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April 1st, 2010
Renesas Electronics Corporation

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CUSTOMER NOTIFICATION

ZUD-CD-10-0015 (1/9)

January 22, 2010

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QB-78K0RIX3
(Control Code: A, B, C, D, E)

Operating Precautions

Be sure to read this document before using the product.

Remark The previous name of the QB-78K0RIX3 is the QB-78K0RKX3L.

CONTENTS

Operating Precautions for QB-78K0RIX3

This document describes the following items.　Refer to the user's manual for cautions on using an in-circuit emulator.

- Restrictions not applicable to the target device but applicable to an in-circuit emulator
- Restrictions applicable to both the target device and an in-circuit emulator but the correction is planned only for the in-circuit emulator

Also refer to the following documents for the restrictions in the target device.

- User's manual of target device
- Restrictions notification document for target device

1.　Product Version

The product versions of NEC Electronics in-circuit emulators are indicated by a control code.　The control code is the second digit from the left in the 10-digit serial number.　If the product has been upgraded, the control code can be checked by selecting [About] from the [Help] menu while the ID78K0R-QB is running. In Figure 2, "X" in version information "IECUBE　**** X　F/W:　V*.**" is the control code.

Figure 1.　Checking Control Code (Label on QB-78K0RIX3)

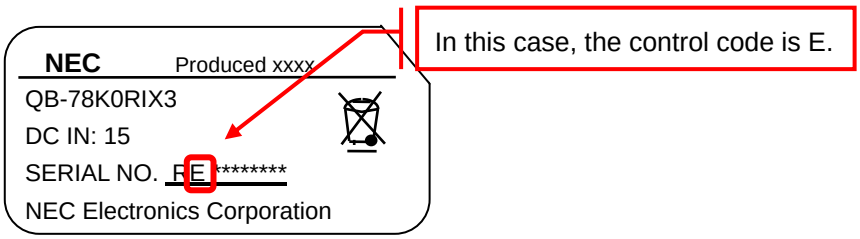
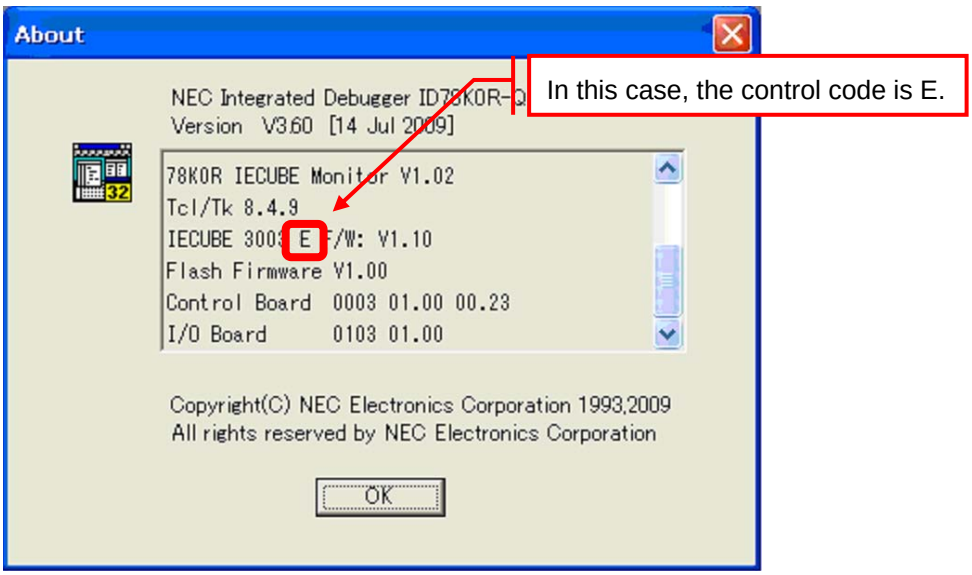


Figure 2.　Checking Control Code (ID78K0R-QB)



2. Cautions

No. 1 Support an open break function

[Description]

The open break function is not supported in ID78K0R-QB Ver. 3.40.

Download the installation file *OpenBreak_78K0R.zip* from the Development Tools Download page on the NEC Electronics website. For details, refer to the document included in *OpenBreak_78K0R.zip*.

URL: http://www.necel.com/micro/en/ods/index.html → Click "Version-up Service".

Category:	Each Development Tool → IECUBE_Software
Product Name/version:	ID78K0R-QB V3.40
Complement:	Relative
File name:	OpenBreak_78K0R.zip

[Correction]

This function is supported in ID78K0R-QB Ver. 3.50 and later.

For details on the open break function, refer to the *ID78K0R-QB User's Manual*.

No. 2 Maximum current consumption in AV_{REF} pin

[Description]

The maximum current consumption substantially differs between the AV_{REF} pins in the QB-78K0RKX3L and the target device.

In the QB-78K0RIX3, the maximum current consumption in the AV_{REF} pin is 50 mA.

[Correction]

This issue has been corrected in products with control code D and later.

After correction, the maximum current consumption in the AV_{REF} pin is 0.05 mA.

No. 3 Default setting of open break function (applicable when the target device is 78K0R/Ix3)

[Description]

The open break function is enabled by default.

Disable the open break function if motors are not to be used.

No. 4 Change in product name

[Description]

The product name has been changed from the QB-78K0RKX3L to the QB-78K0RIX3.

There is no difference in performance.

No. 5 Setting in HALT mode while subsystem clock is selected as CPU clock (Only 78K0R/Kx3-L)

[Description]

Even if the Operation speed mode control register (OSMC) of bit 7 is set as 1, subsystem clock is supplied to peripheral functions in HALT mode.

3. Restrictions

3.1 List of restrictions

No.	Restrictions	Control Code				
		A	B	C	D	E
1	Self-programming	×	×	○	○	○
2	Interrupt function for key-return	×	○	○	○	○
3	P73/TXD0/TO10 pin (only applicable to 38-pin MC packages)	×	○	○	○	○
4	Comparator interrupt function	×	×	○	○	○
5	Count clock for timer array unit	×	×	×	○	○
6	Restriction on trace data when an interrupt occurs (1)	×	×	×	○	○
7	Program execution on RAM	×	×	×	○	○
8	A break during division operation	×	×	×	○	○
9	Restriction on trace data when an interrupt occurs (2)	×	×	×	×	○

–: Not relevant, ×: Applicable, ○: Corrected

3.2 Details of restrictions

No. 1 Self-programming

[Description]

Self-programming is not supported.

[Workaround]

There is no workaround.

[Correction]

This issue has been corrected in products with control code C and later.

No. 2 Interrupt function for key-return (applicable when the target device is 78K0R/Kx3-L)

[Description]

The interrupt function for key-return does not operate.

[Workaround]

There is no workaround.

[Correction]

This issue has been corrected in products with control code B and later.

No. 3 P73/TXD0/TO10 pin (only applicable to 38-pin MC packages)

[Description]

The P73/TXD0/TO10 pin can be used for read/write accesses to SFRs, but its port function and alternate function do not operate.

[Workaround]

There is no workaround.

[Correction]

This issue has been corrected in products with control code B and later.

No. 4 Comparator interrupt function

[Description]

When a comparator interrupt function is used, interrupt requests are issued continuously while an overvoltage is being detected.

In normal operation, an interrupt request is issued only once upon detection of overvoltage.

[Workaround]

There is no workaround.

[Correction]

This issue has been corrected in products with control code C and later.

No. 5 Count clock for timer array unit

[Description]

A subsystem clock whose frequency is divided by 4 cannot be used as a count clock for a timer array unit.

[Workaround]

There is no workaround.

[Correction]

This issue has been corrected in products with control code D and later.

No. 6 Restriction on trace data when an interrupt occurs (1)

[Description]

If a read access or write access is performed immediately before occurrence of an interrupt, this access may not be reflected to the trace result.

[Workaround]

There is no workaround.

[Correction]

This issue has been corrected in products with control code D and later.

An example of trace data before and after the correction of this restriction is shown below.

A read access by this MOV instruction is not reflected to the trace result.

[Before correction]

_	A 131064	0:00:00.516 208 000 01065	AA02	M1				MOVW AX,[DE+2H]
_	A 131065	0:00:00.516 209 000			F3FFE	9700	W	
_	A 131066	0:00:00.516 209 500 0002E	4A01FF	**VECT**	F3FFC	1067	W	
_	A 131067	0:00:00.516 211 500 0014A	84	M1				INC E
_	A 131068	0:00:00.516 212 000 0014B	4C0F	M1				CMP A,#0FH
_	A 131069	0:00:00.516 212 500 0014D	8A02	M1				MOV A,[DE+2H]
_	A 131070	0:00:00.516 213 000			F450D	83	R	

This line shows the result of the read access by "MOVW AX, [DE+2H]".

A read access by this MOV instruction is reflected to the trace result.

[After correction]

_	A 131063	0:00:00.258 053 000 01065	AA02	M1				MOVW AX,[DE+2H]
_	**A 131064**	**0:00:00.258 053 500**			**F450C**	**8312**	**R**	
_	A 131065	0:00:00.258 054 000			F3FFE	9700	W	
_	A 131066	0:00:00.258 054 500 0002E	4A01FF	**VECT**	F3FFC	1067	W	
_	A 131067	0:00:00.258 056 500 0014A	84	M1				INC E
_	A 131068	0:00:00.258 057 000 0014B	4C0F	M1				CMP A,#0FH
_	A 131069	0:00:00.258 057 500 0014D	8A02	M1				MOV A,[DE+2H]
_	A 131070	0:00:00.258 058 000			F450D	83	R	

No. 7 Program execution on RAM

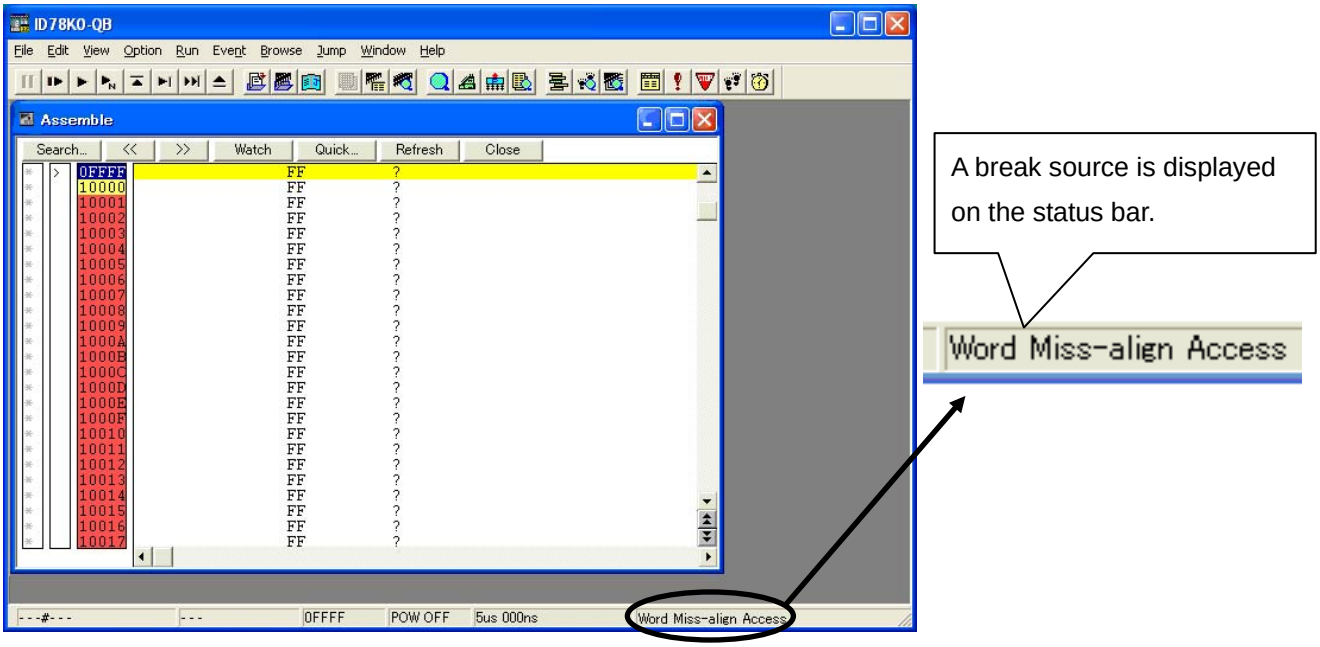
[Description]

When a branch instruction is executed on RAM and if the branch destination is an odd address located in RAM, a fail-safe break due to a word misalign access occurs.

[Workaround]

Clear the check box for the [Word Miss-align Access] in the Fail-Safe Break dialog box in the ID78K0R-QB.

A break source can be checked in the status bar in the ID78K0R-QB, as shown below.



[Correction]

This issue has been corrected in products with control code D and later.

No. 8 A break during division operation

[Description]

If a break occurs in a program in the 16th clock cycle after a division operation is started (DIVST = 1), the operation result may be incorrect.

[Workaround]

Do not set breaks for the division operation.

[Correction]

This issue has been corrected in products with control code D and later.

No. 9 Restriction on trace data when an interrupt occurs (2)

[Description]

If interrupt request occurs by the specific condition, a trace result may not be correct.

Detailed condition and phenomenon are explained in the following. This is a restriction only about trace function. The instruction is executed correctly.

- Condition

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

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

  The above instructions are relevant by the following case.

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

- 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

[Workaround]

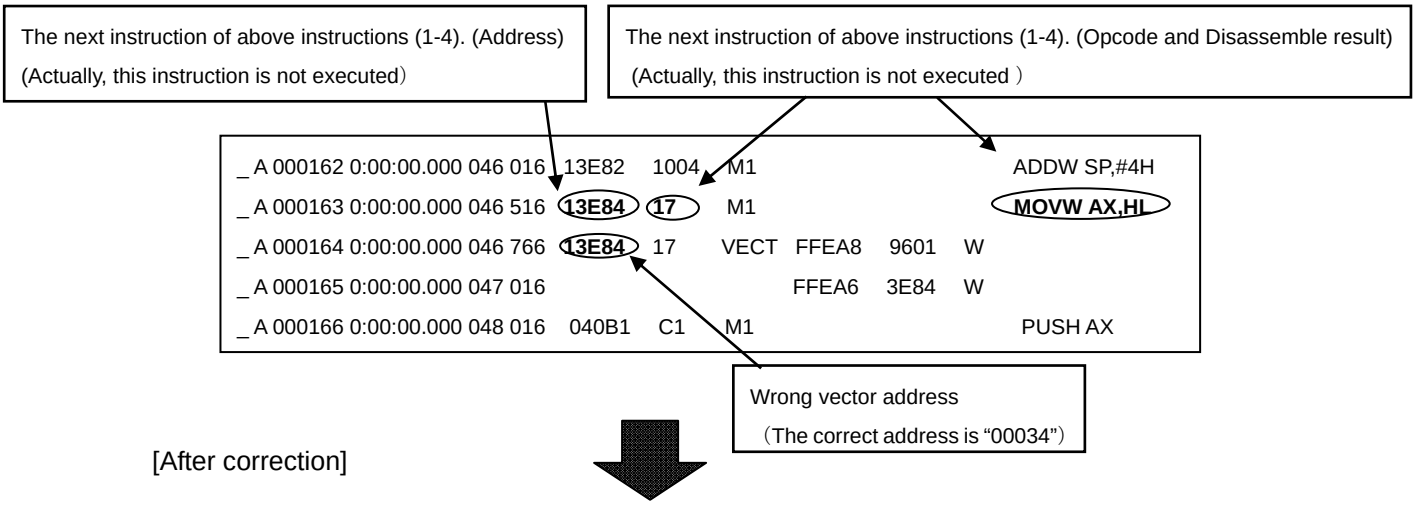
There is no workaround.

[Implementation]

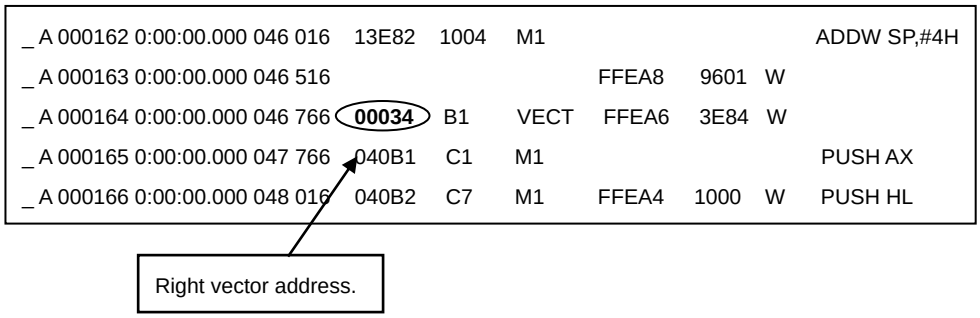
This issue has been corrected in products with control code E or later.

An example of trace data before and after the correction of this restriction is shown below.

[Before correction]



[After correction]



4. Revision History

Document Number	Issued on	Description
ZUD-CD-07-0190	November 26, 2007	Newly created.
ZUD-CD-07-0209	December 14, 2007	Addition of action taken for correcting restrictions (Nos. 2 and 3)
ZUD-CD-08-0007	January 25, 2008	Addition of caution (No. 3) Addition of action taken for correcting restriction (No. 1) Addition of restrictions (Nos. 4 and 5)
ZUD-CD-08-0071	April 23, 2008	Product name change Addition of caution (No. 4)
ZUD-CD-08-0140	September 12, 2008	Addition of action taken for correcting caution items (Nos. 1 and 2) Addition of restrictions (Nos. 6 to 8) Addition of action taken for correcting restriction (No. 5)
ZUD-CD-10-0015	January 22, 2010	Addition of caution (No. 5) Addition of restrictions (No. 9) Addition of action taken for correcting restriction (No. 9)