To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

Renesas Electronics website: http://www.renesas.com

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Renesas Electronics Corporation

Issued by: Renesas Electronics Corporation (http://www.renesas.com)
Send any inquiries to http://www.renesas.com/inquiry.
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:

```c
typedef struct {
    unsigned char a:2;
} // Condition (2)(3)(5)
```
typedef struct {
  unsigned char a:2;
  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
}