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.

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April 1st, 2010
Renesas Electronics Corporation

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RENESAS TECHNICAL UPDATE

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Product Category	MPU&MCU			Document No.	TN-SH7-A592A/E	Rev.	1.00
Title	Note on use of SH7780 data transfer to SIOF transmit FIFO using DMAC			Information Category	Technical Notification		
Applicable Product	SH7780 (R8A77800A)	Lot No.		Reference Document	SH7780 Hardware Manual Rev.1.00 Dec. 13, 2005 (REJ09B0158-0100)		
		All lots					

The SIOF of the SH7780 has the following note when date transfer to the transmit FIFO is performed by using DMA transfer.

[Summary]

When transferring transmit data to the SIOF transmit FIFO by using the DMAC as set SIIER.TDMAE to 1, the DMA transfer request occurs in one time excess and not only the transmit data that should be transmitted but also the next transmit data are written to the FIFO. If the next data is not prepared, unnecessary data is written to the FIFO. And then the transmit FIFO may be overflowed if setting the FIFO watermark (SICTR.TFWM [2:0]) to 111, and the transmit data is not read out from the FIFO, and the watermark is not updated because the transmit data and the next data are being written to the FIFO by the DMAC.

[Condition]

While the DMAC is transferring a data to the transmit FIFO, the SIOF has read out one slot transmit data from the transmit FIFO before the DMAC finishes the transfer to the transmit FIFO.

[Workaround]

• When using DMA transfer to the transmit FIFO, do not set the FIFO watermark (SICTR.TFWM [2:0]) to 111.

  (set the value 000, 100, 101 or 110 for TWFM)

• If set the transmit FIFO watermark (SICTR.TFWM [2:0]) to 111, use the CPU to transfer a data to the transmit FIFO.

[Notes]

Addition of the following notes to the reference document

22.3.10 SIFCTR bits 15 to 13 description (page 821 of 1286):

   Note   TFWM[2:0]=111: Setting prohibited when using DMA transfer

Table 22.11 Condition to Issue Transmit Request (page 836 of 1286):

   Note   TFWM[2:0]=111: Setting prohibited when using DMA transfer

<center>- End of text -</center>

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