

Customer Notification

QB-78K0RFX3

In-Circuit Emulator

Operating Precautions

Target Devices

78K0R/FB3 Series

78K0R/FC3 Series

78K0R/FE3 Series

78K0R/FF3 Series

78K0R/FG3 Series

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.

Table of Contents

A) Table of Operating Precautions for QB-78K0RFX3	5
B) Description of Operating Precautions for QB-78K0RFX3	6
No. 1 Self-programming support (Technical Limitation)	6
No. 2 Data Flash support (Technical Limitation).....	6
No. 3 AD Converter (Technical Limitation)	6
No. 4 Dead lock condition (Technical Limitation).....	6
No. 5 EEPROM emulation in Code Flash (Direction of use)	7
No. 6 Trace data when an interrupt occurs (Technical Limitation)	7
No. 7 IIC: Acknowledge error bit is set erroneous (Technical Limitation).....	8
C) Valid Specification	9
D) Revision History	9

A) Table of Operating Precautions for QB-78K0RFX3

Table A-1 Summary of restrictions

No.	Outline	Control Code ^{Note}	QB-78K0RFX3				
			A	B	C	D	E
1	Self-programming support (Technical Limitation)		x	x	✓	✓	✓
2	Data Flash support (Technical Limitation)		x	x	o	o	o
3	AD Converter (Technical Limitation)		x	x	✓	✓	✓
4	Dead lock condition (Technical Limitation)		x	✓	✓	✓	✓
5	EEPROM emulation in Code Flash (Direction of use)		x	x	x	x	x
6	Trace data when an interrupt occurs (Technical Limitation)		x	x	x	✓	✓
7	IIC: Acknowledge error bit is set erroneous (Technical Limitation)		x	x	x	x	✓

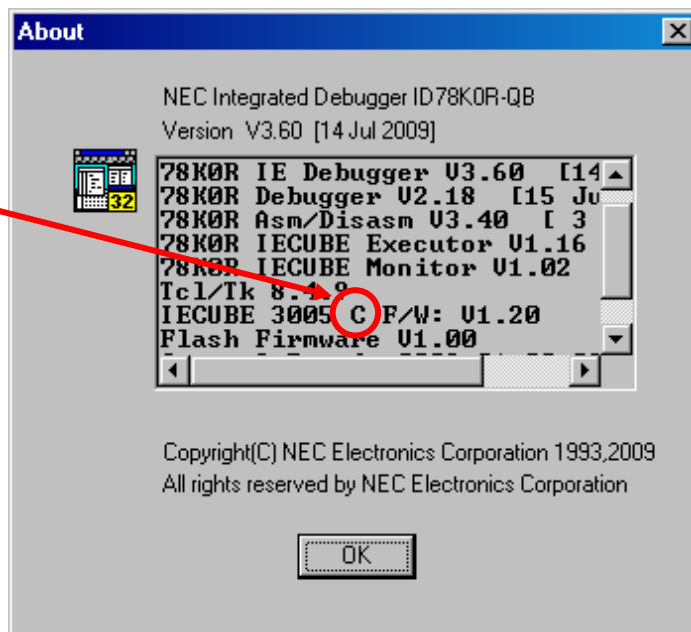
✓: Not applicable

x: Applicable

o: Please refer to details in the description part

Note:

- The "control code" is the second digit from the left in the 10-digit serial number in the warranty supplied with the product you purchased (if it has not been upgraded). If the product has been upgraded, a label indicating the new version is attached to the product and the x in V-UP LEVEL x on this label indicates the control code.
- The control code can be checked by selecting [About] from the [Help] menu when the ID78K0R-QB is running. "X" in version information "IECUBE **** X F/W **.***" is the control code.



B) Description of Operating Precautions for QB-78K0RFX3

Table B-1 No. 1 Self-programming support (Technical Limitation)

<p><u>Details</u> Self-programming is not supported.</p> <p><u>Workaround</u> Will be corrected in the version up.</p>
--

Table B-2 No. 2 Data Flash support (Technical Limitation)

<p><u>Details</u> Data Flash is not supported due to missing EEPROM Emulation Library</p> <p><u>Workaround</u> Will be corrected in the version up.</p> <p>Note: For QB-78K0RFX3 with Control Code "C" and later the access to the Data Flash area is supported (i.e. write, erase block, blank check, read, ...), although the EEPROM Emulation and Data Flash Access library are still under development.</p>
--

Table B-3 No. 3 AD Converter (Technical Limitation)

<p><u>Details</u> The following issues exists on the AD Converter: a) When the conversion time is short in SCAN mode the switching noise for the analog input selector will cause an inaccurate ADC result. b) Due to some high capacitance on the I/O Board, the ADC accuracy might become worse in High-Speed conversion mode</p> <p><u>Workaround</u> Will be corrected in the version up.</p>

Table B-4 No. 4 Dead lock condition (Technical Limitation)

<p><u>Details</u> The CPU will went in a Dead lock when the following condition is met: When the STOP instruction is executed direct after clearing PLLON the CPU will enter in a dead lock.</p> <p><u>Workaround</u> Will be corrected in the version up.</p>
--

Table B-5 No. 5 EEPROM emulation in Code Flash (Direction of use)

Details

While performing EEPROM emulation in the Code Flash and using one of the following error emulation settings: 'EEPROM_Write Error(Verify)' or 'FlashBlockIVerify Error(verify)' In case an error occurs, both errors will be generated.

Table B-6 No. 6 Trace data when an interrupt occurs (Technical Limitation)

Details

If interrupt request occurs by the specific condition, the trace result may not be correct, **however the instructions itself are executed correctly**. Detailed condition and phenomenon about the trace function/display are explained below.

Condition

When branching to interrupt vector just after executing one of the following instructions, the trace display result may not be correct.

1. MOVW SP, #word
2. MOVW SP, AX
3. ADDW SP, #byte
4. SUBW SP, #byte

The above condition is relevant by the following case.

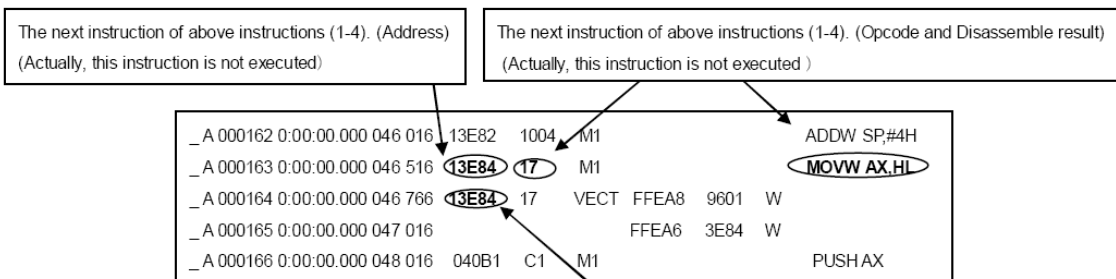
- In case of fetching ROM, 1, 2, 3 and 4 of the above instructions
- In case of fetching RAM, 3 and 4 of the above instructions

Phenomenon

When branching to interrupt vector just after executing the above instructions (1-4), the next instruction of above instructions (1-4) is not executed, thus it is not displayed on trace window. But the following contents are displayed on trace window actually.

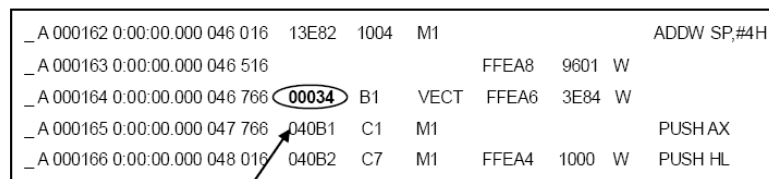
- The next instruction of above instructions (1-4)
- The wrong vector address

[Before correction]



Wrong vector address
(The correct address is "00034")

[After correction]



Right vector address.

Table B-7 No. 7 IIC: Acknowledge error bit is set erroneous (Technical Limitation)

General

During IIC – bus transfer, after 8 data bits, an acknowledge is given back from the receiver when the transfer has been accepted. During the 9 th clock period, the transmitter sets high level at the data line and the receiver has to pull down the data line to low level. This is recognized in the transmitter. If there was no acknowledge, an error flag is set.

Details

During IIC transfer, acknowledge error flag (SSR11.PEFmn = 1) is set despite the receiver has generated an acknowledge correctly.

This behaviour is in the emulator only. In the real device, functionality is as expected.

Workaround

Ignore the PEF - flag error message when you use the emulator. Finally check the correct PEF - flag error message handling using the real chip.

This issue can be corrected by an update of QB-78K0RFX3 with control code D to control code E using the IECUBE upgrade tool qb-78k0rfx3_e_dl.exe.

This issue is corrected in the QB-78K0RFX3 with control code E.

C) Valid Specification

Item	Date published	Document No.	Document Title
1	August 2009 or later	ZUD-CD-09-0139 or later	Preliminary User's Manual

D) Revision History

Item	Date published	Document No.	Comment
1	February 9, 2009	U19675EE1V0IF00	1 st Release
2	September 21, 2009	U19675EE2V0IF00	1 st update (2 nd edition) - Corrections of description for item 1, 2 and 3 - Addition of item 4 and 5 - Addition of Control Code B and C
3	March 29, 2010	U19675EE3V0IF00	2 nd update (3 rd edition) - Addition of item 6 - Addition of Control Code D
4	May 10, 2011	R01TU0020ED0100	3 rd update (4 th edition) - Adaption to new document numbering
5	August 9, 2011	R01TU0020ED0200	4 th update (5 th edition) - Addition of item 7
6	October 11, 2011	R01TU0020ED0300	5 th update (6 th edition) - Addition of Control Code E

