

CUSTOMER NOTIFICATION  IE-789860-NS-EM1 Upgrade	SBG-T-2105
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This is to inform you that the above product is to be upgraded.

1. Product types and version

Product	Outline	Control code
IE-789860-NS-EM1	Emulation board for $\mu$ PD78986x	A, B

2. Details of upgrade

The bugs described on the separate sheet have been corrected. After upgrading, the control code will be C.

3. Upgrade petition period

From August 07, 2000.

The upgrade described herein will be provided for free for a period of one year from the date of issue of this document. After the free upgrade period expires, upgrade will be available for a fee. You are advised to take advantage of the free upgrade offer during the free upgrade period.

**Note** The control code is the letter located in the second position from the left in the 10 digit serial code on the warranty that comes with this product when it is purchased (versions that have not been upgraded). For upgraded versions, an upgrade label is affixed to the product and the final letter of the label (i.e. the X in V-UP LEVEL X) indicates the control code.

## Notes on Using IE-789860-NS-EM1

### 1. Product History

No.	Bugs and Changes/Additions to Specification	Control Code <sup>Note</sup>		
		A	B	C
1	Because the interrupt request signal of the emulation chip is not cleared when the non-maskable interrupt of the key return signal is used, other interrupts cannot be accepted. Workaround: Refer to the attachment (2/2).	√	–	–
2	The key return interrupt (INTKR1) should be generated by the input of the falling edge of P40/KR10 to P43/KR13, but is inadvertently generated by a low-level input. Workaround: None	√	√	–

√: Applicable, –: Not applicable

Note The “control code” is the second digit from the left in the 10-digit serial number in the warranty supplied with the in-circuit emulator you purchased (if it has not been upgraded). If the in-circuit emulator has been upgraded, a label indicating the new version is attached to the in-circuit emulator and the x in V-UP LEVEL x on this label indicates the control code.

Workarounds of product history No. 1:

The interrupt request signal of the emulation chip is cleared when the EI instruction has been executed. Therefore, be sure to execute the EI instruction in the vector table if the non-maskable interrupt of the key return signal is used. At this time, the interrupt servicing of the key return signal is executed two times, and therefore, processing that returns as soon as servicing the interrupt is started the second time is necessary. Here is an example of software.

Example:

(Main routine)

```

•
•□□
MOV      B,#0      ; Clears interrupt counter
STOP
•
•

```

(Key return interrupt vector routine)

```

VINTKR:
  INC      B      ; Increments interrupt counter
  EI       ; Clears interrupt request flag for emulation
  MOV     A,B
  CMP     A,#02H  ; First interrupt?
  BZ      $KR_END0 ; Return processing if interrupt is second interrupt
  •
  •
  •
  •
  •
  BR     $KR_END1
KR_END0:
  MOV     B,#0
KR_END1
  RETI

```

<Flow of operation in this example>

- STOP instruction execution
- Occurrence of non-maskable interrupt because of key return
- Branch to vector of key return
- Incrementing counter (B ← 1)
- EI instruction execution (kept pending while non-maskable interrupt is serviced)
- Execution of original processing because interrupt is first interrupt (B = 1)
- Return to main routine (pending EI instruction is executed at this point and execution branches to vector of key return again)
- Increments counter (B ← 2)
- Clears counter and branches to return processing because interrupt is second interrupt (B = 2)