RENESAS Tool News

Note on Using CubeSuite+ CX Compiler

When using CubeSuite+ CX Compiler, take note of the following problems:

- With the consecutive bit manipulation processing (No. 13)
- With the comparison involving type conversion and typedef (No. 14)

NOTE: The number at the end of the above items is for indexing the problems in this compiler.

1. Problem with the Consecutive Bit Manipulation Processing (No. 13)
1.1 Versions Concerned
CubeSuite+ CX Compiler V1.20 through V1.30

1.2 Description
The processing for a member of a structure or union variable or an element of an integer array is accessed to an incorrect member or an incorrect element.

1.3 Conditions
This problem arises if the following conditions are all met:
(1) 1-bit manipulation processing is done four to eight consecutive times.
(2) The location of at least one target bit of the consecutive bit manipulations is eight or more bits away from the head of the variable.
(3) The values obtained by "target bit location % 8" for the target bits of the consecutive bit manipulations become sequential numbers. This condition is also met when the values become sequential after they are sorted.
(4) The consecutive bit manipulations are all set1 instructions or all clr1 instructions.

1.4 Workarounds
To avoid this problem, use either of the following methods described below:
(1) Insert "__asm("¥n");" so that bit manipulations are not done

four or more consecutive times.
(2) Use "volatile" for the variables that meet the conditions.

1.5 Schedule for Fixing the Problem
This problem will be fixed in CubeSuite+ CX Compiler V1.31.

2. Problem with the Comparison Involving Type Conversion and Typedef (No. 14)

2.1 Versions Concerned
CubeSuite+ CX Compiler V1.00 through V1.30

2.2 Description
When using an operand of a relational operator (>, >=, <, <=, =, !=), type conversion is not done and the operation result is incorrect in some cases.

2.3 Conditions
This problem arises if the following conditions are all met:
(1) The type of the left-hand operand has been converted to a 4-byte integer type and the type before conversion is an integer type declared using typedef.
(2) The right-hand operand meets either condition (a) or (b) below.
   (a) The operand has been converted to the same 4-byte integer type as that described in condition (1), and the type before conversion is the same integer type declared using typedef as that described in condition (1).
   (b) The operand is an integer constant that is not greater than the maximum value of the integer type declared using the typedef described in condition (1).

2.4 Workarounds
To avoid this problem, use either of the following methods described below:
(1) Assign the values to temporary variables for the left-hand operand before comparison.
(2) Remove "typedef" from the variables of the left-hand or the right-hand operand.

2.5 Schedule for Fixing the Problem
This problem will be fixed in CubeSuite+ CX Compiler V1.31.