RENESAS Tool News

Notes on Using the Real-Time OSes --HI7750/4 and HI7700/4-- for the SuperH MCU Family

Please take note of the following problems in using the real-time OSes-- HI7750/4 and HI7700/4--for the SuperH MCU family:

- With defining the interrupt handler for the exception codes greater than 0x1000
- With not defining the interrupt handler for the exception codes 0x800 and 0x820

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1. Problem with Defining the Interrupt Handler for the Exception Codes Greater Than 0x1000

1.1 Products and Versions Concerned

(1) HI7750/4 (for the SH-4 and SH-4A CPU-cored MCUs)
V.2.01 Release 00 through V.2.02 Release 04
(2) HI7700/4 (for the SH-3, SH3-DSP, and SH4AL-DSP CPU-cored MCUs)
V.2.01 Release 00 through V.2.03 Release 02

1.2 Description

When the interrupt handler for the exception codes greater than 0x1000 is defined by selecting the Link with Kernel Library check box, which appears in the Definition of Interrupt/CPU Exception Handler dialog box, the program counter (PC) indicates an incorrect address if the interrupt caused by an exception code greater than 0x1000 is generated.

To open the Definition of Interrupt/CPU Exception Handler dialog box, follow these steps:

(1) Select Interrupt/CPU Exception Handler on the tree structure in the Navigation window of the GUI configurator to open the Information Input window.

(2) In the List of Interrupt/CPU Exception Handlers list, right-click
    any address to open a pop-up menu.
(3) Select Define.

1.3 Workaround

When defining the interrupt handler for the exception codes greater
than 0x1000 by using the GUI configurator, do not select the Link
with Kernel Library check box.

2. Problem with Not Defining the Interrupt Handler
for the Exception Codes 0x800 and 0x820

2.1 Product and Versions Concerned

  - HI7700/4 (for the SH-3, SH3-DSP, and SH4AL-DSP CPU-cored MCUs)
     All the versions up to V.2.03 Release 02

2.2 Description

When an interrupt is generated by exception code 0x800 or 0x820
and no interrupt handler is defined for these exception codes,
the system-down routine is started.
In this case, the following three of the arguments passed to the
system-down routine have incorrect values:
  - ER ercd (R5)
  - VW inf1 (R6)
  - VW inf2 (R7)

2.3 Workaround

Search for "hi_int800" through the "kernel_def_vct.def" file, which
is under the "hisys" directory, and then modify the 22 lines
beginning at "#ifdef hi_int800" as follows:

```
    ----------------------------------------------------------
    #ifdef hi_int800
      (FP)hi_int800,
      #ifdef hi_int800sr
        (UW)hi_int800sr|hi_sr_dsp,
      #else
        (UW)DEFAULT_SR|hi_sr_dsp,
      #endif
    #else
      (FP)_kernel_undefint,  /* Instead of _kernel_undefexp */
      (UW)INTDWN_SR|hi_sr_dsp,
    #endif
```

```
    #ifdef hi_int820
      (FP)hi_int820,
      #ifdef hi_int820sr
        (UW)hi_int820sr|hi_sr_dsp,
      #else
        (UW)DEFAULT_SR|hi_sr_dsp,
      #endif
    #else
      (FP)_kernel_undefint,  /* Instead of _kernel_undefexp */
      (UW)INTDWN_SR|hi_sr_dsp,
    #endif
    ----------------------------------------------------------
```

3. Schedule of Fixing the Problem

The above two problems have already been fixed in the following versions:
  - HI7750/4 V.2.02 Release 05
  - HI7700/4 V.2.03 Release 03

They are being released on November 6 on the Web sites at:
  - HI7700/4: http://www.renesas.com/hi7700_4_download
  - HI7750/4: http://www.renesas.com/hi7750_4_download

Online updates to these are available free of charge. For details of
how to update them, see RENESAS TOOL NEWS Document No. 081101/tn3,
"The Real-Time OSes--HI7750/4 and HI7700/4--for the SuperH MCU Family
Revised," which will be published on November 6 at:
  http://tool-support.renesas.com/eng/toolnews/081101/tn3.htm

NOTICE:
  Updating from V.1 to V.2 is unavailable. If you are using a V.1
  product, please place the order for the latest version you want.