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RENESAS TECHNICAL UPDATE

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Product Category	MPU/MCU		Document No.	TN-RL*-A046A/E	Rev.	1.00
Title	Precaution of using REAL-TIME CLOCK.		Information Category	Technical Notification		
Applicable Product	RL78/G1x RL78/I1x RL78/L1x	Lot No.	Reference Document	Latest user's manual of applicable product.		

The contents of TN-RL*-A047A/J, TN-RL*-A048A/E, TN-RL*-A049A/E, TN-RL*-A050A/E, TN-RL*-A051A/E, and TN-RL*-A053A/E were identical, so they have all been merged into TN-RL*-A046A/E.

Precaution described below is added to the following products in the User's Manual.

These contents will be reflected at the next time of the user's manual revision for each applicable products.

1. Applied Product

RL78/G13, RL78/G14, RL78/G1A, RL78/G1C, RL78/G1D, RL78/G1F,

RL78/I1A, RL78/I1B, RL78/I1D, RL78/L12, RL78/L13, RL78/L1C

2. Precaution regarding the use of REAL-TIME CLOCK

RWAIT bit is bit 0 of Real-time Clock Control Register 1 (RTCC1).

For the description of RWAIT bit, it'll add the following Note1 and Note2, because after setting to RWAIT = 1, the time required to until RWST = 1 might be longer than one clock time of the operation clock (f_{RTC}).

RWAIT	Wait control of real-time clock
0	Sets counter operation.
1	Stops SEC to YEAR counters. Mode to read or write counter value
This bit controls the operation of the counter. Be sure to write "1" to it to read or write the counter value. As the internal counter (16 bits) is continuing to run, complete reading or writing within one second and turn back to 0. When RWAIT = 1, it takes up to 1 operating clock (f_{RTC}) until the counter value can be read or written (RWST = 1). Notes1,2 When the internal counter (16 bits) overflowed while RWAIT = 1, it keeps the event of overflow until RWAIT = 0, then counts up. However, when it wrote a value to second count register, it will not keep the overflow event.	

Note1. When setting RWAIT=1 during 1 operating clock (f_{RTC}), after setting RTCE=1, it may take two clock time of the operation clock (f_{RTC}), until RWST bit is set to "1".

Note2. When setting RWAIT=1 during 1 operating clock (f_{RTC}), after returning from a stand-by (HALT mode, STOP mode and SNOOZE mode), it may take two clock time of the operation clock (f_{RTC}), until RWST bit is set to "1".