NEC

Customer Notification

QB-78K0KX1H

In-Circuit Emulator

Operating Precautions

Target Devices
78K0/Kx1 Series
78K0/Kx1+ Series

Document No. TPS-LE-OP-TQBKX1H-4
Date Published December 2007

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(A) Table of Operating Precautions

No.	Outline	Control Code Note	QB-78K0KX1H C	D	E	G
1	Internal high-speed osc. operation during HALT (Technical Limitation)		✗	✓	✓	✓
2	Caution on option byte (Specification change)		✗	✗	✗	✗
3	External memory access (Technical Limitation)		✗	✓	✓	✓
4	Simultaneous occurrence of a software breakpoint and an interrupt (Technical Limitation)		✗	✗	✓	✓
5	Peripheral operation, when an special function register generates a wait during access and a break occurs simultaneously (Technical Limitation)		✗	✗	✓	✓
6	Illegal program execution, when an instruction is re-executed after a software breakpoint (Technical Limitation)		✗	✗	✓	✓
7	Internal ROM area is overwritten during program execution (Technical Limitation)		✗	✗	✗	✓
8	Support of emulation for bootswap function (Technical Limitation)		✗	✗	✗	✓

✓ : Not applicable
✗ : Applicable

Notes:
1. 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.

2. The Operating Precautions for products with control codes A, B are not content of this customer notification because these parts were not released here in EUROPE.

3. The control code “F” is not part of this operating precaution because it was not released in Europe.

(B) Description of Operating Precautions

No. 1	Internal high-speed osc. operation during HALT (Technical Limitation)
	Details As long as the operation clock for the watchdog timer is not stopped, the watchdog timer does not stop operation when the HALT instruction is executed. This happens even if the mask option "Internal high-speed osc. can be stopped by software" is set. As a result the reset signal is generated.

No. 2	Caution on option byte function (Specification change)
	Details When using a microcontroller with on chip flash memory and option byte function, the function set by the option byte at address 0080H cannot be emulated. To set the option byte function pls. use the Mask Option dialog box of the debugger instead of the option byte

No. 3	External memory access (Technical Limitation)
	Details 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.

No. 4	Simultaneous occurrence of a software breakpoint and an interrupt (Technical Limitation)
	Details When a software breakpoint and an interrupt occurs simultaneously during program execution the content of the program counter becomes illegal. *Workaround* Please use hardware breakpoints.

No. 5	Peripheral operation, when an special function register generates a wait during access and a break occurs simultaneously (Technical Limitation)
	Details When a special function register generates a wait during access, a break occurs simultaneously and the peripheral break function is enabled, the peripheral continues operation, instead to stop operation. Example: Each time, when the watch window or SFR window are refreshed, waits will be generated. The count value of the timer SFR will be counted up.

No. 6	Illegal program execution, when an instruction is re-executed after a software breakpoint (Technical Limitation)
	Detail If a software breakpoint is set to a 2-byte instruction and the 2nd byte of this instruction is C0H, the values in the stack area become illegal after the break execution. As a result, the program counter may become illegal after re-execution of the instruction. *Detail* Please use hardware breakpoints.

No. 7	Internal ROM area is overwritten during program execution (Technical Limitation)
	Details Data in the internal ROM area may be overwritten if the Source window or Assemble window is open during program execution. As a result, an unexpected fail-safe break (such as Write Protect Break or Non Map Break) may occur.

No. 8	Support of emulation for bootswap function (Technical Limitation)
	Details Emulation for the boot swap function is now supported. When using this function, use the tools in the following combinations. • ID78K0-QB: V3.00 or later • QB-78K0KX1H: Control code G or later

(C) Valid Specification

Item	Date published	Document No.	Document Title
1	April 2004 or later	U17081E	QB-78K0KX1H In-Circuit Emulator User's Manual

(D) Revision History

Item	Date published	Document No.	Comment
1	August, 2004	TPS-LE-OP-TQBKX1H-1	1st Release
2	February, 2005	TPS-LE-OP-TQBKX1H-2	1st Update, Level D added
3	November, 2005	TPS-LE-OP-TQBKX1H-3	2nd Update, Items 4, 5 and 6 added due to addition of control code “E”
4	December 2007	TPS-LE-OP-TQBKX1H-4	3rd Update Items 7 and 8 added due to addition of control code “G”