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RENESAS TECHNICAL UPD

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Product Category	User Development Environment		Document No.	TN-CSX-A082A/E	Rev.	1.0
Title	H8S, H8/300 Series C/C++ Compiler V.6 bug information (4)		Information Category	Technical Notification		
Applicable Product	R0C40008XSW06R R0C40008XSS06R R0C40008XSH06R	Lot No.	Reference Document	H8S, H8/300 Series C/C++ Compiler Assembler Optimizing Linkage Editor User's Manual (REJ10B0058-0100H Rev.1.00)		
		V.6.00.02				

Problem with the H8SX, H8S, H8/300 series C/C++ compiler V.6.00.02 is listed below.

Please be careful to use this version of the compiler.

This bug is fixed on V6.00.03.

1. Set and Refer the bit field member(H8C-0002)

1.1 Description

When a bit field member is set or referred via address, the object module may be incorrect.

1.2 Conditions

This problem may occur if the following five conditions are satisfied:

   (1)H8SXA or H8SXX is selected as CPU option.

   (2)A structure has a bit field member which bit size is lower than 8-bit.

   (3)The structure variable(above (2)) is not allocated on a register.

   (4)An expression is set/reference to it(above (3) variable)

   (5)An offset from top of the structure(above (4)'s bit field member) is following:

      Address Size:20 0x0-0x7fff or 0x000f8000- 0x000fffff

      Address Size:24 0x0-0x7fff or 0x00ff8000- 0x00ffffff

      Address Size:28 0x0-0x7fff or 0x0fff8000- 0x0fffffff

      Address Size:32 0x0-0x7fff or 0xffff8000- 0xffffffff

1.3 Workaround

This problem can be circumvented in either of the following ways:

Substitute the address of structure variable which has bit field members to pointer type variable and set/refer the bit field member by the pointer variable.

Original:


```
    typedef struct {

        unsigned char a:2;                    // Condition (2)(3)(5)
```

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```
        unsigned char b:2;

        unsigned char c:4;

    }st;


    extern st str;                      // Condition(3)


    void func(unsigned char);


    char ff(char var01)

    {

        func(str.b);                    // Condition(4)

    }
```

Modified:

```
    typedef struct {

        unsigned char a:2;

        unsigned char b:2;

        unsigned char c:4;

    }st;


    extern st str;

    volatile st *tmp;


    void func(unsigned char);


    char ff(char var01)

    {

        tmp = &str;

        // Substitute the address of structure variable to pointer variable

        func(tmp->b);

        // Refer the bit field member via pointer

    }
```