

RENESAS TECHNICAL UPDATE

1753, Shimonumabe, Nakahara-ku, Kawasaki-shi, Kanagawa 211-8668 Japan
Renesas Electronics Corporation

Product Category	MPU/MCU		Document No.	TN-SH7-A769A/E	Rev.	1.00
Title	Limitation on Changes to the Frequency Control Register and Correction of Error in the Hardware Manual		Information Category	Technical Notification		
Applicable Product	SH7216 Group SH7214 Group	Lot No.	Reference Document	SH7216 Group Hardware Manual (REJ09B0543-0101)		
		All lots				

We would like to inform you of a limitation on the specification for the above applicable products and the correction of an error in the hardware manual. Details are given below.

When changing the frequency division ratio for $B\phi$ after having set the ratios for $B\phi$ and $P\phi$ to 1/4 or a higher value, follow the procedure below rather than simultaneously changing the ratios for $I\phi$, $B\phi$, and $P\phi$.

1. Change only the ratio of $P\phi$ to 1/8 (PFC in FRQCR = B'101).
2. After switching the setting for $P\phi$, set only the ratio for $B\phi$ to the desired value.
3. Set the ratios for $I\phi$ and $P\phi$ to the desired values.

The limitation only applies to changes to the ratio for $B\phi$. No limitation applies to procedures for changing $I\phi$ and $P\phi$. Furthermore, no limitation applies to procedures for changing the ratios for $I\phi$, $B\phi$, and $P\phi$ from the initial values to desired values. Simultaneously changing settings for $I\phi$, $B\phi$, and $P\phi$ is possible. Note that FRQCR values should be changed by program code in the on-chip RAM.

The description on section 4.4.1, Frequency Control Register (FRQCR) in section 4, Clock Pulse Generator (CPG) of the SH7216 Hardware Manual, was amended as follows.

[Before amendment]

FRQCR is a 16-bit readable/writable register used to specify whether a clock is output from the CK pin in software standby mode, the frequency multiplication ratio of PLL circuit 1, and the frequency division ratio of the internal clock ($I\phi$) and peripheral clock ($P\phi$). FRQCR can be accessed only in word units. After executing an instruction for modifying the FRQCR, be sure to execute 32 NOP instructions. Especially when writing/erasing to the flash memory, execute the NOP operation for $32P\phi$ clock after having confirmed the set value by reading the FRQCR.

[After amendment]

FRQCR is a 16-bit readable/writable register used to specify the frequency division ratios for the internal clock ($I\phi$), bus clock ($B\phi$), and peripheral clock ($P\phi$). FRQCR is only accessible in word units. After setting FRQCR to a new value, read it to confirm that it actually holds the new value, then execute NOP instructions for 32 cycles of $P\phi$. Additionally, make settings for individual modules after setting FRQCR.