

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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Renesas Electronics Corporation

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RENESAS TECHNICAL UPDATE

Nippon Bldg., 2-6-2, Ohte-machi, Chiyoda-ku, Tokyo 100-0004, Japan
RenesasTechnology Corp.

Product Category	MPU&MCU		Document No.	TN-SH7-A566A/E	Rev.	1.00
Title	Usage notice of SIOF		Information Category	Technical Notification		
Applicable Product	HD6417727	Lot No.	Reference Document	SH7727 hardware manual (ADE-602-209C Rev. 4.0)		
		All Lots				

SH7727 has the followed usage notice of SIOF.

1. Phenomenon

During serial IO (SIOF) operation, when reception is performed with a slot length of 8 bits and LSB first, unwanted data is added at the start of the reception data, and FIFO storage is delayed one byte at a time, and the final portion of the data remains in the shift register.

To prevent this, use one of the three methods described below.

2. Workaround

(1) Perform reception using a slot length of 8 bits and LSB first, and read and discard the unwanted data.

Read and discard the unwanted data at the start of the reception data. Then, input a dummy FS after the final portion of data so that the real final portion of data is stored in the FIFO.

This will ensure that reception operates correctly when a slot length of 8 bits and LSB first is used.

(2) Perform reception using a slot length of 8 bits and MSB first, then use software processing to convert the data to LSB-first format.

Data reception operates correctly when a slot length of 8 bits and MSB first is used. After receiving the data in MSB-first format, use software processing to convert the data read from the FIFO from MSB-first to LSB-first format.

The result can then be used as 8-bit slot length LSB-first data.

(3) Perform reception using a slot length of 16 bits and LSB first, and read only the required data.

Data reception operates correctly when a slot length of 16 bits and LSB first is used. Then one of the following two methods can be used to obtain data that can be used as 8-bit slot length LSB-first data.

(a) Make settings on the transmitting side so that only the upper 8 bits are used for actual data. Then, after the 16-bit data is received by SH7727, extract the upper 8 bits and use it as 8-bit slot length LSB-first data.

(b) Transmit two 8-bit units of data at once. Then, after the 16-bit data is received by SH7727, separate the upper and lower 8-bit portions and treat them as two 8-bit units of data. They can then be used as 8-bit slot length LSB-first data.