RENESAS Tool News

RENESAS TOOL NEWS on June 1, 2005: RSO-M3T-NC30WA_1-050601D

A Note on Using the C Compiler Packages M3T-NC308WA and M3T-NC30WA

--On Using the labs and abs Functions--

Please take note of the following problem in using for the M32C series (M3T-NC308WA); and for the M16C series (M3T-NC30WA) of MCUs:

- On using the labs and abs functions

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1. **Versions Concerned**
   M3T-NC30WA V.1.00 Release 1 ～ V.5.30 Release 02
   M3T-NC308WA V.1.00 Release 1 ～ V.5.40 Release 00

2. **Description**
   Calculating an absolute value using the labs or abs function may result in an incorrect value being obtained.

   2.1 Conditions
   This problem occurs if the following conditions are all satisfied:
   (1) The standard header file stdlib.h is included.
   (2) The labs or abs function takes an expression as an argument.

   2.2 Example

```
------------------------------------------------------------------
#include <stdlib.h>          /* Condition (1) */

unsigned int b=10;
unsigned int a=8;

unsigned int result;
void func(void)
```

```
{
      result=abs(a - b);      /* Condition (2) */
}
------------------------------------------------------------------
```

3. **Workaround**

   After including stdlib.h, disable the labs macro using preprocessing directive #undef labs or disable the abs macro using preprocessing directive #undef.

   Example:

```
------------------------------------------------------------------
#include <stdlib.h>
#undef abs                  /* Disable abs macro */
unsigned int b=10;
unsigned int a=8;

unsigned int result;
void func(void)
{
      result=abs( a-b );
}
------------------------------------------------------------------
```

4. **Schedule of Fixing the Problem**

   We plan to fix this problem in the next release of the product.
