RENESAS TECHNICAL UPDATE

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Product Category	MPU/MCU			Document No.	TN-RZ*-A041A/E	Rev.	1.00
Title	RZ/A Series: Notes about transition to software standby mode			Information Category	Technical Notification		
Applicable Product	See following		Lot No.	Reference Document	See following		
			All				

In RZ/A1H Group, RZ/A1M Group, RZ/A1L Group, RZ/A1LU Group, and RZ/A1LC Group, a bug about transition to software standby mode is found.

Notes about transition to software standby mode are as follows.

According to this update, relevant manuals will be revised.

Applicable products and relevant documents

Applicable products series	Group	Relevant documents	Rev.	Document number
RZ/A	RZ/A1H, RZ/A1M	RZ/A1H Group, RZ/A1M Group User's Manual: Hardware	Rev 3.00	R01UH0403EJ0300
	RZ/A1L, RZ/A1LU, RZ/A1LC	RZ/A1L Group, RZ/A1LU Group, RZ/A1LC Group User's Manual: Hardware	Rev 3.00	R01UH0437EJ0300

[1] Condition

In case that following procedures are executed in order of (A) -> (B) -> (C).

(A) Set the configuration of IRQ to be detected on falling edge (01), detected on rising edge (10), detected on both edges (11) (exect for detected on low level (00)) by the IRQ sense select in interrupt control register 1 (ICR1) of interrupt controller.

(B) Change the configuration of Pn_m pin corresponding to IRQ used as (A) from port mode (0) to alternative mode (1) by the PMCn[m] bit in port mode control register (PMCn) of ports.

Or after changing from alternative mode (1) to port mode (0), change again from port mode (0) to alternative mode (1).

(C) Execute WFI instruction for transition to software standby mode.

[2] Phenomenon

Software standby mode may be canceled just after transition to software standby mode.

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[3] Workarounds

  If software standby mode is used and the IRQ pin is used as a standby cancelling factor, please implement the following software workarounds.

■   When pin setting is changed from alternative mode(IRQ) to port mode(general-purpose port),

    please change IRQ sense select to the initial value 00 (low level detect) by interrupt control register 1 (ICR1).

■   When pin setting is changed from port mode(general-purpose port) to alternative mode(IRQ) before transition to software standby mode,

    please set setting in the order of pin setting and IRQ sense setting continuously. And in IRQ sense setting, please change IRQ sense select to the initial value 00 (low level detect) and set actual setting by interrupt control register 1 (ICR1) before execution of WFI instruction.

    ・In case that IRQ sense select are set to be detected on falling edge (01)

      Change IRQ sense select to be detected on low level (00)*, and return to be detected on falling edge (01).

    ・In case that IRQ sense select are set to be detected on rising edge (10)

      Change IRQ sense select to be detected on low level (00)*, and return to be detected on rising edge (10).

    ・In case that IRQ sense select are set to be detected on both edges (11)

      Change IRQ sense select to be detected on low level (00)*, and return to be detected on both edges (11).

    * Interrupt request occurs if pin level is low. Please set setting so that the interrupt does not operate or be ignored

      during the period from the terminal setting to the IRQ sense setting.

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