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April 1st, 2010
Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (<http://www.renesas.com>)

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Customer Notification

IE-789860-NS-EM1TM

Emulation Board

Operating Precautions

Target Devices

uPD789860

uPD78E9860A

uPD789861

uPD78E9861A

uPD789052

uPD789062

Global Document No. U18110EE1V0IF00 (1st edition)
Document No. TPS-LE-OP-T9860-D
Date Published March 2005

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IE-789860-NS-EM1

(A) Table of Operating Precautions

No.	Outline	Control Code ^{Note}	IE-789860-NS-EM1			
			A	B	C	D
1	No other interrupt is accepted when key return interrupt is used (Technical Limitation)		X	✓	✓	✓
2	Key return interrupt is static, not falling edge sensitive (Technical Limitation)		X	X	✓	✓
3	Support for the uPD789052, uPD789062 Subseries (Specification Change)		-	-	-	✓
4	Modification of specification of 8-bit timers 30 and 40 (Specification Change)		-	-	-	✓
5	EEPROM guard function (Technical Limitation)		X	X	X	X

✓ : Not applicable

X : Applicable

- : Specification is not supported

Note: The control code is the **second letter** from the left of the 10 digit serial number (version that have not been upgraded).
For upgraded versions, an upgrade label is affixed to the product. The version-up level on this sticker corresponds to the actual control code (i.e. the X in the V-UP LEVEL X indicates the control code X).

(B) Description of Operating Precautions

No. 1	No other interrupt is accepted when key return interrupt is used (Technical Limitation)
	<p><u>Detail:</u> Due to 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.</p> <p>Workaround:.</p> <p>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 key return interrupt vector routine if the non – maskable interrupt of the key return signal is used. If you do so, interrupt servicing of the key return signal is executed twice. Therefore it is necessary to suppress the second interrupt servicing. See the following example of software.</p> <p>Example:</p> <pre> (Main routine) ... MOV B,#0 ; Clears interrupt counter STOP ... VINTKR: (Key return interrupt vector routine) INC B ; Increments interrupt counter EI ; Clears interrupt request flag for emulation MOV A,B CMP A,#02 ; First interrupt ? BZ \$KR_END0 ; Return processing if interrupt is second one. ... Original key return processing. BR \$KR_END1 KR_END0: MOV B,#00 KR_END1: RETI </pre> <p>Flow of operation in this example:</p> <ul style="list-style-type: none"> STOP instruction execution Occurrence of non-maskable interrupt due to key return Branch to vector of key return interrupt vector routine Incrementing interrupt 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 the vector of key return processing again) Increment interrupt counter (B <- 2) Clear interrupt counter and branch to return processing because interrupt is second one

Valid Specification

Item	Date published	Document No.	Document Title
1	July 2003	U16499EJ1V0UM00	User's Manual IE-789860-NS-EM1

(C) Revision History

Item	Date published	Document No.	Comment
3	March 04 th , 2005	TPS-LE-OP-T9860-D	1 st release in new format