

# Microcomputer Technical Information

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<p style="text-align: center;">IE-78K4-NS In-Circuit Emulator for 78K4 Series  Usage Restrictions</p>		Document No.	SBG-DT-03-0276-E	1/2
		Date issued	November 5, 2003	
		Issued by	Microcomputer Group 2nd Solutions Division Solutions Operations Unit NEC Electronics Corporation	
Related documents	IE-78K4-NS User's Manual: U13356EJ3V0UM00	Notification classification	<input checked="" type="checkbox"/>	Usage restriction
			<input type="checkbox"/>	Upgrade
			<input type="checkbox"/>	Document modification
			<input type="checkbox"/>	Other notification

## 1. Affected product

IE-78K4-NS      Control code<sup>Note</sup>: A, B, C, D, E, F, G, H, J, K, L

**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 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. Details of restrictions

This notification concerns the following bugs. See the attachment for details.

- No.18 Bug in trace search (1)
- No.19 Bug in trace display selection
- No.20 Bug in trace search (2)

## 3. Workarounds

See the attachment for details.

## 4. Modification schedule

Modified products are scheduled for release as follows.

Newly shipped products: From the shipment at the end of November 2003 (control code: M)

Upgrade for already shipped products: From mid-November, 2003

\* 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

The restriction history and detailed information is described in the attachment.

## 6. Document revision history

**IE-78K4-NS In-Circuit Emulator for 78K4 Series Usage Restrictions**

Document Number	Date Issued	Description
SBG-T-1594-E	May 14, 1999	Addition of new bugs (No.1 to No.4)
SBG-T-1809-E	October 20, 1999	Addition of new bugs (No.5 and No.6)
SBG-T-1829-E	November 22, 1999	Addition of new bugs (No.6 to No.9) Addition of new restriction
SBG-T-1875-E	December 17, 1999	Addition of new restriction
SBG-T-2053-E	June 16, 2000	Addition of new bugs (No.10 to No.13)
SBG-T-2099-E	July 21, 2000	Addition of new bugs (No.14)
SBG-TT-0001-E	October 11, 2001	Addition of new bugs (No.15 to No.17)
SBG-DT-03-0276-E (latest version)	November 5, 2003	Addition of new bugs (No.18 to No.20)

## Notes on Using IE-78K4-NS

### 1. Product History

No.	Bugs and Changes/Additions to Specifications	Control Code <sup>Note</sup>											
		A	B	C	D	E	F	G	H	J	K	L	M
1	Event Bit trace bug The message "NO EVENT BIT" is displayed on the trace.	√	-	-	-	-	-	-	-	-	-	-	-
2	Path count bug Breaks and event detection are not performed correctly at the specified path count.	√	-	-	-	-	-	-	-	-	-	-	-
3	Incorrect frame trace bug Sometimes the wrong bus cycle is traced.	√	√	-	-	-	-	-	-	-	-	-	-
4	Bug related to P64, 65 output Between turning the power on, and clicking OK on the Configuration dialog box in the debugger, a high level continues to be output from P64 and P65.	√	√	√	√	√	-	-	-	-	-	-	-
5	Products with memory (buffer RAM, etc.) on the EM1 board are not supported. The affected product is the IE-784976-NS-EM1.	√	√	√	√	√	√	-	-	-	-	-	-
6	Interrupt may be enabled if one of the following instructions is executed after setting a DI instruction:  MOV1 PSWH.n,CY; SET1 PSWH.n; CLR1 PSWH.n; NOT1 PSWH.n; BTCLR PSWH.n,\$addr; BFSET PSWH.n,\$addr; RETI; RETB; RETCS !addr16; RETCSB !addr16; POP PSW; POPU PSW Workaround: None.	√	√	√	√	√	√	√	-	-	-	-	-
7	An illegal break may occur if an SFR is accessed in user program RUN. This probability exists for all EM boards and all SFRs. Workaround: None.	√	√	√	√	√	√	√	-	-	-	-	-
8	The number of frames may rise during qualify trace. (The same trace frame is displayed twice.) Workaround: None.	√	√	√	√	√	√	√	-	-	-	-	-
9	The flash self-mode of the debug function (software emulation) is not supported.	√	√	√	√	√	√	√	-	-	-	-	-
10	Software break cannot be used. To use this function upgrade ID-78K4-NS to V2.30 or later (scheduled to be released in Aug. 2000).	√	√	√	√	√	√	√	√	-	-	-	-
11	The trace search function, added when upgrading ID78K4-NS to V 2.30 or later, retrieves byte data (8-bit) even if word data (16-bit) is specified.	√	√	√	√	√	√	√	√	-	-	-	-

√: Applicable, -: Not applicable

No.	Bugs and Changes/Additions to Specifications	Control Code <sup>Note</sup>																						
		A	B	C	D	E	F	G	H	J	K	L	M											
12	The trace result of step execution is not displayed if "NON BREAK" is executed, the trace is stopped using event, a forcible break is executed, and then step execution is used.	√	√	√	√	√	√	√	√	-	-	-	-											
13	<p>(1) The SFR values in the SFR window are not displayed correctly at the SFR that matches the [Condition 1] and onward.</p> <p>[Condition 1]</p> <p>(a) When the 16-bit SFR (R or R/W) is at address n, and 8-bit SFR (W) is at address n+1</p> <p>Example: In the case of D784928</p> <table border="1" data-bbox="284 703 780 909"> <thead> <tr> <th>Address</th> <th>Symbol</th> <th>R/W</th> <th>Bit length</th> </tr> </thead> <tbody> <tr> <td>Address n (0FF10H)</td> <td>CR00</td> <td>R/W</td> <td>16</td> </tr> <tr> <td>Address n+1 (0FF11H)</td> <td>ECC0</td> <td>R</td> <td>8</td> </tr> </tbody> </table> <p>(b) 16-bit SFR (R)</p> <p>[Phenomenon]</p> <p>The value at address n is displayed at address n+1. The same applies to subsequent SFR.</p>	Address	Symbol	R/W	Bit length	Address n (0FF10H)	CR00	R/W	16	Address n+1 (0FF11H)	ECC0	R	8											
	Address	Symbol	R/W	Bit length																				
Address n (0FF10H)	CR00	R/W	16																					
Address n+1 (0FF11H)	ECC0	R	8																					
	<p>(2) The SFR values in the SFR window are not displayed correctly when the SFR satisfies [Condition 2].</p> <p>[Condition 2]</p> <p>(a) When the 16-bit SFR (W) is at address n, and 8-bit SFR (R or R/W) is at address n+1</p> <p>[Phenomenon]</p> <p>The value at address n+1 is always displayed as "0".</p> <p>The other SFR-related operations are performed normally:</p> <ul style="list-style-type: none"> <li>- Writing in the SFR window</li> <li>- Reading/writing in the program</li> <li>- SFR illegal access break</li> </ul> <p>[Workaround for bug (1)]</p> <p>Upgrading IE-78K4-NS to control code J and ID78K4-NS to E1.11j or later.</p> <p>[Workaround for bug (2)]</p> <p>Upgrading ID78K4-NS to E1.11j or later.</p> <p>For details of ID78K4-NS (E1.11j), contact an NEC Electronics representative responsible for debuggers.</p>	√	√	√	√	√	√	√	√	-	-	-	-											

√: Applicable, -: Not applicable

No.	Bugs and Changes/Additions to Specifications	Control Code <sup>Note</sup>											
		A	B	C	D	E	F	G	H	J	K	L	M
14	It may not be possible to correctly fetch a word instruction starting from an odd address via the program on the emulation memory. Workaround: None.	√	√	√	√	√	√	√	√	√	-	-	-
15	The program may inadvertently loop if a software break is set and a high-speed fetch operation (IFCH register = 1) is performed in ID78K4-NS V2.30 or later. Workaround: None.	√	√	√	√	√	√	√	√	√	√	-	-
16	If a high-speed fetch operation (IFCH register = 1) is performed under the following conditions when using the real-time RAM sampling function, illegal data is displayed. • When a register access instruction (*) is executed immediately after an instruction to access the internal RAM area  (* ) Instruction whose operand includes one of the following descriptions: X(R0), A(R1), C(R2), B(R3), E(R4), D(R5), L(R6), H(R7), AX(RP0), BC(RP1), DE(RP2), HL(RP3), sfr, or sfrp  Workaround: Do not execute a register access instruction immediately after an instruction to access the internal RAM area.	√	√	√	√	√	√	√	√	√	√	-	-
17	An illegal code may be fetched when the IE-78K4-NS emulation memory is used. Workaround: None.	√	√	√	√	√	√	√	√	√	√	-	-
18	A frame that matches the search condition set in the Trace Search dialog box is not necessarily found even if it exists in the Trace window. Workaround: None.	√	√	√	√	√	√	√	√	√	√	√	-
19	When “Pick Up BRM1 Frame” is selected in the pick up select area in the Trace Data Select dialog box, not all the BRM1 frames are displayed. Workaround: None.	√	√	√	√	√	√	√	√	√	√	√	-
20	When “Mask” is selected for “Data” in the Trace Search dialog box, the setting of “AccessSize” is invalid. Consequently, all the values set to “Data” are targeted for search regardless of the setting of “AccessSize”. Workaround: None.	√	√	√	√	√	√	√	√	√	√	√	-

√: Applicable, -: Not applicable

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The functions of products with control codes C and D are the same as the functions of products with control code E. The control code I does not exist.

## 2. Restrictions

- Flash self-mode related restrictions

The versions listed below support flash self-mode with the following restrictions.

IE-78K4-NS: Control code H

ID78K4-NS: E1.11h

- (1) Of the four execution events and four access events in flash self-mode, only one of each may be consumed. Consequently, users should release the above events on the debugger side and then set a maximum of three events each when switching to flash self-mode.
- (2) The system may enter restart processing once a break occurs in flash self-mode that is not the result of break settings. This will cause some of the time measurement results and trace data to become invalid.

- Request flags other than the first interrupt request flag will not be enabled if nesting interrupts are generated during non-realtime execution (1 instruction execution, Step, Next (excluding CALL statement), Slowmotion) with the debugger. As a result, there is a possibility of incorrect operation with programs that perform some type of processing by checking request flags.

Workaround: Execute two or more instructions in realtime (Go, Return, Go&Go, Come, CPU Reset&Go).