

RENESAS TOOL NEWS on May 16, 2009: 090516/tn1

## The C Compiler Package for the M16C Series and R8C Family of MCUs Revised to V.5.45 Release 00

We have revised the C compiler package--M3T-NC30WA--for the M16C series and R8C family of MCUs from V.5.44 Release 00 to V.5.45 Release 00.

Here, the M16C series is the generic name of the M16C/60, /30, /20, /10, and /Tiny series.

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### 1. Descriptions of Revision

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

#### 1.1 Functions Introduced and Improved

- (1) All the members of the M16C/64A group, M16C/60 series have been added to the support line.
- (2) The optimization that converts common portions of the generated code to functions has been enhanced.
- (3) The number of characters typed in a command line has been extended from 256 to 2048.

#### 1.2 Problems Fixed

The following 11 known problems have been fixed:

- (1) On nesting inline functions

For details see RENESAS TOOL NEWS Document No. RSO-M3T-NC308WA-041116D, published on November 16, 2004, at:

<http://tool-support.renesas.com/eng/toolnews/n041116/tn6.htm>

- (2) On placing functions in sections

For details see RENESAS TOOL NEWS Document No. RSO-M3T-NC308WA-051101D, published on November 1, 2005, at:

<http://tool-support.renesas.com/eng/toolnews/n051101/tn8.htm>

- (3) With Using SQMLint, the MISRA C rule checker

For details see RENESAS TOOL NEWS Document No. 080416/tn2, published on April 16, 2008, at:

<http://tool-support.renesas.com/eng/toolnews/080416/tn2.htm>

- (4) With using a volatile-qualified variable in the for or while statement

For details see RENESAS TOOL NEWS Document No. 080616/tn1, published on June 16, 2008, at:

<http://tool-support.renesas.com/eng/toolnews/080616/tn1.htm>

- (5) With comparing a bit field variable with 1 or 0

For details see RENESAS TOOL NEWS Document No. 080616/tn2, published on June 16, 2008, at:

<http://tool-support.renesas.com/eng/toolnews/080616/tn2.htm>

- (6) With using a variable volatile-qualified with the indirect member operator

For details see RENESAS TOOL NEWS Document No. 080616/tn3, published on June 16, 2008, at:

<http://tool-support.renesas.com/eng/toolnews/080616/tn3.htm>

- (7) With using a volatile-qualified variable in the bit-wise and operation

For details see RENESAS TOOL NEWS Document No. 080616/tn4, published on June 16, 2008, at:

<http://tool-support.renesas.com/eng/toolnews/080616/tn4.htm>

- (8) With using the strcmp function

For details see RENESAS TOOL NEWS Document No. 080616/tn5, published on June 16, 2008, at:

<http://tool-support.renesas.com/eng/toolnews/080616/tn5.htm>

- (9) With division operations between single-precision floating-point numbers

For details see RENESAS TOOL NEWS Document No. 090116/tn3, published on January 16, 2009, at:

<http://tool-support.renesas.com/eng/toolnews/090116/tn3.htm>

- (10) With using the Scan All Dependencies function on High-performance Embedded Workshop

For details see RENESAS TOOL NEWS Document No. 090201/tn4, published on February 1, 2009, at:

<http://tool-support.renesas.com/eng/toolnews/090201/tn4.htm>

- (11) With calling the Run-time function. (This item has been added on Sep. 15, 2010.)

Product and Versions Concerned:

The C Compiler Package for the M16C Series and R8C Family of MCUs V.5.40  
Release 00 -- V.5.44 Release 00

Description:

The Run-time function may not be called.

In that case, the linker issue the following warning:

16-bits signed value is out of range -32768 -- 32767. address='\*\*\*\*\*'

Conditions:

This problem arise if the following conditions are all satisfied:

- (1) The compile option -R8C is used.
- (2) The size of ROM in the target MCU is larger than 32 KB.
- (3) The Run-time function is called.

Example: the Run-time function `_i4mulu` is called for an multiplication performed on 4-byte integer.

(4) The difference between the address of the call in (3) and the address of the symbol for

the Run-time function is out of range -32768 -- 32767.

Workaround:

To avoid this problem, use the -R8CE and -fNROM options as follows:

(1) In the High-performance Embedded Workshop, open the Build menu and select

the Renesas M16C Standard Toolchain command. You see the Renesas M16C Standard

Toolchain dialog box opens.

(2) In this dialog box, click the CPU tab; then select Generates code for R8C/Tiny (R8C/2X) series in the CPU Type list box.

(3) Click the C tab and select Code Modification in the Category list box.

Next, check the [-fNROM] Changes the default attribute of ROM data to near check box.

(4) Press the OK button to close the window.

### **1.3 Compatibility with Windows Vista(R)**

The M3T-NC30WA compiler package V.5.45 Release 00 is compatible with the 32-bit edition of Windows Vista(R). On this OS, you can run the compiler package with your user right.

Note that it still remains incompatible with the 64-bit edition of Windows Vista(R).

### **1.4 High-performance Embedded Workshop Updated**

The High-performance Embedded Workshop included in the compiler package has been updated to V.4.05.01.

For details of the revision to V.4.05.01, see RENESAS TOOL NEWS Document No. 090201/tn3, published on February 1, 2009, at:

<http://tool-support.renesas.com/eng/toolnews/090201/tn3.htm>

### **1.5 AutoUpdate Utility Updated**

The AutoUpdate Utility included in the compiler package has been updated to V.1.05.00.

For details of AutoUpdate Utility V.1.05.00, see RENESAS TOOL NEWS

Document No. 090216/tn1, published on February 16, 2009, at:  
<http://tool-support.renesas.com/eng/toolnews/090216/tn1.htm>

## **1.6 M16C R8C Simulator Debugger Updated**

M16C R8C Simulator Debugger included in the compiler package has been updated to V.1.04.00.

For details of M16C R8C Simulator Debugger V.1.04.00, see RENESAS TOOL NEWS Document No. 090516/tn5, published on May 16, 2009, at:  
<http://tool-support.renesas.com/eng/toolnews/090516/tn5.htm>

## **2. Problems Unresolved**

The following 5 problems remain unresolved in this revision (they are going to be resolved in the next release):

(1) With using compile option -OSFA (-Ostack\_frame\_align)

For details see RENESAS TOOL NEWS Document No. 070701/tn5, published on July 1, 2007, at:

<http://tool-support.renesas.com/eng/toolnews/070701/tn5.htm>

(2) With performing right-shift operations

For details see RENESAS TOOL NEWS Document No. 070716/tn4, published on July 16, 2007, at:

<http://tool-support.renesas.com/eng/toolnews/070716/tn4.htm>

(3) With building a static function having a static variable within it

For details see RENESAS TOOL NEWS Document No. 080716/tn1, published on July 16, 2008, at:

<http://tool-support.renesas.com/eng/toolnews/080716/tn1.htm>

(4) With initializing a member of a structure using an expression containing the sizeof operator

For details see RENESAS TOOL NEWS Document No. 080716/tn2, published on July 16, 2008, at:

<http://tool-support.renesas.com/eng/toolnews/080716/tn2.htm>

(5) With referencing the Map Symbol Information window

For details see RENESAS TOOL NEWS Document No. 080916/tn2, published on September 16, 2008, at:

<http://tool-support.renesas.com/eng/toolnews/080916/tn2.htm>

## **3. How to Update Your Product and Purchase the Revised One**

### **3.1 Updating**

Online update is available free of charge. Update yours in either of the following ways:

- (1) Use AutoUpdate Utility. This service is available on and after May 21.
- (2) Download the update program of the product from:

[http://www.renesas.com/nc30wa\\_download](http://www.renesas.com/nc30wa_download)  
Then execute it. This site will be opened from May 20 on.

### 3.2 First Ordering

When you place an order for the product, supply the following items of information to your local Renesas Technology sales office or distributor:

Product Type:	C compiler package for the M16C series and R8C family
Version No.:	V.5.45
Release No.:	Release 00
Host OS:	Windows Vista, Windows XP, or Windows 2000

For the price of the product and quantity discounts, contact the above sales office or distributor.

### 4. A Note on Using the MISRA C Rule Checker with the Compiler

When you use the MISRA C rule checker (SQMlint) in combination with the compiler, a problem arises if you select the "MISRA2004" and "Group definition file" options.

For details of this problem, see RENESAS TOOL NEWS Document No. 070901/tn2, published on September 1, 2007, at:

<http://tool-support.renesas.com/eng/toolnews/070901/tn2.htm>

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