RENESAS TECHNICAL UPDATE

Product Category	MPU/MCU		Document No.	TN-RX*-A130B/E	Rev.	2.00
Title	Note on Setting the SCR Register of the Serial Communications Interface (SCI)		Information Category	Technical Notification		
Applicable Product	RX71M Group, RX64M Group RX630 Group, RX63N Group, RX631 Group, RX63T Group, RX210 Group, RX21A Group, RX220 Group, RX230 Group, RX231 Group, RX23T Group, RX110 Group, RX111 Group, RX113 Group	Lot No.				
		All lots	Reference Document	See below.		

We have found that a certain setting of the SCR register of the serial communications interface (SCI), which requires a cautionary note. This was not mentioned in the manual. The following paragraphs informs you of the setting that requires caution and also explains the changes to the manual to add this additional information.

■ Setting of the SCR register that requires caution

In processing to make initial settings using products of the RX110 Group, RX111 Group, RX113 Group, RX210 Group, RX21A Group, RX630 Group, RX631 Group, RX63N Group, RX63T Group, RX64M Group and RX71M Group, if the TE, TIE, and TEIE bits in the SCR register are set to 1 at the same time, caution is required because this will lead to the generation of a TEI (transmit end interrupt) before a TXI (transmit data empty interrupt). This behavior is different than the behavior for RX610 Group, RX621 Group, RX62N Group, RX62T Group, and RX62G Group.

In the serial communications interface (SCI) in products of the RX610 Group, RX621 Group, RX62N Group, RX62T Group, and RX62G Group, if the TE, TIE, and TEIE bits in the SCR register are set to 1 at the same time, a TXI (transmit data empty interrupt) and a TEI (transmit end interrupt) are generated simultaneously. As the timing with which the interrupts are actually generated depends on the product, caution is required on this point.

■ Details of manual revision (described with taking RX630 as the example)

・On page 1096, the description in red has been added to section 32.3.5, SCI Initialization (Asynchronous Mode).

Before transmitting and receiving data, start by writing the initial value "00h" to SCR and then continue through the procedure for SCI given in the sample flowchart (Figure 32.8). Whenever the operating mode or transfer format is changed, SCR must be initialized before the change is made.

When the external clock is used in asynchronous mode, ensure that the clock signal is supplied even during initialization.

Note that clearing the SCR.RE bit to 0 initializes neither the ORER, FER, nor the PER flags in SSR nor RDR.

Moreover, note that switching the value of the SCR.TE bit from 1 to 0 or 0 to 1 while the SCR.TIE bit is 1 leads to the generation of a TXI (transmit data empty interrupt) request.

In processing to make initial settings, if the TE, TIE, and TEIE bits in the SCR register are set to 1 at the same time,

caution is required because this will lead to the generation of a TEI (transmit end interrupt) before a TXI (transmit data empty interrupt).

[Related Documents]

Series	Group	Related Documents	Rev.	Control Code	Page
RX700	RX71M	RX71M Group User's Manual: Hardware	1.00	R01UH0493EJ0100	2029
RX600	RX64M	RX64M Group User's Manual: Hardware	1.00	R01UH0377EJ0100	2012
	RX630	RX630 Group User's Manual: Hardware	1.60	R01UH0040EJ0160	1096
	RX63N, RX631	RX63N Group, RX631 Group User's Manual: Hardware	1.80	R01UH0041EJ0180	1372
	RX63T	RX63T Group User's Manual: Hardware	2.10	R01UH0238EJ0210	1185
RX200	RX210	RX210 Group User's Manual: Hardware	1.50	R01UH0037EJ0150	1016
	RX21A	RX21A Group User's Manual: Hardware	1.10	R01UH0251EJ0110	849
	RX220	RX220 Group User's Manual: Hardware	1.10	R01UH0292EJ0110	768
	RX230, RX231	RX230 Group, RX231 Group User's Manual: Hardware	1.00	R01UH0496EJ0100	1164
	RX23T	RX23T Group User's Manual: Hardware	1.00	R01UH0520EJ0100	696
RX100	RX110	RX110 Group User's Manual: Hardware	1.10	R01UH0421EJ0110	551
	RX111	RX111 Group User's Manual: Hardware	1.20	R01UH0365EJ0120	798
	RX113	RX113 Group User's Manual: Hardware	1.02	R01UH0448EJ0102	859

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