)

4. List of RENESAS TOOL NEWS AND TECHNICAL UPDATE

Below is a list of notifications delivered by RENESAS TOOL NEWS and TECHNICAL UPDATE.

Issue date	Document No.	Description	Applicable MCUs	Fixed version
Mar.16, 2019	R20TS0407	1. Build error occurs when setting not to generate clocks 2. RAM size display error https://www.renesas.com/document/tnn/notes-rh850-smart-configurator	RH850F1KM	V1.2.0
Jun. 01, 2016	R20TS0431	When using PLL0 Clock https://www.renesas.com/document/tnn/notes-rh850-smart-configurator-0	RH850F1KM	V1.2.0
Jul.01, 2019	R20TS0441	1. When using PWM output and triangle PWM output slave setting 2. Port input buffer setting error 3. Port drive strength control setting error 4. Port register setting error https://www.renesas.com/document/tnn/notes-smart-configurator-rh850	RH850F1KM	V1.2.0
Aug.01, 2019	R20TS0463	1. When using the input pulse interval measurement function 2. When using the Clocked Serial Interface in Master mode https://www.renesas.com/document/tnn/notes-smart-configurator-rh850-0	RH850F1KM	V1.2.0
Oct.16, 2019	R20TS0500	1. When using data CRC 2. When using one-pulse outputs https://www.renesas.com/document/tnn/notes-smart-configurator-rh850-1	RH850F1KM	V1.2.0
Apr.16, 2020	R20TS0569	When using CSI master and CSI slave https://www.renesas.com/document/tnn/notes-smart-configurator-rh850-2	RH850F1KM	V1.3.0
May.16, 2020	R20TS0576	When using CSI master and CSI slave https://www.renesas.com/document/tnn/notes-smart-configurator-rh850-3	RH850F1KM	V1.3.0
Feb. 16, 2021	R20TS0668	When using CSI master https://www.renesas.com/document/tnn/notes-smart-configurator-rh850-4	RH850F1KM	V1.4.0

Issue date	Document No.	Description	Applicable MCUs	Fixed version
Apr. 05, 2021	R20TS0679	1. When using CSI Master and CSI Slave with CSIG 2. When using CSI Master with CSIH 3. When using Data CRC 4. When using One-Pulse Output and One-Shot Pulse Output 5. When using PWM Output and Triangle PWM Output https://www.renesas.com/document/tnn/notes-smart-configurator-rh850-5	RH850F1KM RH850U2A	V1.4.0
Jun.16, 2021	R20TS0717	1. When using A/D converter with ADCJ2 https://www.renesas.com/document/tnn/notes-smart-configurator-rh850-6	RH850U2A	V1.5.0
Jul. 01, 2021	R20TS0723	1.Notes on using One-Shot Pulse Output, PWM Output, Triangle PWM Output, Triangle PWM Output with Dead Time functions with TAUD1, TAUD2 https://www.renesas.com/document/tnn/notes-smart-configurator-rh850-7	RH850U2A	V1.5.0
Sep. 16, 2021	R20TS0744	1.Notes on selecting PLL0 clock CPLL0OUT as source of CPU Subsystem clock 2.Notes on using CSIH Master receive and Master transmit/receive operation mode https://www.renesas.com/document/tnn/notes-smart-configurator-rh850-8	RH850F1KM RH850F1KH	V1.5.0
Feb. 01, 2022	R20TS0806	1.Notes on using T&H path self-diagnosis function of A/D Converter 2.Notes on redundant macros and wrong comments in A/D Converter header file https://www.renesas.com/document/tnn/notes-smart-configurator-rh850-9	RH850U2A	V1.6.0

5. Points for Limitation

This section describes points for limitation regarding the Smart Configurator for RH850 V1.13.0.

5.1 List of Limitation

Table 5-1 List of Limitation

✓: Applicable, -: Not Applicable

No	Description	RH850 F1KM	RH850 U2A	RH850 F1KH	RH850 C1M	RH850 U2B	RH850 U2C	Remarks
1	Note on using RIIC	✓	✓	✓	-	✓	✓	
2	Note on using OS Timer	✓	-	✓	-	-	-	
3	Note on using All Toolchain (CC-RH, GHS, IAR)	-	-	-	-	✓	✓	
4	Note on UI display with High Contrast theme on Linux OS	✓	✓	✓	✓	✓	✓	

5.2 Details of Limitation

5.2.1 Note on using RIIC

When using RIIC master or RIIC Slave to send or receive data, error interrupt priority must be higher than any other interrupt priority.

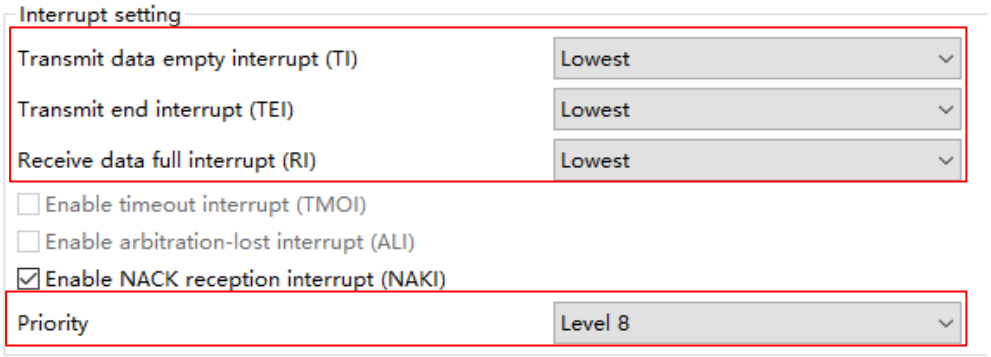

Figure 5-1. RIIC interrupt priority setting

5.2.2 Note on using OS Timer

Smart Configurator only supports OSTM0, OSTM1~OSTM4 are not supported.

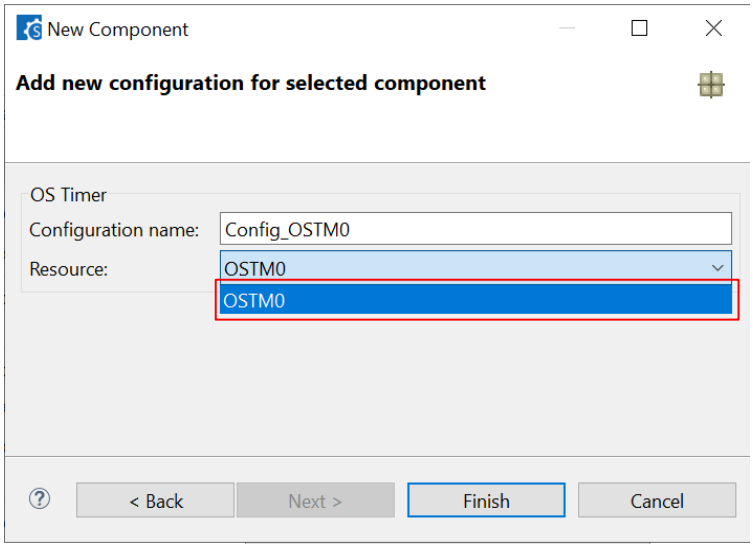

Figure 5-2 OS Timer Resource selection

5.2.3 Note on using All Toolchain (CC-RH, GHS, IAR)

When selecting RH850/U2B or RH850/U2C devices and All Toolchain (CC-RH, GHS, IAR) to create project, the generated code does not support IAR compiler, the reason is:

IAR Embedded Workbench for RH850 V3.10.1 doesn't support RH850/U2B and RH850/U2C yet, so Smart Configurator doesn't generate code adapted to IAR compiler.

All toolchain (CC-RH, GHS, IAR) will be changed to All Toolchain (CC-RH, GHS) in future.

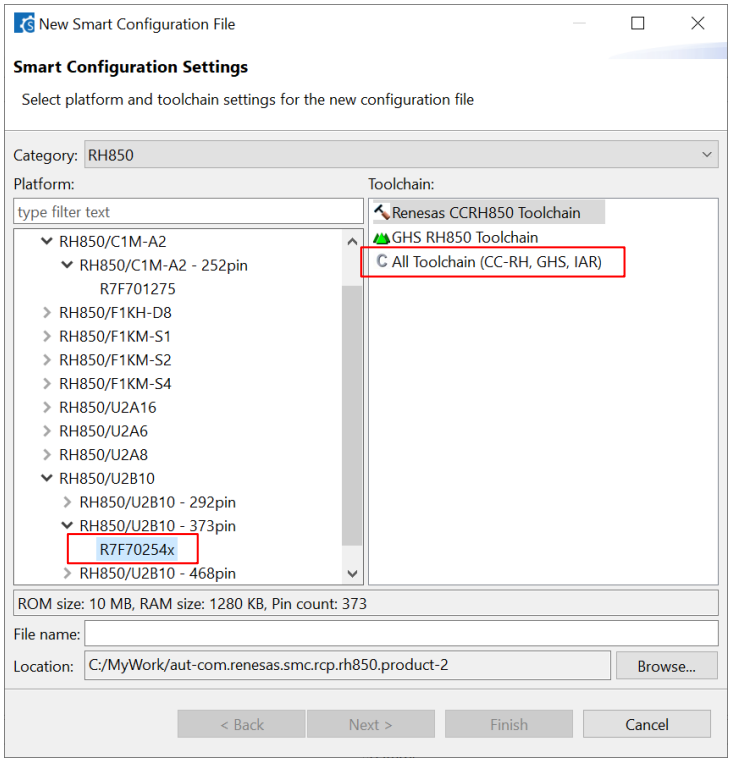

Figure 5-3 All Toolchain (CC-RH, GHS, IAR) selection

5.2.4 Note on UI display with High Contrast theme on Linux OS

When using e² studio with High Contrast theme on Linux OS, some display texts of Smart Configurator cannot be seen. To avoid this issue, please use other themes.

Figure 5-4 UI display with High Contrast theme

6. Points for Caution

This section describes points for caution regarding the Smart Configurator for RH850 V1.13.0

6.1 List of Caution

Table 6-1 List of Caution

✓: Applicable, -: Not Applicable

No	Description	RH850 F1KM	RH850 U2A	RH850 F1KH	RH850 C1M	RH850 U2B	RH850 U2C	Remarks
1	About the I/O define header file	✓	✓	✓	✓	✓	✓	
2	About loading the project on CS+	✓	✓	✓	✓	✓	✓	
3	About the sample projects	✓	✓	✓	✓	✓	✓	
4	About the decimal point	✓	✓	✓	✓	✓	✓	
5	Note on pins sharing functions.	✓	✓	✓	✓	✓	✓	
6	Note on Interrupt Controller resource name	✓	-	-	-	-	-	
7	Note on DMA/DTS trigger generator setting of MSPI Master	-	✓	-	-	✓	✓	
8	Note on CPU Operating mode of DTS Controller	-	✓	-	-	-	-	
9	Note on using Smart Configurator when the OS language is Japanese	-	✓	-	-	✓	✓	
10	Note on changing device when using Error Control Module	-	✓	-	✓	-	-	
11	Note on reloading project for Error Control Module	-	✓	-	-	-	-	
12	Note on the “Release Notes” or “Tool News” display issue in Renesas Website	✓	✓	✓	✓	✓	-	
13	Note on using Smart Configurator for RH850 project in CS+	✓	✓	✓	✓	✓	✓	
14	Note on using RH850/U2A devices	-	✓	-	-	-	-	

6.2 Details of Caution

6.2.1 About the I/O define header file

Please use Renesas iodefine.h for the header file that defines the register. Because RH850 Smart Configurator outputs code conforming to the definition in Renesas iodefine.h, a build error occurs when using the register definition file provided by other environments.

6.2.2 About loading the project on CS+

When launching RH850 Smart Configurator from CS+, please set 'RH850 Build tool CC-RH plugin' and 'RH850 Build tool GHS CCRH850 plugin' to enable. If these plugins are disable, the error occurs when CS+ project that includes the setting of RH850 Smart Configurator is loaded.

6.2.3 About the sample project

The RH850 Smart Configurator does not output the processing after resetting the microcontroller (including the startup routine).
Therefore, we provide sample projects that include sample startup routines and other necessary processing so that user applications can be built immediately after peripheral modules are set up using the RH850 Smart Configurator.
Please refer to the user guide for sample projects under installation path.
Default installation path:
C:\Program Files (x86)\Renesas Electronics\SmartConfigurator\RH850\

6.2.4 About the decimal point

For error-free operation of the RH850 Smart Configurator, use a period (".") as the decimal point and a comma (",") as the digit grouping separator. Which of "." (period), "," (comma) or ", " (space) is used as the decimal point or digit grouping separator differs depending on the language setting of the Windows OS that is used. For example, if you use a comma (",") as the decimal point, the RH850 Smart Configurator may not work correctly. This will occur when you are using Windows OS with language set to other than Japanese or English. If you are using the RH850 Smart Configurator on Windows OS with language set to other than Japanese or English, change the language setting to Japanese or English.

6.2.5 Note on pins sharing functions

When function shared pin selects a shared pin, shared pin displays an error.
But the shared pin can be selected correctly and work correctly.
Example) For RH850/U2A RSENT0
Assign RSENT0RX and RSENT0SPCO to the T24 pin
When assigned: T24 pin displays an error

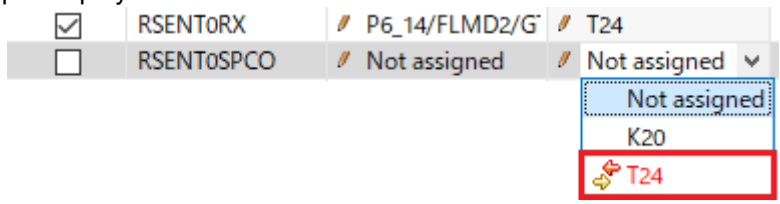

Figure 6-1. pins sharing function sample when assigned

After assignment

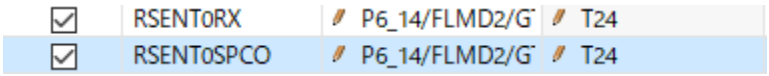

Figure 6-2. pins sharing function sample after assigned

6.2.6 Note on Interrupt Controller resource name

In RH850 Smart Configurator V1.2.0, the resource name of the interrupt controller has been changed to “INTC”. The resource name of the interrupt controller of the previous version is automatically changed from "ICU" to “INTC”.
Therefore, the following file name and macro name are changed.

Table 6-2 File name change

Before change	After change
r_cg_icu.h	r_cg_intc.h

Table 6-3 Macro name change

File name	Before change	After change
r_smc_interrupt.h	ICU_xxx_PRIORITY	INTC_xxx_PRIORITY

6.2.7 Note on DMA/DTS trigger generator setting of MSPI Master

If alternative trigger is selected in Smart Configurator for RH850 V1.5.0, when reloading the project file (.scfg file) into Smart Configurator for RH850 V1.6.0, the alternative trigger signal “Use alternative trigger” can`t be reloaded and the default trigger signal “Trigger1(DTSMSPI12)/Trigger2(DTSMSPI13)” will be used.
There isn`t this cautions when reloading project between Smart Configurator for RH850 V1.5.0 and before, or between Smart Configurator for RH850 V1.6.0 and later.

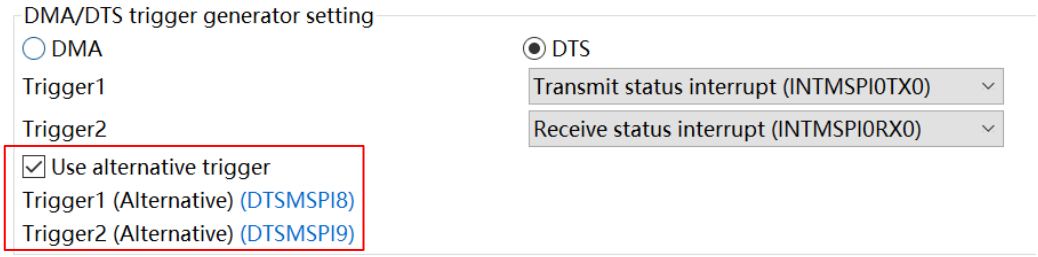

Figure 6-3. “Use alternative trigger” checked in Smart Configurator for RH850 V1.5.0

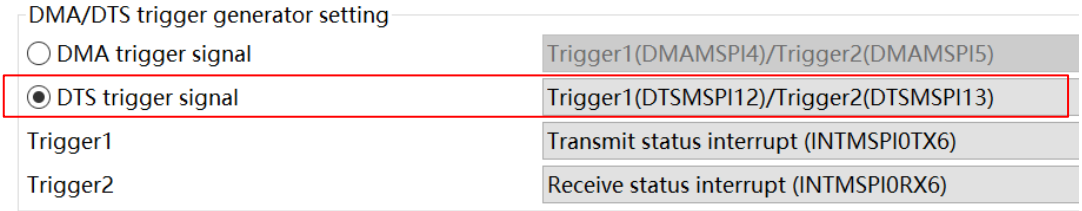

Figure 6-4. “Trigger1(DTSMSPI12/Trigger2(DTSMSPI13)” selected after reloading in Smart Configurator for RH850 V1.6.0

6.2.8 Note on CPU Operating mode of DTS Controller

If CPU operating mode selects “User mode” in Smart Configurator for RH850 V1.5.0, after reloading the project in Smart Configurator for RH850 V1.6.0, CPU operating mode will be changed to “Supervisor mode” which is default setting.
There isn`t this cautions when reloading project between Smart Configurator for RH850 V1.5.0 and before, or between Smart Configurator for RH850 V1.6.0 and later.

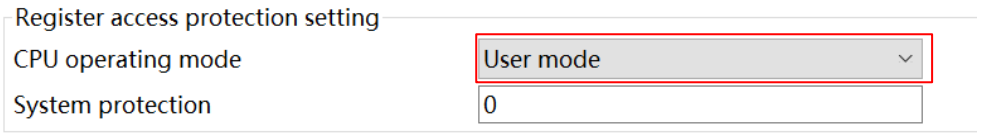

Figure 6-5. CPU operating mode in Smart Configurator for RH850 V1.5.0

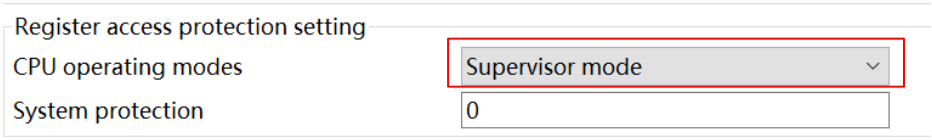

Figure 6-6. CPU operating mode after reloading in Smart Configurator for RH850 V1.6.0

6.2.9 Note on using Smart Configurator when the OS language is Japanese

For RH850/U2x users, we recommend using Smart Configurator on English OS. If your OS is Japanese, you also can add “-Duser.language=en” to “<install directory>\SmartConfigurator\RH850\eclipse\SmartConfigurator.ini” file, then you can see English GUI in Smart Configurator. For RH850/U2x, Smart Configurator Japanese UI is just for your reference, and we do not recommend that you use it.

6.2.10 Note on changing device when using Error Control Module

When using Error Control Module, we don't recommend changing device between RH850/U2A and RH850/C1M. Because most of the error sources of these two devices are different, the error sources can`t migrate.

6.2.11 Note on reloading project for Error Control Module

If user used some error sources of Error Control Module in the project created using Smart Configurator for RH850 V1.7.0 or earlier, when reloading the project using Smart Configurator for RH850 V1.8.0 or later, the error source will be different between the two versions.
Figure 6-7 and Figure 6-8 show the difference.
Figure 6-9 shows the error sources that have such issue.

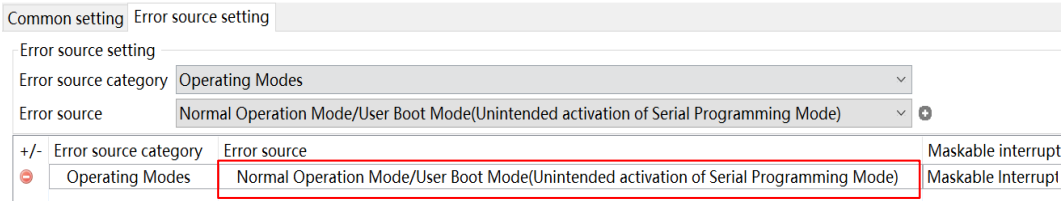

Figure 6-7. Error source added in Smart Configurator for RH850 V1.7.0 or earlier

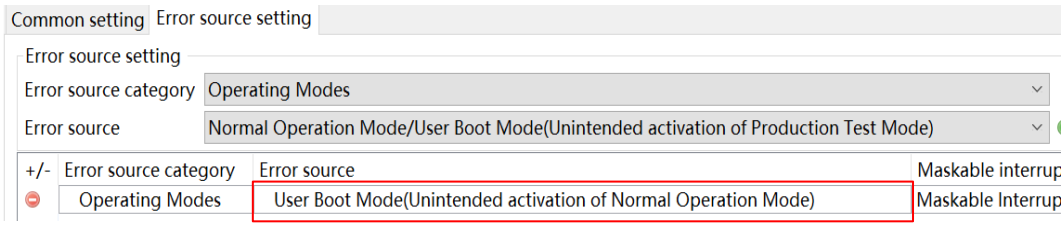

Figure 6-8. Error source reloaded in Smart Configurator for RH850 V1.8.0 or later

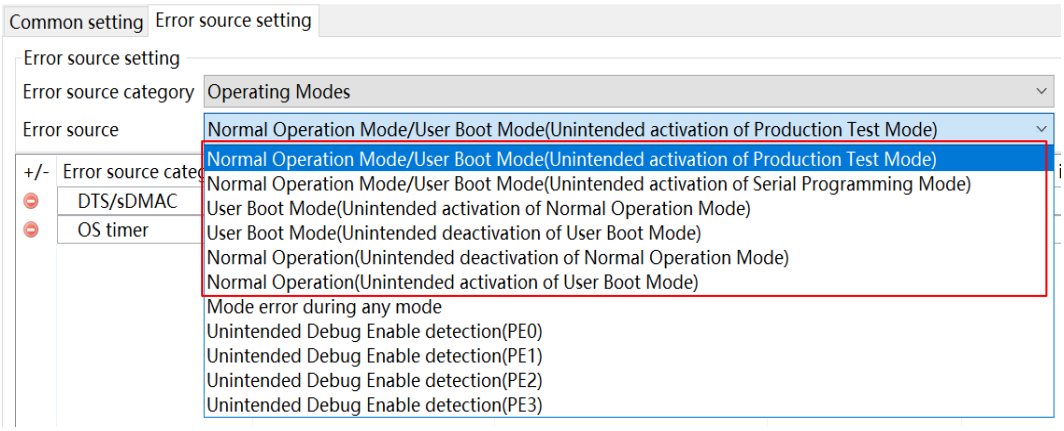

Figure 6-9. Error sources that have such issue

6.2.12 Note on the “Release Notes”, “Tool News” display issue in Renesas Website

For Smart Configurator for RH850 V1.7 or before version, release note or tools news might not be displayed correctly on Renesas Website after clicking the “Renesas Notes” or “Tool News” under the help menu of Smart Configurator. This issue has been fixed from this version.

As a workaround, please use the URL directly:

- Release Notes: https://www.renesas.com/rh850-smart-configurator-release-note
- Tool News: https://www.renesas.com/rh850-smart-configurator-tn-notes

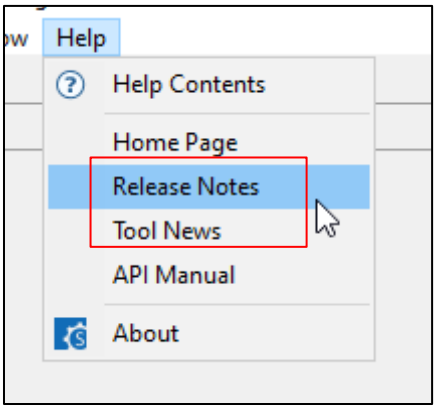

Figure 6-10 Help menu of Smart Configurator

6.2.13 Note on using Smart Configurator for RH850 in CS+

When you want to use Smart Configurator for RH850 in CS+, Please take note to select below six kinds of projects in “Create project” dialog of CS+:

- Application(CC-RH) (for single-core devices, such as RH850/F1KM)
- Application for Multi-core(CC-RH) (for multi-core devices, such as RH850/C1M-A2, RH850/F1KH, RH850/U2A, RH850/U2B)
- Empty Application(CC-RH)
- Library(CC-RH)
- Empty Application(GHS CCRH850)
- Application(RI850V4,CC-RH)
-

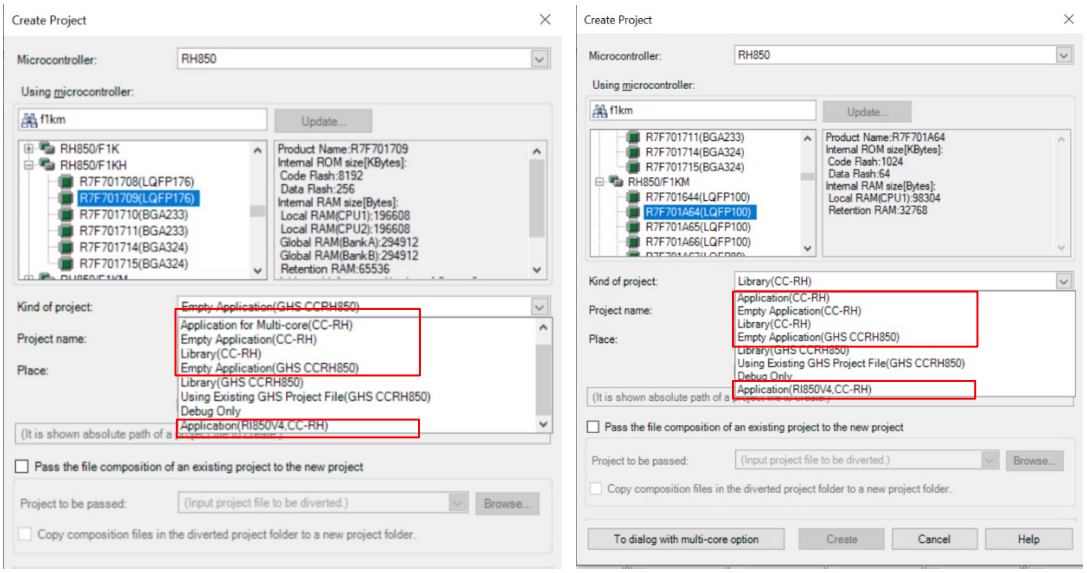

Figure 6-11 Kinds of project for multi-core devices and single-core devices

6.2.14 Note on using RH850/U2A devices

For RH850/U2A devices, if using Smart Configurator for RH850 in CS+ CC for V8.11.01 and later, please use Smart Configurator for RH850 V1.12.00 and later; when using Smart Configurator for RH850 in CS+ CC for V8.11.00 and before, please use Smart Configurator for RH850 V1.11.00 and before; otherwise, there would be build error because of the RH850/U2A device file update.
In e2 studio 2024-04 there is build error too for RH850/U2A devices when using Smart Configurator for RH850. In order to avoid the build error, please use e2 studio 2024-01, or e2 studio 2024-07 or later.

Revision History

Rev.	Section	Description
1.00	-	First edition issued

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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