

Note on Using the C Compiler Package for RH850 Family

When using the CC-RH C Compiler package for the RH850 Family, take note of the problem described in this note regarding the following point.

- Designating a member of a packed structure or union in an initializing declaration (No.8)
Note: The number which follows the description of the precautionary note is an identifying number for the precaution.

1. Applicable Products

CC-RH V1.00.00 to V1.03.00

2. Description

When packing of structures and unions is designated, reference to a member of a structure or union in the initializer of variable declaration may lead to either of the following problems.

- (1) Code which leads to misaligned access is generated.
- (2) Errors or warnings with the following codes may occur or be issued.
 - E0550226
 - E0562332
 - W0550010
 - W0550019

3. Conditions

This problem may arise if both of the following conditions are met.

- (1) The `-Xpack` option or `#pragma pack` directive is designated.
- (2) The initializer of variable declaration includes reference to a member of a structure or union in an area of memory that has the static attribute and the designation of condition (1) applies to the structure or union.

Example:

```
-----  
#pragma pack (1)           // condition (1)
```

```

char c1;
struct _st1 {
    short s1;
} st1;
void func(void)
{
    volatile short tmp = st1.s1; // condition (2)
}

```

Example of output code:

```

.section .text, text
_func:
.stack _func = 4

add 0xFFFFFFF0, r3
mov #_st1, r2      ; An odd address replaces the value of r2.
ld.h 0x00000000[r2], r2 ; Code includes access to a misaligned
                    ; address.
st.h r2, 0x00000002[r3]
dispose 0x00000004, 0x00000000, [r31]
.section .bss, bss
_c1:
.ds (1)
_st1:
.ds (2)

```

4. Workaround

Separate the declaration and initializer of the member variable.

Example of the workaround:

```

.....
void func(void)
{
    volatile short tmp; // variable declaration
    tmp = st1.s1;      // initializer
}

```

5. Schedule for Fixing the Problem

This problem will be fixed in the next version.

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