

RENESAS TECHNICAL UPDATE

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Product Category	MPU/MCU		Document No.	TN-RX*-A133B/E	Rev.	2.00
Title	Note on the Status Register (SSISR) and the FIFO Status Register (SSIFSR) in the Serial Sound Interface (SSI)		Information Category	Technical Notification		
Applicable Product	RX64M Group RX71M Group RX113 Group	Lot No. All	Reference Document	RX64M Group User's Manual: Hardware Rev.1.00 (R01UH0377EJ0100) RX71M Group User's Manual: Hardware Rev.1.00 (R01UH0493EJ0100) RX113 Group User's Manual: Hardware Rev.1.02 (R01UH0448EJ0102)		

This document describes a note pertaining to the serial sound interface (SSI) in the above applicable products and the relevant corrections to the user's manual.

Note that the page and section numbers below, are borrowed from the RX64M Group. To see how they correspond to the page and section numbers for other product groups, refer to the table on the last page.

1. Note

Regarding the clearing of flags in the Status Register (SSISR) and the FIFO Status Register (SSIFSR) in the Serial Sound Interface (SSI):

Clearing of the applicable flags (see below) in the Status Register (SSISR) and the FIFO Status Register (SSIFSR) is normally done by reading a value of 1, then writing 0. However, when these flags are set to 1, the condition of reading the value of 1 is met by reading the registers in the tables below, and writing 0 to these registers causes the flags to become cleared.

[Applicable flags in SSISR and SSIFSR]

SSISR.ROIRQ, SSISR.RUIRQ, SSISR.TOIRQ, SSISR.TUIRQ, SSIFSR.TDE, and SSIFSR.RDF

[Registers other than SSISR for RX64M,RX71M]

Address	Module Symbol	Register Name	Register Symbol
0008 8004h	CMT0	Compare Match Timer Counter	CMCNT
0008 8044h	R12DA	D/A Control Register	DACR
0008 8144h	TPU3	Timer Interrupt Enable Register	TIER
0008 8204h	TMR0	Time Constant Register A	TCORA
0008 8204h	TMR01	Time Constant Register A	TCORA
0008 8304h	RIIC0	I2C Bus Mode Register 3	ICMR3
0008 8344h	RIIC2	I2C Bus Mode Register 3	ICMR3
0008 8544h	MMCIF	Interrupt request Enable Register	CEINTEN
0008 9004h	S12AD	A/D Channel Select Register A0	ADANSA0
0008 9084h	S12AD	A/D Data Duplication Register A	ADDBLDRA
0008 9104h	S12AD1	A/D Channel Select Register A0	ADANSA0
0008 9144h	S12AD1	A/D Data Register 18	ADDR18
0008 9184h	S12AD1	A/D Data Duplication Register A	ADDBLDRA
0008 9E04h	QSPI	QSPI Data Register	SPDR

Address	Module Symbol	Register Name	Register Symbol
0008 A004h	SCI0	Serial Status Register	SSR
0008 A044h	SCI2	Serial Status Register	SSR
0008 A084h	SCI4	Serial Status Register	SSR
0008 A0C4h	SCI6	Serial Status Register	SSR
0008 AC44h	SDHI	SD Interrupt Mask Register 2	SDIMSK2
0008 ADC4h	SDHI	Version Register	SDVER
0008 B004h	CAC	CAC Status Register	CASTR
0008 B084h	DOC	DOC Data Setting Register	DODSR
0008 B104h	ELC	Event Link Setting Register 3	ELSR3
0008 B304h	SCI12	Serial Status Register	SSR
0008 C004h	PORT4	Port Direction Register	PDR
0008 C044h	PORT4	Port Input Register	PIDR
0008 C084h	PORT2	Open-Drain Control Register0	ODR0
0008 C0C4h	PORT4	Pull-Up Resistor Control Register	PCR
0008 C104h	MPC	Address Output Enable Register 0	PFAOE0
0008 C1C4h	MPC	PG4 Pin Function Control Register	PG4PFS
0008 C404h	RTC	Minute Counter	RMINCNT
0008 C404h	RTC	Binary Counter 1	BCNT1
0008 C444h	RTC	Time Capture Control Register 2	RTCCR2
0008 C4C4h	POE3	Input Level Control/Status Register 2	ICSR2
0009 0844h	CAN0	Bit Configuration Register	BCR
0009 1844h	CAN1	Bit Configuration Register	BCR
0009 2844h	CAN2	Bit Configuration Register	BCR
0009 4204h	CMTW0	Timer Control Register	CMWCR
0009 4284h	CMTW1	Timer Control Register	CMWCR

[Registers other than SSISR for RX113]

Address	Module Symbol	Register Name	Register Symbol
0008 8004h	CMT0	Compare Match Timer Counter	CMCNT
0008 8044h	R12DA	D/A Control Register	DACR
0008 8204h	TMR0	Time Constant Register A	TCORA
0008 8204h	TMR01	Time Constant Register A	TCORA
0008 8304h	RIIC0	I2C Bus Mode Register 3	ICMR3
0008 8384h	RSPI0	RSPI Data Register	SPDR
0008 8604h	MTU3	Timer I/O Control Register H	TIORH
0008 8644h	MTU4	Timer A/D Converter Start Request Cycle Set Register A	TADCORA
0008 8684h	MTU	Timer Read/Write Enable Register	TRWER
0008 8704h	MTU0	Timer Interrupt Enable Register	TIER
0008 8784h	MTU1	Timer Interrupt Enable Register	TIER
0008 8804h	MTU2	Timer Interrupt Enable Register	TIER
0008 8884h	MTU5	Timer Control Register U	TCRU
0008 9004h	S12AD	A/D Channel Select Register A	ADANSA
0008 A004h	SCI0	Serial Status Register	SSR
0008 A044h	SCI2	Serial Status Register	SSR
0008 A0C4h	SCI6	Serial Status Register	SSR
0008 A104h	SCI8	Serial Status Register	SSR
0008 B004h	CAC	CAC Status Register	CASTR
0008 B084h	DOC	DOC Data Setting Register	DODSR
0008 B104h	ELC	Event Link Setting Register 3	ELSR3
0008 B304h	SCI12	Serial Status Register	SSR
0008 C004h	PORT4	Port Direction Register	PDR
0008 C044h	PORT4	Port Input Register	PIDR
0008 C084h	PORT2	Open-Drain Control Register0	ODR0
0008 C144h	MPC	P04 Pin Function Control Register	P04PFS
0008 C404h	RTC	Minute Counter	RMINCNT
0008 C404h	RTC	Binary Counter 1	BCNT1
0008 C584h	CMPB	Comparator B Filter Select Register	CPBF

【Registers other than SSIFSR for RX64M,RX71M】

Address	Module Symbol	Register Name	Register Symbol
0008 8014h	CMT2	Compare Match Timer Counter	CMCNT
0008 8114h	TPU0	Timer Interrupt Enable Register	TIER
0008 8154h	TPU4	Timer Interrupt Enable Register	TIER
0008 8214h	TMR2	Time Constant Register A	TCORA
0008 8214h	TMR23	Time Constant Register A	TCORA
0008 8514h	MMCIF	Transfer Block Setting Register	CEBLOCKSET
0008 9014h	S12AD	A/D Channel Select Register B0	ADANSB0
0008 9094h	S12AD	A/D Compare Channel Select Register 0	ADCMPANSR0
0008 9114h	S12AD1	A/D Channel Select Register B0	ADANSB0
0008 9194h	S12AD1	A/D Compare Channel Select Register 0	ADCMPANSR0
0008 9E14h	QSPI	QSPI Command Register 2	SPCMD2
0008 AC14h	SDHI	Block Count Register	SDBLKCNT
0008 B114h	ELC	Event Link Setting Register 19	ELSR19
0008 C094h	PORTA	Open-Drain Control Register 0	ODR0
0008 C154h	MPC	P24 pin Function Control Register	P24PFS
0008 C194h	MPC	PA4 pin Function Control Register	PA4PFS
0008 C414h	RTC	Hour Alarm Register	RHRAR
0008 C414h	RTC	Binary Counter 2 Alarm Register	BCNT2AR
0008 C454h	RTC	Minute Capture Register 0	RMINCP0
0008 C454h	RTC	BCNT1Capture Register 0	BCNT1CP0
0008 C4D4h	POE3	Port Output Enable Control Register 6	POECR6
0009 0854h	CAN0	Time Stamp Resister	TSR
0009 1854h	CAN1	Time Stamp Resister	TSR
0009 2854h	CAN2	Time Stamp Resister	TSR
0009 4214h	CMTW0	Compare Match Constant Register	CMWCOR
0009 4294h	CMTW1	Compare Match Constant Register	CMWCOR

【Registers other than SSIFSR for RX113】

Address	Module Symbol	Register Name	Register Symbol
0008 8014h	CMT2	Compare Match Timer Counter	CMCNT
0008 8214h	TMR2	Time Constant Register A	TCORA
0008 8214h	TMR23	Time Constant Register A	TCORA
0008 8394h	RSPI0	RSPI Command Register 2	SPCMD2
0008 8614h	MTU	Timer Cycle Data Register	TCDR
0008 8694h	MTU4	Noise Filter Control Register	NFCR
0008 8894h	MTU5	Timer Control Register V	TCRV
0008 9014h	S12AD	A/D Channel Select Register B	ADANSB
0008 C094h	PORTA	Open-Drain Control Register 0	ODR0
0008 C154h	MPC	P24 pin Function Control Register	P24PFS
0008 C194h	MPC	PA4 pin Function Control Register	PA4PFS
0008 C414h	RTC	Hour Alarm Register	RHRAR
0008 C414h	RTC	Binary Counter 2 Alarm Register	BCNT2AR

2. Measures

To clear a flag in the status register (SSISR) or the FIFO status register (SSIFSR), confirm the flag to be 1, then write 0 to the flag. Write 0 only to the flags to be cleared, and write 1 to all other flags.

3. Corrections to the Manuals

The notes on the SSISR and SSIFSR registers are corrected as follows.

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Before correction

47.2.2 Status Register (SSISR)

Note 1. This bit can be set to 0 by writing 0 after reading it as 1.

After correction

47.2.2 Status Register (SSISR)

Note 1. Writing 0 after confirming the flag to be 1 clears the flag. To clear flags, write 0 only to the flags to be cleared; write 1 to the other flags. Do not write 0 to a status flag indicating 0.

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Before correction

47.2.4 FIFO Status Register (SSIFSR)

Note 1. This bit can be set to 0 by writing 0 after reading it as 1.

After correction

47.2.4 FIFO Status Register (SSIFSR)

Note 1. Writing 0 after confirming the flag to be 1 clears the flag. To clear flags, write 0 only to the flags to be cleared; write 1 to the other flags. Do not write 0 to a status flag indicating 0.

Table 1 Page and Section Numbers in the Parts of the Manuals Covering the SSI for All Applicable Products

Group	Related Documents	Rev.	Control Code	Page and Section Numbers
RX64M	RX64M Group User's Manual: Hardware	Rev.1.00	R01UH0377EJ0100	47.2.2 (p. 2409) 47.2.4 (p. 2413)
RX71M	RX71M Group User's Manual: Hardware	Rev.1.00	R01UH0493EJ0100	47.2.2 (p. 2426) 47.2.4 (p. 2430)
RX113	RX113 Group User's Manual: Hardware	Rev.1.02	R01UH0448EJ0102	30.2.2 (p. 1028) 30.2.4 (p. 1032)