

To our customers,

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April 1<sup>st</sup>, 2010  
Renesas Electronics Corporation

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## **Customer Notification**

# **IE-789862-NS-EM1™**

**Emulation Board**

**Operating Precautions**

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### **Target Devices**

**uPD789862**

**uPD78E9862**

Global Document No. U18111EE1V0IF00 (1st edition)  
Document No. TPS-LE-OP-T9862-C  
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IE-789862-NS-EM1

**(A) Table of Operating Precautions**

No.	Outline	IE-789862-NS-EM1	
		Control Code <small>Note</small>	
		B	C
1	Oscillation stabilisation time (Technical Limitation)	X	X
2	Low voltage operation (Technical Limitation)	X	X
3	16-bit SFR display (Technical Limitation)	X	X
4	16-bit timer event counter (Technical Limitation)	X	✓
5	General Cautions (Direction of use)	X	X

✓ : Not applicable

X : applicable

**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	Oscillation stabilization time (Technical Limitation)
<p><u>Details</u> The oscillation stabilization time after reset release differs from that of the device.</p> <p>Target device: <math>2^{12} / f_x</math> IE-789862-NS-EM1:system: <math>2^{15} / f_x</math></p>	
No. 2	Low-voltage operation (Technical Limitation)
<p><u>Details</u> The operation voltage range differs from that of the device.</p> <p>Target device: 1.8 to 5.5V IE-789862-NS-EM1: 2.0 to 5.5V</p>	
No. 3	16-bit SFR display (Technical Limitation)
<p><u>Details</u> The display of the SFR window of the integrated debugger is illegal because the correct value can not be written to the 16-bit SFR's. In detail these are the registers CR00, CR01 and CMD.</p> <p>Workaround: Use program execution to write values to the 16-bit SFR's</p>	
No. 4	16-bit timer event/counter (Technical Limitation)
<p><u>Details</u> Even if <math>f_x/2^3</math> is selected as a count clock of the 16-bit timer/event counter 0, <math>f_x/2^2</math> is set</p>	
No. 5a	General Cautions (Direction of use)
<p>When emulation of the low-voltage detector and power-on-clear circuit detection voltage is performed, it is affected by voltage fluctuation and noise. Therefore, the detected voltage must be checked in the EEPROM product.</p>	

No. 5b	General Cautions (Direction of use)																																
<p>When a program that illegally accesses EEPROM is executed in the IE-789862-NS-EM1, an error message is displayed and a break occurs. The conditions for illegally accessing the EEPROM and the displayed error message are described below.</p> <p style="text-align: center;"><b>Illegal Access Condition</b></p> <table border="1" data-bbox="386 447 1409 1087"> <tr> <td colspan="2">Error message: <b>Unspecified Illegal</b></td> </tr> <tr> <td colspan="2">EEPROM illegal access conditions</td> </tr> <tr> <td>&lt;1&gt;</td> <td>Write instruction to EEPROM is executed when EWE10 = 0.</td> </tr> <tr> <td>&lt;2&gt;</td> <td>Write instruction to EEPROM is executed while the clock selected by EEPROM (8-bit timer 80) is stopped.</td> </tr> <tr> <td>&lt;3&gt;</td> <td>Write instruction to EEPROM is executed while EEPROM is being written to.</td> </tr> <tr> <td>&lt;4&gt;</td> <td>Read instruction from EEPROM is executed while EEPROM is being written to.</td> </tr> <tr> <td>&lt;5&gt;</td> <td>Instruction is fetched from EEPROM while EEPROM is being written to.</td> </tr> <tr> <td>&lt;6&gt;</td> <td>EWE10 is set to 0 while EEPROM is being written to.</td> </tr> <tr> <td>&lt;7&gt;</td> <td>ERE10 is set to 0 while EEPROM is being written to.</td> </tr> <tr> <td>&lt;8&gt;</td> <td>Main system clock is stopped by the STOP instruction while EEPROM is being written to.</td> </tr> <tr> <td>&lt;9&gt;</td> <td>Count clock selection of the write time setting timer is changed while EEPROM is being written to.</td> </tr> <tr> <td>&lt;10&gt;</td> <td>RESET is applied while EEPROM is being written to.</td> </tr> <tr> <td>&lt;11&gt;</td> <td>Instruction is fetched from EEPROM when EWE10 = 0.</td> </tr> <tr> <td>&lt;12&gt;</td> <td>Write to EEPROM area 2 is executed when the EEWE pin is low.</td> </tr> <tr> <td>&lt;13&gt;</td> <td>Read instruction to EEPROM is executed when EWE10 = 0.</td> </tr> <tr> <td>&lt;14&gt;</td> <td>Write to EEPROM is executed when EWST = 1.</td> </tr> </table>		Error message: <b>Unspecified Illegal</b>		EEPROM illegal access conditions		<1>	Write instruction to EEPROM is executed when EWE10 = 0.	<2>	Write instruction to EEPROM is executed while the clock selected by EEPROM (8-bit timer 80) is stopped.	<3>	Write instruction to EEPROM is executed while EEPROM is being written to.	<4>	Read instruction from EEPROM is executed while EEPROM is being written to.	<5>	Instruction is fetched from EEPROM while EEPROM is being written to.	<6>	EWE10 is set to 0 while EEPROM is being written to.	<7>	ERE10 is set to 0 while EEPROM is being written to.	<8>	Main system clock is stopped by the STOP instruction while EEPROM is being written to.	<9>	Count clock selection of the write time setting timer is changed while EEPROM is being written to.	<10>	RESET is applied while EEPROM is being written to.	<11>	Instruction is fetched from EEPROM when EWE10 = 0.	<12>	Write to EEPROM area 2 is executed when the EEWE pin is low.	<13>	Read instruction to EEPROM is executed when EWE10 = 0.	<14>	Write to EEPROM is executed when EWST = 1.
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No. 5c	General Cautions (Direction of use)
<p>The signals related to port 4 are connected to a 1 MOhm pull-up resistor in the IE-789862-NS-EM1. 3Fh is read as the initial value of port 4 under the following conditions.</p> <ul style="list-style-type: none"> <li>• When the target system is not connected</li> <li>• When all the P4 pins are left open in the target system</li> </ul>	

Operating Precautions for IE-789862-NS-EM1™

No. 5d	General Cautions (Direction of use)
<p>Since bit 2 (POCOF) of the power-on-clear register (POCF) is 1 when the IE-789862-NS-EM1 is activated, set bit 2 (POCOF) to 0 in the startup routine.</p>	
No. 5e	General Cautions (Direction of use)
<p>No error occurs even if the EEPROM write time is set to other than 3.3 to 6.6 ms.</p>	
No. 5f	General Cautions (Direction of use)
<p>Procedure to set ERE10 and EWE10 when writing data to the EEPROM</p> <ul style="list-style-type: none"> <li>• Set ERE10 = 1</li> <li>• Set EWE10 = 1</li> <li>• Insert a wait for 1 ms or longer using software.*Note</li> <li>• The program shifts to the EEPROM write state</li> </ul> <p>Note No error occurs even if the wait in is less than 1 ms.</p>	
No. 5g	General Cautions (Direction of use)
<p>The status differs from that of the actual device when ERE10 = 0 and EWE = 0 are set without reading/writing data from/to EEPROM.</p> <ul style="list-style-type: none"> <li>• Actual device: Shifts to low-current-consumption mode.</li> <li>• IE-789862-NS-EM1: Shifts to access guard (read/write disable) status.</li> </ul>	
No. 5h	General Cautions (Direction of use)
<p>The operation differs from that of the actual device when shifting to STOP mode while data is being written.</p> <ul style="list-style-type: none"> <li>• Actual device: Illegal data is written.</li> <li>• IE-789862-NS-EM1: An illegal access break occurs.</li> </ul>	

Operating Precautions for IE-789862-NS-EM1™

No. 5i	General Cautions (Direction of use)
	<p>The operation differs from that of the actual device when read is disabled by setting bit 2 (ERE10) and bit 0 (EWE10) of EEPROM write control register 10 (EEWC10).</p> <ul style="list-style-type: none"><li>• Actual device: Illegal data is read.</li><li>• IE-789862-NS-EM1: An illegal access break occurs. (Addition of specification)</li></ul>

**(C) Valid Specification**

Item	Date published	Document No.	Document Title
1	June 2004 or later	U16297EJ...	User's Manual IE-789862-NS-EM1

**(D) Revision History**

<b>Item</b>	<b>Date published</b>	<b>Document No.</b>	<b>Comment</b>
1	May 09, 2005	TPS-LE-OP-T9862-C	1 <sup>st</sup> release