

# RENESAS TECHNICAL UPDATE

TOYOSU FORESIA, 3-2-24, Toyosu, Koto-ku, Tokyo 135-0061, Japan  
Renesas Electronics Corporation

Product Category	MPU/MCU		Document No.	TN-RH8-B0590A/E	Rev.	1.00
Title	RH850/U2C Clock Monitor Backup Clock Limitation		Information Category	Technical Notification		
Applicable Product	RH850/U2C8-EVA, U2C8, U2C4, U2C2	Lot No.	Reference Document	R01UH1018EJ0100 (User's Manual: Hardware)		
		All				

## [Overview]

When System Reset 2 or System Reset 1 occurs, a System Clock Gear Down is performed inside the device. However, if a CLMA error occurs during the System Clock Gear Down process after System Reset 1/2, the gear-down procedure may not be completed, which can disturb the continuing operation.

## [Applicable Product]

RH850 / U2C8-EVA, U2C8, U2C4, U2C2

## [Phenomenon]

### - Condition

When both following conditions are configured and System Reset 2 or System Reset 1 (except Primary VMON Reset) occurs.

- CLMA3 or CLMA8 is enabled (CLMA<sub>n</sub>CTL.CLMA<sub>n</sub>CLME = 1)
- The backup clock is enabled (CLMABCE.CLMABCE = 1)

### - Behavior

- **Case 1)** After System Reset 2 factor occurs, the clock gear down process is executed inside the device. A CLMA error occurs during the clock gear down process. However, the internal reset process will be initiated by the CLMA error without waiting for the completion of clock gear down process. As the result, clock gear down process (clock gear down of CLK\_PLLO/CLK\_SSCGO and clock selection from CLK\_PLLO/CLK\_SSCGO to CLK\_SYS\_IOSC ) may not be performed correctly, and the device may not be able to continue operating.
- **Case 2)** After System Reset 1/2 factor (except Primary VMON Reset), A CLMA error occurs during the clock gear down process. And the internal reset process will be initiated by the CLMA error without waiting for the completion of clock gear down process. In this case, clock selection from CLK\_PLLO/CLK\_SSCGO to CLK\_SYS\_IOSC can be done, but clock frequency may change to a lower frequency without proper gear down steps.

Which of the above two cases occurs after System Reset 2 depends on the state of the internal clock divider and the timing of CLMA error detection.

### - Recovery

In case of device could not continue (case 1), use an External Reset to recover.

### - Workaround

Set the Backup clock to disable. (CLMABCE.CLMABCE = 0)

[Judgement Flow]

