

To our customers,

Old Company Name in Catalogs and Other Documents

On April 1st, 2010, NEC Electronics Corporation merged with Renesas Technology Corporation, and Renesas Electronics Corporation took over all the business of both companies. Therefore, although the old company name remains in this document, it is a valid Renesas Electronics document. We appreciate your understanding.

Renesas Electronics website: <http://www.renesas.com>

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Renesas Electronics Corporation

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RENESAS TECHNICAL UPDATE

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Product Category	MPU&MCU		Document No.	TN-16C-A168A/E	Rev.	1.00
Title	M32C/84 Group, M32C/85 Group, M32C/86 Group, M32C/87 Group, M32C/88 Group, Usage Precaution for the WAIT Instruction		Information Category	Technical Notification		
Applicable Product	Flash memory versions in M32C/84 Group, M32C/85 Group, M32C/86 Group, M32C/87 Group, M32C/88 Group	Lot No.	Reference Document			

1. Precaution

When entering wait mode from low-power consumption mode⁽¹⁾, if an interrupt request, which is used to exit wait mode, is acknowledged while the WAIT instruction is being executed, then the MCU may run out of control (refer to Figure 1).

NOTE:

1. When the CPU is in low-power consumption mode, the main clock and the on-chip oscillator clock stop, and the sub clock is used as the source for the CPU clock.

2. Countermeasures

Enter wait mode from other than low-power consumption mode (i.e. high-speed mode, middle-speed mode, low-speed mode, on-chip oscillator mode, or on-chip oscillator low-power consumption mode) (refer to Figure 2).

To reduce power consumption, execute the WAIT instruction in on-chip oscillator low-power consumption mode and enter wait mode.

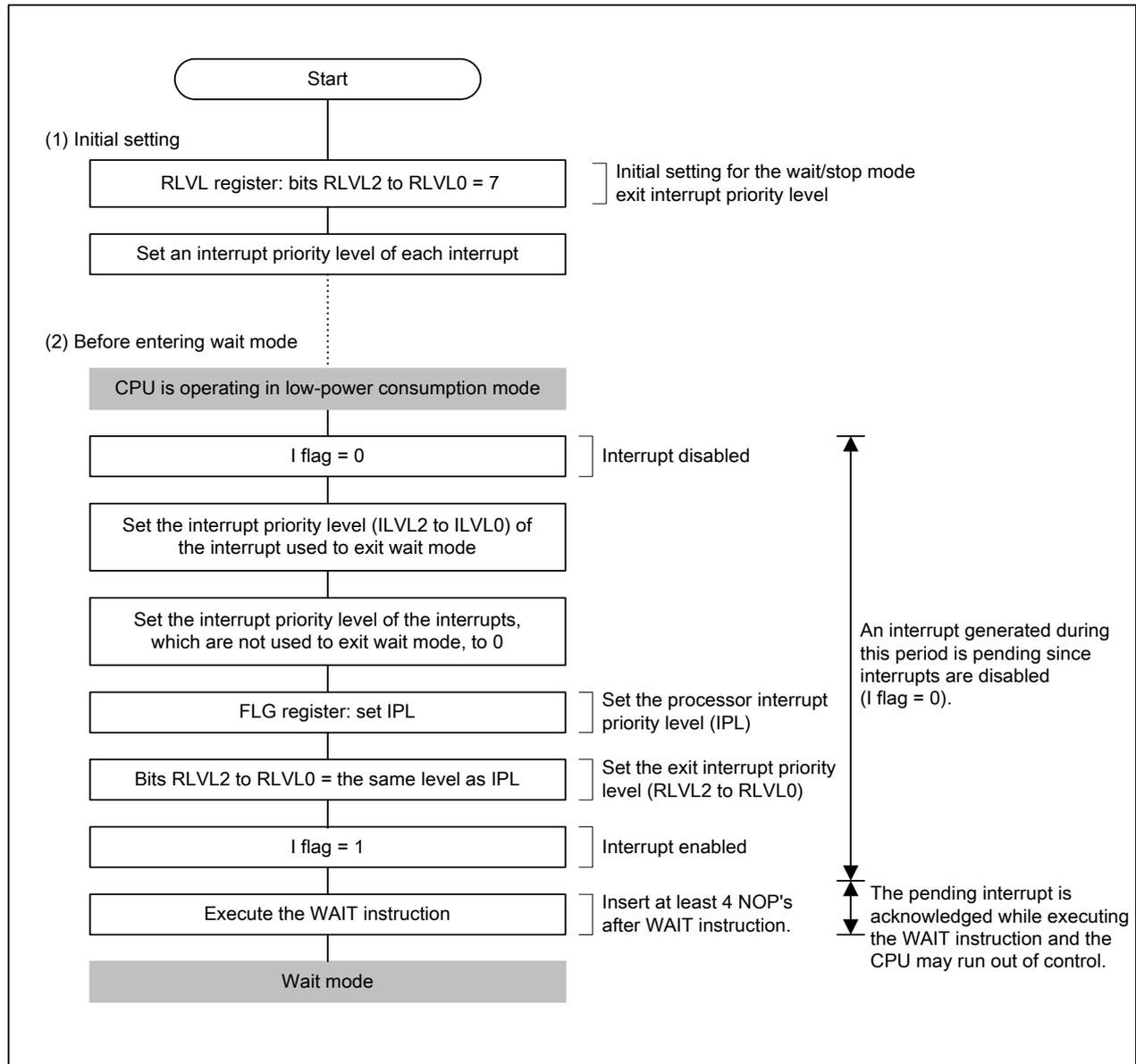
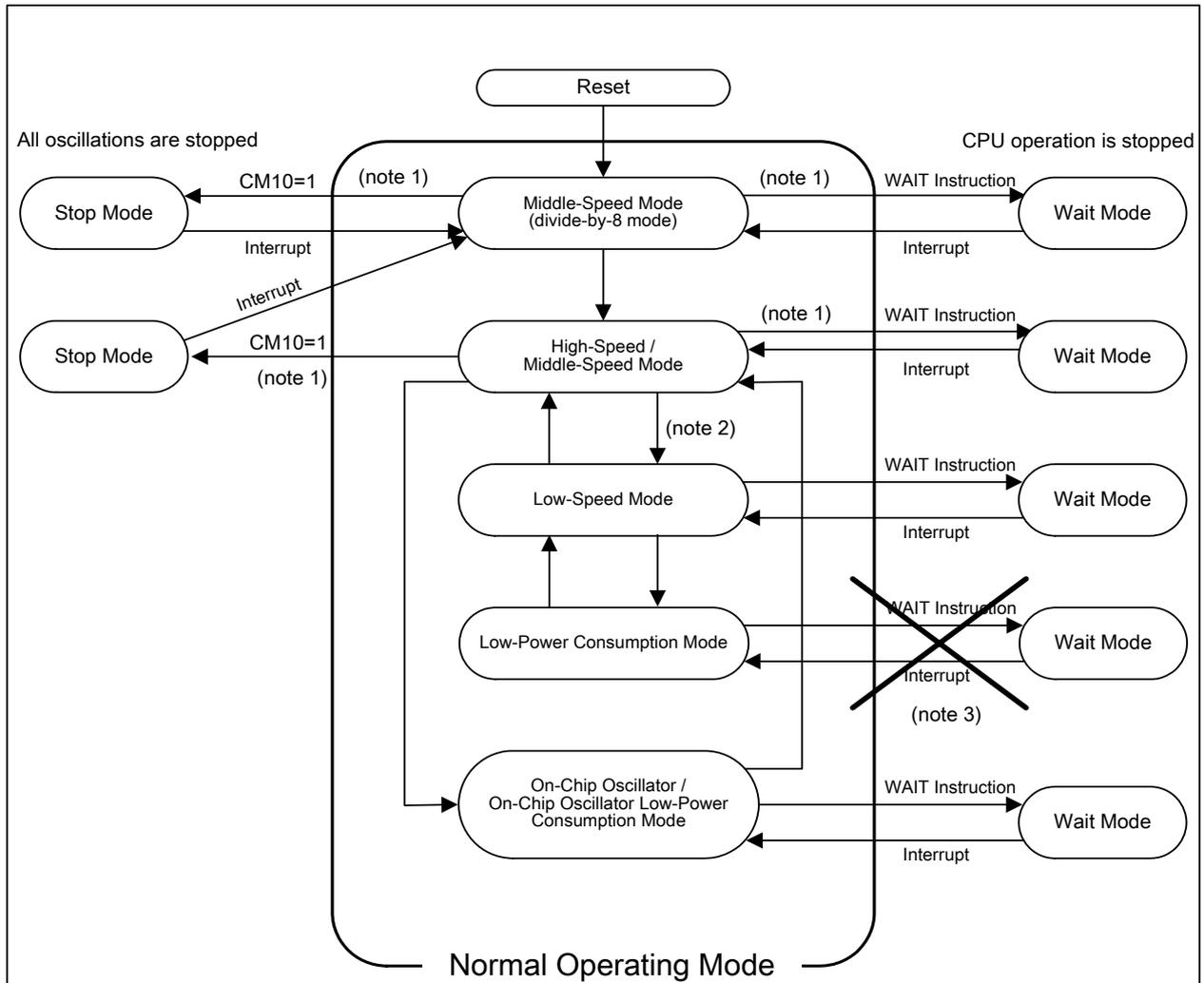


Figure 1 Problem Conditions



NOTES:

1. When the CM17 bit in the CM1 register is set to 1 (PLL clock as CPU clock source), set the CM17 bit to 0 (main clock as CPU clock source) and the PLC07 bit in the PLC0 register to "0" (PLL off). Then enter wait mode or stop mode.
2. When the CM17 bit is set to 1 (PLL clock as CPU clock source), set the CM17 bit to 0 (main clock as CPU clock source) and the PLC07 bit to "0" (PLL off). Then enter low-speed mode or low-power consumption mode.
3. Do not enter wait mode from low-power consumption mode.

Figure 2 Status Transition in Wait Mode and Stop Mode