

Microcontroller Technical Information

QB-78K0RKX3C In-Circuit Emulator for 78K0R/KF3-C, 78K0R/KG3-C, 78K0R/KF3-L, 78K0R/KG3-L Usage Restrictions	Document No.	ZBG-CD-09-0067	1/2
	Date issued	December 24, 2009	
	Issued by	Development Tool Solution Group Multipurpose Microcomputer Systems Division Microcomputer Operations Unit NEC Electronics Corporation	
Related documents QB-78K0RKX3C User's Manual: U19324EJ2V0UM00 QB-78K0RKX3C In-Circuit Emulator for 78K0R/KF3-C, 78K0R/KG3-C, 78K0R/KF3-L, 78K0R/KG3-L - Upgrade: ZBG-CD-09-0068	Notification classification	√	Usage restriction
			Upgrade
			Document modification
			Other notification

1. Affected product

Product	Outline	Control Code ^{Note}
QB-78K0RKX3C	In-circuit emulator for 78K0R/KF3-C, 78K0R/KG3-C, 78K0R/KF3-L, 78K0R/KG3-L	A

Note The control code is the second digit from the left in the 10-digit serial number. To see if the product has been upgraded, click the ID78K0R-QB **Help** menu, select **About**, and then check the control code. **X** in **IECUBE **** X F/W: V*. **** is the control code.

2. New items

A new restriction (No. 1) has been added. See the attachment for details.

3. Workarounds

See the attachment for details.

4. Modification schedule

Products from which restriction No. 1 is removed are scheduled for release as follows:

Date when the upgrade file is posted on the Development Tools Download webpage:

December 25, 2009

Upgrade for already shipped products: Available from January 22, 2010

Newly shipped products (control code: B): Shipments as of January 29, 2010

* Note that this schedule is subject to change without notice. For the detailed release schedule of modified products, contact an NEC Electronics sales representative.

5. List of restrictions
See the attachment.

6. Document revision history

Document Number	Issued on	Description
ZBG-CD-09-0067	December 24, 2009	1st edition

Operating Precautions for QB-78K0RKX3C

This document describes the items below. See the user's manual for cautions on using this emulator.

- Restrictions not applicable to the target device but applicable to this emulator
- Restrictions applicable to both the target device and this emulator, but for which correction is planned only for this emulator

Also see the following documents for the restrictions related to the target device:

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

1. Product Version

The product versions of emulators are indicated by a control code. The control code is the second digit from the left in the 10-digit serial number. To see if the product has been upgraded, click the ID78K0R-QB **Help** menu, select **About**, and then check the control code.

In Figure 2, **X** in **IECUBE **** X F/W: V*.**** is the control code.

Figure 1. Checking the Control Code (Label on QB-78K0RKX3C)

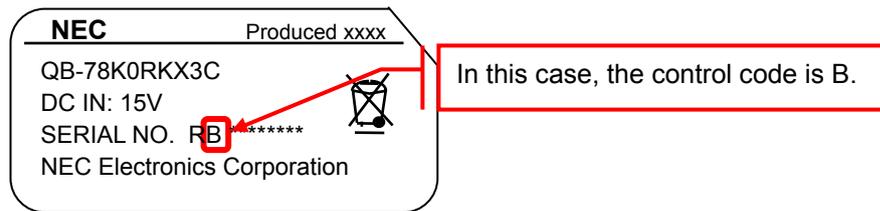
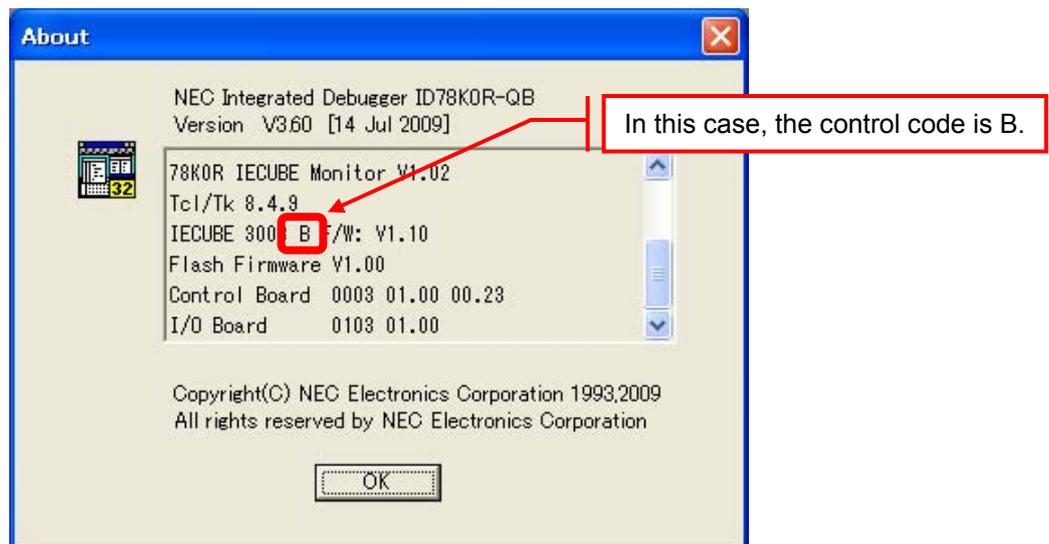


Figure 2. Checking the Control Code (ID78K0R-QB)



2. Supported Devices

(1) Emulation environment for -A devices^{Note}

Use a QB-78K0RKX3C with control code B or later when performing emulation of an -A device. Emulation of -A devices is not available when a QB-78K0RKX3C with control code A is used. (Use the QB-78K0RKX3C with the latest control code.)

(2) Emulation environment for non-A devices^{Note}

Emulation of non-A devices is available only when a QB-78K0RKX3C with control code A is used. (If not, the QB-78K0RKX3C must be upgraded to control code B.)
Contact an NEC Electronics sales representative or a distributor from whom you purchased this product for how to update the control code.

Note Identification of -A devices and non-A devices

"A" in the part number indicates whether the product has been revised and this classifies devices as -A or non-A.

The parts of part number “ μ PD78F1849AGC-UEU-AX” are explained below, as an example.

Family type	Part number	Revised	Package type custom code/speed class, pin type, etc.		Lead-free
μ PD	78F1849	A	GC	- UEU	-AX

3. Restrictions

3.1 Restriction list

No.	Restrictions	Control Code	
		A	B
1	Restriction on trace data when an interrupt occurs	×	○

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

3.2 Restriction details

No. 1 Restriction on trace data when an interrupt occurs

Description:

If interrupt servicing is executed under a specific condition, the trace result might be incorrect.

Although the correct trace result is not displayed, the instructions are executed correctly. The following describes the detailed condition and operations:

Condition:

Execution jumps to an interrupt vector immediately after executing one of the following instructions:

- (1) `MOVW SP, #word`
- (2) `MOVW SP, AX`
- (3) `ADDW SP, #byte`
- (4) `SUBW SP, #byte`

If the instruction fetches data from the ROM, the displayed trace result is incorrect if any instruction from (1) to (4) is executed.

If the instruction fetches data from the RAM, the displayed trace result is incorrect if instruction (3) or (4) is executed.

Operation:

If execution jumps to an interrupt vector immediately after executing one of the above instructions, the instruction that follows the above instructions is not supposed to be executed or displayed in the trace result. However, due to this problem, the following items are displayed in the trace result:

- The instruction that follows the above instructions
- The incorrect vector address

Workaround:

There is no workaround.

Correction:

This issue will be corrected in products with control code B.

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

Before correction:

The address of the instruction that follows an instruction from (1) to (4)
(This is not displayed during normal operation.)

The opcode for and result of disassembling the instruction that follows an instruction from (1) to (4)
(This is not displayed during normal operation.)

```

_ A 000162 0:00:00.000 046 016 13E82 1004 M1 ADDW SP,#4H
_ A 000163 0:00:00.000 046 516 13E84 17 M1 MOVW AX,HL
_ A 000164 0:00:00.000 046 766 13E84 17 VECT FFEA8 9601 W
_ A 000165 0:00:00.000 047 016 FFEA6 3E84 W
_ A 000166 0:00:00.000 048 016 040B1 C1 M1 PUSH AX
    
```

Incorrect vector address
(00034 is displayed during normal operation.)

After correction:

```

_ A 000162 0:00:00.000 046 016 13E82 1004 M1 ADDW SP,#4H
_ A 000163 0:00:00.000 046 516 FFEA8 9601 W
_ A 000164 0:00:00.000 046 766 00034 B1 VECT FFEA6 3E84 W
_ A 000165 0:00:00.000 047 766 040B1 C1 M1 PUSH AX
_ A 000166 0:00:00.000 048 016 040B2 C7 M1 FFEA4 1000 W PUSH HL
    
```

The correct vector address is displayed.