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RENESAS TECHNICAL UPDATE

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Product Category	MPU/MCU		Document No.	TN-RX*-A0209A/E	Rev.	1.00
Title	Errata Regarding Numbers of Access Cycles to I/O Registers of RX71M Group Products		Information Category	Technical Notification		
Applicable Product	RX71M Group	Lot No. All	Reference Document	RX71M Group User's Manual: Hardware Rev.1.10 (R01UH0493EJ0110)		

This document describes corrections to the numbers of access cycles listed in Table 5.1 of RX71M Group User's Manual: Hardware, Rev.1.10.

Before correction

Address	Module Symbol	Number of Access Cycles		Pages of the User's Manual
		ICLK ≥ PCLK	ICLK < PCLK	
0008 0000h to 0008 03FFh	SYSTEM	3 ICLK		174, 175
0008 1200h to 0008 120Bh	RAM	2 ICLK		175
0008 12C0h to 0008 12D4h	ECCRAM	2 ICLK		175, 176
0008 1300h to 0008 1311h	BSC	2 ICLK		176
0008 2000h to 0008 2204h	DMAC0 to DMAC7, DMAC	2 ICLK		176 to 178
0008 2400h to 0008 240Fh	DTC	2 ICLK		178
0008 2800h to 0008 2BFFh	EXDMAC0, EXDMAC1, EXDMAC	1, 2 BCLK		178, 179
0008 3002h to 0008 3C50h	BSC	1, 2 BCLK		179, 180
0008 6400h to 0008 652Fh	MPU	1 ICLK		180, 181
0008 6610h	SYSTEM	1 ICLK		181
0008 7010h to 0008 7594h	ICU	2 ICLK		181
0008 7600h to 0008 77CFh		2 ICLK to 1 PCLKB	2 ICLK	181 to 184
0008 7830h to 0008 79FFh		2 ICLK to 1 PCLKA	2 ICLK	184 to 186
0008 7A00h, 0008 7A01h		2 ICLK to 1 PCLKA/B	2 ICLK	186
0008 8000h to 0008 801Dh	CMT, CMT0 to CMT3	2, 3 PCLKB	2 ICLK	186, 187
0008 8020h to 0008 8038h	WDT, IWDT	2, 3 PCLKB	2 ICLK	187
0008 8040h to 0008 8048h	DA	2, 3 PCLKB	2 ICLK	187
0008 8100h to 0008 816Bh	TPUA, TPU0 to TPU5	2, 3 PCLKB	2 ICLK	187, 188
0008 81E6h to 0008 81FFh	PPG0, PPG1	2, 3 PCLKB	2 ICLK	188, 189
0008 8200h to 0008 821Dh	TMR0 to TMR3, TMR01, TMR23	2, 3 PCLKB	2 ICLK	189
0008 8280h to 0008 8283h	CRC	2, 3 PCLKB	2 ICLK	189
0008 8300h to 0008 8353h	RIIC0, RIIC2	2, 3 PCLKB	2 ICLK	189, 190
0008 8500h to 0008 857Fh	MMCIF	2, 3 PCLKB	2 ICLK	190, 191
0008 9000h to 0008 91A4h	S12AD, S12AD1	2, 3 PCLKB	2 ICLK	191 to 194
0008 9E00h to 0008 9E2Bh	QSPI	4, 5 PCLKB	2, 3 ICLK	194

Address	Module Symbol	Number of Access Cycles		Pages of the User's Manual
		ICLK ≥ PCLK	ICLK < PCLK	
0008 A000h to 0008 A00Fh	SCI0, SMCI0	2, 3 PCLKB	2 ICLK	194, 195
0008 A00Eh (16-bit access)		4, 5 PCLKB	2 ICLK	195
0008 A010h, 0008 A011h		2, 3 PCLKB	2 ICLK	195
0008 A010h (16-bit access)		4, 5 PCLKB	2 ICLK	195
0008 A012h		2, 3 PCLKB	2 ICLK	195
0008 A020h to 0008 A02Fh	SCI1, SMCI1	2, 3 PCLKB	2 ICLK	195
0008 A02Eh (16-bit access)		4, 5 PCLKB	2 ICLK	196
0008 A030h, 0008 A031h		2, 3 PCLKB	2 ICLK	196
0008 A030h (16-bit access)		4, 5 PCLKB	2 ICLK	196
0008 A032h		2, 3 PCLKB	2 ICLK	196
0008 A040h to 0008 A04Fh	SCI2, SMCI2	2, 3 PCLKB	2 ICLK	196
0008 A04Eh (16-bit access)		4, 5 PCLKB	2 ICLK	196
0008 A050h, 0008 A051h		2, 3 PCLKB	2 ICLK	196
0008 A050h (16-bit access)		4, 5 PCLKB	2 ICLK	196
0008 A052h		2, 3 PCLKB	2 ICLK	196
0008 A060h to 0008 A06Fh	SCI3, SMCI3	2, 3 PCLKB	2 ICLK	196, 197
0008 A06Eh (16-bit access)		4, 5 PCLKB	2 ICLK	197
0008 A070h, 0008 A071h		2, 3 PCLKB	2 ICLK	197
0008 A070h (16-bit access)		4, 5 PCLKB	2 ICLK	197
0008 A072h		2, 3 PCLKB	2 ICLK	197
0008 A080h to 0008 A08Fh	SCI4, SMCI4	2, 3 PCLKB	2 ICLK	197, 198
0008 A08Eh (16-bit access)		4, 5 PCLKB	2 ICLK	198
0008 A090h, 0008 A091h		2, 3 PCLKB	2 ICLK	198
0008 A090h (16-bit access)		4, 5 PCLKB	2 ICLK	198
0008 A092h		2, 3 PCLKB	2 ICLK	198
0008 A0A0h to 0008 A0AFh	SCI5, SMCI5	2, 3 PCLKB	2 ICLK	198
0008 A0AEh (16-bit access)		4, 5 PCLKB	2 ICLK	198
0008 A0B0h, 0008 A0B1h		2, 3 PCLKB	2 ICLK	198
0008 A0B0h (16-bit access)		4, 5 PCLKB	2 ICLK	198
0008 A0B2h		2, 3 PCLKB	2 ICLK	198
0008 A0C0h to 0008 A0CFh	SCI6, SMCI6	2, 3 PCLKB	2 ICLK	198, 199
0008 A0CEh (16-bit access)		4, 5 PCLKB	2 ICLK	199
0008 A0D0h, 0008 A0D1h		2, 3 PCLKB	2 ICLK	199
0008 A0D0h (16-bit access)		4, 5 PCLKB	2 ICLK	199
0008 A0D2h		2, 3 PCLKB	2 ICLK	199
0008 A0E0h to 0008 A0EFh	SCI7, SMCI7	2, 3 PCLKB	2 ICLK	199, 200
0008 A0EEh (16-bit access)		4, 5 PCLKB	2 ICLK	200
0008 A0F0h, 0008 A0F1h		2, 3 PCLKB	2 ICLK	200
0008 A0F0h (16-bit access)		4, 5 PCLKB	2 ICLK	200
0008 A0F2h		2, 3 PCLKB	2 ICLK	200
0008 A500h to 0008 A563h	SSI0, SSI1	2, 3 PCLKB	2 ICLK	200
0008 AC00h to 0008 ADE3h	SDHI	2, 3 PCLKB	2 ICLK	200
0008 B000h to 0008 B00Bh	CAC	2, 3 PCLKB	2 ICLK	201
0008 B080h to 0008 B085h	DOC	2, 3 PCLKB	2 ICLK	201
0008 B100h to 0008 B143h	ELC	2, 3 PCLKB	2 ICLK	201, 202
0008 B300h to 0008 B30Fh	SCI12, SMCI12	2, 3 PCLKB	2 ICLK	202
0008 B30Eh (16-bit access)		4, 5 PCLKB	2 ICLK	202
0008 B310h, 0008 B311h		2, 3 PCLKB	2 ICLK	202
0008 B310h (16-bit access)		4, 5 PCLKB	2 ICLK	202
0008 B312h to 0008 B333h		2, 3 PCLKB	2 ICLK	202, 203
0008 C000h to 0008 C0F0h	PORT0 to PORTJ	2, 3 PCLKB	2 ICLK	203 to 207
0008 C100h to 0008 C1D5h	MPC	2, 3 PCLKB	2 ICLK	207 to 209
0008 C280h to 0008 C294h	SYSTEM	4, 5 PCLKB	2, 3 ICLK	210
0008 C296h	FLASH	2 ICLK		210
0008 C297h to 0008 C2BFh	SYSTEM	4, 5 PCLKB	2, 3 ICLK	210, 211
0008 C400h to 0008 C47Ch	RTC	2, 3 PCLKB	2 ICLK	211, 212

Address	Module Symbol	Number of Access Cycles		Pages of the User's Manual
		ICLK ≥ PCLK	ICLK < PCLK	
0008 C4C0h to 0008 C4E9h	POE3	2, 3 PCLKB	2 ICLK	212
0008 C500h	TEMPS	2, 3 PCLKB	2 ICLK	212
0008 C5C0h	DA	2, 3 PCLKB	2 ICLK	212
0009 0200h to 0009 2858h	CAN0 to CAN2	2, 3 PCLKB	2 ICLK	212 to 214
0009 4200h to 0009 42A7h	CMTW0, CMTW1	2, 3 PCLKB	2 ICLK	214, 215
0009 8000h to 0009 D6BFh	SRC	4, 5 PCLKB	2, 3 ICLK	215
0009 DFF0h to 0009 DFF7h		5, 6 PCLKB	2, 3 ICLK	215
0009 DFF8h to 0009 DFFFh		4, 5 PCLKB	2, 3 ICLK	215
000A 0000h	USB0	3, 4 PCLKB	2 ICLK	215
000A 0004h, 000A 0008h		9 PCLKB or more	Rounded up to the nearest integer greater than 1 + 9 × (frequency ratio of ICLK / PCLKB)*5	215
000A 0014h to 000A 002Fh		3, 4 PCLKB	2 ICLK	215
000A 0030h to 000A 0407h		9 PCLKB or more	Frequency with 1 + 9 × (frequency ratio of ICLK / PCLKB)*5	215 to 218
000A 0500h to 000A 051Bh	PDC	2, 3 PCLKB	2 ICLK	218
000C 0000h to 000C 00DBh	EDMAC0	4, 5 PCLKA	2, 3 ICLK	218, 219
000C 0100h to 000C 01FBh	ETHERC0	13, 14 PCLKA	2 to 7 ICLK	219, 220
000C 0200h to 000C 02DBh	EDMAC1	4, 5 PCLKA	2, 3 ICLK	220, 221
000C 0300h to 000C 03FBh	ETHERC1	13, 14 PCLKA	2 to 7 ICLK	221
000C 0400h to 000C 04DBh	PTPEDMAC	4, 5 PCLKA	2, 3 ICLK	221, 222
000C 0500h, 000C 0504h	EPTPC	3, 4 PCLKA	2, 3 ICLK	222
000C 1200h to 000C 1CB6h	MTU, MTU0 to MTU8	5, 6 PCLKA	2, 3 ICLK	222 to 226
000C 2000h to 000C 22C3h	GPT, GPT0 to GPT3	4, 5 PCLKA	2, 3 ICLK	226 to 229
000C 4000h to 000C 4017h	EPTPC	5, 6 PCLKA	2, 3 ICLK	229
000C 4040h to 000C 437Fh		8 to 43 PCLKA	2 to 22 ICLK	229 to 231
000C 4400h to 000C 4437h		9, 10 PCLKA	2 to 5 ICLK	231
000C 4800h to 000C 4DD7h	EPTPC0, EPTPC1	9 to 211 PCLKA	2 to 106 ICLK	231 to 235
000D 0000h to 000D 0077h	SCIFA8 to SCIFA11	3, 4 PCLKB	2 ICLK	235, 236
000D 0100h to 000D 013Fh	RSPI0, RSPI1	3, 4 PCLKA	2 ICLK	236, 237
000D 0400h, 000D 0402h	USBA	3, 4 PCLKB	2 ICLK	237
000D 0404h to 000D 0567h		(3 + BUSWAIT) PCLKA or more	Rounded up to the nearest integer greater than 1 + (3 + BUSWAIT) × (frequency ratio of ICLK / PCLKB)*5	237 to 243

After correction

Address	Module Symbol	Number of Access Cycles		Pages of the User's Manual
		ICLK ≥ PCLK	ICLK < PCLK	
0008 0000h to 0008 03FFh	SYSTEM	4 ICLK		174, 175
0008 1200h to 0008 120Bh	RAM	3 ICLK		175
0008 12C0h to 0008 12D4h	ECCRAM	3 ICLK		175, 176
0008 1300h to 0008 1311h	BSC	3 ICLK		176
0008 2000h to 0008 2204h	DMAC0 to DMAC7, DMAC	3 ICLK		176 to 178
0008 2400h to 0008 240Fh	DTC	3 ICLK		178
0008 2800h to 0008 2BFFh	EXDMAC0, EXDMAC1, EXDMAC	2, 3 BCLK		178, 179
0008 3002h to 0008 3C50h	BSC	2, 3 BCLK		179, 180
0008 6400h to 0008 652Fh	MPU	1 ICLK		180, 181
0008 6610h	SYSTEM	2 ICLK		181

Address	Module Symbol	Number of Access Cycles		Pages of the User's Manual
		ICLK ≥ PCLK	ICLK < PCLK	
0008 7010h to 0008 7594h	ICU	3 ICLK		181
0008 7600h to 0008 77CFh		1 to 3 PCLKB	3 ICLK	181 to 184
0008 7830h to 0008 79FFh		1 to 3 PCLKA	3 ICLK	184 to 186
0008 7A00h, 0008 7A01h		1 to 3 PCLKA/B	3 ICLK	186
0008 8000h to 0008 801Dh	CMT, CMT0 to CMT3	3, 4 PCLKB	3 ICLK	186, 187
0008 8020h to 0008 8038h	WDT, IWDT	3, 4 PCLKB	3 ICLK	187
0008 8040h to 0008 8048h	DA	3, 4 PCLKB	3 ICLK	187
0008 8100h to 0008 816Bh	TPUA, TPU0 to TPU5	3, 4 PCLKB	3 ICLK	187, 188
0008 81E6h to 0008 81FFh	PPG0, PPG1	3, 4 PCLKB	3 ICLK	188, 189
0008 8200h to 0008 821Dh	TMR0 to TMR3, TMR01, TMR23	3, 4 PCLKB	3 ICLK	189
0008 8280h to 0008 8283h	CRC	3, 4 PCLKB	3 ICLK	189
0008 8300h to 0008 8353h	RIIC0, RIIC2	3, 4 PCLKB	3 ICLK	189, 190
0008 8500h to 0008 857Fh	MMCIF	3, 4 PCLKB	3 ICLK	190, 191
0008 9000h to 0008 91A4h	S12AD, S12AD1	3, 4 PCLKB	3 ICLK	191 to 194
0008 9E00h to 0008 9E2Bh	QSPI	5, 6 PCLKB	3, 4 ICLK	194
0008 A000h to 0008 A00Fh	SCI0, SMCI0	3, 4 PCLKB	3 ICLK	194, 195
0008 A00Eh (16-bit access)		5, 6 PCLKB	3 ICLK	195
0008 A010h, 0008 A011h		3, 4 PCLKB	3 ICLK	195
0008 A010h (16-bit access)		5, 6 PCLKB	3 ICLK	195
0008 A012h		3, 4 PCLKB	3 ICLK	195
0008 A020h to 0008 A02Fh	SCI1, SMCI1	3, 4 PCLKB	3 ICLK	195
0008 A02Eh (16-bit access)		5, 6 PCLKB	3 ICLK	196
0008 A030h, 0008 A031h		3, 4 PCLKB	3 ICLK	196
0008 A030h (16-bit access)		5, 6 PCLKB	3 ICLK	196
0008 A032h		3, 4 PCLKB	3 ICLK	196
0008 A040h to 0008 A04Fh	SCI2, SMCI2	3, 4 PCLKB	3 ICLK	196
0008 A04Eh (16-bit access)		5, 6 PCLKB	3 ICLK	196
0008 A050h, 0008 A051h		3, 4 PCLKB	3 ICLK	196
0008 A050h (16-bit access)		5, 6 PCLKB	3 ICLK	196
0008 A052h		3, 4 PCLKB	3 ICLK	196
0008 A060h to 0008 A06Fh	SCI3, SMCI3	3, 4 PCLKB	3 ICLK	196, 197
0008 A06Eh (16-bit access)		5, 6 PCLKB	3 ICLK	197
0008 A070h, 0008 A071h		3, 4 PCLKB	3 ICLK	197
0008 A070h (16-bit access)		5, 6 PCLKB	3 ICLK	197
0008 A072h		3, 4 PCLKB	3 ICLK	197
0008 A080h to 0008 A08Fh	SCI4, SMCI4	3, 4 PCLKB	3 ICLK	197, 198
0008 A08Eh (16-bit access)		5, 6 PCLKB	3 ICLK	198
0008 A090h, 0008 A091h		3, 4 PCLKB	3 ICLK	198
0008 A090h (16-bit access)		5, 6 PCLKB	3 ICLK	198
0008 A092h		3, 4 PCLKB	3 ICLK	198
0008 A0A0h to 0008 A0AFh	SCI5, SMCI5	3, 4 PCLKB	3 ICLK	198
0008 A0AEh (16-bit access)		5, 6 PCLKB	3 ICLK	198
0008 A0B0h, 0008 A0B1h		3, 4 PCLKB	3 ICLK	198
0008 A0B0h (16-bit access)		5, 6 PCLKB	3 ICLK	198
0008 A0B2h		3, 4 PCLKB	3 ICLK	198
0008 A0C0h to 0008 A0CFh	SCI6, SMCI6	3, 4 PCLKB	3 ICLK	198, 199
0008 A0CEh (16-bit access)		5, 6 PCLKB	3 ICLK	199
0008 A0D0h, 0008 A0D1h		3, 4 PCLKB	3 ICLK	199
0008 A0D0h (16-bit access)		5, 6 PCLKB	3 ICLK	199
0008 A0D2h		3, 4 PCLKB	3 ICLK	199
0008 A0E0h to 0008 A0EFh	SCI7, SMCI7	3, 4 PCLKB	3 ICLK	199, 200
0008 A0EEh (16-bit access)		5, 6 PCLKB	3 ICLK	200
0008 A0F0h, 0008 A0F1h		3, 4 PCLKB	3 ICLK	200
0008 A0F0h (16-bit access)		5, 6 PCLKB	3 ICLK	200
0008 A0F2h		3, 4 PCLKB	3 ICLK	200

Address	Module Symbol	Number of Access Cycles		Pages of the User's Manual
		ICLK ≥ PCLK	ICLK < PCLK	
0008 A500h to 0008 A563h	SSI0, SSI1	3, 4 PCLKB	3 ICLK	200
0008 AC00h to 0008 ADE3h	SDHI	3, 4 PCLKB	3 ICLK	200
0008 B000h to 0008 B00Bh	CAC	3, 4 PCLKB	3 ICLK	201
0008 B080h to 0008 B085h	DOC	3, 4 PCLKB	3 ICLK	201
0008 B100h to 0008 B143h	ELC	3, 4 PCLKB	3 ICLK	201, 202
0008 B300h to 0008 B30Fh	SCI12, SMCI12	3, 4 PCLKB	3 ICLK	202
0008 B30Eh (16-bit access)		5, 6 PCLKB	3 ICLK	202
0008 B310h, 0008 B311h		3, 4 PCLKB	3 ICLK	202
0008 B310h (16-bit access)		5, 6 PCLKB	3 ICLK	202
0008 B312h to 0008 B333h		3, 4 PCLKB	3 ICLK	202, 203
0008 C000h to 0008 C0F0h	PORT0 to PORTJ	3, 4 PCLKB	3 ICLK	203 to 207
0008 C100h to 0008 C1D5h	MPC	3, 4 PCLKB	3 ICLK	207 to 209
0008 C280h to 0008 C294h	SYSTEM	6, 7 PCLKB	3, 4 ICLK	210
0008 C296h	FLASH	6, 7 PCLKB	3, 4 ICLK	210
0008 C297h to 0008 C2BFh	SYSTEM	6, 7 PCLKB	3, 4 ICLK	210, 211
0008 C400h to 0008 C47Ch	RTC	3, 4 PCLKB	3 ICLK	211, 212
0008 C4C0h to 0008 C4E9h	POE3	3, 4 PCLKB	3 ICLK	212
0008 C500h	TEMPS	3, 4 PCLKB	3 ICLK	212
0008 C5C0h	DA	3, 4 PCLKB	3 ICLK	212
0009 0200h to 0009 2858h	CAN0 to CAN2	3, 4 PCLKB	3 ICLK	212 to 214
0009 4200h to 0009 42A7h	CMTW0, CMTW1	3, 4 PCLKB	3 ICLK	214, 215
0009 8000h to 0009 D6BFh	SRC	5, 6 PCLKB	3, 4 ICLK	215
0009 DFF0h to 0009 DFF7h		6, 7 PCLKB	4, 5 ICLK	215
0009 DFF8h to 0009 DFFFh		5, 6 PCLKB	3, 4 ICLK	215
000A 0000h	USB0	4, 5 PCLKB	3 ICLK	215
000A 0004h, 000A 0008h		6 to 13 PCLKB	Rounded up to the nearest integer greater than 2 + 9 × (frequency ratio of ICLK / PCLKB)*5	215
000A 0014h to 000A 002Fh		4, 5 PCLKB	3 ICLK	215
000A 0030h to 000A 0407h		6 to 13 PCLKB	Rounded up to the nearest integer greater than 2 + 9 × (frequency ratio of ICLK / PCLKB)*5	215 to 218
000A 0500h to 000A 051Bh	PDC	3, 4 PCLKB	3 ICLK	218
000C 0000h to 000C 00DBh	EDMAC0	5, 6 PCLKA	3, 4 ICLK	218, 219
000C 0100h to 000C 01FBh	ETHERC0	14, 15 PCLKA	3 to 8 ICLK	219, 220
000C 0200h to 000C 02DBh	EDMAC1	5, 6 PCLKA	3, 4 ICLK	220, 221
000C 0300h to 000C 03FBh	ETHERC1	14, 15 PCLKA	3 to 8 ICLK	221
000C 0400h to 000C 04DBh	PTPEDMAC	5, 6 PCLKA	3, 4 ICLK	221, 222
000C 0500h, 000C 0504h	EPTPC	4, 5 PCLKA	3, 4 ICLK	222
000C 1200h to 000C 1CB6h	MTU, MTU0 to MTU8	6, 7 PCLKA	3, 4 ICLK	222 to 226
000C 2000h to 000C 22C3h	GPT, GPT0 to GPT3	5, 6 PCLKA	3, 4 ICLK	226 to 229
000C 4000h to 000C 4017h	EPTPC	6, 7 PCLKA	3, 4 ICLK	229
000C 4040h to 000C 437Fh		9 to 44 PCLKA	3 to 23 ICLK	229 to 231
000C 4400h to 000C 4437h		10, 11 PCLKA	3 to 6 ICLK	231
000C 4800h to 000C 4DD7h	EPTPC0, EPTPC1	10 to 212 PCLKA	3 to 107 ICLK	231 to 235
000D 0000h to 000D 0077h	SCIFA8 to SCIFA11	5, 6 PCLKA	3 ICLK	235, 236
000D 0100h to 000D 013Fh	RSPI0, RSPI1	5, 6 PCLKA	3 ICLK	236, 237
000D 0400h, 000D 0402h	USBA	5, 6 PCLKA	3 ICLK	237
000D 0404h to 000D 0567h		(4 + BUSWAIT) PCLKA or more	Rounded up to the nearest integer greater than 2 + (3 + BUSWAIT) × (frequency ratio of ICLK / PCLKA)*5	237 to 243