

To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

Renesas Electronics website: <http://www.renesas.com>

April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

Send any inquiries to <http://www.renesas.com/inquiry>.

Notice

1. 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.
2. 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.
3. You should not alter, modify, copy, or otherwise misappropriate any Renesas Electronics product, whether in whole or in part.
4. 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.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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.
10. 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.
11. This document may not be reproduced or duplicated, in any form, in whole or in part, without prior written consent of Renesas Electronics.
12. 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.



Customer Notification

QB-703425

In-Circuit-Emulator

Operating Precautions

Target Device - V850E/Dx3

uPD70(F)3420/421/422/423/424/425TM

DISCLAIMER

The related documents in this customer notification may include preliminary versions. However, preliminary versions may not have been marked as such.

The information in this customer notification is current as of its date of publication. The information is subject to change without notice. For actual design-in, refer to the latest publications of NEC's data sheets or data books, etc., for the most up-to-date specifications of NEC PRODUCT(S). Not all PRODUCT(S) and/or types are available in every country. Please check with an NEC sales representative for availability and additional information.

No part of this customer notification may be copied or reproduced in any form or by any means without prior written consent of NEC. NEC assumes no responsibility for any errors that may appear in this customer notification. NEC 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 NEC PRODUCT(S) listed in this customer notification or any other liability arising from the use of such PRODUCT(S).

No license, express, implied or otherwise, is granted under any patents, copyrights or other intellectual property rights of NEC or others. Descriptions of circuits, software and other related information in this customer notification are provided for illustrative purposes of PRODUCT(S) operation and/or application examples only. The incorporation of these circuits, software and information in the design of customer's equipment shall be done under the full responsibility of customer. NEC assumes no responsibility for any losses incurred by customers or third parties arising from the use of these circuits, software and information.

While wherever feasible, NEC endeavors to enhance the quality, reliability and safe operation of PRODUCT(S) the customer agree and acknowledge that the possibility of defects and/or erroneous thereof cannot be eliminated entirely. To minimize risks of damage to property or injury (including death) to persons arising from defects and/or errors in PRODUCT(S) the customer must incorporate sufficient safety measures in their design, such as redundancy, fire-containment and anti-failure features.

The customer agrees to indemnify NEC against and hold NEC harmless from any and all consequences of any and all claims, suits, actions or demands asserted against NEC made by a third party for damages caused by one or more of the items listed in the enclosed table of content of this customer notification for PRODUCT(S) supplied after the date of publication.

Applicable Law:

The law of the Federal Republic of Germany applies to all information provided by NEC to the Customer under this Operating Precaution document without the possibility of recourse to the Conflicts Law or the law of 5th July 1989 relating to the UN Convention on Contracts for the International Sale of Goods (the Vienna CISG agreement).

Düsseldorf is the court of jurisdiction for all legal disputes arising directly or indirectly from this information. NEC is also entitled to make a claim against the Customer at his general court of jurisdiction.

If the supplied goods/information are subject to German, European and/or North American export controls, the Customer shall comply with the relevant export control regulations in the event that the goods are exported and/or re-exported. If deliveries are exported without payment of duty at the request of the Customer, the Customer accepts liability for any subsequent customs administration claims with respect to NEC.

Notes: (1) "**NEC**" as used in this statement means NEC Electronics Corporation and also includes its direct or indirect owned or controlled subsidiaries.

(2) "**PRODUCT(S)**" means 'NEC semiconductor products' (NEC semiconductor products means any semiconductor product developed or manufactured by or for NEC) and/or 'TOOLS' (TOOLS means 'hardware and/or software development tools' for NEC semiconductor products' developed, manufactured and supplied by 'NEC' and/or 'hardware and/or software development tools' supplied

by NEC but developed and/or manufactured by independent 3rd Party vendors worldwide as their own product or on contract from NEC)

Global Document No. U18405EE1V01P00 (1st edition)

Table of Contents

(A)	Table of Operating Precautions.....	5
(B)	Description of Operating Precautions.....	6
(C)	Valid Specification	9
(D)	Revision History	10

Global Document No. U18405EE1V0IF00 (1st edition)

(A) Table of Operating Precautions

No.	Outline	QB-703425			
		Ctrl.-Code	C		
		Date	07.02.06		
		HW Version IO	V2.11		
		FPGA Version	V3.00		
1	Ring OSC frequency is fixed to 200 kHz (Technical limitation)	Y			
2	Fout- and WDT-clock supply differ from device in stand by mode (Specification change notice)	Y			
3	PSM.OSCDIS reset value different to device (Specification change notice)	Y			
4	Timing different to device for oscillation stabilisation time (Specification change notice)	Y			
5	Break precaution related to ADC macro (Specification change notice)	Y			

N : Not applicable

Y : Applicable

Note: The control code is the second letter from the left of the 10 digit serial number or in case of update the latest control code is mentioned on the version up sticker.

(B) Description of Operating Precautions

No. 1	Ring OSC frequency is fixed to 200 kHz
	<u>Details:</u> The Ring OSC frequency may differ from the device version to be emulated. <u>Workaround:</u> None
No. 2	Fout- and WDT-clock supply differ from device in stand by mode
	<u>Details:</u> In stand by mode, the FOUT clock supply (Ring-clock, if ROSTP=1 is set) will not stop. In stand by mode, the FOUT clock supply (Sub-clock, if SOSTP=1 is set) will not stop. In stand by mode, the WDT clock supply (Ring-clock, if ROSTP=1 is set) will not stop. In stand y mode, the WDT clock supply (Sub-clock, if SOSTP=1 is set) will not stop. <u>Workaround:</u> None.
No. 3	PSM.OSCDIS reset value different to device
	<u>Details:</u> The reset value of the OSCDIS is '1'. On real chip OSCDIS is set to '0' during firmware execution. <u>Workaround:</u> Initialise the OSCDIS after RESET or use the functions of the Debugger to initialize the OSCDIS before program start.
No. 4	Timing different to device for oscillation stabilization time
	<u>Details:</u> The oscillation stabilization time indicated by OSCSTAT differ to real device. In emulation mode the oscillator run permanently, so the time for oscillation start is not given. After reset, out of the different OSCDIS setting, the oscillation stabilization counter start is different. <u>Workaround:</u> None

No. 5	Break precaution related to ADC macro
	<u>Details: [Explanation]</u> The following Behaviour is valid for the IECUBE emulator "only" in case the peripheral break mode is active for the ADC macro: 1.) In case the peripheral break signal (SVSTOP = 1) is set while or after the conversion control bit ADA0CE has been set, the AD conversion is not started and the concerned interrupt INTAD will not be generated. Furthermore the AD conversion will not start conversion even in case the Supervisor mode has been left and the debugger operates in RUN mode. In case the ADA0CE bit will be set during normal RUN mode again without issuing the peripheral break signal, the ADC will operate as specified. The conditions the peripheral break signal is issued are as follows: a.) - When one of these break is executed on the AD0ACE bit write instruction - Software break - Before-execution hardware break - After-execution hardware break b.) - When one of these break is executed on the first instruction following the AD0ACE bit write instruction - Software break - Before-execution hardware break c.) - When the following break is executed on the second instruction following the AD0ACE bit write instruction - Software break 2.) In case the peripheral break mode (SVSTOP=1) has been configured and the debugger operates in the debug (supervisor-) mode, a write operation to the ADC concerned registers: ADA0M0, (ADA0M1(#)), ADA0M2, ADA0S, ADA0PFT, ADAPFM (#) when ADA0CE=1, the re-write of ADA0M1 is prohibited and will not cause the start of the ADC's reconversion. It doesn't make a difference if the concerned write operations to the above mentioned ADC registers are executed via the debugger itself or via DMA that is not stopped when entering the supervisor mode. Both write operations will cause the limitation.

No. 5	Break precaution related to ADC macro (2nd page)
	<u>Workaround: [Restrictions]</u> a) When a software break is executed in case the peripheral break mode has been configured for the ADC macro, set the software break not for the instruction the ADA0CE bit is set or at one of the following two instructions: Example: <pre>set1 7, ADA0M0 --- software break is prohibited nop --- software break is prohibited nop --- software break is prohibited nop --- software break is possible to set from here on</pre> b) When a "before-execution hardware break" is executed and the peripheral break mode has been configured for the ADC macro, don't set that breakpoint for the instruction that sets the ADA0CE bit or for the following instruction: Example: <pre>set1 7, ADA0M0 --- before-execution hardware break is prohibited nop --- before-execution hardware break is prohibited nop --- before-execution hardware break is possible to set from here on</pre> c) When a "before-execution hardware break" is executed in peripheral break mode and the peripheral break mode has been configured for the ADC macro, don't set that breakpoint for the instruction that sets the ADA0CE bit: Example: <pre>set1 7, ADA0M0 --- after-execution hardware break is prohibited nop --- after-execution hardware break is possible to set from here on</pre> d) When users want to proceed the write operation for the AD related registers during BREAK (debugger operates within the supervisor mode), don't use peripheral break mode. e) When users want to proceed the DMA transfer which has AD related registers set as source/destination for this DMA transfer <<<, don't use peripheral break mode. Note: In case a condition mentioned under "Workarounds: a), b), c)" will occur when setting one of the concerned breakpoints on the location of an interrupt-vector, no limitation will become valid due to the clock-cycles that are requested for the interrupt-response time!

Global Document No. U18405EE1V0IF00 (1st edition)

(C) Valid Specification

Item	Date published	Document No.	Document Title
1	February 2006	EEDT-OP-0029-1.0	This document
2	December 2005	U17678EE1V0UM00	Preliminary User's Manual

Global Document No. U18405EE1V0IF00 (1st edition)

(D) Revision History

Item	Date published	Document No.	Comment
1	February 2006	EEDT-OP-0029-1.0	1st release

Global Document No. U18405EE1V0IF00 (1st edition)