

## Cross-Tool Kit M3T-CC32R Upgraded to V.4.20 Release 1

We have upgraded the M3T-CC32R Cross-Tool Kit for the M32R family MCUs from V.4.10 Release 1 to V.4.20 Release 1.

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### 1. Descriptions of Upgrade

#### 1.1 Functions Introduced and Specifications Improved

- (1) Single-precision mathematical function library introduced  
Introduced a single-precision mathematical function library (header file mathf.h) for processing mathematical functions in single precision. This library gives you better performances in program execution than the C-language standard library (header file math.h). At the same time, a function that can handle FPU instructions of the M32R-FPU-cored M3218x group has been provided. When used together with the single-precision mathematical function library, it makes the processing of mathematical functions much faster.
- (2) High-performance Embedded Workshop bundled (PC version only)  
The High-performance Embedded Workshop (an integrated development environment) that runs on the M3T-CC32R has been bundled, which allows you to create and manage projects and make builds.  
The TM, another integrated development environment, is also bundled as before.
- (3) Debug information available full-time and the strip32R command added  
In the cc32R C compiler, as32R assembler, and lnk23R linker, debug information has become available full-time, which allows you to dispense with the -g option. On the other hand, the size of object and load module files grows larger since debug information resides in them all the time. In order to remove debug information from these files, the strip32R command has been supplied. Use this command if necessary.
- (4) Option -CS enhanced  
Selecting the -CS option only can create an assembly source file containing C-

source lines at compilation. Because this eliminates the need for the C source merge utility "cmerge", we discontinue including it in the product package.

- (5) Static variables placed in memory in order of declarations  
Static variables, which have ever been placed in indefinite order, can be placed in memory in order of declarations.
- (6) Increased number of items in map files  
The name of the source file and those of the debug symbols (the function name and the names of global variables of type int and pointer only) have been added to the output items of map files created by the map32R map generator.
- (7) Error handlings altered in the Ink32R linker
  - \* When a section is incorrectly specified, the linker does not take it as an error but displays a warning message without discontinuing linking.
  - \* Detailed error information is displayed when relocation size overflows.
  - \* Only the first 20 errors and warning messages are displayed (this number is alterable).

## 1.2 Problems Fixed

The following seven known problems have been fixed:

- (1) On compiling a program in which a structure whose first member is 4 bytes long is copied  
For details, see RENESAS TOOL NEWS "A Note on Using Cross-Tool Kit M3T-CC32R" issued on August 16, 2003.
- (2) On compiling a switch statement containing 415 or more case labels  
For details, see RENESAS TOOL NEWS "A Note on Using Cross-Tool Kit M3T-CC32R" issued on July 16, 2003.
- (3) On converting the address of a variable to a pointer and performing an indirect operation on it  
For details, see RENESAS TOOL NEWS "A Note on Using Cross-Tool Kit M3T-CC32R" issued on July 1, 2003.
- (4) On converting a value by a printf-like standard library function  
For details, see RENESAS TOOL NEWS "Notes on Using Cross-Tool Kit M3T-CC32R" issued on June 1, 2003.
- (5) On displaying include files written in assembly language using the debugger
- (6) On optimizing a division expression where the divisor becomes zero  
For details of the above items, see RENESAS TOOL NEWS "Notes on Using Cross-Tool Kit M3T-CC32R" issued on March 16, 2003.
- (7) On accessing an area declared to be volatile more than once

For details, see MAEC TOOL NEWS "A Note on Cross-Tool Kit M3T-CC32R V4.00 Release 1" issued on December 1, 2002.

## 2. How to Upgrade the Current Product and Order the Upgraded One

### 2.1 Online Upgrade (without Charge)

Upgrading procedure varies according to the version of your product.

- (1) For the customer who is using M3T-CC32R V.1.00 Release 4 or later (with the license ID possessed)

Please download the upgraded product from **HERE**.

- (2) For the customer who is using M3T-CC32R V.1.00 Release 1, 2, or 3  
Fill in the appended "Free-of-Charge M3T-CC32R License ID Application Form" and send it by e-mail or FAX to your local Renesas Technology sales office or distributor.

We will inform you of your license ID by return. Then, download the upgraded product by using it from the Web site shown in (1) above.

#### NOTICES:

1. Only the customer who has already made the registration can apply for their license ID free of charge.
2. Your newly obtained license ID is not a temporary one for this online upgrade. Keep it carefully for later use.
3. Because the publication of the IBE version has been discontinued since V.1.00 Release 4, please upgrade your product to the W95E version, if necessary.

### 2.2 First ordering or upgrading by CD-ROM (with Additional Charge)

Upgrade service in CD-ROM is also available. When you place an order please furnish the following information to your local Renesas Technology sales office or distributor:

[First Ordering]

Product Type : M3T-CC32R

Version No. : V.4.20

Release No. : Release 1

Host OS : Windows XP, Windows Me, Windows 98, Windows 95, Windows 2000, or Windows NT 4.0

[Upgrading by CD-ROM]

Please let us know your product's license ID or serial number besides the above information.

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