To our customers,

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Renesas Electronics website: http://www.renesas.com

April 1st, 2010
Renesas Electronics Corporation

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

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RENESAS

Customer Notification

IE-780818-NS-EM4™

Probe Board

Operating Precautions

Target Devices

μPD780816 Subseries
μPD780816A Subseries
μPD780816B Subseries

Global Document No. U18091EE6V0IF00 (6th edition)
Document No. TPS-LE-OP-0T0816-1
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Table of Contents

(A) Table of Operating Precautions

No.	Outline	Control Code Note	IE-780818-NS-EM4 A	IE-780818-NS-EM4 B	
1	Port function with N-channel open-drain ports (Technical Limitation)		✗	✓	
2	Vpp detection (Technical Limitation)		✗	✗	
3	AD-Converter (Technical Limitation)		✗	✗	
4	Clock Monitor (Technical Limitation)		✗	✗	
5	Watch timer interval mode (Technical Limitation)		✗	✗	
6	DCAN interface can not run on external clock (Technical Limitation)		✗	✗	
7	SFR register KRM (Technical Limitation)		✗	✗	

✓ : Not applicable
✗ : 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 V-UP LEVEL X indicates the control code X).

Caution: Pls. refer to and consider the Operating Precautions mentioned in the Customer Notifications of the according devices, to which this Probe Board belongs.

(B) Description of Operating Precautions

No. 1	Port function with N-channel open-drain ports (Technical Limitation)
	Details Port 2 has no N-channel open-drain functionality. The port is always driven and the SFR-register returns always 0.

No. 2	Vpp detection (Technical Limitation)
	Details The voltage level of Vpp cannot be detected during self-programming. The feedback information bit VPP of the FLPMC register will be always read as 1.

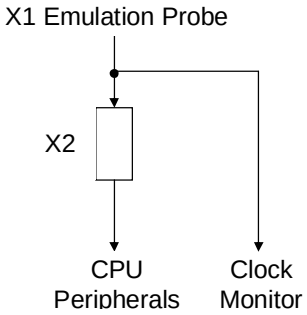
No. 3	AD-Converter (Technical Limitation)

Details
The conversion time of the AD-Converter is different than on the real device.

Device	IE-780818-NS-EM4
$\frac{144}{f_X}$	$\frac{144}{f_X}$
$\frac{120}{f_X}$	$\frac{120}{f_X}$
$\frac{96}{f_X}$	$\frac{96}{f_X}$
$\frac{72}{f_X}$	$\frac{288}{f_X}$
$\frac{60}{f_X}$	$\frac{240}{f_X}$
$\frac{48}{f_X}$	$\frac{192}{f_X}$

No. 4	Clock Monitor (Technical Limitation)

Details
The clock monitor is implemented in the following way:



When the Clock Monitor shall be used, the clock for the Clock Monitor has to be supplied via the X1 pin of the emulation probe. Due to this it may be necessary to use two separate clock supplies: one for the CPU and the peripherals on the IE-78K0-NS-P04 (socket X2) and the other for the Clock Monitor via the X1 pin of the emulation probe.

No. 5	Watch timer interval mode (Technical Limitation)

Details
The WTM2 bit of the SFR register WTM cannot be set to "1". It will always remain at "0".
This behaviour is only valid for the Probe Board IE-780818-NS-EM4. On the device WTM2 bit can be set to "1".

No. 6	DCAN interface can not run on external clock (Technical Limitation)

Details
The on-chip DCAN interface will not work based on the external clock input for the DCAN, which can be provided to the CL1/CCLK pin.
This behaviour is only valid for the Probe Board IE-780818-NS-EM4 and not for the device.

Workaround
Please use the internal clock for the DCAN interface during the emulation.

No. 7	SFR register KRM (Technical Limitation)
	Details The SFR register KRM cannot be read. Due to this, the internal read-modify-write operation, as performed in BIT operations (i.e. SET1 KRM.0), is not possible. The SFR window of the debugger will also show incorrect contents of the KRM register. *Workaround* Pease use BYTE operations for writing to the KRM register: Example: MOV KRM,#0x01 Or KRM = 0x01 There is no workaround available to show the correct contents of the KRM register.

(C) Valid Specification

Item	Date published	Document No.	Document Title
1	December 2000	U14514EE2V0UM00	Preliminary User's Manual IE-780818-NS-EM4 IE-78K0-NS-P04
2	March 2005	TPS-LE-OP-0816B or later	Customer Notification µPD780816, µPD780816A and µPD780816B Subseries

(D) Revision History

Item	Date published	Document No.	Comment
1	September 24, 1999	TPS-LE-B-0T019	1st release
2	December 15, 2000	TPS-LE-B-0T019-1	1st update Items 2, 3 and 4 added
3	October 5, 2001	TPS-LE-B-0T019-2	2nd update Item 5 added
4	December 20, 2001	TPS-LE-B-0T019-3	3rd update Item 6 added
5	April 24, 2003	TPS-LE-OP-0T0816	4th update This document is a replacement of the document TPS-LE-B-0T019-3, including an added item 7.
6	June 13, 2005	TPS-LE-OP-0T0816-1	5th Update Caution added on page 4