

**Release Note****Contents**

Chapter 1. Target Devices .....	2
Chapter 2. User's Manuals .....	3
Chapter 3. Key Word for Uninstallation .....	4
Chapter 4. Changes .....	5
4.1 Specifications changed .....	5
4.1.1 Simulation on CubeSuite+ V1.01.00.....	5
Chapter 5. Cautions.....	6
5.1 Differences between target devices and simulator .....	6
5.1.1 Simulation of ROM correction .....	6
5.1.2 Flash self programming function.....	6
5.1.3 Noise eliminators .....	6
5.1.4 Oscillation stabilization time for clock oscillator .....	7
5.1.5 IIC digital filter and arbitration functions .....	7
5.1.6 External bus interface functions.....	8
5.1.7 Simulation of PLL function in locked status .....	9
5.1.8 Simulation of DMA controller transfer time .....	9
5.1.9 Low-speed internal oscillator .....	9
5.1.10 Clock monitoring .....	9
5.1.11 CAN controller.....	9
5.1.12 Simulation of A/D converter .....	9
5.1.13 Accessing special function registers.....	10
5.1.14 Data protection and security .....	10
5.1.15 Noise filter on asynchronous serial interface (UARTD) .....	10
5.1.16 Baud rate of asynchronous serial interface (UARTD) .....	10
5.1.17 Baud rate clock input of asynchronous serial interface (UARTD0) .....	10
5.1.18 Constant 0/1 bits of I/O registers .....	11
5.1.19 Interrupt response time .....	11
5.1.20 Low-voltage detector .....	11
5.2 Cautions for using simulator GUI .....	12
5.2.1 Cautions for controlling each windows .....	12
5.2.2 Cautions for closing simulator GUI window .....	12
5.2.3 Cautions for showing help for the simulator GUI window .....	12
5.2.4 Cautions for disconnecting the debug tool .....	13
5.2.5 Cautions for setting the Host Machine's language and region .....	13

## Chapter 1. Target Devices

Below is a list of devices supported by the V850ES/Fx3 simulator.

Nickname	Device name
V850ES/FE3	$\mu$ PD70F3370A, $\mu$ PD70F3371
V850ES/FF3	$\mu$ PD70F3372, $\mu$ PD70F3373
V850ES/FG3	$\mu$ PD70F3374, $\mu$ PD70F3375, $\mu$ PD70F3376A, $\mu$ PD70F3377A
V850ES/FJ3	$\mu$ PD70F3378, $\mu$ PD70F3379, $\mu$ PD70F3380, $\mu$ PD70F3381, $\mu$ PD70F3382
V850ES/FK3	$\mu$ PD70F3383, $\mu$ PD70F3384, $\mu$ PD70F3385
V850ES/FE3-L	$\mu$ PD70F3610, $\mu$ PD70F3611, $\mu$ PD70F3612, $\mu$ PD70F3613, $\mu$ PD70F3614
V850ES/FF3-L	$\mu$ PD70F3615, $\mu$ PD70F3616, $\mu$ PD70F3617, $\mu$ PD70F3618, $\mu$ PD70F3619
V850ES/FG3-L	$\mu$ PD70F3620, $\mu$ PD70F3621, $\mu$ PD70F3622

## Chapter 2. User's Manuals

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

Manual Name	Document Number
CubeSuite+ V1.01.00 V850 Debug	R20UT0734EJ0100
CubeSuite+ V1.01.00 Message	R20UT0736EJ0100

## Chapter 3. Key Word for Uninstallation

To uninstall this product, use the integrated uninstaller (uninstalls CubeSuite+).

## Chapter 4. Changes

This chapter describes changes from V3.00.00 to V3.00.01.

### 4.1 Specifications changed

#### 4.1.1 Simulation on CubeSuite+ V1.01.00

Support simulation on CubeSuite+ V1.01.00. There is no functional change.

## Chapter 5. Cautions

This section describes cautions for using the V850ES/Fx3 simulator. The following two types of caution are described:

- Differences between target devices and simulator : Differences from behavior of target devices due to simulator specifications
- Cautions for using simulator GUI : Cautions for using the simulator GUI window

### 5.1 Differences between target devices and simulator

#### 5.1.1 Simulation of ROM correction

The simulator does not simulate ROM correction.

#### 5.1.2 Flash self programming function

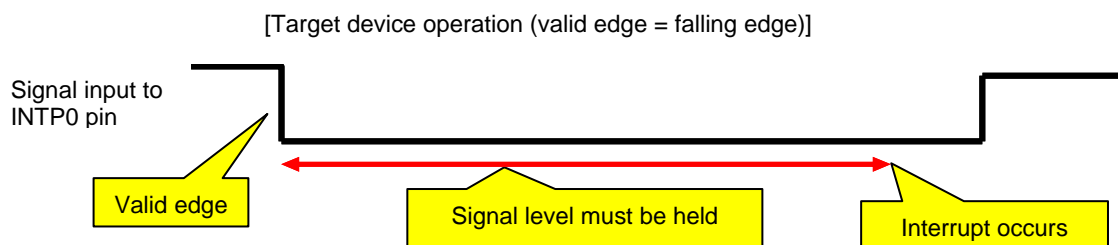
The following differences exist between the target device and simulator regarding the flash self programming function.

#### 5.1.3 Noise eliminators

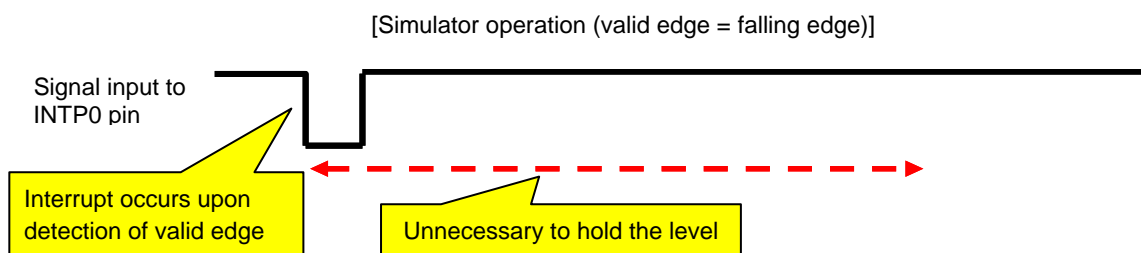
The simulator does not simulate noise eliminators. Consequently, when an active level is input to an external interrupt pin via a noise eliminator, for example, the interrupt is acknowledged even if the active-level width is not sufficient.

The following shows an example whereby a signal is input to the INTP0 pin.

The INTP0 pin of the target device is equipped with a noise eliminator. To generate an interrupt, the signal level must therefore be held after a valid edge is input to the target device. (The hold time is prescribed in the user's manual of the target device.)



Since the simulator does not simulate this noise eliminator, an interrupt occurs when a valid edge is detected. (It is unnecessary to hold the signal level.)



#### 5.1.4 Oscillation stabilization time for clock oscillator

The simulator does not simulate the oscillation stabilization time for a clock oscillator.

#### 5.1.5 IIC digital filter and arbitration functions

The digital filter function and arbitration function of the IIC bus are not supported.

[Digital filter function]

The IIC bus equipped in the target device has a digital filter ON/OFF function for the purpose of eliminating noise during high-speed transfer, but the simulator does not simulate this function. (The operation is not affected by switching ON or OFF.) The simulator does not support this function because noise will never be applied to signals in the simulator.

[Arbitration function]

The IIC bus equipped in the target device has the arbitration function that arbitrates communication requests simultaneously sent from multiple masters, which are connected to one communication line.

### 5.1.6 External bus interface functions

Some of the external bus interface functions can be simulated, and some cannot.

[Functions that can be simulated]

- \* ROM and RAM connection
- \* Access to connected ROM/RAM

[Functions that cannot be simulated]

- \* External bus-related SFR simulation (External bus access is possible even without configuring SFR.)
- \* Check signal input to external bus pins in the Timing Chart window  
(It will appear as high impedance.)
- \* Input to WAIT or HLDRQ pin (It will be ignored.)
- \* Access Speed (always 0 clock)

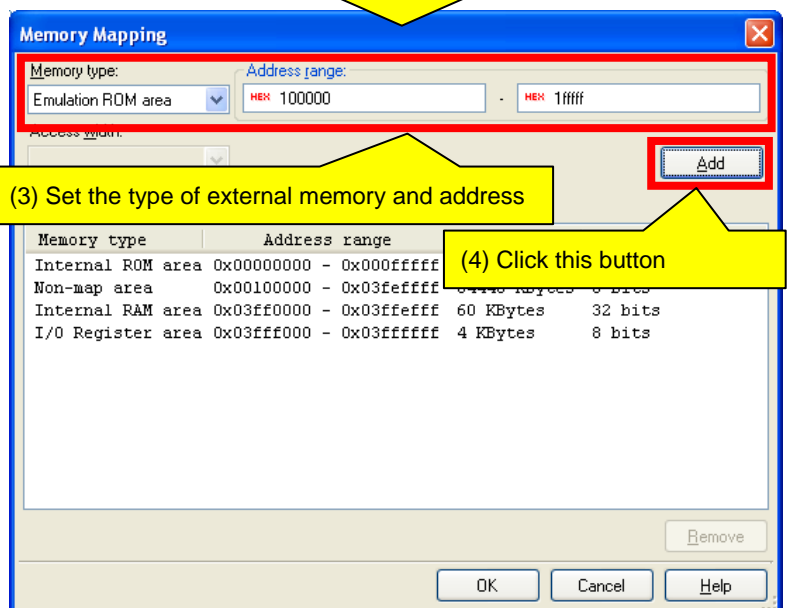
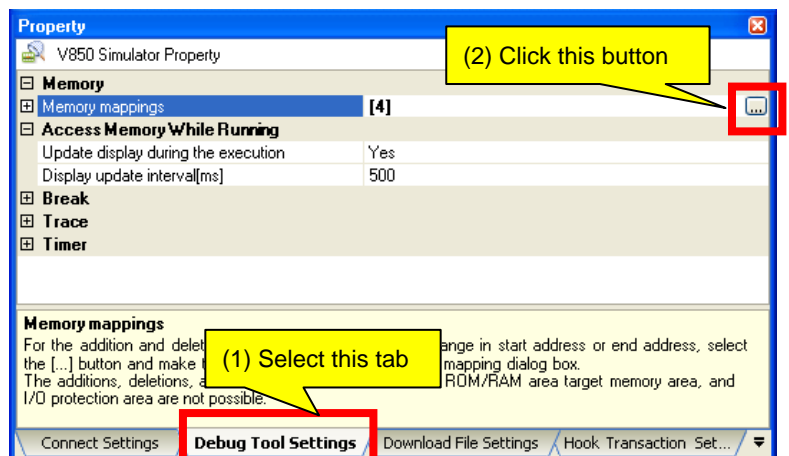
When connecting ROM or RAM to the external bus, perform configuration in the Property panel, from the Debugging Tool Setting tab.

Connect by entering:

- \* Type of memory to connect to (emulation ROM area or emulation RAM area)
- \* Memory address to connect to

This setting enables both:

- \* Writing to external bus
- \* Reading from external bus





### 5.1.7 Simulation of PLL function in locked status

The simulator does not simulate the PLL function in the locked status.

### 5.1.8 Simulation of DMA controller transfer time

When a DMA transfer request is issued, DMA transfer is executed even if the internal/external bus that will be used by the DMA controller is being used by the CPU. (Normally, the DMA controller waits for CPU access to the internal/external bus to end.)

In addition, DMA transfer ends as soon as transfer starts. (Normally, DMA transfer ends several clocks after DMA transfer has been started.) As a result, a transfer time difference occurs.

### 5.1.9 Low-speed internal oscillator

The low-speed internal oscillation clock (240 kHz) cannot be used for the CPU clock.

### 5.1.10 Clock monitoring

The simulator does not simulate clock monitoring.

### 5.1.11 CAN controller

The simulator does not simulate the following CAN controller functions.

Transfer speed (baud rate) setting, transmit/receive history, automatic block transmission, multi-buffer reception block, remote frame, receive-only mode, single-shot mode, shift to bus-off state, power saving modes, bus errors (stuff error, form error, ACK error, bit error, CRC error), error count, forced shutdown, automatic block transmission delay, receive status bit (RSTAT bit of CnCTRL register), CAN module last error information, CAN module information, interrupt status, wakeup interrupt, arbitration loss interrupt, CAN protocol interrupt, CAN error status interrupt, time stamping, diagnosis, self-testing mode.

### 5.1.12 Simulation of A/D converter

The simulator does not simulate the stabilization time of the A/D converter or diagnosis features (ADAnDIAG).

### 5.1.13 Accessing special function registers

A specific sequence must be executed to access special function registers such as PSC, CLM, and PCC. In the simulator, however, values are reflected in the above registers even if the specific sequence is not executed.

The special function registers shown below cannot be written. Therefore, the system register (SYS) is always set to 1 even if data is written to these registers.

- CLM
- SFC0
- SFC1
- DFLCTL
- RAMS
- OCDM

### 5.1.14 Data protection and security

Data protection (protection from reading from, writing to, and deleting flash memory) and security settings (boot swapping and secure self-programming) are not supported.

### 5.1.15 Noise filter on asynchronous serial interface (UARTD)

Although the target device's asynchronous serial interface (UARTD) has a noise filter to reduce noise on the input pin, the simulator does not simulate this. Since there is no noise in the simulator's signal, it would be meaningless to simulate this function.

### 5.1.16 Baud rate of asynchronous serial interface (UARTD)

If the baud rate of the asynchronous serial interface (UARTD) is set to 233 bps or lower, operation will be abnormal (it will operate at a higher baud rate than the one set). Do not specify a baud rate that is 233 bps or lower.

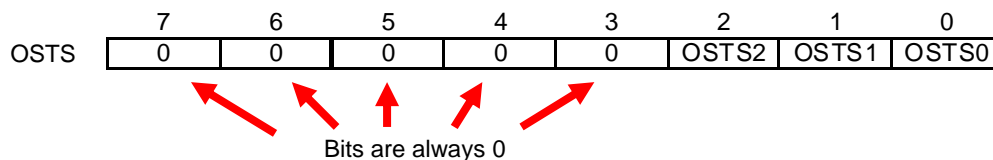
### 5.1.17 Baud rate clock input of asynchronous serial interface (UARTD0)

Although the target device's asynchronous serial interface (UARTD0) has an ASCKD0 pin as a baud rate clock input pin, the simulator does not simulate this. Inputs of baud rate clocks to this pin are ignored.

### 5.1.18 Constant 0/1 bits of I/O registers

The I/O register has bits that are always 0 or 1.

For example, bits 3 to 7 are always 0 for the oscillation stabilization time selection register (OSTS).



Although the values of these bits cannot be changed from the target device, the values can be changed from the simulator. Note that changing these values has no effect on behavior.

### 5.1.19 Interrupt response time

The interrupt response times of the target device and simulator differ.

[Target device]

It takes at least 4 clock cycles after an interrupt is generated until execution branches to the handler address.

[Simulator]

Execution branches to the handler address immediately upon the interrupt.

### 5.1.20 Low-voltage detector

The simulator does not simulate the internal RAM data status register (RAMS).

## 5.2 Cautions for using simulator GUI

### 5.2.1 Cautions for controlling each windows


The following keyboard operations are not available in the simulator windows (signal-data editor window, I/O panel window, and serial window).

- \* Navigation via tab or arrow keys (←, ↑, →, ↓)
- \* Deletion via the Del or Backspace keys
- \* Copy & paste and other operations via the Ctrl + C, V, X, A, or Z keys.


Perform the above operations as follows.

- \* Navigation:           Navigate using the mouse.
- \* Deletion:            Right click and perform the action via the context menu.
- \* Copy & paste, etc.: Right click and perform the action via the context menu.

### 5.2.2 Cautions for closing simulator GUI window

The simulator GUI window can only be closed by disconnecting from the debugging tool, or by closing CubeSuite+ proper. (The  button cannot be clicked.)

Note, however, that pressing Alt + F4 together in the simulator's GUI window will close it. Do not perform this operation.

Additionally, although it appears that the  button can be pressed if Aero is enabled in Windows Vista, pressing this button will not close the GUI window.

### 5.2.3 Cautions for showing help for the simulator GUI window

Pressing the F1 key in the simulator GUI window will not display the help if none of the internal windows are visible (e.g. the I/O panel window).

To display the help for the simulator GUI window, from the GUI window's menu, select [Help] > [Main Window].

### 5.2.4 Cautions for disconnecting the debug tool

CubeSuite+ may exit if the debugging tool is disconnected while any of the following dialog boxes is open from the simulator GUI window. Make sure that the following dialog boxes are closed before disconnecting the debugging tool.

- Save As
- Open
- New
- Color
- Font
- Customize
- Loop
- Select Pin
- Search Data
- Format (UART)
- Format (CSI)
- Message (e.g. Error)
- Parts Button Properties
- Analog Button Properties
- Parts Key Properties
- Parts Level Gauge Properties
- Parts Led Properties
- Parts Segment LED Properties
- Parts Matrix Led Properties
- Parts Buzzer Properties
- Pull up / Pull down
- Entry Bitmap
- Object Properties

### 5.2.5 Cautions for setting the Host Machine's language and region

If a Japanese OS is installed on your Host Machine, then if the language or region is set to other than Japanese/Japan, the menus and dialog-box names of the simulator GUI window will be shown in English. Similarly, if a non-Japanese OS is installed on your Host Machine, then if the language or region is set to Japanese/Japan, the menus and dialog-box names of the simulator GUI window will be shown in Japanese.

All trademarks and registered trademarks are the property of their respective owners.

## Notice

- All information included in this document is current as of the date this document is issued. Such information, however, is subject to change without any prior notice. Before purchasing or using any Renesas Electronics products listed herein, please confirm the latest product information with a Renesas Electronics sales office. Also, please pay regular and careful attention to additional and different information to be disclosed by Renesas Electronics such as that disclosed through our website.
- 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.
- You should not alter, modify, copy, or otherwise misappropriate any Renesas Electronics product, whether in whole or in part.
- 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.
- When exporting the 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. You should not use Renesas Electronics products or the 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. 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.
- 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.
- Renesas Electronics products are classified according to the following three quality grades: "Standard", "High Quality", and "Specific". The recommended applications for each Renesas Electronics product depends on the product's quality grade, as indicated below. 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 categorized as "Specific" without the prior written consent of Renesas Electronics. Further, you may not use any Renesas Electronics product for any application for which it is not intended without the prior written consent of Renesas Electronics. 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 an application categorized as "Specific" or for which the product is not intended where you have failed to obtain the prior written consent of Renesas Electronics. The quality grade of each Renesas Electronics product is "Standard" unless otherwise expressly specified in a Renesas Electronics data sheets or data books, etc.  
"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.  
"High Quality": Transportation equipment (automobiles, trains, ships, etc.); traffic control systems; anti-disaster systems; anti-crime systems; safety equipment; and medical equipment not specifically designed for life support.  
"Specific": Aircraft; aerospace equipment; submersible repeaters; nuclear reactor control systems; medical equipment or systems for life support (e.g. artificial life support devices or systems), surgical implantations, or healthcare intervention (e.g. excision, etc.), and any other applications or purposes that pose a direct threat to human life.
- 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.
- 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 system manufactured by you.
- 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.
- This document may not be reproduced or duplicated, in any form, in whole or in part, without prior written consent of Renesas Electronics.
- 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.



### 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.

2880 Scott Boulevard Santa Clara, CA 95050-2554, U.S.A.  
Tel: +1-408-588-6000, Fax: +1-408-588-6130

#### Renesas Electronics Canada Limited

1101 Nicholson Road, Newmarket, Ontario L3Y 9C3, Canada  
Tel: +1-905-898-5441, Fax: +1-905-898-3220

#### 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.

7th Floor, Quantum Plaza, No.27 ZhiChunLu Haidian District, Beijing 100083, P.R.China  
Tel: +86-10-8235-1155, Fax: +86-10-8235-7679

#### Renesas Electronics (Shanghai) Co., Ltd.

Unit 204, 205, AZIA Center, No.1233 Lujiazui Ring Rd., Pudong District, Shanghai 200120, China  
Tel: +86-21-5877-1818, Fax: +86-21-6887-7858 / -7898

#### Renesas Electronics Hong Kong Limited

Unit 1601-1613, 16/F., Tower 2, Grand Century Place, 193 Prince Edward Road West, Mongkok, Kowloon, Hong Kong  
Tel: +852-2886-9318, Fax: +852-2886-9022/9044

#### Renesas Electronics Taiwan Co., Ltd.

7F, No. 363 Fu Shing North Road Taipei, Taiwan, R.O.C.  
Tel: +886-2-8175-9600, Fax: +886-2-8175-9670

#### Renesas Electronics Singapore Pte. Ltd.

1 harbourFront Avenue, #06-10, Keppel Bay Tower, Singapore 098632  
Tel: +65-6213-0200, Fax: +65-6278-8001

#### Renesas Electronics Malaysia Sdn.Bhd.

Unit 906, 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 Korea Co., Ltd.

11F., Samik Laviel' or Bldg., 720-2 Yeoksam-Dong, Kangnam-Ku, Seoul 135-080, Korea  
Tel: +82-2-558-3737, Fax: +82-2-558-5141