

To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

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

April 1st, 2010
Renesas Electronics Corporation

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

Send any inquiries to <http://www.renesas.com/inquiry>.

RENESAS TECHNICAL UPDATE

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Product Category	MPU&MCU	Document No.	TN-16C-A156A/E	Rev.	1.00
Title	M32C/80 Series, M32C/90 Series: Usage Precaution for MUL.W Instruction, MULU.W Instruction	Information Category	Technical Notification		
Applicable Product	M32C/80 Group, M32C/81 Group M32C/82 Group, M32C/83 Group M32C/84 Group, M32C/85 Group M32C/86 Group, M32C/87 Group M32C/88 Group, M32C/95 Group	Lot No.	Reference Document		

Precautionary Note

If the instruction listed in 1) and the addressing mode listed in 2) for dest are used, the calculation result is 32-bit wide. Then, incorrect results are stored into the 16 high-order bits and also the next instructions are not executed as they are supposed to.

Use the addressing mode listed in 3) for the instructions listed in 1).

1) MUL.W src, dest or MULU.W src,dest

2) Unavailable addressing mode for dest

[A0], [A1]

dsp:8[A0], dsp:8[A1], dsp:8[SB], dsp:8[FB], dsp:16[A0], dsp:16[A1], dsp:16[SB], dsp:16[FB]

dsp:24[A0], dsp:24[A1], abs16,abs24

[[A0]], [[A1]]

[dsp:8[A0]], [dsp:8[A1]], [dsp:8[SB]], [dsp:8[FB]], [dsp:16[A0]], [dsp:16[A1]], [dsp:16[SB]],

[dsp:16[FB]], [dsp:24[A0]], [dsp:24[A1]], [abs16], [abs24]

3) Available addressing mode for dest

R0, R1, A0, A1

When using Renesas C Compiler Package:

- C Language Program

When compiling your C language program with the M3T-NC308WA, instructions MUL.W and MULU.W using the addressing mode listed in 2) are not generated.

- Assembly Language Program

When using the M3T-NC308WA V.1.00 Release 1 to V5.40 Release 00, an error is not be appeared even if instructions MUL.W and MULU.W using the addressing mode listed in 2) are used. Do not use instructions MUL.W and MULU.W using the addressing mode listed in 2).

In the next compiler package update, we will revise as the program will produce error(s) if the instruction listed in 1) and the addressing mode listed in 2) for dest are used.

When using Renesas Real Time OS:

In the M3T-MR308, instructions MUL.W and MULU.W using the addressing mode listed in 2) are not used.

Renesas does not support third-party products*. As to the third-party compiler and real time OS, please contact each product manufacturer. (* A third-party product refers to a product that is manufactured by a company other than Renesas.)