

# RENESAS TECHNICAL UPDATE

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Product Category	MPU/MCU		Document No.	TN-RZ*-A014A/E	Rev.	1.00
Title	Hardware Real Time OS issue		Information Category	Technical Notification		
Applicable Product	Please refer to [1. Applicable Product] described below.	Lot No.	Reference Document	RZ/T1 Group OS Library User's Manual Rev.1.01 R01US0179EJ0101Rev.1.01		
		All lot		RZ/T1 Group User's Manual Hardware Rev.1.1 R01UH0483EJ0110 Rev.1.10		

This document describes information about issues of Hardware Real Time OS for RZ/T1. Please use the Hardware Real Time OS considering those issues.

If you do not use Hardware Real Time OS feature, this notice could be ignored.

## 1. Applicable Product

Product Type	Product Code
RZ/T1 (for products incorporating an R-IN engine)	R7S910015CBG
	R7S910115CBG
	R7S910016CBG
	R7S910116CBG
	R7S910017CBG
	R7S910117CBG
	R7S910018CBG
	R7S910118CBG

The OS library (V2.0.2) is included in the following sample software.

[Sample software related to this issues]

Target	Data
EtherCAT sample program (for products incorporating an R-IN Engine)	an-r01an3071ej0100-rzt1-other.zip

Note : This sample program is preliminary version. Please contact our sales representative.

2. Issue

2.1 Illegal reordering of task waiting for resources

2.1.1 Content

Target task of chg\_pri() moves to the last of queue waiting for resources with TA\_TFIFO attribution.

2.1.2 Condition

chg\_pri() service call is called for the task waiting for resources with TA\_TFIFO attribution such as Event flag, Mailbox, Semaphore and Mutex.

2.1.3 Permanent measures

No workaround. This is new limitation of this product. This limitation is added to OS Library User's Manual.

Limitation

When chg\_pri() service call is called for the task waiting for resources with TA\_TFIFO attribution, order of the task moves to the last of the queue. In case of uITRON(ver4.03) specification, order does not change.

2.2 Deadlock during prologue of interrupt handler

2.2.1 Content

Deadlock occurs during calling interrupt handler (inside OS library)

2.2.2 Condition

In case all the following conditions are met,

- 1) chg\_pri() or ter\_tsk() service call is called during the period from calling dis\_dsp() until calling ena\_dsp()
- 2) Interrupt from the peripheral of which interrupt number is smaller than one of HW-RTOS is used.

# of HW-RTOS interrupt	Peripheral of which interrupt number is smaller than one of HW-RTOS
96	Timer/UART/CSI/IIC/CAN/DMAC/EtherCAT/Inter buffer DMA Ether PHY/Ether MAC/Ether Switch/Host IF/Port

2.2.3 Permanent measures

Renesas updates the OS Library.

3. Update Plan

Renesas will update OS Library User's Manual and OS library and releases the update in Dec, 2016 on Renesas Web site.

[RZ/T1 sample software download site]

<https://www.renesas.com/products/microcontrollers-microprocessors/rz/rzt/rzt1.html#>

➔ Sample Program

[Sample software related to this issues]

Target	Data
EtherCAT sample program (for products incorporating an R-IN Engine)	an-r01an3071ej0101-rzt1-other.zip

[OS library version]

V2.0.3