

C Compiler Package M3T-NC30WA Revised to Its V.5.30 Release 02

We have revised the M3T-NC30WA C-compiler package from its V.5.30 Release 1 to V.5.30 Release 02. This product is used for the M16C/60, M16C/30, M16C/20, M16C/10, M16C/Tiny, and R8C/Tiny series of MCUs. (Those MCUs are hereafter called the M16C MCUs.)

■ On the Evaluation Version

1. Descriptions of Revision

1.1 New Features

- (1) Qualifier "_ext4mptr" introduced: It enables you to access the 4-MB expanded memory space of the M16C/62 series of MCUs using a pointer.
- (2) Assembler directive command ".OFSREG" introduced: It loads a value into the Option function select register of the R8C/Tiny series of MCUs.
- (3) The functions of assembler directive command ".ID" extended: This command specifies an ID code for ID code checking.
- (4) Code-generating option "-R8Cxx" added to the as30 assembler.

This option is used to circumvent the following problems encountered in the R8C/14, R8C/15, R8C/16, and R8C/17 group of MCUs:

- on the clock-synchronized serial bus interface with chip select
- on the I2C bus interface

For details of the problems, see the following hardware manual of the MCU concerned.

- R8C/14, R8C/15 Group Hardware Manual Rev.1.00
- R8C/16, R8C/17 Group Hardware Manual Rev.1.00

- (5) Modified the message that appears at closing the In30 linkage editor when link option "-R8C" (dedicated to the R8C/Tiny series) is used in the In30.

1.2 The High-performance Embedded Workshop revised to its V.4.00.00.

For details of the descriptions of the revision, see RENESAS TOOL NEWS "The High-performance Embedded Workshop, an Integrated Development Environment, Revised to Its V.4.00.00" (Document NO. RSO-HEW-050126D) issued on January 26, 2005.

1.3 The "Simulator Debugger for M16C MCUs" which runs on the High-performance Embedded Workshop V.4.00.00 have been added

1.3.1 Functionality

The simulator debugger is provided with the functionality covering the following product:

- Simulator Debugger M3T-PD30SIM
(for the M16C/60, M16C/30, M16C/20, M16C/10, M16C/Tiny, and R8C/Tiny series of MCUs)

Main features in comparison with the above simulator debugger is as follows:

When the High-performance Embedded Workshop is used conventionally to develop programs for M16C MCUs, it performs builds of programs only, and any of the debuggers has to be used as an external development tool. Now, running this simulator debugger on the High-performance Embedded Workshop V.4.00.00 enables you to debug programs using a simulator; that is, the emulators for the M16C MCUs can perform seamless operations of coding, compiling, simulating, and debugging under the single development environment of the V.4.00.00. So you need not invoke an editor, a compiler, a simulator debugger, and an emulator debugger independently.

1.3.2 Host System Requirements

Computer: IBM PC/AT compatible

OS: Windows XP, Windows 2000, Windows Me. or Windows 98SE

1.3.3 Main Points of Difference between this Simulator Debugger and the M3T-PD30SIM Simulator Debugger

- (1) This simulator debugger does not support the OS debugging function. If you need this function, use the M3T-PD30SIM simulator debugger. We plan to support the OS debugging function in our next release of the package.

- (2) If you run application programs created using the PSDK COM kit on this simulator debugger, consult our technical support contact.
csc@renesas.com
- (3) This simulator debugger does not run in combination with ZIPC CASE tool, manufactured by CATS Co., Ltd. If you want to utilize ZIPC's debugging functions, use the M3T-PD30SIM simulator debugger.
- (4) On this simulator debugger, the commands and windows created by the CB (Custom Builder) do not operate.

1.4 Problems Fixed

The following known problems have been fixed:

- (1) On including the asmmacro.h file
For details, see RENESAS TOOL NEWS issued on April 1, 2004 "A Note on Using C Compiler Package M3T-NC30WA V.5.30 Release 1".
- (2) On a multiplication between a variable of type unsigned/signed long and an immediate value
For details, see RENESAS TOOL NEWS issued on April 16, 2004 "A Note on Using C-Compiler Package M3T-NC30WA".
- (3) On linking the _init routine
For details, see RENESAS TOOL NEWS issued on May 1, 2004 "A Note on Using C-Compiler Package M3T-NC30WA".
- (4) On debug information
For details, see RENESAS TOOL NEWS issued on May 16, 2004 "A Note on Using C-Compiler Packages M3T-NC308WA and M3T-NC30WA --On Debug Information--".
- (5) On if statements including bitwise operations
For details, see RENESAS TOOL NEWS issued on May 16, 2004 "A Note on Using C-Compiler Packages M3T-NC308WA and M3T-NC30WA --On Debug Information--".
- (6) On selecting link option "-JOPT"
For details, see RENESAS TOOL NEWS issued on July 1, 2004 "A Note on Using C Compiler Packages M3T-NC308WA V.5.20 Release 1 and M3T-NC30WA V.5.30 Release 1".
- (7) On selecting link option "-R8C"
For details, see RENESAS TOOL NEWS issued on July 1, 2004 "A Note on Using C Compiler Package M3T-NC30WA V.5.30 Release 1 --On Selecting Link Option

"-R8C"--".

- (8) On setting the Reset vector in the start-up program
For details, see RENESAS TOOL NEWS issued on July 1, 2004 "A Note on Using C Compiler Package M3T-NC30WA V.5.30 Release 1 --On Setting the Reset Vector in the Start-Up Program--".
- (9) On calling the same function in both cases where the controlling expression of an if statement is TRUE and FALSE
For details, see RENESAS TOOL NEWS issued on July 16, 2004 "A Note on Using C Compiler Packages M3T-NC308WA and M3T-NC30WA".
- (10) On typing three or more successive question marks
For details, see RENESAS TOOL NEWS issued on August 1, 2004 "A Note on Using C-Compiler Packages M3T-NC308WA and M3T-NC30WA --On Typing Three or More Successive Question Marks--".
- (11) On using options for the SQMlint (a MISRA C rule-checker)
For details, see RENESAS TOOL NEWS issued on August 1, 2004 "A Note on Using C-Compiler Packages M3T-NC308WA and M3T-NC30WA --On Using Options for the SQMlint--".
- (12) On using an assembler option "-P"
For details, see RENESAS TOOL NEWS issued on August 1, 2004 "A Note on Using C-Compiler Package M3T-NC30WA --On Using an Assembler Option "-P"--".
- (13) On reading members of bit fields in an array
For details, see RENESAS TOOL NEWS issued on September 1, 2004 "A Note on Using C Compiler Packages M3T-NC308WA and M3T-NC30WA --On Reading Members of Bit Fields in an Array--".
- (14) On inverting the sign of a signed variable
For details, see RENESAS TOOL NEWS issued on September 1, 2004 "A Note on Using C Compiler Package M3T-NC30WA --On Inverting the Sign of a Signed Variable--".
- (15) On using the near or far qualifier
For details, see RENESAS TOOL NEWS issued on September 16, 2004 "A Note on Using C Compiler Packages M3T-NC308WA and M3T-NC30WA".
- (16) On an inline function that returns a value of type `_Bool`
For details, see RENESAS TOOL NEWS issued on October 1, 2004 "A Note on Using C-Compiler Packages M3T-NC308WA and M3T-NC30WA".
- (17) On using inline functions
For details, see RENESAS TOOL NEWS issued on December 1, 2004 "A Note on Using C-Compiler Packages M3T-NC308WA and M3T-NC30WA".
- (18) On evaluation of Elements of an Array in the controlling expression of an if

statement

For details, see RENESAS TOOL NEWS issued on December 16, 2004 "A Note on Using the M3T-NC308WA and M3T-NC30WA C-Compiler Packages --On Evaluation of Elements of an Array in the Controlling Expression of an If Statement--".

- (19) On evaluation of members of a structure in the controlling expression of an if statement

For details, see RENESAS TOOL NEWS issued on December 16, 2004 "A Note on Using the M3T-NC308WA and M3T-NC30WA C-Compiler Packages --On Evaluation of Members of a Structure in the Controlling Expression of an If Statement--".

- (20) On using the -Ofoward_function_to_inline (-OFFTI) compile option

For details, see RENESAS TOOL NEWS issued on December 16, 2004 "A Note on Using the M3T-NC308WA and M3T-NC30WA C-Compiler Packages --On Using the -OFFTI Compile Option--".

1.5 On the Evaluation-version and R8C/Tiny-only Free-version of the Product

We are replacing the C-compiler packages included with the following products with the evaluation version of the M3T-NC30WA V.5.30 Release 02 successively:

- M16C starter kit (the entry version of the M3T-NC30WA included)
- M16C compact emulator (the entry version of the M3T-NC30WA included)
- E8 emulator (the M3T-NC8C, a freeware product specific to the R8C/Tiny series, included)
- R8C starter kit (the M3T-NC8C, a freeware product specific to the R8C/Tiny series, included)

Depending on the time of delivery, the product you purchased may include the entry version of the M3T-NC30WA or the M3T-NC8C. If so, please download the evaluation version of the M3T-NC30WA V.5.30 Release 02 from the **Software Download Site**.

Difference between the evaluation and the commercial version of the M3T-NC30WA V.5.30 Release 02

- The evaluation version of the M3T-NC30WA V.5.30 Release 02 is provided with the same functionality as the commercial version except that link size will be restricted to 64 Kbytes on and after the 61th day from when you begin using the compiler.
- However, because the R8C/Tiny Series program size is 64K bytes, it is not affected by the above limitation.

2. How to Revise the Current Product and Order the Revised One

2.1 Online Revision (without Charge)

Download the revised product from **HERE**.

2.2 First Ordering

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

Product Type : M3T-NC30WA

Version No. : V.5.30

Release No. : Release 02

Host OS : Windows XP, Windows Me, Windows 98,
Windows 2000,
or Windows NT 4.0

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