

Microcomputer Technical Information

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QB-78K0KX1H In-Circuit Emulator for 78K0/KB1, KC1, KD1, KE1, KF1, KB1+, KC1+, KD1+, KE1+, KF1+ Usage Restrictions	Document No.	ZBG-CD-04-0079	1/2								
	Date issued	October 18, 2004									
	Issued by	Development Tool Group Multipurpose Microcomputer Systems Division 3rd Systems Operations Unit NEC Electronics Corporation									
Related documents	QB-78K0KX1H User's Manual: U17081EJ1V0UM00	Notification classification	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">√</td> <td>Usage restriction</td> </tr> <tr> <td></td> <td>Upgrade</td> </tr> <tr> <td></td> <td>Document modification</td> </tr> <tr> <td></td> <td>Other notification</td> </tr> </table>	√	Usage restriction		Upgrade		Document modification		Other notification
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1. Affected product

QB-78K0KX1H

Control code^{Note}: A, B, C, D

2. Details of restrictions

Bug No. 5 has been added. See the attachment for details.

3. Workarounds

See the attachment for details.

4. Modification schedule

Products in which No. 3 to No. 5 are modified are scheduled for release as follows.

Newly shipped products: From the shipment of November 2004 (control code: D)

Upgrade for already shipped products: Available from November 2004

* 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.

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 the product has been upgraded, a label indicating the new version is attached to the product and the x in V-UP x on this label indicates the control code. Control codes A and B are functionally equivalent.

6. Document revision history

QB-78K0KX1H In-Circuit Emulator for 78K0/KB1, KC1, KD1, KE1, KF1, KB1+, KC1+, KD1+, KE1+, KF1+

Usage Restrictions

Document Number	Issued on	Description
ZBG-CD-04-0079	October 18, 2004	Newly created. Modification of bug description (No. 3) Addition of new bug (No. 5)

Notes on Using QB-78K0KX1H

1. Product Version

Control Code ^{Note 1}	FPGA ^{Note 2}	Firmware ^{Note 2}	Remark
A	0033	V1.01	–
B			Change of some parts
C	9036	V1.10	–
D	0045	V1.10	–

Notes 1. The “control code” is the second digit from the left in the 10-digit serial number. If the product has been upgraded, a label indicating the new version is attached to the product and the x in V-UP x on this label indicates the control code.

Control codes A and B are functionally equivalent.

2. How to check the FPGA and firmware version

- Start up the ID78K0-QB and select [About] from the [Help] menu

IECUBE 78K0 1000 A XX.XX (firmware)

Control Board 0001 01.00 XX.XX (FPGA)

2. Product History

No.	Bugs and Changes/Additions to Specifications	Control Code		
		A, B	C	D
1	Bug related to conflict between write to SFR in which a wait occurs and interrupt	×	√	√
2	Bug related to conflict between SFR access and interrupt	×	√	√
3	Bug related to RINGCLK operation during HALT	×	×	√
4	Illegal value is read from SFR in which a wait occurs	×	√	√
5	External memory cannot be accessed via GUI operation	×	×	√

×: Applicable, √: Not applicable or already corrected

3. Details of Bugs and Added Specifications

No. 1 Bug related to conflict between write to SFR in which a wait occurs and interrupt

[Description]

If a conflict occurs between writing to an SFR (TMC00, WDTM, ADM, ADS, PFM, or PFT) in which a wait occurs or writing to the buffer RAM and an interrupt, the interrupt vector may be illegal.

[Workaround]

There is no workaround. This bug has been corrected in control code C or later.

No. 2 Bug related to conflict between SFR access and interrupt

[Description]

If an interrupt occurs while accessing an SFR related to the functions shown below, the interrupt vector may be illegal. However, this bug does not occur in operation at a frequency of 12 MHz or lower.

Ports (except for 4, 5, and 6), A/D converter, 16-bit timer 0, 8-bit timer, watchdog timer, low-voltage detector, UART0, UART6, CS11, CSIA0, watch timer, key interrupt, and registers for multiplication/division

[Workaround]

There is no workaround. This bug has been corrected in control code C or later.

No. 3 Bug related to RINGCLK operation during HALT

[Description]

The watchdog timer operation does not stop even if NONMSK (Ring-OSC can be stopped by software) is set for the mask option RING-OSC and the HALT instruction is executed, as long as the operation clock for the watchdog timer does not stop. As a result, a reset signal is generated.

[Workaround]

There is no workaround. This bug has been corrected in control code D or later.

No. 4 Illegal value is read from SFR in which a wait occurs

[Description]

When writing to an SFR (TMC00, WDTM, ADM, ADS, PFM, PFT) or the buffer RAM at an operating frequency of 15 to 16 MHz, a wait occurs. If an instruction that does not generate a wait is executed and the value written to the SFR is read during this wait period, an undefined value is read. The correct value can be read after the wait period has elapsed.

```
Example:  MOV    ADS,#7H
          MOVW   MK0,#0FFFFH
          MOV    A,ADS          ; Undefined value is read.
```

[Workaround]

Do not read the value written to the relevant register until the wait period ends.

This bug has been corrected in control code C or later.

No. 5 External memory cannot be accessed via GUI operation

[Description]

When using the external memory ("Target" is selected in the Memory Mapping area in the Configuration dialog box), data in the external memory cannot be displayed nor can data be written to the external memory using the Memory window or the Memory command. (Accessing the external memory via the user program is performed normally.)

[Workaround]

There is no workaround. This bug has been corrected in control code D or later.

4. Cautions

4.1 Caution on option byte function

When using a microcontroller with on-chip flash memory and the option byte function, the function to set the option byte to address 0080H cannot be emulated.

Set the mask option, instead of the option byte, in the Mask Option dialog box of the debugger; this enables emulation.

4.2 Caution on target voltage during break

Do not decrease the target voltage during a break.

4.3 General cautions on handling this product

a) Circumstances not covered by product guarantee

- If the product was disassembled, altered, or repaired by the customer
- If it was dropped, broken, or given another strong shock
- Use at overvoltage, use outside guaranteed temperature range, storing outside guaranteed temperature range
- If power was turned on while the AC adapter, interface cable, or target system connection was in an unsatisfactory state
- If the AC adapter cable, interface cable, emulation probe, or the like was bent or pulled excessively
- If an AC adapter other than the one supplied with the product is used
- If the product got wet
- If the product and target system were connected while a potential difference existed between the GND of the product and the GND of the target system
- If a connector or cable was removed while the power was being supplied to the product
- If an excessive load was placed on a connector or socket

b) Safety precautions

- If used for a long time, the product may become hot (50°C to 60°C). Be careful of low temperature burns and other dangers due to the product becoming hot.
- Be careful of electrical shock. There is a danger of electrical shock if the product is used as described above in **a) Circumstances not covered by product guarantee**.