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## A Note on Using C-Compiler Package M3T-NC30WA V.5.30 Release 1

Please take note of the following problem in using the M3T-NC30WA V.5.30 Release 1 C-compiler package for the M16C/60, M16C/30, M16C/Tiny, M16C/20, M16C/10, and R8C/Tiny series MCUs:

- On linking the `_init` routine
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### 1. Description

When the M3T-NC30WA is upgraded from V.5.20 Release 1 to V.5.30 Release 1, the `_init` routine is linked in some cases. On the other hand, the routine already linked in V.5.20 Release 1 may be lost in the upgrade.

This reason is that the assemble conditions of the two versions for calling the `_init` routine contained in the `nrcr0.a30` startup file of the versions are different from each other as follows:

```
if __STANDARD_IO__ != 1 in V.5.20 Release 1
if __STANDARD_IO__ == 1 in V.5.30 Release 1
```

### 2. Conditions

This problem occurs if any of the following conditions is satisfied as a compiling environment:

- (1) The M3T-NC30WA V.5.30 Release 1 has inherited a project created by the integrated development environment, High-performance Embedded Workshop or TM, or make environment in V.5.20 Release 1.
- (2) Though a new project has been created by the High-performance Embedded Workshop in V.5.30 Release 1, the startup file of V.5.20 Release 1 is used.
- (3) When batch files are used to generate the system, the startup file of V.5.30 Release 1 is assembled using batch files containing assemble options for V.5.20 Release 1.

### 3. Solutions of the Problem

First, change the expression "if `__STANDARD_IO__ != 1`" to the one "if `__STANDARD_IO__ == 1`."

Then, make changes to the settings of your compiling environment as follows:

#### (1) In the TM

(a) When you don't need to link the `_init` routine:

- i) Select an option macro `AFLAGS` in the Option Browser dialog box, and click the Edit button to open the Options dialog box.
- ii) If the parameter "`__STANDARD_IO__=1`" of the `-D` assembler option appears in the Options dialog box, select `-D` and click the Parameters button.
- iii) You will see the Parameter Strings text box; then delete the `__STANDARD_IO__=1` parameter in this text box.

(b) When you need to link the `_init` routine:

- i) Select an option macro `AFLAGS` in the Option Browser dialog box, and click the Edit button to open the Options dialog box.
- ii) In the Options dialog box, select the `-D` assembler option and click the Parameters button.
- iii) You will see the Parameter Strings text box; then type the `__STANDARD_IO__=1` parameter in this text box.

#### (2) In the High-performance Embedded Workshop

(a) When you don't need to link the `_init` routine:

- i) Click the Assembly tab on the Renesas M16C Standard Toolchain dialog box; then select "Source" and "Defines" in the Category and the Show entries for drop-down list boxes respectively.
- ii) If the check box in front of the "`[-D__STANDARD_IO__=1]` Enable initialization for standard &I/O library." string has been checked, uncheck it.

(b) When you need to link the `_init` routine:

- i) Click the Assembly tab on the Renesas M16C Standard Toolchain dialog box; then select "Source" and "Defines" in the Category and Show entries for drop-down list boxes respectively.
- ii) Check the check box in front of the "`[-D__STANDARD_IO__=1]` Enable initialization for standard &I/O library." string.

- (3) With the TM or High-performance Embedded Workshop not used
- (a) When you don't need to link the `_init` routine, delete the switch of `-D__STANDARD_IO__=1` added to the assembler option if the switch is used.
  - (b) When you need to link the `_init` routine, add the switch of `-D__STANDARD_IO__=1` to the assembler option.

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