RENESAS Tool News

RENESAS TOOL NEWS on September 16, 2006: 060916/tn3

The C Compiler Package--M3T-NC308WA--for the M32C/90, M32C/80, and M16C/80 MCU Series Revised to V.5.41 Release 00

We have revised the C compiler package--M3T-NC308WA--for the M32C/90, M32C/80, and M16C/80 series of MCUs from V.5.40 Release 00 to V.5.41 Release 00.

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1. Descriptions of Revision

For details, please see the release note included with this product.

1.1 Functions Introduced

(1) The link option -NOMCU has been introduced. Using this option enables you to link relocatable object files for a target MCU to those for another in a project.

(2) A function of generating ID files using the .ID assembler directive command has been introduced. So ID files can be generated by the .ID assembler directive command as well as the existing -ID option of the load module converter. According to the introduction of .ID, changes have been made to the specifications for using the assembler directive commands .ID and .PROTECT, and the options of the load module converter -ID, -protect1, and -protectx in combination with each others.

(3) The Call Walker, utility tool for calculating stack size, and the Map Section Information window in the High-performance Embedded Environment have been supported.

1.2 **Functions Improved**

(1) In V.5.40 Release 00 and earlier versions, the C compiler generates the string and the product-sum instructions by default.
Now in V.5.41 Release 00, the C compiler generates them only when compile options -fuse_strings and -fuse_product_sum are selected.

-fuse_strings (-fUS):	Generates code that contains string instructions.
-fuse_product_sum (-fUPS):	Generates code that contains product-sum instructions.

NOTICE:
Caution must be taken to use the string and product-sum instructions. So, be sure to see RENESAS TECHNICAL UPDATE Document No.: TN-16C-A157A/E, M16C/70 Series, M16C80 Series, M32C/80 Series, M32C/90 Series: Usage Precaution for String Instruction, Product-Sum Operation Instruction, before using the -fuse_strings and -fuse_product_sum options.

(2) A change has been made to the specifications so that assemble errors can arise if any one of the following addressing modes is used in the destination of the multiply instruction "MUL.W src,dest" or "MULU. src,dest W" in assembly programs for the M32C/80 and M32C/90 MCU Series.

Addressing modes:

[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]

NOTICE:
Caution must be taken to use MUL.W and MULU.W instructions.
For details, see RENESAS TECHNICAL UPDATE Document No.: TN-16C-A156A/E, M32C/80 Series, M32C/90 Series: Usage Precaution for MUL.W Instruction, MULU.W Instruction.

(3) Compilation rate with optimizing options being used, which becomes slower in V.5.40 Release 00, has been improved as fast as V.5.20.

1.3 The High-performance Embedded Workshop Revised

The High-performance Embedded Workshop included with the package has been revised from V.4.00.03 to V.4.01.01. For details of the descriptions of revision in the updated High-performance Embedded Workshop, see the following items of RENESAS TOOL NEWS:

- The High-performance Embedded Workshop (IDE) Revised to V.4.01.00 (Doc. NO. 060701/tn1)
- The High-performance Embedded Workshop Revised to V.4.01.01 (Doc. NO. 060801/tn1)

1.4 Problems Fixed

The following four known problems have been fixed:

(1) On using the MISRA C rule checker SQMlint
For details, see RENESAS TOOL NEWS Doc. No. RSO-M3T-NC308WA-060401D.

(2) On accessing an array variable in the loop of a for statement
For details, see RENESAS TOOL NEWS Doc. No. RSO-M3T-NC308WA-060616D.

(3) On using the extended function #pragma SPECIAL
For details, see RENESAS TOOL NEWS Doc. No. 060916/tn2 (available on and after October 5).

(4) (Update 2007/7/12)
On address calculations made in an iteration statement
For details, see RENESAS TOOL NEWS Doc. No. 060801/tn2

(5) (Update 2008/8/7)

On using the labs and abs functions

For details, see RENESAS TOOL NEWS Doc. No. RSO-M3T-NC30WA_1-050601

2. How to Update Your Product and Purchase the Revised One

2.1 Free-of-Charge Update

Free-of-charge online update is available. If you are using the product concerned, download the latest program of product from the download site.

2.2 First Ordering

If you place an order for the product, please supply the following items of information to your local Renesas Technology sales office or distributor (for the price of the product, also contact them):

Product Name	The C compiler package for the M32C/90, M32C/80, and M16C/80 MCU series
Version No.	V.5.41
Release No.	Release 00
Host OS	Windows XP, Windows Me, Windows 98, Windows 2000, or Windows NT 4.0