

The C Compiler Package M3T-NC30WA Revised to V.5.40 Release 00

We have revised the C compiler package M3T-NC30WA from V.5.30 Release 02 to V.5.40 Release 00. This compiler package is used for the M16C/60, M16C/30, M16C/20, M16C/10, M16C/Tiny, and R8C/Tiny series of MCUs.

1. Descriptions of Revision

1.1 Functions Introduced and Improved

- (1) Code-optimizing capabilities enhanced. Examples of optimization are as follows:
 - The controlling expression not generated of the "for" construct that executes its iteration statement only once.
 - In the case where any statement or expression is repeatedly used in a program, it is made into a subroutine, to which calls are made instead of the statement or expression.
- (2) Optimizing options -OR_MAX and -OS_MAX introduced in the compiler. Their functions are as follows:

-OR_MAX

Performs optimization that gives high priority to coding efficiency (equivalent to using all of these options, -O5, -OR, -OGJ, -OSA, -fCE, -fD32, -fNA, -fSA, -fUD, and -fNC).

-OS_MAX

Performs optimization that gives high priority to the speed of execution of user programs (equivalent to using all of these options, -O4, -OS, -OGJ, -OSA, -OSTI, -OLU=10, -fCE, -fD32, -fSA, -fUD, and -fNC).

- (3) The start-up program in the C language introduced in addition to the assembly language.
- (4) The en-size blank space usable for names of directories (folders) under

which tool products are installed; and of the files and paths that the compiler, assembler, linker and others handle.

- (5) The type of the type definition `size_t` changed from unsigned int to unsigned long, and that of `ptrdiff_t` from signed int to signed long.
In addition, compile options `-fsizet_16` and `-fptrdiff_16` introduced to maintain compatibility with the previous versions. Option `-fsizet_16` treats the type of `size_t` as unsigned int and `-fptrdiff_16` does that of `ptrdiff_t` as signed int.

1.2 The High-performance Embedded Workshop Revised

The High-performance Embedded Workshop that is bundled with the NC30WA has been revised from V.4.00.00 to V.4.00.03.

For detailed information on the revision, see the following items of RENESAS TOOL NEWS:

- (1) "The High-performance Embedded Workshop, an Integrated Development Environment, Revised to V.4.00.01"
- (2) "The High-performance Embedded Workshop, an Integrated Development Environment, Revised to V.4.00.02"
- (3) "The High-performance Embedded Workshop (an Integrated Development Environment) Revised to V.4.00.03"

1.3 The AutoUpdate, an extended function of the High-performance Embedded Workshop V.4, has been revised from V.1.00.01 to V.1.00.02.

For details, see RENESAS TOOL NEWS RSO-AutoUpdate-051226D.

1.4 The OS debugging function had been newly added to the "Simulator Debugger for M16C MCUs" which runs on the "High-performance Embedded Workshop V.4.00.03."

1.5 Problems Fixed

The following known problems have been fixed:

- (1) On successive statements each of which contains an operation of multiplication, addition, or subtraction between a variable of type float and a floating constant
For details, see RENESAS TOOL NEWS.
- (2) On using assembler directive commands `".ID"`, `".PROTECT"` and `".OFSREG"`
For details, see RENESAS TOOL NEWS.

- (3) On passing the address of an object qualified as const as an argument to a function
For details, see RENESAS TOOL NEWS.
- (4) On calling string handling functions in the standard library
For details, see RENESAS TOOL NEWS.
- (5) On using the #pragma ADDRESS directive
For details, see RENESAS TOOL NEWS.
- (6) On an arithmetic operation between two unsigned-type variables in a controlling expression
For details, see RENESAS TOOL NEWS.
- (7) On passing a pointer or address to a function as an argument
For details, see RENESAS TOOL NEWS.
- (8) On using the labs and the abs functions
For details, see RENESAS TOOL NEWS.
- (9) On using preprocessing directive #pragma BITADDRESS
For details, see RENESAS TOOL NEWS.
- (10) On assigning a near-qualified variable of type long long to a far-qualified variable of the same type
For details, see RENESAS TOOL NEWS.
- (11) On defining more than one void function
For details, see RENESAS TOOL NEWS.
- (12) On using optimizing option "-OR"
For details, see RENESAS TOOL NEWS.
- (13) On machine-language files created by the load module converter (lmc308 or lmc30) with the "-F" option selected
For details, see RENESAS TOOL NEWS.
- (14) On incorrect description of do statements
For details, see RENESAS TOOL NEWS.
- (15) On using the linker's option "-JOPT"
For details, see RENESAS TOOL NEWS.
- (16) On viewing command lines at builds (We informed you of this problem as the one arising from the High-performance Embedded Workshop in May 2005. However it has been found that the problem is caused by the M3T-NC308WA and M3T-NC30WA.)
For details, see RENESAS TOOL NEWS.

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

2.1 Free-of-Charge Update

Free-of-charge update is available. If you are using the product concerned, download the installer of the revised product from Download site and execute it .

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 Type	M3T-NC30WA
Version No.	V.5.40
Release No.	Release 00
Host OS	Windows XP, Windows Me, Windows 98, Windows 2000, or Windows NT 4.0

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