

Microcomputer Technical Information

CP(K), O

IE-78K0S-NS In-Circuit Emulator for 78K0S Series Upgrade		Document No.	ZBG-CD-05-0064	1/1
		Date issued	July 12, 2005	
		Issued by	Development Tool Group Multipurpose Microcomputer Systems Division 4th Systems Operations Unit NEC Electronics Corporation	
Related documents	IE-78K0S-NS User's Manual: U13549EJ2V0 (2nd edition) IE-78K0S-NS In-Circuit Emulator for 78K0S Series Usage Restrictions: ZBG-CD-05-0014	Document classification		Usage restriction
			√	Upgrade
				Document modification
				Other notification

1. Corresponding product

Product	Outline	Control Code ^{Note}
IE-78K0S-NS	In-circuit emulator for 78K0S Series	A, B, C, D, E, F

It is not necessary to upgrade a control code G.

2. Upgrade details

The bug (No. 8) described in "IE-78K0S-NS In-Circuit Emulator for 78K0S Series Usage Restrictions" (ZBG-CD-04-0014) will be corrected.

After upgrading, the control code will be G. See the document for details

3. Upgrade start date

Upgrade by sending the product to NEC Electronics is available. Consult an NEC Electronics sales representative or distributor.

The upgrade described here will be provided for free for a period of one year from the above date. After the free upgrade period expires, the upgrade will be still available, but a fee will be required. We therefore recommend that you take advantage of the free upgrade offer during the free upgrade period.

Upgrading by submitting the product will be available from July 25, 2005.

Note 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 LEVEL x on this label indicates the control code.

Notes on Using IE-78K0S-NS

1. Product Version

Part number: IE-78K0S-NS

Control Code ^{Note}	Remark
A	–
B	Expansion of I/F specifications of emulator and debugger
C	Correction of bugs No. 1 to No. 3
D	Correction of bug No. 4
E	Addition of specifications for supporting new products
F	Correction of bugs No. 6 and No. 7
G	Correction of bug No. 8 and addition of No. 9

Note 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 LEVEL x on this label indicates the control code.

2. Product History

No.	Bugs and Changes/Additions to Specifications	Control Code						
		A	B	C	D	E	F	G
1	Bug in operation after software CPU reset (1)	×	×	√	√	√	√	√
2	Bug in trace display	×	×	×	√	√	√	√
3	Bug in operation after software CPU reset (2)	×	×	√	√	√	√	√
4	Bug in operation when address condition matches	×	×	√	√	√	√	√
5	Addition of specifications for supporting new products	–	–	–	–	√	√	√
6	Bug in operation after standby instruction execution (1)	×	×	×	×	×	√	√
7	Bug in operation after standby instruction execution (2)	×	×	×	×	×	√	√
8	The program stops at an illegal fetch break when a reset occurs.	×	×	×	×	×	×	√ <small>Note</small>
9	The program stops at an illegal fetch break when a reset is generated by the watchdog timer.	Permanent restriction						

×: Applicable, √: Not applicable or already corrected, –: Specification change not implemented

Note Bug No. 8 has been corrected in control code G, but has not been resolved completely. Thus, this unresolved part has been made separate as bug No. 9. Please regard this item as a permanent restriction.

3. Details of Bugs and Added Specifications

No. 1 Bug in operation after software CPU reset (1)

[Description]

The PC value and the value registered in the reset vector are different if a software CPU reset is applied immediately after STEP execution.

[Workaround]

There is no workaround.

This bug has been corrected in IE-78K0S-NS control code C or later.

No. 2 Bug in trace display

[Description]

The trace result of the EEPROM access cycle is not displayed correctly.

[Workaround]

There is no workaround.

This bug has been corrected in IE-78K0S-NS control code C or later.

No. 3 Bug in operation after software CPU reset (2)

[Description]

If a software CPU reset is applied during emulation, the reset is performed but a break does not occur.

[Workaround]

There is no workaround.

This bug has been corrected in IE-78K0S-NS control code C or later.

No. 4 Bug in operation when address condition matches

[Description]

When an access event assigned using "Event Set" of the debugger accesses address 0, the IE-78K0S-NS assumes the address condition matched even though the address condition is different from the specified one.

[Workaround]

There is no workaround.

This bug has been corrected in IE-78K0S-NS control code D or later.

No. 5 Addition of specifications for supporting new products

[Description]

The IE-78K0S-NS must be upgraded to emulate the IE-789850-NS-EM1 and 78K0S Series devices to be developed and released in April 2000 and onward.

Specifications have been added in IE-78K0S-NS control code F.

No. 6 Bug in operation after standby instruction execution (1)

[Description]

When executing standby (STOP or HALT), the status will be displayed in the CPU status of the debugger within three seconds. It should be displayed after three seconds.

[Workaround]

There is no workaround.

This bug has been corrected in IE-78K0S-NS control code F or later.

No. 7 Bug in operation after standby instruction execution (2)

[Description]

If the standby function is cleared within three seconds after executing standby (STOP or HALT), the status will not be displayed in the CPU status of the debugger afterward.

[Workaround]

There is no workaround.

This bug has been corrected in IE-78K0S-NS control code F or later.

No. 8 The program stops at an illegal fetch break when a reset occurs

[Description]

If an external reset input by the $\overline{\text{RESET}}$ pin or an internal reset (reset by POC, LVI, watchdog timer, etc.) occurs, the program may be stopped due to an illegal fetch break (fail-safe break function).

This bug does not depend on the emulation board, emulation probe, or target system.

[Workaround]

There is no workaround.

If the program is stopped illegally, the subsequent user program can be emulated by executing "Go" (F5).

It is also possible to restart the user program from the beginning by executing "Restart (F4)", or use other execution functions to continue execution.

This bug has been corrected in IE-78K0S-NS control code G, except for cases where a reset is generated by the watchdog timer. Thus, this unresolved part has been made separate as bug No. 9.

No. 9 The program stops at an illegal fetch break when a reset is generated by the watchdog timer.

[Description]

When the watchdog timer is used in a mode in which a reset is generated upon program loop detection, and then a reset occurs, the program may be stopped due to an illegal fetch break (fail-safe break function).

- Products affected by this bug:

IE-789014-NS-EM1, IE-789026-NS-EM1, IE-789046-NS-EM1, IE-789088-NS-EM1,
IE-789136-NS-EM1, IE-789177-NS-EM1, IE-789306-NS-EM1, IE-789418-NS-EM1,
IE-789436-NS-EM1, IE-789456-NS-EM1, IE-789468-NS-EM1, IE-789488-NS-EM1,
IE-789801-NS-EM1, IE-789831-NS-EM1, IE-789835-NS-EM1, IE-789840-NS-EM1,
IE-789850-NS-EM1, IE-789852-NS-EM1, IE-789860-NS-EM1, IE-789862-NS-EM1,
IE-789871-NS-EM1

- Products not affected by this bug:

IE-789882-NS-EM1, IE-789234-NS-EM1, IE-789842-NS-EM1

[Workaround]

There is no workaround.

If the program is stopped illegally, the subsequent user program can be emulated by executing "Go" (F5).

It is also possible to restart the user program from the beginning by executing "Restart (F4)", or use other execution functions to continue execution.

Please regard this item as a permanent restriction.

4. Cautions

4-1. Cautions on using the IE-789014-NS-EM1

Use the IE-78K0S-NS and DF789014 in the following combination when using the IE-789014-NS-EM1:

IE-78K0S-NS (control code B or later): DF789014 E1.02a or later

IE-78K0S-NS (control code A): DF789014 V1.01

If the IE-78K0S-NS with control code B or later is used in combination with DF789014 V1.01, a parameter error occurs and the debugger cannot be started.

Modification of the IE-78K0S-NS from control code A to B expands the interface specification of the emulator and the debugger to support 78K0S Series devices that will be developed in future. As long as the above combinations are used, therefore, there is no functional difference.

4-2. 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 power supply, PC interface cable, or target system connection was in an unsatisfactory state
- If the power supply, PC interface cable, emulation probe, or the like was bent or pulled excessively
- If a power supply 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.**