

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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HITACHI SEMICONDUCTOR TECHNICAL UPDATE

Classification of Production	MPU			No	TN-SH7-416A/E	
THEME	A problem on the DMAC of SH3 and the SH3-DSP		Classification of Information	1. Spec change 2. Supplement of Documents 3. Limitation of Use	4. Change of Mask 5. Change of Production Line	
PRODUCT NAME	SH7729R,SH7709S,SH7706,SH7727	Lot No. ALL	Reference Documents	SH7729R Hardware manual Rev.2.0 ADE-602-229A SH7709S Hardware manual Rev.2.0 ADE-602-250A SH7706 Hardware manual Rev.2.0 ADE-602-235A SH7727 Hardware manual Rev.3.0 ADE-602-209B	Rev. 1.0	Effective Date Eternal

There is an error on the DMAC of SH3 and SH3-DSP.

1. Error conditions

When the DMAC transfers data under one of the following two conditions.

- (a) clock ratio I θ :B θ 1:1 and wake-up from the sleep mode
- (b) Internal clock frequency division ratio bits (IFC[2:0]) in the FRQCR register is modified, except following two cases.
 - clock ratio I θ :B θ =1:1 after the modification
 - frequency multiplication ratio bits (STC[2:0]) in the FRQCR is modified at the same time

2. Problem

The CPU may fetch an unexpected instruction or the DMA may transfer wrong data.

3. Work around

- (1) Please do not use the DMAC during the sleep mode, or set ratio I θ :B θ =1:1 before the sleep mode.
- (2) Please do not use the DMAC when only the IFC[2:0] is modified and it is not I θ :B θ =1:1.