RENESAS Tool News

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Notes on Using Real-Time OS HI7200/MP

Please take note of the following problems in using real-time OS HI7200/MP, which is used for the SH2A-DUAL-cored MCUs:

- With using the TA_COP1 attribute in tasks
- With specifying address ranges by using the cache-supporting library

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1. Problem with Using the TA_COP1 Attribute in Tasks

1.1 Description

When you use the TA_COP1 attribute in a task, values in the FPU registers may be rewritten to other values.

1.2 Conditions

This problem may arise if the conditions (1), (2), and (3) or the conditions (1), (2), and (4) below are satisfied.

(1) The TA_COP1 attribute is used in a task.
(2) The task in (1) ends by calling the ext_tsk service call or returning from the task's starting function.
(3) The activation request count for requesting the task in (1) is greater than 1.
(4) The interrupt handler or the time-event handler invokes the task in (1) by issuing the iact_tsk or ista_tsk service call.

1.3 Solutions

This problem has been solved in HI7200/MP V.1.00 Release 04, which was released on October 1, 2009.
For how to update your product to the latest one, see RENESAS TOOL NEWS Document No. 091001/tn7, published on October 1, 2009.
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2. Problem with Specifying Address Ranges

by Using the Cache-Supporting Library

In this problem, two symptoms appear under the conditions corresponding to them, which are described below.

2.1 Symptom 1

2.1.1 Description

If the address range to be handled is specified by library functions sh2adual_clr_cac() and sh2adual_fls_cac(), part of the specified range may not be handled, and/or an unspecified range may be handled.

2.1.2 Conditions

(1) If the size of the specified range is 4 KB or larger, and the value of argument pStart rounded down to a multiple of 16 is not equal to a multiple of 0x800, the address range falling between the following starting and ending addresses may not be handled though it would be:
- Starting address: Value of pStart rounded down to a multiple of 16
- Ending address: (Value of pStart rounded up to a multiple of 0x800) - 1

(2) If the size of the specified range is 4 KB or larger, and the value of argument pEnd plus 1 rounded up to a multiple of 16 is not equal to a multiple of 0x800, the address range falling between the following starting and ending addresses may be handled though it would not be:
- Starting address: Value of pEnd plus 1 rounded up to a multiple of 16
- Ending address: (Value of pEnd plus 1 rounded up to a multiple of 0x800) - 1

In the conditions above, the size of the specified range is calculated as follows:

(the value of pEnd plus 1 rounded up to a multiple of 16)
- (the value of pStart rounded down to a multiple of 16)

2.2 Symptom 2

2.2.1 Description

If the address range to be handled is specified by library function sh2adual_fls_cac(), the specified range may be cleared from operand cache.

2.2.2 Condition

This symptom appears if the size of the specified range is smaller than 4 KB. Here, the size of the specified range is calculated as follows:

(the value of pEnd plus 1 rounded up to a multiple of 16)
- (the value of pStart rounded down to a multiple of 16)

2.3 Solutions

This problem has been solved in HI7200/MP V.1.00 Release 04, which was released on October 1, 2009.
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