

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 TECHNICAL UPDATE

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Product Category	User Development Environment		Document No.	TN-EML-A136A/E	Rev.	1.00
Title	H8SX E6000H Emulator (HS1650EPH60H): Problems in Data Transfer by SCI		Information Category	Technical Notification		
Applicable Product	H8SX E6000H Emulator (HS1650EPH60H)	Lot No.	Reference Document	H8SX E6000H User's Manual (REJ10J1130-0900)		
		Serial No. 0001 to 0108 and 0110 to 0117				

Thank you for your consistent patronage of Renesas semiconductor products.

We would like to inform you of the problems in data transfer by the SCI that occur when a specific register of the SCI is written to by using the H8SX E6000H emulator (HS1650EPH60H). Please take this information into consideration when you use the emulator.

[Problems]

1) The following problems may occur when writing to any of the applicable registers of the channel on which data transmission or reception is in progress.

- (A) Writing to an applicable register for the channel that is transmitting data illegally inverts the values of the bits being transmitted.
- (B) Writing to an applicable register for the channel that is receiving data illegally inverts the values of the bits being received.
- (C) When data is written to an applicable register immediately after clearing of the overrun error flag, the first SCK clock pulse is not normally output (i.e. incorrect duty cycle), which prevents correct reception.

[Applicable Registers]

Serial control register (SCR): Controls transmission/reception and interrupts and selects a clock source

Smart card mode register (SCMR): Selects the communication format and a clock source for the on-chip baud rate generator

Serial mode register (SMR): Selects smart card interface mode and its format

Operating Condition			Operation Causing the Problem		Problem	Category
Communication Mode	Clock Source	Transmission /Reception	Register	Operation		
Synchronous	Internal clock (SCK output)	Transmission	SCR	Writing to an applicable register of the channel that is transmitting data	Values of the bits being transmitted are illegally inverted.	(A)
		Reception	SCR SCMR	Writing to an applicable register of the channel that is receiving data	Values of the bits being received are illegally inverted.	(B)
			SCR	Writing to an applicable register immediately after clearing of the overrun error flag	The SCK clock output becomes abnormal and reception cannot be performed correctly.	(C)
	External clock input	Transmission	SCMR	Writing to an applicable register of the channel that is transmitting data	Values of the bits being transmitted are illegally inverted.	(A)
		Reception		Writing to an applicable register of the channel that is receiving data	Values of the bits being received are illegally inverted.	(B)
	Asynchronous	Internal clock *	Reception	SCR SCMR	Writing to an applicable register of the channel that is receiving data	Values of the bits being received are illegally inverted.
External clock input		Transmission	SMR	Writing to an applicable register of the channel that is transmitting data	Values of the bits being transmitted are illegally inverted.	(A)
Smart card interface	Internal clock	Reception	SCR	Writing to an applicable register of the channel that is receiving data	Values of the bits being received are illegally inverted.	(B)

*Note: There are exceptional cases under the operating conditions of "asynchronous mode/internal clock/reception."
 The data transfer error does not occur when there is sufficient margin in data reception or when the transfer rate of the transmitting device is lower than that of the H8SX.

2) Cause

These problems are caused by the emulator evaluation chip (HD64E1688) installed on the emulator (HS1650EPH60H).

3) Applicable Devices

All devices incorporating the SCI and supported by HS1650EPH60H

[Countermeasure]

Take the following procedure to make sure if your usage fall under the category that causes the problem.

(1) Operating condition

Check if your usage fits into any of the combinations of communication mode (synchronous/asynchronous/smart card interface), clock source selection (internal/external clock), and whether transmission or reception as shown in the table in the previous page.

(2) Writing to an applicable register and its timing

If the operating conditions apply, check to see if writing is performed with the timing stated in the table.

If your usage is found to be the case through steps (1) and (2), the following countermeasure must be taken to avoid the problems.

Cases (A) and (B): Do not write to any applicable registers during data transmission or reception.

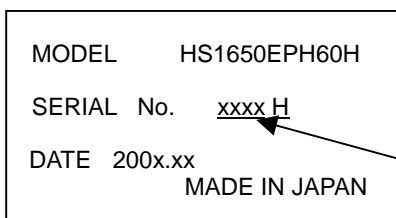
Case (C): Clear the overrun error flag after writing to the SCR register.

For the case of "asynchronous/internal clock (marked * in the table)", no countermeasure with software is needed as long as there is sufficient margin in reception.

[Other]

For more information, please contact Customer Support Dept. in Global Strategic Communication Div. of Renesas Solutions Corporation or the sales office where you have purchased the Renesas product.

Note: The serial number is written on the label at the lower position of the emulator's rear panel.



Lot No: Serial number 0001 to 0108 and 0110 to 0117