

RENESAS TOOL NEWS on August 1, 2005: RSO-HI7700/4-050801D

The Real-Time OS HI7700/4 Revised to V.2.01 Release 00 (with Additional Charge)

We have revised the real-time OS HI7700/4 from V.1.03 Release 02 to V.2.01 Release 00. (This is used for the SuperH RISC engine family, supporting the MCUs using any of the SH-3, SH3-DSP and SH4AL-DSP cores.)

1. Descriptions of Revision

1.1 Functions Introduced and Improved

- (1) The SH4AL-DSP with extended functions supported
The cache-support library--shx2_cache_???.lib--for the SH4AL-DSP with extended functions is available.
- (2) Functions of assigning addresses to task stacks, fixed-length memory pools, and variable-length memory pools supported
In the previous versions, the user cannot assign addresses to a stack at creating a task and to a fixed-length or variable-length memory pool when it is created but only the kernel can assign addresses within the pre-defined area to them.
In the revised version, the user can assign those within the user- reserved area to them as well as the kernel.
By this improvement, the user is allowed to assign addresses to task stacks and memory pools the way the user likes according to the user's purposes; that is, the user is able to use high-speed internal memory for stacks at creating specified tasks.
- (3) The management of fixed-length memory pools modified
In the previous versions, the kernel's management

table for managing each memory block in a fixed-length memory pool resides in the area of the fixed-length memory.

In the revised version, the user is allowed to reserve an area for the kernel's management table so that the user can assign addresses to fixed-length memory pools when they are generated. As a result, no management table does exist in each memory pool. By combining this feature with that of (2) above, memory blocks with specified offsets can be gained.

- (4) Improvements of variable-length memory pools made

Gaining and relinquishing memory blocks are performed very rapidly. Also attribute value VTA_UNFRAGMENT has been introduced to reduce fragmentation of vacant areas.

- (5) The initial values of the DSR registers in the DSP changed

The initial values of the DSR registers, which are used for the tasks with attribute value TA_COP0 and for the task exception-handling routine, have been changed from indefinite to 0s. (This change has been applied to V.1.03 Release 02 and later.)

And, in the previous versions, the kernel does not initialize the DSR registers when a task having not attribute value TA_COP0 is switched to the one having it. In the revised version, these registers are initialized to 0s.

- (6) The initial values of the SR register for the task exception-handling routine changed

The initial value of the SR register used for the task exception-handling routine has been changed from the same value as in the task before initiation to 0.

- (7) The maximum exception code CFG_MAXVCTNO extended

The configurator can select a value of the maximum exception code CFG_MAXVCTNO out of an extended range of 0xfe0 to 0x3fe0.

- (8) Handling of TRAPA #16-31 improved

A trap exception handler can be defined to handle these traps.

- (9) Restrictions on aligning the structure elements raised
The restrictions imposed on the pack option and the #pragma pack directive at compilation have been raised.
- (10) How to give names to IDs improved
In the previous versions, the configurator can give names to IDs only when it automatically assigns ID names to objects. In the revised version, it is allowed to give names to IDs even if automatic assignment is not used.

1.2 Problems Fixed

The problems on setting the timer interrupt priority level and on reading files not supported have been fixed.

For details, see RENESAS TOOL NEWS No. RSO-RTOS-050716D, "Notes on Using the Real-Time OSes HI7750/4, HI7700/4, HI7000/4 and HI1000/4" issued on July 16, 2005.

2. How to Purchase the Product

Because important improvements have been made to the product, free-of-charge online update is not available. If necessary, please purchase it. When you place an order for the product, supply the following items of information to your local Renesas Technology sales office or distributor:

Product Type	HI7700/4
Type Name	R0R40770TXW02w
Version No.	V.2.01
Release No.	Release 00
Host OS	Windows XP, Windows Me, Windows 98, Windows 2000, or Windows NT 4.0

NOTICE:

Lower case letter w in the type name denotes the type of license. It shall be replaced with any of the following numerals or letters:

- 1: License for evaluation; a real-time OS can be installed only to one host computer.
- 5: License for evaluation; a real-time OS can be installed up to 5 host computers.
- A: License for evaluation; a real-time OS can be installed up to 10 host computers.
- K: Mass-production license; a real-time OS can be embedded up to a total of 1,000 productions of product model(s) with the source code not disclosed.
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