

RX65W-A Group, RX65N/RX651 Group

Differences Between the RX65W-A Group and the RX65N Group

Introduction

This application note is intended as a reference to points of difference in the pin functions and input/output pins of the RX65W-A Group and RX65N Group, as well as a guide of how to perform debugging in e² studio.

Unless specifically otherwise noted, the information in this application note applies to the 145-pin package version of the RX65W-A Group and the 176-pin package version of the RX65N Group as the maximum specifications. To confirm details of differences in the specifications of the electrical characteristics, usage notes, and setting procedures, refer to the User's Manual: Hardware of the products in question.

Target Device

RX65W-A Group and RX65N Group

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1. Comparison of Built-In Functions of RX65W-A Group and RX65N Group

A comparison of the built-in functions of the RX65W-A Group and RX65N Group is provided below.

Table 1.1 is Comparison of Built-In Functions of RX65N and RX65W-A.

Table 1.1 Comparison of Built-In Functions of RX65N and RX65W-A

Classification	Functions	Product (model)			
		RX65N (R5F565NEHDFC)	RX651 (R5F5651EDDFC)	RX65W-A (R5F565WEADBF)	RX65W-A (R5F565WEMDBF)
Code flash memory	Code flash memory capacity	2 Mbytes			
	Dual bank function	Available			
	BGO function	Available			
Data flash memory		32 Kbytes			
RAM		640 Kbytes (256 Kbytes + 384 Kbytes of expansion RAM)			
External bus	External bus width	32/16/8 bits		Not available	
	SDRAM area controller	Available		Not available	
External interrupts		NMI, IRQ0 to IRQ15		NMI, IRQ0 to IRQ14	
DMA	DMA controller	ch0 to ch7			
	Data transfer controller	Available			
	EXDMA controller	Ch. 0 and 1		Not available	
Timers	16-bit timer pulse unit	Ch. 0 to 5		Ch. 0, 1, 3 to 5	
	Multi-function timer pulse unit 3	Ch. 0 to 8			
	Port output enable 3	Available			
	Programmable pulse generator	Ch. 0 and 1		Not available	
	8-bit timer	Ch. 0 to 3			
	Compare match timer	Ch. 0 to 3			
	Compare match timer W	Ch. 0 and 1			
	Realtime clock	Available			
	Watchdog timer	Available			
	Independent watchdog timer	Available			
	Communication function	RF transceiver	Not available		Available
Ethernet controller		Ch. 0	Not available	Ch. 0 (only for RMII)	Not available
DMA Controller for the Ethernet Controller		Ch. 0	Not available	Ch. 0	Not available
USB 2.0 FS host/ function module		Ch. 0		Ch. 0 (only supports the function controller)	
Serial communications interface (SCIg)		Ch. 0 to 9		Ch. 1 to 6, 8, and 9 (Ch. 2 and 3 do not support clock synchronization or simple SPI.)	
Serial communications interface (SCIn)		Ch. 12		Ch. 12 (simple SPI not supported)	
Serial communications interface (SCli)		Ch. 10 and 11			
I ² C bus interface		Ch. 0 to 2		Ch. 0 and 2	
Serial peripheral interface		Ch. 0 to 2		Ch. 0 and 1	
CAN module		Ch. 0 and 1		Not available	

Classification	Functions	Product (model)			
		RX65N (R5F565NEHDFC)	RX651 (R5F5651EDDFC)	RX65W-A (R5F565WEADBF)	RX65W-A (R5F565WEMDBF)
Communication function	Quad serial peripheral interface	Ch. 0			
	SD host interface	Available		Available	Not available
	SD slave interface	Available		Available	Not available
	MMC host interface	Available		Not available	
	Parallel data capture unit	Available		Not available	
Graphics	Graphic-LCD controller	Available		Not available	
	2D drawing engine	Available		Not available	
12-bit A/D converter		AN000 to 007 (unit 0: 8 channels)		AN000 to 003 (unit 0: 4 channels)	
		AN100 to 120 (unit 1: 21 channels)		AN100, 102 to 107, 110 to 113 (unit 1: 11 channels)	
12-bit D/A converter		Ch. 0 and 1		Not available	
Temperature sensor		Available			
Safety	Memory-protection unit (MPU)	Available			
	Trusted Memory (TM) function	Available			
	Register write protection	Available			
	CRC calculator	Available			
	Main clock oscillation stop detection function	Available			
	Clock frequency accuracy measurement circuit (CAC)	Available			
	Data operation circuit (DOC)	Available			
Encryption	Trusted Secure IP	Available	Not available	Available	Not available
Event link controller		Available			
Off-board programming (parallel programmer mode)		Available		Not available	

2. Comparison of Input/Output Pins

This section presents a comparison of input/output pins.

In the comparison of port functions, **red text** indicates functions which are included only in one of the MCU groups and also functions for which the specifications differ between the two groups.

In the register comparison, **red text** indicates differences in specifications for registers that are included in both groups and **black text** indicates registers which are included only in one of the MCU groups. Register specification items that have no differences between the groups are not indicated.

2.1 I/O Ports

Table 2.1 is Comparison of I/O Port Functions, and Table 2.2 is Comparison of I/O Port Registers.

Table 2.1 Comparison of I/O Port Functions

Item	Port Symbol	RX65N (176-Pin)	RX65W-A (145-Pin)
Input pull-up function	PORT0	P00 to P03, P05, P07	—
	PORT1	P10 to P17	P12, P13, P16, P17
	PORT2	P20 to P27	P26, P27
	PORT3	P30 to P34, P36, P37	P30, P31, P34, P36, P37
	PORT4	P40 to P47	P40 to P43
	PORT5	P50 to P57	P53
	PORT6	P60 to P67	—
	PORT7	P70 to P77	—
	PORT8	P80 to P87	P80 to P82
	PORT9	P90 to P97	—
	PORTA	PA0 to PA7	PA1 to PA4
	PORTB	PB0 to PB7	PB0 to PB7
	PORTC	PC0 to PC7	PC0, PC1, PC4 to PC7
	PORTD	PD0 to PD7	PD2 to PD7
	PORTE	PE0 to PE7	PE0 to PE2, PE4 to PE7
	PORTF	PF0 to PF5	—
	PORTG	PG0 to PG7	—
	PORTJ	PJ0 to PJ3, PJ5	—
Open drain output function	PORT0	P00 to P03, P05, P07	—
	PORT1	P10 to P17	P12, P13, P16, P17
	PORT2	P20 to P27	P26, P27
	PORT3	P30 to P34, P36, P37	P30, P31, P34, P36, P37
	PORT4	P40 to P47	P40 to P43
	PORT5	P50 to P57	P53
	PORT6	P60 to P67	—
	PORT7	P70 to P77	—
	PORT8	P80 to P87	P80 to P82
	PORT9	P90 to P97	—
	PORTA	PA0 to PA7	PA1 to PA4
	PORTB	PB0 to PB7	PB0 to PB7
	PORTC	PC0 to PC7	PC0, PC1, PC4 to PC7
	PORTD	PD0 to PD7	PD2 to PD7
	PORTE	PE0 to PE7	PE0 to PE2, PE4 to PE7
	PORTF	PF0 to PF5	—
	PORTG	PG0 to PG7	—
	PORTJ	PJ0 to PJ3, PJ5	—

Item	Port Symbol	RX65N (176-Pin)	RX65W-A (145-Pin)
Drive capability switching function	PORT0	P00 to P02	—
	PORT1	P11 to P14, P17	P12 to P13, P17
	PORT2	P20 to P23, P27	P27
	PORT3	P30, P31	P30, P31
	PORT5	P50 to P57	P53
	PORT7	P70, P72 to P77	—
	PORT8	P80 to P85, P87	P80 to P82
	PORT9	P90 to P97	—
	PORTA	PA0 to PA7	PA1 to PA4
	PORTB	PB0 to PB7	PB0 to PB7
	PORTC	PC0 to PC7	PC0, PC1, PC4 to PC7
	PORTD	PD0 to PD7	PD2 to PD7
	PORTE	PE0 to PE7	PE0 to PE2, PE4 to PE7
	PORTG	PG0 to PG7	—
	PORTJ	PJ0 to PJ2	—
5 V tolerant	PORT0	P07	—
	PORT1	P11 to P17	P12, P13, P16, P17
	PORT2	P20, P21	—
	PORT3	P30 to P33	P30, P31
	PORT6	P67	—
	PORTC	PC0 to PC3	PC0, PC1

Table 2.2 Comparison of I/O Port Registers

Register	Bit	RX65N	RX65W-A
PDR	B0 to B7	Pm0 to Pm7 I/O select bits (m = 0 to 9, A to G, J)	Pm0 to Pm7 I/O select bits (m = 1 to 5, 8, A to E)
PODR	B0 to B7	Pm0 to Pm7 output data store bits (m = 0 to 9, A to G, J)	Pm0 to Pm7 output data store bits (m = 1 to 5, 8, A to E)
PIDR	B0 to B7	Pm0 to Pm7 bits (m = 0 to 9, A to G, J)	Pm0 to Pm7 bits (m = 1 to 5, 8, A to E)
PMR	B0 to B7	Pm0 to Pm7 pin mode control bits (m = 0 to 9, A to G, J)	Pm0 to Pm7 pin mode control bits (m = 1 to 5, 8, A to E)
ODR0	B0	Pm0 output type select bits (m = 0 to 9, A to G, J)	Pm0 output type select bits (m = 1 to 5, 8, A to E)
	B2	Pm1 output type select bits (m = 0 to 9, A to G, J)	Pm1 output type select bits (m = 1 to 5, 8, A to E)
	B3	Pm1 output type select bits (m = 0 to 9, A to G, J)	Pm1 output type select bits (m = 1 to 5, 8, A to E)
	B4	Pm2 output type select bits (m = 0 to 9, A to G, J)	Pm2 output type select bits (m = 1 to 5, 8, A to E)
	B6	Pm3 output type select bits (m = 0 to 9, A to G, J)	Pm3 output type select bits (m = 1 to 5, 8, A to E)
ODR1	B0	Pm4 output type select bits (m = 0 to 9, A to G, J)	Pm4 output type select bits (m = 1 to 5, 8, A to E)
	B2	Pm5 output type select bits (m = 0 to 9, A to G, J)	Pm5 output type select bits (m = 1 to 5, 8, A to E)
	B4	Pm6 output type select bits (m = 0 to 9, A to G, J)	Pm6 output type select bits (m = 1 to 5, 8, A to E)
	B6	Pm7 output type select bits (m = 0 to 9, A to G, J)	Pm7 output type select bits (m = 1 to 5, 8, A to E)
PCR	B0 to B7	Pm0 to Pm7 input pull-up resistor control bits (m = 0 to 9, A to G, J)	Pm0 to Pm7 input pull-up resistor control bits (m = 1 to 5, 8, A to E)
DSCR	B0 to B7	Pm0 to Pm7 drive capability control bits (m = 0 to 2, 5, 7 to 9, A to E, G, J)	Pm0 to Pm7 drive capability control bits (m = 1, 2, 5, 8, A to E)
DSCR2	B0 to B7	Pm0 to Pm7 drive capability control bits 2 (m = 0 to 3, 5, 7 to 9, A to E, G, J)	Pm0 to Pm7 drive capability control bits 2 (m = 1 to 3, 5, 8, A to E)

2.2 Multi-Function Pin Controller

Table 2.3 is Comparison of Multiplexed Pin Assignments, and Table 2.4 to Table 2.21 are comparisons of multi-function pin controller registers.

In the following comparison of the assignments of multiplexed pins, **orange text** designates pins that exist on the RX65N Group only. A circle (○) indicates that a function is assigned, a cross (X) that the pin does not exist or that no function is assigned, and grayed out items mean that the function is not implemented.

Table 2.3 Comparison of Multiplexed Pin Assignments

Module/ Function	Pin Function	Port Allocation	RX65N		RX65W-A	
			176-Pin	Pin No.	145-Pin	Pin No.
EXDMA controller	EDREQ0 (input)	P22	○	43		
		P55	○	65		
		P80	○	81		
	EDACK0 (output)	P23	○	42		
		P54	○	66		
		P81	○	80		
	EDREQ1 (input)	P24	○	40		
		P33	○	28		
		P82	○	79		
	EDACK1 (output)	P25	○	38		
		P56	○	64		
		P83	○	74		
		PJ3	○	13		
Interrupt	NMI (input)	P35	○	26	○	K13
	IRQ0-DS (input)	P30	○	33	○	J13
	IRQ0 (input)	P10	○	68		
		PD0	○	158		
	IRQ1-DS (input)	P31	○	32	○	H13
	IRQ1 (input)	P11	○	67		
		PD1	○	156		
	IRQ2-DS (input)	P32	○	29		
	IRQ2 (input)	P12	○	53	○	F14
		PD2	○	154	○	P11
	IRQ3-DS (input)	P33	○	28		
	IRQ3 (input)	P13	○	52	○	G14
		PD3	○	150	○	N11
	IRQ4-DS (input)	PB1	○	100	○	P9
	IRQ4 (input)	P14	○	51	X	—
		P34	○	27	○	J14
		PD4	○	148	○	N10
		PF5	○	9	X	—
	IRQ5-DS (input)	PA4	○	109	○	N7
	IRQ5 (input)	P15	○	50	X	—
		PD5	○	147	○	P10
		PE5	○	130	○	B11
	IRQ6-DS (input)	PA3	○	110	○	P7
	IRQ6 (input)	P16	○	48	○	G15
		PD6	○	145	○	N9
		PE6	○	126	○	B12
	IRQ7-DS (input)	PE2	○	133	○	R9

Module/ Function	Pin Function	Port Allocation	RX65N		RX65W-A	
			176-Pin	Pin No.	145-Pin	Pin No.
Interrupt	IRQ7 (input)	P17	○	46	○	F15
		PD7	○	143	○	R10
		PE7	○	125	○	A12
	IRQ8-DS (input)	P40	○	173	○	N13
	IRQ8 (input)	P00	○	8		
		P20	○	45		
	IRQ9-DS (input)	P41	○	171	○	P12
	IRQ9 (input)	P01	○	7		
		P21	○	44		
	IRQ10-DS (input)	P42	○	170	○	N12
	IRQ10 (input)	P02	○	6		
		P55	○	65		
	IRQ11-DS (input)	P43	○	169	○	R11
	IRQ11 (input)	P03	○	4	×	—
		PA1	○	114	○	N8
	IRQ12-DS (input)	P44	○	168		
	IRQ12 (input)	PB0	○	104	○	P8
		PC1	○	89	○	F13
	IRQ13-DS (input)	P45	○	167		
	IRQ13 (input)	P05	○	2	×	—
		PC6	○	77	○	C14
	IRQ14-DS (input)	P46	○	166		
	IRQ14 (input)	PC0	○	91	○	E14
		PC7	○	76	○	D13
	IRQ15-DS (input)	P47	○	165		
	IRQ15 (input)	P07	○	176		
		P67	○	120		
Multi-function timer pulse unit 3	MTIOC0A (input/output)	P34	○	27	○	J14
		PB3	○	98	○	N5
	MTIOC0B (input/output)	P13	○	52	○	G14
		P15	○	50	×	—
		PA1	○	114	○	N8
	MTIOC0C (input/output)	P32	○	29	×	—
		PB1	○	100	○	P9
	MTIOC0D (input/output)	P33	○	28	×	—
		PA3	○	110	○	P7
	MTIOC1A (input/output)	P20	○	45	×	—
		PE4	○	131	○	A10
	MTIOC1B (input/output)	P21	○	44	×	—
		PB5	○	96	○	P5
	MTIOC2A (input/output)	P26	○	37	○	H14
		PB5	○	96	○	P5
	MTIOC2B (input/output)	P27	○	36	○	H15
		PE5	○	130	○	B11
	MTIOC3A (input/output)	P14	○	51	×	—
		P17	○	46	○	F15
		PC1	○	89	○	F13
		PC7	○	76	○	D13

Module/ Function	Pin Function	Port Allocation	RX65N		RX65W-A	
			176-Pin	Pin No.	145-Pin	Pin No.
Multi-function timer pulse unit 3	MTIOC3B (input/output)	P17	○	46	○	F15
		P22	○	43	×	—
		P80	○	81	○	B13
		PB7	○	94	○	N4
		PC5	○	78	○	B14
		PE1	○	134	○	E13
	MTIOC3C (input/output)	P16	○	48	○	G15
		P56	○	64	×	—
		PC0	○	91	○	E14
		PC6	○	77	○	C14
		PJ3	○	13	×	—
	MTIOC3D (input/output)	P16	○	48	○	G15
		P23	○	42	×	—
		P81	○	80	○	C13
		PB6	○	95	○	P4
		PC4	○	82	○	A13
		PE0	○	135	○	D14
	MTIOC4A (input/output)	P21	○	44	×	—
		P24	○	40	×	—
		P82	○	79	○	A14
		PA0	○	118	×	—
		PB3	○	98	○	N5
		PE2	○	133	○	R9
	MTIOC4B (input/output)	P17	○	46	○	F15
		P30	○	33	○	J13
		P54	○	66	×	—
		PC2	○	86	×	—
		PD1	○	156	×	—
		PE3	○	132	×	—
	MTIOC4C (input/output)	P25	○	38	×	—
		P83	○	74	×	—
		P87	○	47	×	—
		PB1	○	100	○	P9
		PE1	○	134	○	E13
		PE5	○	130	○	B11
	MTIOC4D (input/output)	P31	○	32	○	H13
		P55	○	65	×	—
		P86	○	49	×	—
		PC3	○	83	×	—
		PD2	○	154	○	P11
		PE4	○	131	○	A10
	MTIC5U (input)	P12	○	53	○	F14
		PA4	○	109	○	N7
		PD7	○	143	○	R10
	MTIC5V (input)	P11	○	67	×	—
		PA6	○	107	×	—
		PD6	○	145	○	N9

Module/ Function	Pin Function	Port Allocation	RX65N		RX65W-A	
			176-Pin	Pin No.	145-Pin	Pin No.
Multi-function timer pulse unit 3	MTIC5W (input)	P10	○	68	×	—
		PB0	○	104	○	P8
		PD5	○	147	○	P10
	MTIOC6A (input/output)	PE7	○	125	○	A12
		PJ1	○	59	×	—
	MTIOC6B (input/output)	PA5	○	108		
		PJ0	○	60		
	MTIOC6C (input/output)	PE6	○	126	○	B12
		P85	○	61	×	—
	MTIOC6D (input/output)	PA0	○	118		
		P84	○	62		
	MTIOC7A (input/output)	PA2	○	112	○	R8
	MTIOC7B (input/output)	PA1	○	114	○	N8
	MTIOC7C (input/output)	P67	○	120		
	MTIOC7D (input/output)	P66	○	122		
	MTIOC8A (input/output)	PD6	○	145	○	N9
	MTIOC8B (input/output)	PD4	○	148	○	N10
	MTIOC8C (input/output)	PD5	○	147	○	P10
	MTIOC8D (input/output)	PD3	○	150	○	N11
	MTCLKA (input)	P14	○	51	×	—
		P24	○	40	×	—
		PA4	○	109	○	N7
		PC6	○	77	○	C14
	MTCLKB (input)	P15	○	50	×	—
		P25	○	38	×	—
		PA6	○	107	×	—
		PC7	○	76	○	D13
	MTCLKC (input)	P22	○	43	×	—
		PA1	○	114	○	N8
		PC4	○	82	○	A13
	MTCLKD (input)	P23	○	42	×	—
		PA3	○	110	○	P7
		PC5	○	78	○	B14
	POE0# (input)	P32	○	29	×	—
		P93	○	159	×	—
		PC4	○	82	○	A13
		PD1	○	156	×	—
		PD7	○	143	○	R10
	POE4# (input)	P33	○	28	×	—
		P92	○	160	×	—
		PB5	○	96	○	P5
		PD0	○	158	×	—
		PD6	○	145	○	N9
	POE8# (input)	P17	○	46	○	F15
		P30	○	33	○	J13
		PD3	○	150	○	N11
		PE3	○	132	×	—
		PJ5	○	11	×	—

Module/ Function	Pin Function	Port Allocation	RX65N		RX65W-A	
			176-Pin	Pin No.	145-Pin	Pin No.
Multi-function timer pulse unit 3	POE10# (input)	P32	○	29	×	—
		P34	○	27	○	J14
		PA6	○	107	×	—
		PD5	○	147	○	P10
	POE11# (input)	P33	○	28	×	—
		PB3	○	98	○	N5
		PD4	○	148	○	N10
16-bit timer pulse unit	TIOCA0 (input/output)	P86	○	49		
		PA0	○	118		
	TIOCB0 (input/output)	P17	○	46	○	F15
		PA1	○	114	○	N8
	TIOCC0 (input/output)	P32	○	29		
		P85	○	61		
	TIOCD0 (input/output)	P33	○	28	×	—
		PA3	○	110	○	P7
	TIOCA1 (input/output)	P56	○	64	×	—
		PA4	○	109	○	N7
	TIOCB1 (input/output)	P16	○	48	○	G15
		PA5	○	108	×	—
	TIOCA2 (input/output)	P87	○	47		
		PA6	○	107		
	TIOCB2 (input/output)	P15	○	50		
		PA7	○	106		
	TIOCA3 (input/output)	P21	○	44	×	—
		PB0	○	104	○	P8
	TIOCB3 (input/output)	P20	○	45	×	—
		PB1	○	100	○	P9
	TIOCC3 (input/output)	P22	○	43	×	—
		PB2	○	99	○	P6
	TIOCD3 (input/output)	P23	○	42	×	—
		PB3	○	98	○	N5
	TIOCA4 (input/output)	P25	○	38	×	—
		PB4	○	97	○	N6
	TIOCB4 (input/output)	P24	○	40	×	—
		PB5	○	96	○	P5
	TIOCA5 (input/output)	P13	○	52	○	G14
		PB6	○	95	○	P4
	TIOCB5 (input/output)	P14	○	51	×	—
		PB7	○	94	○	N4
	TCLKA (input)	P14	○	51		
		PC2	○	86		
	TCLKB (input)	P15	○	50	×	—
		PA3	○	110	○	P7
		PC3	○	83	×	—
	TCLKC (input)	P16	○	48	○	G15
		PB2	○	99	○	P6
		PC0	○	91	○	E14

Module/ Function	Pin Function	Port Allocation	RX65N		RX65W-A	
			176-Pin	Pin No.	145-Pin	Pin No.
16-bit timer pulse unit	TCLKD (input)	P17	○	46	○	F15
		PB3	○	98	○	N5
		PC1	○	89	○	F13
Programmable pulse generator	PO0 (output)	P20	○	45		
	PO1 (output)	P21	○	44		
	PO2 (output)	P22	○	43		
	PO3 (output)	P23	○	42		
	PO4 (output)	P24	○	40		
	PO5 (output)	P25	○	38		
	PO6 (output)	P26	○	37		
	PO7 (output)	P27	○	36		
	PO8 (output)	P30	○	33		
	PO9 (output)	P31	○	32		
	PO10 (output)	P32	○	29		
	PO11 (output)	P33	○	28		
	PO12 (output)	P34	○	27		
	PO13 (output)	P13	○	52		
		P15	○	50		
	PO14 (output)	P16	○	48		
	PO15 (output)	P14	○	51		
		P17	○	46		
	PO16 (output)	P73	○	93		
		PA0	○	118		
	PO17 (output)	PA1	○	114		
		PC0	○	91		
	PO18 (output)	PA2	○	112		
		PC1	○	89		
		PE1	○	134		
	PO19 (output)	P74	○	88		
		PA3	○	110		
	PO20 (output)	P75	○	87		
		PA4	○	109		
	PO21 (output)	PA5	○	108		
		PC2	○	86		
	PO22 (output)	P76	○	85		
		PA6	○	107		
	PO23 (output)	P77	○	84		
		PA7	○	106		
		PE2	○	133		
	PO24 (output)	PB0	○	104		
		PC3	○	83		
	PO25 (output)	PB1	○	100		
		PC4	○	82		
	PO26 (output)	P80	○	81		
		PB2	○	99		
		PE3	○	132		
	PO27 (output)	P81	○	80		
		PB3	○	98		

Module/ Function	Pin Function	Port Allocation	RX65N		RX65W-A	
			176-Pin	Pin No.	145-Pin	Pin No.
Programmable pulse generator	PO28 (output)	P82	○	79		
		PB4	○	97		
		PE4	○	131		
	PO29 (output)	PB5	○	96		
		PC5	○	78		
	PO30 (output)	PB6	○	95		
		PC6	○	77		
	PO31 (output)	PB7	○	94		
		PC7	○	76		
8-bit timer	TMO0 (output)	P22	○	43	×	—
		PB3	○	98	○	N5
	TMCI0 (input)	P01	○	7	×	—
		P21	○	44	×	—
		PB1	○	100	○	P9
	TMRI0 (input)	P00	○	8	×	—
		P20	○	45	×	—
		PA4	○	109	○	N7
	TMO1 (output)	P17	○	46	○	F15
		P26	○	37	○	H14
	TMCI1 (input)	P02	○	6	×	—
		P12	○	53	○	F14
		P54	○	66	×	—
		PC4	○	82	○	A13
	TMRI1 (input)	P24	○	40	×	—
		PB5	○	96	○	P5
	TMO2 (output)	P16	○	48	○	G15
		PC7	○	76	○	D13
	TMCI2 (input)	P15	○	50	×	—
		P31	○	32	○	H13
		PC6	○	77	○	C14
	TMRI2 (input)	P14	○	51	×	—
		PC5	○	78	○	B14
	TMO3 (output)	P13	○	52	○	G14
		P32	○	29	×	—
		P55	○	65	×	—
	TMCI3 (input)	P11	○	67	×	—
		P27	○	36	○	H15
		P34	○	27	○	J14
		PA6	○	107	×	—
	TMRI3 (input)	P10	○	68	×	—
		P30	○	33	○	J13
		P33	○	28	×	—
Compare match timer W	TOC0 (output)	PC7	○	76	○	D13
	TIC0 (input)	PC6	○	77	○	C14
	TOC1 (output)	PE7	○	125	○	A12
	TIC1 (input)	PE6	○	126	○	B12
	TOC2 (output)	PD3	○	150	○	N11
	TIC2 (input)	PD2	○	154	○	P11

Module/ Function	Pin Function	Port Allocation	RX65N		RX65W-A	
			176-Pin	Pin No.	145-Pin	Pin No.
Compare match timer W	TOC3 (output)	PE3	○	132		
	TIC3 (input)	PE2	○	133	○	R9
Ethernet controller	REF50CK0 (input)	P76	○	85	×	—
		PB2	○	99	○	P6
		PE5	○	130	○	B11
	RMII0_CRS_DV (input)	P83	○	74	×	—
		PB7	○	94	○	N4
	RMII0_TXD0 (output)	P81	○	80	○	C13
		PB5	○	96	○	P5
	RMII0_TXD1 (output)	P82	○	79	○	A14
		PB6	○	95	○	P4
	RMII0_RXD0 (input)	P75	○	87	×	—
		PB1	○	100	○	P9
	RMII0_RXD1 (input)	P74	○	88	×	—
		PB0	○	104	○	P8
	RMII0_TXD_EN (output)	P80	○	81	○	B13
		PA0	○	118	×	—
		PB4	○	97	○	N6
	RMII0_RX_ER (input)	P77	○	84	×	—
		PB3	○	98	○	N5
	ET0_CRS (input)	P83	○	74		
		PB7	○	94		
	ET0_RX_DV (input)	PC2	○	86		
	ET0_EXOUT (output)	P55	○	65		
		PA6	○	107		
		PJ3	○	13		
	ET0_LINKSTA (input)	P34	○	27	○	J14
		P54	○	66	×	—
		PA5	○	108	×	—
	ET0_ETXD0 (output)	P81	○	80		
		PB5	○	96		
	ET0_ETXD1 (output)	P82	○	79		
		PB6	○	95		
	ET0_ETXD2 (output)	PC5	○	78		
	ET0_ETXD3 (output)	PC6	○	77		
	ET0_ERXD0 (input)	P75	○	87		
		PB1	○	100		
	ET0_ERXD1 (input)	P74	○	88		
		PB0	○	104		
	ET0_ERXD2 (input)	PC1	○	89		
		PE4	○	131		
	ET0_ERXD3 (input)	PC0	○	91		
		PE3	○	132		
	ET0_TX_EN (output)	P80	○	81		
		PA0	○	118		
		PB4	○	97		
	ET0_TX_ER (output)	PC3	○	83		
	ET0_RX_ER (input)	P77	○	84		
		PB3	○	98		
	ET0_TX_CLK (input)	PC4	○	82		

Module/ Function	Pin Function	Port Allocation	RX65N		RX65W-A	
			176-Pin	Pin No.	145-Pin	Pin No.
Ethernet controller	ET0_RX_CLK (input)	P76	○	85		
		PB2	○	99		
		PE5	○	130		
	ET0_COL (input)	PC7	○	76		
	ET0_WOL (output)	P73	○	93	×	—
		PA1	○	114	○	N8
		PA7	○	106	×	—
	ET0_MDC (output)	P72	○	101	×	—
		PA4	○	109	○	N7
	ET0_MDIO (input/output)	P71	○	102	×	—
		PA3	○	110	○	P7
Serial communications interface	RXD0 (input)/ SMISO0 (input/output)/ SSCL0 (input/output)	P21	○	44		
		P33	○	28		
	TXD0 (output)/ SMOSI0 (input/output)/ SSDA0 (input/output)	P20	○	45		
		P32	○	29		
	SCK0 (input/output)	P22	○	43		
		P34	○	27		
	CTS0# (input)/ RTS0# (output)/ SS0# (input)	P23	○	42		
		PJ3	○	13		
	RXD1 (input)/ SMISO1 (input/output)/ SSCL1 (input/output)	P15	○	50	×	—
		P30	○	33	○	J13
		PF2	○	31	×	—
	TXD1 (output)/ SMOSI1 (input/output)/ SSDA1 (input/output)	P16	○	48	○	G15
		P26	○	37	○	H14
		PF0	○	35	×	—
	SCK1 (input/output)	P17	○	46	○	F15
		P27	○	36	○	H15
		PF1	○	34	×	—
	CTS1# (input)/ RTS1# (output)/ SS1# (input)	P14	○	51	×	—
		P31	○	32	○	H13
	RXD2 (input)/ SMISO2 (input/output)/ SSCL2 (input/output)	P12	○	53	○	F14
		P52	○	70	×	—
	TXD2 (output)/ SMOSI2 (input/output)/ SSDA2 (input/output)	P13	○	52	○	G14
		P50	○	72	×	—
	SCK2 (input/output)	P11	○	67		
		P51	○	71		
	CTS2# (input)/ RTS2# (output)/ SS2# (input)	P54	○	66		
		PJ5	○	11		
	RXD3 (input)/ SMISO3 (input/output)/ SSCL3 (input/output)	P16	○	48	○	G15
		P25	○	38	×	—
	TXD3 (output)/ SMOSI3 (input/output)/ SSDA3 (input/output)	P17	○	46	○	F15
		P23	○	42	×	—

Module/ Function	Pin Function	Port Allocation	RX65N		RX65W-A	
			176-Pin	Pin No.	145-Pin	Pin No.
Serial communications interface	SCK3 (input/output)	P15	○	50		
		P24	○	40		
	CTS3# (input)/ RTS3# (output)/ SS3# (input)	P26	○	37	○	H14
	RXD4 (input)/ SMISO4 (input/output)/ SSCL4 (input/output)	PB0	○	104	○	P8
	TXD4 (output)/ SMOSI4 (input/output)/ SSDA4 (input/output)	PB1	○	100	○	P9
	SCK4 (input/output)	PB3	○	98	○	N5
	CTS4# (input)/ RTS4# (output)/ SS4# (input)	PB2	○	99	○	P6
	RXD5 (input)/ SMISO5 (input/output)/ SSCL5 (input/output)	PA2	○	112	○	R8
		PA3	○	110	○	P7
		PC2	○	86	×	—
	TXD5 (output)/ SMOSI5 (input/output)/ SSDA5 (input/output)	PA4	○	109	○	N7
		PC3	○	83	×	—
	SCK5 (input/output)	PA1	○	114	○	N8
		PC1	○	89	○	F13
		PC4	○	82	○	A13
	CTS5# (input)/ RTS5# (output)/ SS5# (input)	PA6	○	107	×	—
		PC0	○	91	○	E14
	RXD6 (input)/ SMISO6 (input/output)/ SSCL6 (input/output)	P01	○	7	×	—
		P33	○	28	×	—
		PB0	○	104	○	P8
	TXD6 (output)/ SMOSI6 (input/output)/ SSDA6 (input/output)	P00	○	8	×	—
		P32	○	29	×	—
		PB1	○	100	○	P9
	SCK6 (input/output)	P02	○	6	×	—
		P34	○	27	○	J14
		PB3	○	98	○	N5
	CTS6# (input)/ RTS6# (output)/ SS6# (input)	PB2	○	99	○	P6
		PJ3	○	13	×	—
	RXD7 (input)/ SMISO7 (input/output)/ SSCL7 (input/output)	P57	○	63		
		P92	○	160		
	TXD7 (output)/ SMOSI7 (input/output)/ SSDA7 (input/output)	P55	○	65		
		P90	○	163		
	SCK7 (input/output)	P56	○	64		
		P91	○	161		
	CTS7# (input)/ RTS7# (output)/ SS7# (input)	P93	○	159		

Module/ Function	Pin Function	Port Allocation	RX65N		RX65W-A	
			176-Pin	Pin No.	145-Pin	Pin No.
Serial communications interface	RXD8 (input)/ SMISO8 (input/output)/ SSCL8 (input/output)	PC6	○	77	○	C14
		PJ1	○	59	×	—
	TXD8 (output)/ SMOSI8 (input/output)/ SSDA8 (input/output)	PC7	○	76		
		PJ2	○	58		
	SCK8 (input/output)	PC5	○	78		
		PJ0	○	60		
	CTS8# (input)/ RTS8# (output)/ SS8# (input)	PC4	○	82	○	A13
	RXD9 (input)/ SMISO9 (input/output)/ SSCL9 (input/output)	PB6	○	95	○	P4
	TXD9 (output)/ SMOSI9 (input/output)/ SSDA9 (input/output)	PB7	○	94	○	N4
	SCK9 (input/output)	PB5	○	96	○	P5
	CTS9# (input)/ RTS9# (output)/ SS9# (input)	PB4	○	97	○	N6
	RXD10 (input)/ SMISO10 (input/output)/ SSCL10 (input/output)	P81	○	80	○	C13
		P86	○	49	×	—
		PC6	○	77	○	C14
	TXD10 (output)/ SMOSI10 (input/output)/ SSDA10 (input/output)	P82	○	79	○	A14
		P87	○	47	×	—
		PC7	○	76	×	—
	SCK10 (input/output)	P80	○	81	○	B14
		P83	○	74	×	—
		PC5	○	78	○	B15
	RTS10# (output)/	P80	○	81	○	B13
	CTS10# (input)/ SCK10 (input/output)/	P83	○	74		
	CTS10# (input)/ SCK10 (output)/ SS10# (input)	PC4	○	82	○	A13
	RXD11 (input)/ SMISO11 (input/output)/ SSCL11 (input/output)	P76	○	85	×	—
		PB6	○	95	○	P4
	TXD11 (output)/ SMOSI11 (input/output)/ SSDA11 (input/output)	P77	○	84	×	—
		PB7	○	94	○	N4
	SCK11 (input/output)	P75	○	87	×	—
		PB5	○	96	○	P5
	RTS11# (output)/	P75	○	87		
	CTS11# (input)/ SS11# (input)	P74	○	88		
	CTS11# (input)/ RTS11# (output)/ SS11# (input)	PB4	○	97		

Module/ Function	Pin Function	Port Allocation	RX65N		RX65W-A	
			176-Pin	Pin No.	145-Pin	Pin No.
Serial communications interface	RXD12 (input)/ SMISO12 (input/output)/ SSCL12 (input/output)/ RXDX12 (input)	PE2	○	133	○	R9
	TXD12 (output)/ SMOSI12 (input/output)/ SSDA12 (input/output)/ TXDX12 (output)/ SIOX12 (input/output)	PE1	○	134	○	E13
	SCK12 (input/output)	PE0	○	135	○	N4
	CTS12# (input)/ RTS12# (output)/ SS12# (input)	PE3	○	132	×	—
I ² C bus interface	SCL0[FM+] (input/output)	P12	○	53	○	F14
	SDA0[FM+] (input/output)	P13	○	52	○	G14
	SCL1 (input/output)	P21	○	44		
	SDA1 (input/output)	P20	○	45		
	SCL2-DS (input/output)	P16	○	48	○	G15
	SDA2-DS (input/output)	P17	○	46	○	F15
USB 2.0 FS host/function module	USB0_VBUS (input)	P16	○	48	○	G15
	USB0_EXICEN (output)	P21	○	44		
	USB0_VBUSEN (output)	P16	○	48		
		P24	○	40		
		P32	○	29		
	USB0_OVRCURA (input)/ USB0_OVRCURB (input)	P14	○	51		
		P16	○	48		
		P22	○	43		
	USB0_ID (input)	P20	○	45		
CAN module	CRX0 (input)	P33	○	28		
		PD2	○	154		
	CTX0 (output)	P32	○	29		
		PD1	○	156		
	CRX1-DS (input)	P15	○	50		
	CRX1 (input)	P55	○	65		
	CTX1 (output)	P14	○	51		
		P54	○	66		
Serial peripheral interface	RSPCKA (input/output)	PA5	○	108	×	—
		PC5	○	78	○	B14
	MOSIA (input/output)	PA6	○	107	×	—
		PC6	○	77	○	C14
	MISOA (input/output)	PA7	○	106	×	—
		PC7	○	76	○	D13
	SSLA0 (input/output)	PA4	○	109	×	—
		PC4	○	82	○	A13
	SSLA1 (output)	PA0	○	118	×	—
		PC0	○	91	○	E14
	SSLA2 (output)	PA1	○	114	×	—
		PC1	○	89	○	F13
	SSLA3 (output)	PA2	○	112		
		PC2	○	86		

Module/ Function	Pin Function	Port Allocation	RX65N		RX65W-A	
			176-Pin	Pin No.	145-Pin	Pin No.
Serial peripheral interface	RSPCKB (input/output)	P27	○	36	×	—
		PE5	○	130	○	B11
	MOSIB (input/output)	P26	○	37	×	—
		PE6	○	126	○	B12
	MISOB (input/output)	P30	○	33	×	—
		PE7	○	125	○	A12
	SSLB0 (input/output)	P31	○	32	×	—
		PE4	○	131	○	A10
	SSLB1 (output)	P50	○	72	×	—
		PE0	○	135	○	D14
	SSLB2 (output)	P51	○	71	×	—
		PE1	○	134	○	E13
	SSLB3 (output)	P52	○	70	×	—
		PE2	○	133	○	R9
	RSPCKC (input/output)	P56	○	64		
		PD3	○	150		
	MOSIC (input/output)	P54	○	66		
		PD1	○	156		
	MISOC (input/output)	P55	○	65		
		PD2	○	154		
	SSLC0 (input/output)	P57	○	63		
		PD4	○	148		
	SSLC1 (output)	PD5	○	147		
		PJ0	○	60		
	SSLC2 (output)	PD6	○	145		
		PJ1	○	59		
	SSLC3 (output)	PD7	○	143		
		PJ2	○	58		
Realtime clock	RTCOUT (output)	P16	○	48	○	G15
		P32	○	29	×	—
	RTCIC0 (input)	P30	○	33	○	J13
	RTCIC1 (input)	P31	○	32	○	H13
	RTCIC2 (input)	P32	○	29		
12-bit A/D converter	AN000 (input)	P40	○	173	○	N13
	AN001 (input)	P41	○	171	○	P12
	AN002 (input)	P42	○	170	○	N12
	AN003 (input)	P43	○	169	○	R11
	AN004 (input)	P44	○	168		
	AN005 (input)	P45	○	167		
	AN006 (input)	P46	○	166		
	AN007 (input)	P47	○	165		
	ADTRG0# (input)	P07	○	176	×	—
		P16	○	48	○	G15
		P25	○	38	×	—
	AN100 (input)	PE2	○	133	○	R9
	AN101 (input)	PE3	○	132		
	AN102 (input)	PE4	○	131	○	A10
	AN103 (input)	PE5	○	130	○	B11
	AN104 (input)	PE6	○	126	○	B12
	AN105 (input)	PE7	○	125	○	A12

Module/ Function	Pin Function	Port Allocation	RX65N		RX65W-A	
			176-Pin	Pin No.	145-Pin	Pin No.
12-bit A/D converter	AN106 (input)	PD6	○	145	○	N9
	AN107 (input)	PD7	○	143	○	R10
	AN108 (input)	PD0	○	158		
	AN109 (input)	PD1	○	156		
	AN110 (input)	PD2	○	154	○	P11
	AN111 (input)	PD3	○	150	○	N11
	AN112 (input)	PD4	○	148	○	N10
	AN113 (input)	PD5	○	147	○	P10
	AN114 (input)	P90	○	163		
	AN115 (input)	P91	○	161		
	AN116 (input)	P92	○	160		
	AN117 (input)	P93	○	159		
	AN118 (input)	P00	○	8		
	AN119 (input)	P01	○	7		
	AN120 (input)	P02	○	6		
	ANEX0 (output)	PE0	○	135	○	D14
	ANEX1 (input)	PE1	○	134	○	E13
	ADTRG1# (input)	P13	○	52	○	G14
		P17	○	46	○	F15
12-bit D/A converter	DA0 (output)	P03	○	4		
	DA1 (output)	P05	○	2		
Parallel data capture unit	PIXCLK (input)	P24	○	40		
	VSYN (input)	P32	○	29		
	HSYN (input)	P25	○	38		
	PIXD0 (input)	P15	○	50		
	PIXD1 (input)	P86	○	49		
	PIXD2 (input)	P87	○	47		
	PIXD3 (input)	P17	○	46		
	PIXD4 (input)	P20	○	45		
	PIXD5 (input)	P21	○	44		
	PIXD6 (input)	P22	○	43		
	PIXD7 (input)	P23	○	42		
	PCKO (output)	P33	○	28		
MultiMediaCard interface	MMC_RES# (output)	P75	○	87		
		PE7	○	125		
	MMC_CLK (output)	P77	○	84		
		PD5	○	147		
	MMC_CD (input)	PC2	○	86		
		PE6	○	126		
	MMC_CMD (input/output)	P76	○	85		
		PD4	○	148		
	MMC_D0 (input/output)	PC3	○	83		
		PD6	○	145		
	MMC_D1 (input/output)	PC4	○	82		
		PD7	○	143		
	MMC_D2 (input/output)	P80	○	81		
		PD2	○	154		
	MMC_D3 (input/output)	P81	○	80		
		PD3	○	150		

Module/ Function	Pin Function	Port Allocation	RX65N		RX65W-A	
			176-Pin	Pin No.	145-Pin	Pin No.
MultiMediaCard interface	MMC_D4 (input/output)	P82	○	79		
		PE0	○	135		
	MMC_D5 (input/output)	PC5	○	78		
		PE1	○	134		
	MMC_D6 (input/output)	PC6	○	77		
		PE2	○	133		
	MMC_D7 (input/output)	PC7	○	76		
		PE3	○	132		
SD host interface	SDHI_CLK (output)	P21	○	44	×	—
		P77	○	84	×	—
		PD5	○	147	○	P10
	SDHI_CMD (input/output)	P20	○	45	×	—
		P76	○	85	×	—
		PD4	○	148	○	N10
	SDHI_CD (input)	P25	○	38	×	—
		P81	○	80	○	C13
		PE6	○	126	○	B12
	SDHI_WP (input)	P24	○	40	×	—
		P80	○	81	○	B13
		PE7	○	125	○	A12
	SDHI_D0 (input/output)	P22	○	43	×	—
		PC3	○	83	×	—
		PD6	○	145	○	N9
	SDHI_D1 (input/output)	P23	○	42	×	—
		PC4	○	82	×	—
		PD7	○	143	○	R10
	SDHI_D2 (input/output)	P75	○	87	×	—
		P87	○	47	×	—
		PD2	○	154	○	P11
	SDHI_D3 (input/output)	P17	○	46	×	—
		PC2	○	86	×	—
		PD3	○	150	○	N11
SD slave interface	SDSI_CLK (input)	P77	○	84	×	—
		PB5	○	96	○	P5
	SDSI_CMD (input/output)	P76	○	85	×	—
		PB4	○	97	○	N6
	SDSI_D0 (input/output)	PC3	○	83	×	—
		PB6	○	95	○	P4
	SDSI_D1 (input/output)	PC4	○	82	×	—
		PB7	○	94	○	N4
	SDSI_D2 (input/output)	P75	○	87	×	—
		PB2	○	99	○	P6
Clock frequency accuracy measurement circuit	CACREF (input)	PC7	○	76	○	D13
		PA0	○	118	×	—

Module/ Function	Pin Function	Port Allocation	RX65N		RX65W-A	
			176-Pin	Pin No.	145-Pin	Pin No.
Quad serial peripheral interface	QSPCLK (output)	P77	○	84	×	—
		PD5	○	147	○	P10
	QSSL (output)	P76	○	85	×	—
		PD4	○	148	○	N10
	QMO/QIO0 (input/output)	PC3	○	83	×	—
		PD6	○	145	○	N9
	QMI/QIO1 (input/output)	PC4	○	82	×	—
		PD7	○	143	○	R10
	QIO2 (input/output)	P80	○	81	×	—
		PD2	○	154	○	P11
	QIO3 (input/output)	P81	○	80	×	—
		PD3	○	150	○	N11
LCD controller	LCD_EXTCLK (input)	P73	○	93		
		PD0	○	158		
	LCD_CLK (output)	P14	○	51		
		PB5	○	96		
	LCD_TCON0 (output)	P13	○	52		
		PB4	○	97		
	LCD_TCON1 (output)	P12	○	53		
		PB3	○	98		
	LCD_TCON2 (output)	PB2	○	99		
		PJ2	○	58		
	LCD_TCON3 (output)	PB1	○	100		
		PJ1	○	59		
	LCD_DATA0 (output)	PB0	○	104		
		PJ0	○	60		
	LCD_DATA1 (output)	P85	○	61		
		PA7	○	106		
	LCD_DATA2 (output)	P84	○	62		
		PA6	○	107		
	LCD_DATA3 (output)	P57	○	63		
		PA5	○	108		
	LCD_DATA4 (output)	P56	○	64		
		PA4	○	109		
	LCD_DATA5 (output)	P55	○	65		
		PA3	○	110		
	LCD_DATA6 (output)	P54	○	66		
		PA2	○	112		
	LCD_DATA7 (output)	P11	○	67		
		PA1	○	114		
	LCD_DATA8 (output)	P83	○	74		
		PA0	○	118		
	LCD_DATA9 (output)	PC7	○	76		
		PE7	○	125		
	LCD_DATA10 (output)	PC6	○	77		
		PE6	○	126		
	LCD_DATA11 (output)	PC5	○	78		
		PE5	○	130		
	LCD_DATA12 (output)	P82	○	79		
		PE4	○	131		

Module/ Function	Pin Function	Port Allocation	RX65N		RX65W-A	
			176-Pin	Pin No.	145-Pin	Pin No.
LCD controller	LCD_DATA13 (output)	P81	○	80		
		PE3	○	132		
	LCD_DATA14 (output)	P80	○	81		
		PE2	○	133		
	LCD_DATA15 (output)	PC4	○	82		
		PE1	○	134		
	LCD_DATA16 (output)	PC3	○	83		
		PE0	○	135		
	LCD_DATA17 (output)	P77	○	84		
		PD7	○	143		
	LCD_DATA18 (output)	P76	○	85		
		PD6	○	145		
	LCD_DATA19 (output)	PC2	○	86		
		PD5	○	147		
	LCD_DATA20 (output)	P75	○	87		
		PD4	○	148		
	LCD_DATA21 (output)	P74	○	88		
		PD3	○	150		
	LCD_DATA22 (output)	PC1	○	89		
		PD2	○	154		
	LCD_DATA23 (output)	P72	○	101		
		PD1	○	156		

Table 2.4 Comparison of P0n Pin Function Control Register (P0nPFS)

Register	Bit	RX65N (MPC) RX26T (n = 0 to 3,5, 7)	RX65W-A (MPC)
P0nPFS	—	P0n pin function control register	—

Table 2.5 Comparison of P1n Pin Function Control Registers (P1nPFS)

Register	Bit	RX65N (MPC) (n = 0 to 7)	RX65W-A (MPC) (n = 2, 3, 6, 7)
P10PFS	PSEL[5:0]	P10 pin function select bits	—
P11PFS	PSEL[5:0]	P10 pin function select bits	—
P12PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIC5U 000101b: TMC11 001010b: RXD2/ SMISO2 /SSCL2 001111b: SCL0[FM+] 100101b: LCD_TCON1-A *1	Pin function select bits 000000b: Hi-Z 000101b: TMC11 001010b: RXD2/SSCL2 001111b: SCL0[FM+]
P13PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC0B 000011b: TIOCA5 000101b: TMO3 000110b: PO13 001001b: ADTRG1# 001010b: TXD2/ SMOSI2 /SSDA2 001111b: SDA0[FM+] 100101b: LCD_TCON0-A *1	Pin function select bits 000000b: Hi-Z 000001b: MTIOC0B 000011b: TIOCA5 000101b: TMO3 001001b: ADTRG1# 001010b: TXD2/SSDA2 001111b: SDA0[FM+]
P14PFS	PSEL[5:0]	P14 pin function select bits	—
P15PFS	PSEL[5:0]	P15 pin function select bits	—
P16PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC3C 000010b: MTIOC3D 000011b: TIOCB1 000100b: TCLKC 000101b: TMO2 000110b: PO14 000111b: RTCOUT 001001b: ADTRG0# 001010b: TXD1/SMOSI1/SSDA1 001011b: RXD3/ SMISO3 /SSCL3 001111b: SCL2-DS 010001b: USB0_VBUS 010010b: USB0_VBUSEN 010011b: USB0_OVRCURB	Pin function select bits 000000b: Hi-Z 000001b: MTIOC3C 000010b: MTIOC3D 000011b: TIOCB1 000100b: TCLKC 000101b: TMO2 000111b: RTCOUT 001001b: ADTRG0# 001010b: TXD1/SMOSI1/SSDA1 001011b: RXD3 /SSCL3 001111b: SCL2-DS 010001b: USB0_VBUS

Register	Bit	RX65N (MPC) (n = 0 to 7)	RX65W-A (MPC) (n = 2, 3, 6, 7)
P17PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC3A 000010b: MTIOC3B 000011b: TIOCB0 000100b: TCLKD 000101b: TMO1 000110b: PO15 000111b: POE8# 001000b: MTIOC4B 001001b: ADTRG1# 001010b: SCK1 001011b: TXD3/ SMOSI3 /SSDA3 001111b: SDA2-DS 011010b: SDHI_D3-C 011100b: PIXD3	Pin function select bits 000000b: Hi-Z 000001b: MTIOC3A 000010b: MTIOC3B 000011b: TIOCB0 000100b: TCLKD 000101b: TMO1 000111b: POE8# 001000b: MTIOC4B 001001b: ADTRG1# 001010b: SCK1 001011b: TXD3/SSDA3 001111b: SDA2-DS
P1nPFS	ISEL	Interrupt input function select bit 0: Not used as IRQn input pin 1: Used as IRQn input pin P10: IRQ0 (177/176 pin) P11: IRQ1 (177/176 pin) P12: IRQ2 (177/176/145/144/100/64 pin) P13: IRQ3 (177/176/145/144/100/64 pin) P14: IRQ4 (177/176/145/144/100 pin) P15: IRQ5 (177/176/145/144/100 pin) P16: IRQ6 (177/176/145/144/100/64 pin) P17: IRQ7 (177/176/145/144/100/64 pin)	Interrupt input function select bit 0: Not used as IRQn input pin 1: Used as IRQn input pin P12: IRQ2 P13: IRQ3 P16: IRQ6 P17: IRQ7

Note: 1. This setting is not supported by products with 1 Mbyte of code flash memory or less.

Table 2.6 Comparison of P2n Pin Function Control Registers (P2nPFS)

Register	Bit	RX65N (MPC) (n = 0 to 7)	RX65W-A (MPC) (n = 6, 7)
P20PFS	PSEL[5:0]	P20 pin function select bits	—
P21PFS	PSEL[5:0]	P21 pin function select bits	—
P22PFS	PSEL[5:0]	P22 pin function select bits	—
P23PFS	PSEL[5:0]	P23 pin function select bits	—
P24PFS	PSEL[5:0]	P24 pin function select bits	—
P25PFS	PSEL[5:0]	P25 pin function select bits	—
P26PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC2A 000101b: TMO1 000110b: PO6 001010b: TXD1/SMOSI1/SSDA1 001011b: CTS3#/RTS3#/ SS3# 001101b: MOSIB-A	Pin function select bits 000000b: Hi-Z 000001b: MTIOC2A 000101b: TMO1 001010b: TXD1/SMOSI1/SSDA1 001011b: CTS3#/RTS3#
P27PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC2B 000101b: TMCI3 000110b: PO7 001010b: SCK1 001101b: RSPCKB-A	Pin function select bits 000000b: Hi-Z 000001b: MTIOC2B 000101b: TMCI3 001010b: SCK1
P2nPFS	ISEL	Interrupt input function select bit	—

Table 2.7 Comparison of P3n Pin Function Control Registers (P3nPFS)

Register	Bit	RX65N (MPC) (n = 0 to 4)	RX65W-A (MPC) (n = 0, 1, 4)
P30PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC4B 000101b: TMRI3 000110b: PO8 000111b: POE8# 001010b: RXD1/SMISO1/SSCL1 001101b: MISOB-A	Pin function select bits 000000b: Hi-Z 000001b: MTIOC4B 000101b: TMRI3 000111b: POE8# 001010b: RXD1/SMISO1/SSCL1
P31PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC4D 000101b: TMCi2 000110b: PO9 001011b: CTS1#/RTS1#/SS1# 001101b: SSLB0-A	Pin function select bits 000000b: Hi-Z 000001b: MTIOC4D 000101b: TMCi2 001011b: CTS1#/RTS1#/SS1#
P32PFS	PSEL[5:0]	P32 pin function select bits	—
P33PFS	PSEL[5:0]	P33 pin function select bits	—
P34PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC0A 000101b: TMCi3 000110b: PO12 000111b: POE10# 001010b: SCK6 001011b: SCK0 010001b: ET0_LINKSTA	Pin function select bits 000000b: Hi-Z 000001b: MTIOC0A 000101b: TMCi3 000111b: POE10# 001010b: SCK6 010001b: ET0_LINKSTA
P3nPFS	ISEL	Interrupt input function select bit 0: Not used as IRQn input pin 1: Used as IRQn input pin P30: IRQ0-DS (177/176/145/144/100/64 pin) P31: IRQ1-DS (177/176 pin) P32: IRQ2-DS (177/176/145/144/100/64 pin) P33: IRQ3-DS (177/176/145/144/100/64 pin) P34: IRQ4-DS (177/176/145/144/100 pin)	Interrupt input function select bit 0: Not used as IRQn input pin 1: Used as IRQn input pin P30: IRQ0-DS P31: IRQ1-DS P34: IRQ4

Table 2.8 Comparison of P4n Pin Function Control Registers (P4nPFS)

Register	Bit	RX65N (MPC) (n = 0 to 7)	RX65W-A (MPC) (n = 0 to 3)
P4nPFS	ISEL	0: Not used as IRQn input pin 1: Used as IRQn input pin P40: IRQ8-DS (177/176/145/144/100/64 pin) P41: IRQ9-DS (177/176/145/144/100/64 pin) P42: IRQ10-DS (177/176/145/144/100/64 pin) P43: IRQ11-DS (177/176/145/144/100/64 pin) P44: IRQ12-DS (177/176/145/144/100 pin) P45: IRQ13-DS (177/176/145/144/100 pin) P46: IRQ14-DS (177/176/145/144/100 pin) P47: IRQ15-DS (177/176/145/144/100 pin)	0: Not used as IRQn input pin 1: Used as IRQn input pin P40: IRQ8-DS P41: IRQ9-DS P42: IRQ10-DS P43: IRQ11-DS
	ASEL	Analog function select bit 0: Used as other than as analog pin 1: Used as analog pin P40: AN000 (177/176/145/144/100/64 pin) P41: AN001 (177/176/145/144/100/64 pin) P42: AN002 (177/176/145/144/100/64 pin) P43: AN003 (177/176/145/144/100/64 pin) P44: AN004 (177/176/145/144/100 pin) P45: AN005 (177/176/145/144/100 pin) P46: AN006 (177/176/145/144/100 pin) P47: AN007 (177/176/145/144/100 pin)	Analog function select bit 0: Used as other than as analog pin 1: Used as analog pin P40: AN000 P41: AN001 P42: AN002 P43: AN003

Table 2.9 Comparison of P5n Pin Function Control Register (P5nPFS)

Register	Bit	RX65N (MPC) (n = 0 to 2, 4 to 7)	RX65W-A (MPC)
P5nPFS	—	P5n pin function control register	—

Table 2.10 Comparison of P6n Pin Function Control Register (P6nPFS)

Register	Bit	RX65N (MPC) (n = 6, 7)	RX65W-A (MPC)
P6nPFS	—	P6n pin function control register	—

Table 2.11 Comparison of P7n Pin Function Control Register (P7nPFS)

Register	Bit	RX65N (MPC) (n = 1 to 7)	RX65W-A (MPC)
P7nPFS	—	P7n pin function control register	—

Table 2.12 Comparison of P8n Pin Function Control Registers (P8nPFS)

Register	Bit	RX65N (MPC) (n = 0 to 7)	RX65W-A (MPC) (n = 0 to 2)
P80PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC3B 000110b: PO26 001010b: SCK10 001011b: RTS10# 010001b: ET0_TX_EN 010010b: RMII0_TXD_EN 011000b: EDREQ0 011001b: MMC_D2-A 011010b: SDHI_WP 011011b: QIO2-A 100101b: LCD_DATA14-A	Pin function select bits 000000b: Hi-Z 000001b: MTIOC3B 001010b: SCK10 001011b: RTS10# 010010b: RMII0_TXD_EN 011010b: SDHI_WP
P81PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC3D 000110b: PO27 001010b: RXD10/SMISO10/SSCL10 010001b: ET0_ETXD0 010010b: RMII0_TXD0 011000b: EDACK0 011001b: MMC_D3-A 011010b: SDHI_CD 011011b: QIO3-A 100101b: LCD_DATA13-A	Pin function select bits 000000b: Hi-Z 000001b: MTIOC3D 001010b: RXD10/SMISO10/SSCL10 010010b: RMII0_TXD0 011010b: SDHI_CD

Register	Bit	RX65N (MPC) (n = 0 to 7)	RX65W-A (MPC) (n = 0 to 2)
P82PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC4A 000110b: PO28 001010b: TXD10/SMOSI10/SSDA10 010001b: ET0_ETXD1 010010b: RMII0_TXD1 011000b: EDREQ1 011001b: MMC_D4-A 100101b: LCD_DATA12-A	Pin function select bits 000000b: Hi-Z 000001b: MTIOC4A 001010b: TXD10/SMOSI10/SSDA10 010010b: RMII0_TXD1
P83PFS	PSEL[5:0]	P83 pin function select bits	—
P84PFS	PSEL[5:0]	P84 pin function select bits	—
P85PFS	PSEL[5:0]	P85 pin function select bits	—
P86PFS	PSEL[5:0]	P86 pin function select bits	—
P87PFS	PSEL[5:0]	P87 pin function select bits	—

Table 2.13 Comparison of P9n Pin Function Control Register (P9nPFS)

Register	Bit	RX65N (MPC) (n = 0 to 3)	RX65W-A (MPC)
P9nPFS	—	P9n pin function control register	—

Table 2.14 Comparison of PAn Pin Function Control Registers (PAnPFS)

Register	Bit	RX65N (MPC) (n = 0 to 7)	RX65W-A (MPC) (n = 1 to 4)
PA0PFS	PSEL[5:0]	PA0 pin function select bits	—
PA1PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC0B 000010b: MTCLKC 000011b: TIOCB0 000110b: PO17 001000b: MTIOC7B 001010b: SCK5 001101b: SSLA2-B 010001b: ET0_WOL 100101b: LCD_DATA7-B*1	Pin function select bits 000000b: Hi-Z 000001b: MTIOC0B 000010b: MTCLKC 000011b: TIOCB0 001000b: MTIOC7B 001010b: SCK5 010001b: ET0_WOL
PA2PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000110b: PO18 001000b: MTIOC7A 001010b: RXD5/SMISO5/SSCL5 001101b: SSLA3-B 100101b: LCD_DATA6-B*1	Pin function select bits 000000b: Hi-Z 001000b: MTIOC7A 001010b: RXD5/SMISO5/SSCL5

Register	Bit	RX65N (MPC) (n = 0 to 7)	RX65W-A (MPC) (n = 1 to 4)
PA3PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC0D 000010b: MTCLKD 000011b: TIOC0D 000100b: TCLKB 000110b: PO19 001010b: RXD5/SMISO5/SSCL5 010001b: ET0_MDIO 100101b: LCD_DATA5-B*1	Pin function select bits 000000b: Hi-Z 000001b: MTIOC0D 000010b: MTCLKD 000011b: TIOC0D 000100b: TCLKB 001010b: RXD5/SMISO5/SSCL5 010001b: ET0_MDIO
PA4PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIC5U 000010b: MTCLKA 000011b: TIOCA1 000101b: TMRI0 000110b: PO20 001010b: TXD5/SMOSI5/SSDA5 001101b: SSLA0-B 010001b: ET0_MDC 100101b: LCD_DATA4-B*1	Pin function select bits 000000b: Hi-Z 000001b: MTIC5U 000010b: MTCLKA 000011b: TIOCA1 000101b: TMRI0 001010b: TXD5/SMOSI5/SSDA5 010001b: ET0_MDC
PA5PFS	PSEL[5:0]	PA5 pin function select bits	—
PA6PFS	PSEL[5:0]	PA6 pin function select bits	—
PA7PFS	PSEL[5:0]	PA7 pin function select bits	—

Note: 1. This setting is not supported by products with 1 Mbyte of code flash memory or less.

Table 2.15 Comparison of PBN Pin Function Control Registers (PBNPFS)

Register	Bit	RX65N (MPC) (n = 0 to 7)	RX65W-A (MPC) (n = 0 to 7)
PB0PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIC5W 000011b: TIOCA3 000110b: PO24 001010b: RXD4/SMISO4/SSCL4 001011b: RXD6/SMISO6/SSCL6 010001b: ET0_ERXD1 010010b: RMII0_RXD1 100101b: LCD_DATA0-B	Pin function select bits 000000b: Hi-Z 000001b: MTIC5W 000011b: TIOCA3 001010b: RXD4/SMISO4/SSCL4 001011b: RXD6/SMISO6/SSCL6 010010b: RMII0_RXD1

Register	Bit	RX65N (MPC) (n = 0 to 7)	RX65W-A (MPC) (n = 0 to 7)
PB1PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC0C 000010b: MTIOC4C 000011b: TIOCB3 000101b: TMCIO 000110b: PO25 001010b: TXD4/SMOSI4/SSDA4 001011b: TXD6/SMOSI6/SSDA6 010001b: ET0_ERXD0 010010b: RMII0_RXD0 100101b: LCD_TCON3-B	Pin function select bits 000000b: Hi-Z 000001b: MTIOC0C 000010b: MTIOC4C 000011b: TIOCB3 000101b: TMCIO 001010b: TXD4/SMOSI4/SSDA4 001011b: TXD6/SMOSI6/SSDA6 010010b: RMII0_RXD0
PB2PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000011b: TIOCC3 000100b: TCLKC 000110b: PO26 001010b: CTS4#/RTS4#/SS4# 001011b: CTS6#/RTS6#/SS6# 010001b: ET0_RX_CLK 010010b: REF50CK0 100011b: SDSI_D2 100101b: LCD_TCON2-B	Pin function select bits 000000b: Hi-Z 000011b: TIOCC3 000100b: TCLKC 001010b: CTS4#/RTS4#/SS4# 001011b: CTS6#/RTS6#/SS6# 010010b: REF50CK0 100011b: SDSI_D2
PB3PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC0A 000010b: MTIOC4A 000011b: TIOCD3 000100b: TCLKD 000101b: TMO0 000110b: PO27 000111b: POE11# 001010b: SCK4 001011b: SCK6 010001b: ET0_RX_ER 010010b: RMII0_RX_ER 100011b: SDSI_D3 100101b: LCD_TCON1-B	Pin function select bits 000000b: Hi-Z 000001b: MTIOC0A 000010b: MTIOC4A 000011b: TIOCD3 000100b: TCLKD 000101b: TMO0 000111b: POE11# 001010b: SCK4 001011b: SCK6 010010b: RMII0_RX_ER 100011b: SDSI_D3

Register	Bit	RX65N (MPC) (n = 0 to 7)	RX65W-A (MPC) (n = 0 to 7)
PB4PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000011b: TIOCA4 000110b: PO28 001011b: CTS9#/RTS9#/SS9# 010001b: ET0_TX_EN 010010b: RMII0_TXD_EN 100011b: SDSI_CMD 100100b: CTS11#/RTS11#/SS11# 100101b: LCD_TCON0-B	Pin function select bits 000000b: Hi-Z 000011b: TIOCA4 001011b: CTS9#/RTS9#/SS9# 010010b: RMII0_TXD_EN 100011b: SDSI_CMD 100100b: CTS11#/RTS11#/SS11#
PB5PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC2A 000010b: MTIOC1B 000011b: TIOCB4 000101b: TMRI1 000110b: PO29 000111b: POE4# 001010b: SCK9 010001b: ET0_ETXD0 010010b: RMII0_TXD0 100011b: SDSI_CLK 100100b: SCK11 100101b: LCD_CLK-B	Pin function select bits 000000b: Hi-Z 000001b: MTIOC2A 000010b: MTIOC1B 000011b: TIOCB4 000101b: TMRI1 000111b: POE4# 001010b: SCK9 010010b: RMII0_TXD0 100011b: SDSI_CLK 100100b: SCK11
PB6PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC3D 000011b: TIOCA5 000110b: PO30 001010b: RXD9/SMISO9/SSCL9 010001b: ET0_ETXD1 010010b: RMII0_TXD1 100011b: SDSI_D0 100100b: RXD11/SMISO11/SSCL11	Pin function select bits 000000b: Hi-Z 000001b: MTIOC3D 000011b: TIOCA5 001010b: RXD9/SMISO9/SSCL9 010010b: RMII0_TXD1 100011b: SDSI_D0 100100b: RXD11/SMISO11/SSCL11
PB7PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC3B 000011b: TIOCB5 000110b: PO31 001010b: TXD9/SMOSI9/SSDA9 010001b: ET0_CRS 010010b: RMII0_CRS_DV 100011b: SDSI_D1 100100b: TXD11/SMOSI11/SSDA11	Pin function select bits 000000b: Hi-Z 000001b: MTIOC3B 000011b: TIOCB5 001010b: TXD9/SMOSI9/SSDA9 010010b: RMII0_CRS_DV 100011b: SDSI_D1 100100b: TXD11/SMOSI11/SSDA11

Table 2.16 Comparison of PCn Pin Function Control Register (PCnPFS)

Register	Bit	RX65N (MPC) (n = 0 to 7)	RX65W-A (MPC) (n = 0, 1, 4 to 7)
PC0PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC3C 000011b: TCLKC 000110b: PO17 001011b: CTS5#/RTS5#/SS5# 001101b: SSLA1-A 010001b: ET0_ERXD3	Pin function select bits 000000b: Hi-Z 000001b: MTIOC3C 000011b: TCLKC 001011b: CTS5#/RTS5#/SS5# 001101b: SSLA1
PC1PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC3A 000011b: TCLKD 000110b: PO18 001010b: SCK5 001101b: SSLA2-A 010001b: ET0_ERXD3 100101b: LCD_DATA22-A	Pin function select bits 000000b: Hi-Z 000001b: MTIOC3A 000011b: TCLKD 001010b: SCK5 001101b: SSLA2
PC2PFS	PSEL[5:0]	PC2 pin function select bits	—
PC3PFS	PSEL[5:0]	PC3 pin function select bits	—
PC4PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC3D 000010b: MTCLKC 000101b: TMCI1 000110b: PO25 000111b: POE0# 001010b: SCK5 001011b: CTS8#/RTS8#/SS8# 001101b: SSLA0-A 010001b: ET0_TX_CLK 011001b: MMC_D1-A 011010b: SDHI_D1-A 011011b: QIO1-A/QMI-A 100011b: SDSI_D1 100100b: CTS10#/RTS10#/SS10# 100101b: LCD_DATA15-A*1	Pin function select bits 000000b: Hi-Z 000001b: MTIOC3D 000010b: MTCLKC 000101b: TMCI1 000111b: POE0# 001010b: SCK5 001011b: CTS8#/RTS8#/SS8# 001101b: SSLA0 100100b: CTS10#/RTS10#/SS10#

Register	Bit	RX65N (MPC) (n = 0 to 7)	RX65W-A (MPC) (n = 0, 1, 4 to 7)
PC5PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC3B 000010b: MTCLKD 000101b: TMRI2 000110b: PO29 001010b: SCK8 001101b: RSPCKA-A 010001b: ET0_ETXD2 011001b: MMC_D5-A 100100b: SCK10 100101b: LCD_DATA11-A*1	Pin function select bits 000000b: Hi-Z 000001b: MTIOC3B 000010b: MTCLKD 000101b: TMRI2 001010b: SCK8 001101b: RSPCKA 100100b: SCK10
PC6PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC3C 000010b: MTCLKA 000101b: TMC12 000110b: PO30 001010b: RXD8/SMISO8/SSCL8 001101b: MOSIA-A 010001b: ET0_ETXD3 011001b: MMC_D6-A 011101b: TIC0 100100b: RXD10/SMISO10/SSCL10 100101b: LCD_DATA10-A*1	Pin function select bits 000000b: Hi-Z 000001b: MTIOC3C 000010b: MTCLKA 000101b: TMC12 001010b: RXD8/SMISO8/SSCL8 001101b: MOSIA 011101b: TIC0 100100b: RXD10/SMISO10/SSCL10
PC7PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC3A 000010b: MTCLKB 000101b: TMO2 000110b: PO31 000111b: CACREF 001010b: TXD8/SMOSI8/SSDA8 001101b: MISOA-A 010001b: ET0_COL 011001b: MMC_D7-A 011101b: TOC0 100100b: TXD10/SMOSI10/SSDA10 100101b: LCD_DATA9-A*1	Pin function select bits 000000b: Hi-Z 000001b: MTIOC3A 000010b: MTCLKB 000101b: TMO2 000111b: CACREF 001010b: TXD8/SMOSI8/SSDA8 001101b: MISOA 011101b: TOC0 100100b: TXD10/SMOSI10/SSDA10

Note: 1. This setting is not supported by products with 1 Mbyte of code flash memory or less.

Table 2.17 Comparison of PDn Pin Function Control Registers (PDnPFS)

Register	Bit	RX65N (MPC) (n = 0 to 7)	RX65W-A (MPC) (n = 2 to 7)
PD0PFS	PSEL[5:0]	PD0 pin function select bits	—
PD1PFS	PSEL[5:0]	PD1 pin function select bits	—
PD2PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC4D 001101b: MISOC-A 010000b: CRX0 011001b: MMC_D2-B 011010b: SDHI_D2-B 011011b: QIO2-B 011101b: TIC2 100101b: LCD_DATA22-B*1	Pin function select bits 000000b: Hi-Z 000001b: MTIOC4D 011010b: SDHI_D2 011011b: QIO2 011101b: TIC2
PD3PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000111b: POE8# 001000b: MTIOC8D 001101b: RSPCKC-A 011001b: MMC_D3-B 011010b: SDHI_D3-B 011011b: QIO3-B 011101b: TOC2 100101b: LCD_DATA21-B*1	Pin function select bits 000000b: Hi-Z 000111b: POE8# 001000b: MTIOC8D 011010b: SDHI_D3 011011b: QIO3 011101b: TOC2
PD4PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000111b: POE11# 001000b: MTIOC8B 001101b: SSLC0-A 011001b: MMC_CMD-B 011010b: SDHI_CMD-B 011011b: QSSL-B 100101b: LCD_DATA20-B*1	Pin function select bits 000000b: Hi-Z 000111b: POE11# 001000b: MTIOC8B 011010b: SDHI_CMD 011011b: QSSL
PD5PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIC5W 000111b: POE10# 001000b: MTIOC8C 001101b: SSLC1-A 011001b: MMC_CLK-B 011010b: SDHI_CLK-B 011011b: QSPCLK-B 100101b: LCD_DATA19-B*1	Pin function select bits 000000b: Hi-Z 000001b: MTIC5W 000111b: POE10# 001000b: MTIOC8C 011010b: SDHI_CLK 011011b: QSPCLK

Register	Bit	RX65N (MPC) (n = 0 to 7)	RX65W-A (MPC) (n = 2 to 7)
PD6PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIC5V 000111b: POE4# 001000b: MTIOC8A 001101b: SSLC2-A 011001b: MMC_D0-B 011010b: SDHI_D0-B 011011b: QIO0-B/QMO-B 100101b: LCD_DATA18-B*1	Pin function select bits 000000b: Hi-Z 000001b: MTIC5V 000111b: POE4# 001000b: MTIOC8A 011010b: SDHI_D0 011011b: QIO0/QMO
PD7PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIC5U 000111b: POE0# 001101b: SSLC3-A 011001b: MMC_D1-B 011010b: SDHI_D1-B 011011b: QIO1-B/QMI-B 100101b: LCD_DATA17-B*1	Pin function select bits 000000b: Hi-Z 000001b: MTIC5U 000111b: POE0# 011010b: SDHI_D1 011011b: QMI/QIO1
PDnPFS	ISEL	Interrupt input function select bit 0: Not used as IRQn input pin 1: Used as IRQn input pin PD0: IRQ0 (177/176/145/144/100 pin) PD1: IRQ1 (177/176/145/144/100 pin) PD2: IRQ2 (177/176/145/144/100/64 pin) PD3: IRQ3 (177/176/145/144/100/64 pin) PD4: IRQ4 (177/176/145/144/100/64 pin) PD5: IRQ5 (177/176/145/144/100/64 pin) PD6: IRQ6 (177/176/145/144/100/64 pin) PD7: IRQ7 (177/176/145/144/100/64 pin)	Interrupt input function select bit 0: Not used as IRQn input pin 1: Used as IRQn input pin PD2: IRQ2 PD3: IRQ3 PD4: IRQ4 PD5: IRQ5 PD6: IRQ6 PD7: IRQ7

Register	Bit	RX65N (MPC) (n = 0 to 7)	RX65W-A (MPC) (n = 2 to 7)
PDnPFS	ASEL	Analog function select bit 0: Used as other than as analog pin 1: Used as analog pin PD0: AN108 (177/176/145/144/100 pin) PD1: AN109 (177/176/145/144/100 pin) PD2: AN110 (177/176/145/144/100/64 pin) PD3: AN111 (177/176/145/144/100/64 pin) PD4: AN112 (177/176/145/144/100/64 pin) PD5: AN113 (177/176/145/144/100/64 pin) PD6: AN106 (177/176/145/144/100/64 pin) PD7: AN107 (177/176/145/144/100/64 pin)	Analog function select bit 0: Used as other than as analog pin 1: Used as analog pin PD2: AN110 PD3: AN111 PD4: AN112 PD5: AN113 PD6: AN106 PD7: AN107

Note: 1. This setting is not supported by products with 1 Mbyte of code flash memory or less.

Table 2.18 Comparison of PEn Pin Function Control Registers (PEnPFS)

Register	Bit	RX65N (MPC) (n = 0 to 7)	RX65W-A (MPC) (n = 0 to 2, 4 to 7)
PE0PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 001000b: MTIOC3D 001100b: SCK12 001101b: SSLB1-B 011001b: MMC_D4-B 100101b: LCD_DATA16-B*1	Pin function select bits 000000b: Hi-Z 001000b: MTIOC3D 001100b: SCK12 001101b: SSLB1
PE1PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC4C 000110b: PO18 001000b: MTIOC3B 001100b: TXD12/SMOSI12/SSDA12/ TXDX12/SIOX12 001101b: SSLB2-B 011001b: MMC_D5-B 100101b: LCD_DATA15-B*1	Pin function select bits 000000b: Hi-Z 000001b: MTIOC4C 001000b: MTIOC3B 001100b: TXD12/SSDA12/TXDX12/ SIOX12 001101b: SSLB2

Register	Bit	RX65N (MPC) (n = 0 to 7)	RX65W-A (MPC) (n = 0 to 2, 4 to 7)
PE2PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC4A 000110b: PO23 001100b: RXD12/ SMISO12 /SSCL12/ RXDX12 001101b: SSLB3- B 011001b: MMC_D6-B 011101b: TIC3 100101b: LCD_DATA14-B*1	Pin function select bits 000000b: Hi-Z 000001b: MTIOC4A 001100b: RXD12/SSCL12/RXDX12 001101b: SSLB3 011101b: TIC3
PE3PFS	PSEL[5:0]	PE3 pin function select bits	—
PE4PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC4D 000010b: MTIOC1A 000110b: PO28 001101b: SSLB0- B 010001b: ET0_ERXD2 100101b: LCD_DATA12-B*1	Pin function select bits 000000b: Hi-Z 000001b: MTIOC4D 000010b: MTIOC1A 001101b: SSLB0
PE5PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 000001b: MTIOC4C 000010b: MTIOC2B 001101b: RSPCKB- B 010001b: ET0_RX_CLK 010010b: REF50CK0 100101b: LCD_DATA11-B*1	Pin function select bits 000000b: Hi-Z 000001b: MTIOC4C 000010b: MTIOC2B 001101b: RSPCKB 010010b: REF50CK0
PE6PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 001000b: MTIOC6C 001101b: MOSIB- B 011001b: MMC_CD-B 011010b: SDHI_CD 011101b: TIC1 100101b: LCD_DATA10-B*1	Pin function select bits 000000b: Hi-Z 001000b: MTIOC6C 001101b: MOSIB 011010b: SDHI_CD 011101b: TIC1
PE7PFS	PSEL[5:0]	Pin function select bits 000000b: Hi-Z 001000b: MTIOC6A 001101b: MISOB- B 011001b: MMC_RES#-B 011010b: SDHI_WP 011101b: TOC1 100101b: LCD_DATA9-B*1	Pin function select bits 000000b: Hi-Z 001000b: MTIOC6A 001101b: MISOB 011010b: SDHI_WP 011101b: TOC1

Register	Bit	RX65N (MPC) (n = 0 to 7)	RX65W-A (MPC) (n = 0 to 2, 4 to 7)
PEnPFS	ASEL	0: Used as other than as analog pin 1: Used as analog pin PE0: ANEX0 (177/176/145/144/100/64 pin) PE1: ANEX1 (177/176/145/144/100/64 pin) PE2: AN100 (177/176/145/144/100 pin) PE3: AN101 (177/176/145/144/100 pin) PE4: AN102 (177/176/145/144/100 pin) PE5: AN103 (177/176/145/144/100 pin) PE6: AN104 (177/176/145/144/100 pin) PE7: AN105 (177/176/145/144/100 pin)	0: Used as other than as analog pin 1: Used as analog pin PE0: ANEX0 PE1: ANEX1 PE2: AN100 PE4: AN102 PE5: AN103 PE6: AN104 PE7: AN105

Note: 1. This setting is not supported by products with 1 Mbyte of code flash memory or less.

Table 2.19 Comparison of PFn Pin Function Control Register (PFnPFS)

Register	Bit	RX65N (MPC) (n = 0 to 2, 5)	RX65W-A (MPC)
PFnPFS	—	PFn pin function control register	—

Table 2.20 Comparison of PJn Pin Function Control Register (PJnPFS)

Register	Bit	RX65N (MPC) (n = 0 to 3, 5)	RX65W-A (MPC)
PJnPFS	—	PJn pin function control register	—

Table 2.21 Comparison of Multi-Function Pin Controller Registers

Register	Bit	RX65N (MPC)	RX65W-A (MPC)
PFCSE	—	CS output enable register	—
PFCSS0	—	CS output pin select register 0	—
PFCSS1	—	CS output pin select register 1	—
PFAOE0	—	Address output enable register 0	—
PFAOE1	—	Address output enable register 1	—
PFBCR0	—	External bus control register 0	—
PFBCR1	—	External bus control register 1	—
PFBCR2	—	External bus control register 2	—
PFBCR3	—	External bus control register 3	—
PFENET	PHYMODE0	Ethernet Channel 0 Mode Set 0: RMII mode (ETHERC0) 1: MII mode (ETHERC0)	Ethernet Channel 0 Mode Set 0: RMII mode (ETHERC0)

2.3 Input/Output Pins by Function

Some input/output pins are not included in the RX65W-A MCU Group due to differences from those of the RX65N/RX651 MCU Group. The following shows a list of input/output pins by function.

Table 2.22 Comparison of Input/Output Pins by Function

Classification	RX65N/RX651	RX65W-A
Digital power supply	VCC	VCC
	VCL	VCL
	VSS	VSS
	VBATT	VBATT
Clock	XTAL	XTAL
	EXTAL	EXTAL
	BCLK	—
	SDCLK	—
	XCOUT	XCOUT
	XCIN	XCIN
Clock frequency accuracy measurement	CACREF	CACREF
Operating mode control	MD	MD
	UB	UB
	UPSEL	UPSEL
System control	RES#	RES#
	EMLE	EMLE
	BSCANP	BSCANP
On-chip emulator	FINED	FINED
	TRST#	TRST#
	TMS	TMS
	TDI	TDI
	TCK	TCK
	TDO	TDO
	TRCLK	—
	TRSYNC	—
	TRSYNC1	—
	TRDATA0	—
	TRDATA1	—
	TRDATA2	—
	TRDATA3	—
	TRDATA4	—
	TRDATA5	—
	TRDATA6	—
	TRDATA7	—
Address bus	A0 to A23	—
Data bus	D0 to D31	—
Multiplexed bus	A0/D0 to A15/D15	—
Bus control	RD#	—
	WR#	—
	WR0# to WR3#	—
	BC0# to BC3#	—
	ALE	—
	WAIT#	—
	CS0# to CS7#	—

Classification	RX65N/RX651	RX65W-A
Bus control	CKE	—
	SDCS#	—
	RAS#	—
	CAS#	—
	WE#	—
	DQM0 to DQM3	—
EXDMA controller	EDREQ0, EDREQ1	—
	EDACK0, EDACK1	—
Interrupt	NMI	NMI
	IRQ0 to IRQ15, IRQ0-DS to IRQ15-DS	IRD2 to IRQ7, IRQ11 to IRQ14, IRD0-DS, IRQ1-DS, IRQ4-DS to IRQ11-DS
Multi-function timer pulse unit 3	MTIOC0A, MTIOC0B, MTIOC0C, MTIOC0D	MTIOC0A, MTIOC0B, MTIOC0C, MTIOC0D
	MTIOC1A, MTIOC1B	MTIOC1A, MTIOC1B
	MTIOC2A, MTIOC2B	MTIOC2A, MTIOC2B
	MTIOC3A, MTIOC3B, MTIOC3C, MTIOC3D	MTIOC3A, MTIOC3B, MTIOC3C, MTIOC3D
	MTIOC4A, MTIOC4B, MTIOC4C, MTIOC4D	MTIOC4A, MTIOC4B, MTIOC4C, MTIOC4D
	MTIC5U, MTIC5V, MTIC5W	MTIC5U, MTIC5V, MTIC5W
	MTIOC6A, MTIOC6B, MTIOC6C, MTIOC6D	MTIOC6A, MTIOC6C
	MTIOC7A, MTIOC7B, MTIOC7C, MTIOC7D	MTIOC7A, MTIOC7B
	MTIOC8A, MTIOC8B, MTIOC8C, MTIOC8D	MTIOC8A, MTIOC8B, MTIOC8C, MTIOC8D
	MTCLKA, MTCLKB, MTCLKC, MTCLKD	MTCLKA, MTCLKB, MTCLKC, MTCLKD
Port Output Enable 3	POE0#, POE4#, POE8#, POE10#, POE11#	POE0#, POE4#, POE8#, POE10#, POE11#
16-bit timer pulse unit	TIOCA0, TIOCB0, TIOCC0, TIOCD0	TIOCB0, TIOCD0
	TIOCA1, TIOCB1	TIOCA1, TIOCB1
	TIOCA2, TIOCB2	—
	TIOCA3, TIOCB3, TIOCC3, TIOCD3	TIOCA3, TIOCB3, TIOCC3, TIOCD3
	TIOCA4, TIOCB4	TIOCA4, TIOCB4
	TIOCA5, TIOCB5	TIOCA5, TIOCB5
	TCLKA, TCLKB, TCLKC, TCLKD	TCLKB, TCLKC, TCLKD
Programmable pulse generator	PO0 to PO31	—
8-bit timer	TMO0 to TMO3	TMO0 to TMO3
	TMCI0 to TMCI3	TMCI0 to TMCI3
	TMRI0 to TMRI3	TMRI0 to TMRI3
Compare match timer W	TIC0 to TIC3	TIC0 to TIC3
	TOC0 to TOC3	TOC0 to TOC2
Serial communications interface (SCIg)	• Asynchronous mode/clock synchronous mode	
	SCK0 to SCK9	SCK1, SCK4 to SCK6, SCK8, SCK9
	RXD0 to RXD9	RXD1 to RXD6, RXD8, RXD9
	TXD0 to TXD9	TXD1 to TXD6, TXD8, TXD9

Classification	RX65N/RX651	RX65W-A
Serial communications interface (SCIg)	CTS0# to CTS9#	CTS1#, CTS3# to CTS6#, CTS8#, CTS9#
	RTS0# to RTS9#	RTS1#, RTS3# to RTS6#, RTS8#, RTS9#
	• Simple I ² C mode	
	SSCL0 to SSCL9	SSCL1 to SSCL6, SSCL8, SSCL9
	SSDA0 to SSDA9	SSDA1 to SSDA6, SSDA8, SSDA9
	• Simple SPI mode	
	SCK0 to SCK9	SCK1, SCK4 to SCK6, SCK8, SCK9
	SMISO0 to SMISO9	SMISO1, SMISO4 to SMISO6, SMISO8, SMISO9
	SMOSI0 to SMOSI9	SMOSI1, SMOSI4 to SMOSI6, SMOSI8, SMOSI9
Serial communications interface (SCIh)	SS0# to SS9#	SS1#, SS4# to SS6#, SS8#, SS9#
	• Asynchronous mode/clock synchronous mode	
	SCK12	SCK12
	RXD12	RXD12
	TXD12	TXD12
	CTS12#	—
	RTS12#	—
	• Simple I ² C mode	
	SSCL12	SSCL12
	SSDA12	SSDA12
	• Simple SPI mode	
	SCK12	—
	SMISO12	—
	SMOSI12	—
	SS12#	—
	• Extended serial mode	
	RDX12	RDX12
	TXDX12	TXDX12
	SIOX12	SIOX12
Serial communications interface (SCli)	• Asynchronous mode/clock synchronous mode	
	SCK10, SCK11	SCK10, SCK11
	RXD10, RXD11	RXD10, RXD11
	TXD10, TXD11	TXD10, TXD11
	CTS10#, CTS11#	CTS10#, CTS11#
	RTS10#, RTS11#	RTS10#, RTS11#
	• Simple I ² C mode	
	SSCL10, SSCL11	SSCL10, SSCL11
	SSDA10, SSDA11	SSDA10, SSDA11
	• Simple SPI mode	
	SCK10, SCK11	SCK10, SCK11
	SMISO10, SMISO11	SMISO10, SMISO11
	SMOSI10, SMOSI11	SMOSI10, SMOSI11
	SS10#, SS11#	SS10#, SS11#
I ² C bus interface	SCL0[FM+], SCL1, SCL2, SCL2-DS	SCL0[FM+], SCL2-DS
	SDA0[FM+], SDA1, SDA2, SDA2-DS	SDA0[FM+], SDA2-DS

Classification	RX65N/RX651	RX65W-A
Ethernet controller	REF50CK0	REF50CK0
	RMII0_CRS_DV	RMII0_CRS_DV
	RMII0_TXD0, RMII0_TXD1	RMII0_TXD0, RMII0_TXD1
	RMII0_RXD0, RMII0_RXD1	RMII0_RXD0, RMII0_RXD1
	RMII0_TXD_EN	RMII0_TXD_EN
	RMII0_RX_ER	RMII0_RX_ER
	ET0_CRS	—
	ET0_RX_DV	—
	ET0_EXOUT	—
	ET0_LINKSTA	ET0_LINKSTA
	ET0_ETXD0 to ET0_ETXD3	—
	ET0_ERXD0 to ET0_ERXD3	—
	ET0_TX_EN	—
	ET0_TX_ER	—
	ET0_RX_ER	—
	ET0_TX_CLK	—
	ET0_RX_CLK	—
	ET0_COL	—
	ET0_WOL	ET0_WOL
	ET0_MDC	ET0_MDC
	ET0_MDIO	ET0_MDIO
USB 2.0 host/ function module	VCC_USB	VCC_USB
	VSS_USB	VSS_USB
	USB0_DP	USB0_DP
	USB0_DM	USB0_DM
	USB0_EXICEN	—
	USB0_ID	—
	USB0_VBUSEN	—
	USB0_OVRCURA/ USB0_OVRCURB	—
	USB0_VBUS	USB0_VBUS
CAN module	CRX0 to CRX1, CRX1-DS	—
	CTX0, CTX1	—
Serial peripheral interface	RSPCKA-A/RSPCKA-B/ RSPCKB-A/RSPCKB-B/ RSPCKC-A/RSPCKC-B	RSPCKA/RSPCKB
	MOSIA-A/MOSIA-B/ MOSIB-A/MOSIB-B/ MOSIC-A/MOSIC-B	MOSIA/MOSIB
	MISOA-A/MISOA-B/ MISOB-A/MISOB-B/ MISOC-A/MISOC-B	MISOA/MISOB
	SSLA0-A/SSLA0-B/ SSLB0-A/SSLB0-B/ SSLC0-A/SSLC0-B	SSLA0/SSLB0

Classification	RX65N/RX651	RX65W-A
Serial peripheral interface	SSLA1-A/ SSLA1-B/ SSLB1-A/ SSLB1-B/ SSLC1-A/SSLC1-B, SSLA2-A/ SSLA2-B/ SSLB2-A/ SSLB2-B/ SSLC2-A/SSLC2-B, SSLA3-A/SSLA3-B/ SSLB3-A/ SSLB3-B/ SSLC3-A/SSLC3-B	SSLA1/SSLB1, SSLA2/SSLB2, SSLB3
Quad serial peripheral interface	QSPCLK-A/ QSPCLK-B	QSPCLK
	QSSL-A/ QSSL-B	QSSL
	QMO-A/ QMO-B/QIO0-A/QIO0-B	QMO, QIO0
	QMI-A/ QMI-B/QIO1-A/QIO1-B	QMI, QIO1
	QIO2-A/ QIO2-B/QIO3-A/QIO3-B	QIO2, QIO3
MMC host interface	MMC_CLK-A/MMC_CLK-B	—
	MMC_CMD-A/MMC_CMD-B	—
	MMC_D7-A/MMC_D7-B to MMC_D0-A/MMC_D0-B	—
	MMC_CD-A/MMC_CD-B	—
	MMC_RES#-A/MMC_RES#-B	—
SD host interface	SDHI_CLK-A/ SDHI_CLK-B/ SDHI_CLK-C	SDHI_CLK
	SDHI_CMD-A/ SDHI_CMD-B/ SDHI_CMD-C	SDHI_CMD
	SDHI_D3-A/ SDHI_D3-B/ SDHI_D3-C to SDHI_D0-A/ SDHI_D0-B/SDHI_D0-C	SDHI_D0,SDHI_D1,SDHI_D2,SDHI_D3
	SDHI_CD	SDHI_CD
	SDHI_WP	SDHI_WP
SD slave interface	SDSI_CLK-A/ SDSI_CLK-B	SDSI_CLK
	SDSI_CMD-A/ SDSI_CMD-B	SDSI_CMD
	SDSI_D3-A/ SDSI_D3-B, SDSI_D2-A/ SDSI_D2-B, SDSI_D1-A/ SDSI_D1-B, SDSI_D0-A/ SDSI_D0-B	SDSI_D0, SDSI_D1, SDSI_D2, SDSI_D3
Parallel data capture unit	PIXCLK	—
	VSNC	—
	HSNC	—
	PIXD0 to PIXD7	—
	PCKO	—
Graphic-LCD controller	LCD_CLK-A, LCD_CLK-B	—
	LCD_TCON3-A/LCD_TCON3-B to LCD_TCON0-A/LCD_TCON0-B	—
	LCD_DATA23-A/LCD_DATA23-B to LCD_DATA0-A/LCD_DATA0-B	—
	LCD_EXTCLK-A, LCD_EXTCLK-B	—
Realtime clock	RTCOUT	RTCOUT
	RTCIC0 to RTCIC2	RTCIC0, RTCIC1
12-bit A/D converter	AN000 to AN007, AN100 to AN120	AN000 to AN003, AN100, AN102 to AN107, AN110 to AN113
	ADTRG0#, ADTRG1#	ADTRG0#, ADTRG1#
	ANEX0	ANEX0

Classification	RX65N/RX651	RX65W-A
12-bit A/D converter	ANEX1	ANEX1
12-bit D/A converter	DA0, DA1	—
Analog power supply	AVCC0	AVCC0
	AVSS0	AVSS0
	VREFH0	VREFH0
	VREFL0	VREFL0
	AVCC1	AVCC1
	AVSS1	AVSS1
I/O ports	P00 to P03, P05, P07	—
	P10 to P17	P12, P13, P16, P17
	P20 to P27	P26, P27
	P30 to P37	P30, P31, P34 to P37
	P40 to P47	P40 to P43
	P50 to P57	P53
	P60 to P67	—
	P70 to P77	—
	P80 to P87	P80 to P82
	P90 to P97	—
	PA0 to PA7	PA1 to PA4
	PB0 to PB7	PB0 to PB7
	PC0 to PC7	PC0, PC1, PC4 to PC7
	PD0 to PD7	PD2 to PD7
	PE0 to PE7	PE0 to PE2, PE4 to PE7
	PF0 to PF5	—
	PG0 to PG7	—
	PJ0 to PJ3, PJ5	—
RF transceiver	—	SIN
	—	SOUT
	—	SCLK
	—	SEN
	—	VREG_DIG
	—	GPIO0 to GPIO12
	—	VCC_DA
	—	VREG_RF
	—	RFIN
	—	VSS
	—	RFOUT
	—	VREG_TXPA
	—	VCC_RF
	—	VREG_PLL
	—	VREG_VCO
	—	REXT
	—	VCC_A
	—	XIN
	—	XOUT
	—	CKOUT
	—	REGIN
	—	VSS_DDC
	—	DDC_OUT
	—	VCC_DDC
	—	VCC_D

Classification	RX65N/RX651	RX65W-A
RF transceiver	—	RSTB
	—	MODE

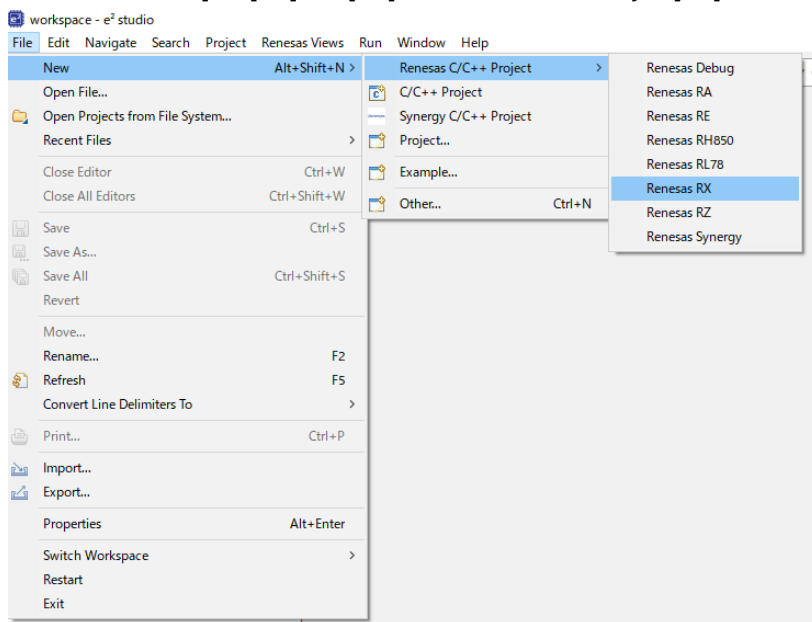
3. Creating RX65W-A projects and Specifying Smart Configurator Settings by Using e² studio

To use the RX65W-A Group in e² studio, no product type of the RX65W-A group is provided. You can create a project and use the Smart Configurator by specifying a product type of the RX65N Group instead. However, because the operation uses the MCU information of the RX65N Group, do not use ports or peripheral functions that do not exist on the RX65W-A group.

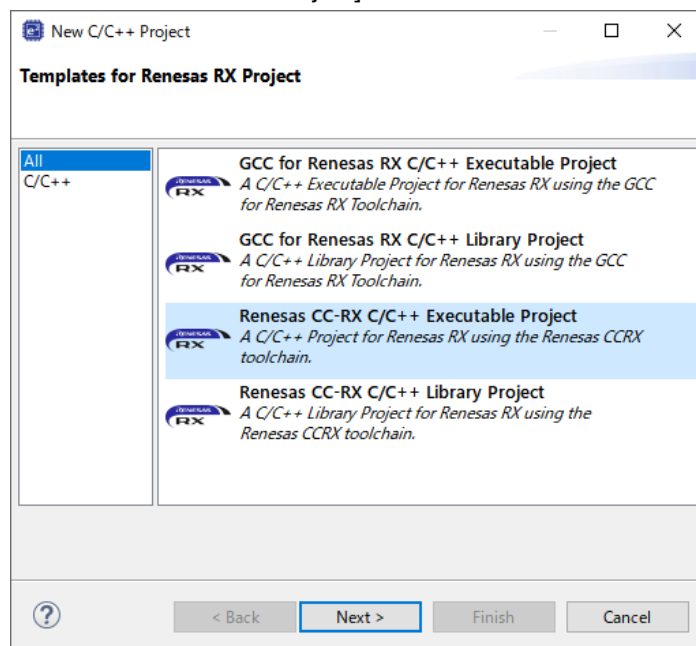
3.1 Creating a Project

The following describes an example of creating a project.

(1) Activate e² studio, and then click [File] > [New] > [Renesas C/C++ Project] > [Renesas RX].



(2) Select [Renesas CC-RX C/C++ Executable Project].



(3) Specify the project name and the location in which a working space is to be created.

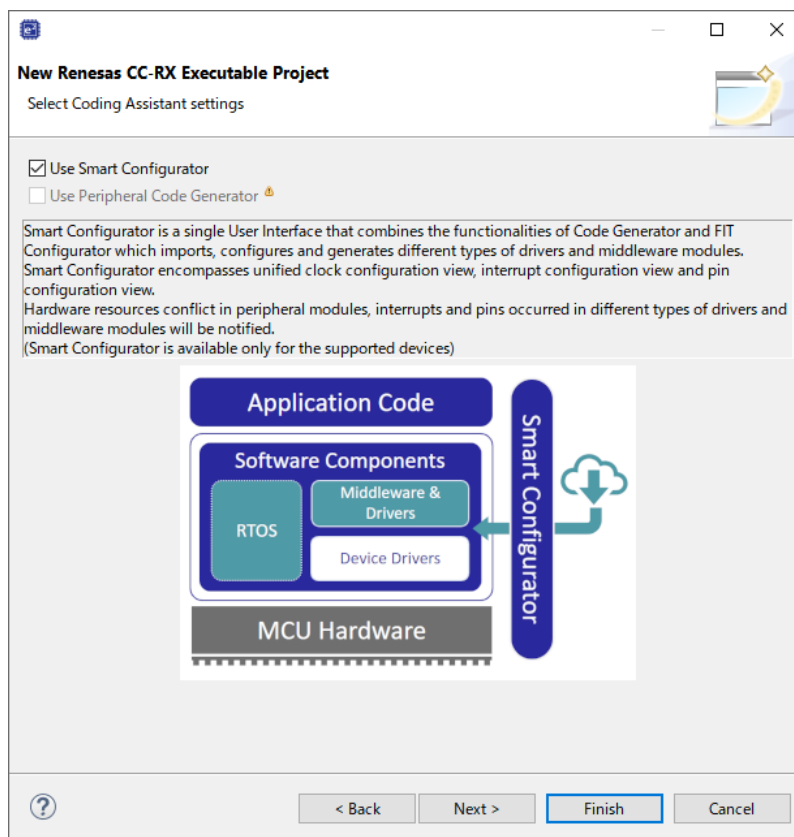
(4) Specify the settings for [Toolchain Settings], [Device Settings], and [Configurations].

For [Target Device], specify the product model corresponding to the device according to the following table.

This example uses R5F565NEHDFC.

RX65W-A device	Device to be selected
R5F565WEADBF	R5F565NEHDFC
R5F565WEMDBF	R5F5651EDDFC

(5) Select the check box for [Use Smart Configurator], and then click [Finish] to terminate creation of the project.



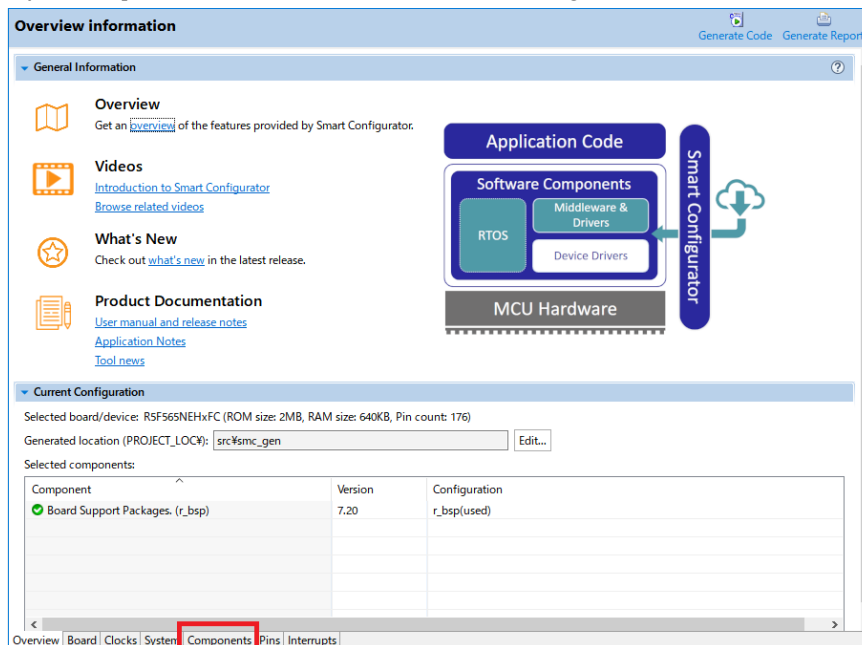
3.2 Specifying Smart Configuration Settings

You can use the component for peripheral functions (FIT (Firmware Integration Technology) or [Generate Code]) in the software component configuration.

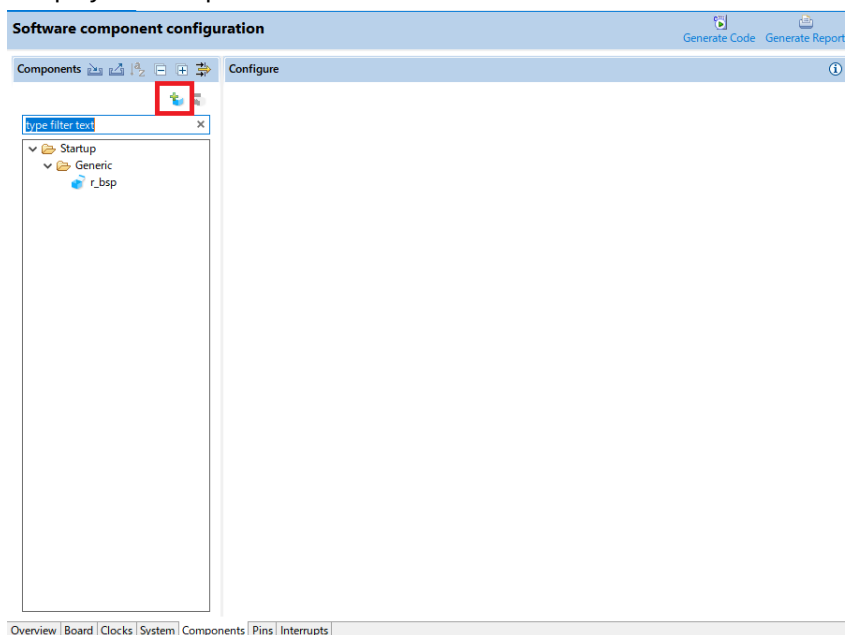
Note that available pins, channels, and functions are restricted due to the use of MCU information of the RX65N Group. For details of available pins and channels, refer to 2.3, Input/Output Pins by Function.

The following describes a setting example for using SCI2 with the SCI module Firmware Integration Technology (SCI FIT module) in asynchronous mode.

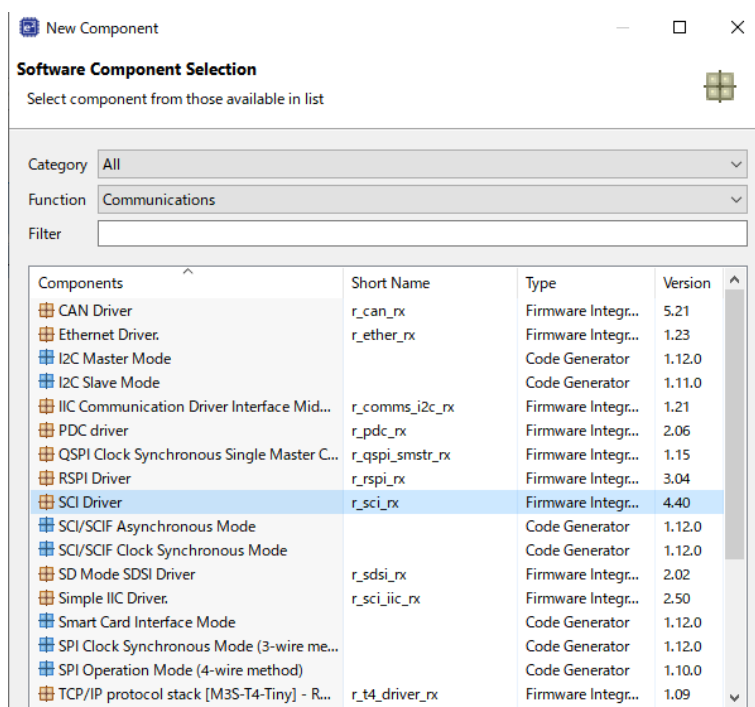
(1) Select the [Components] tab on the bottom of the Smart Configurator.



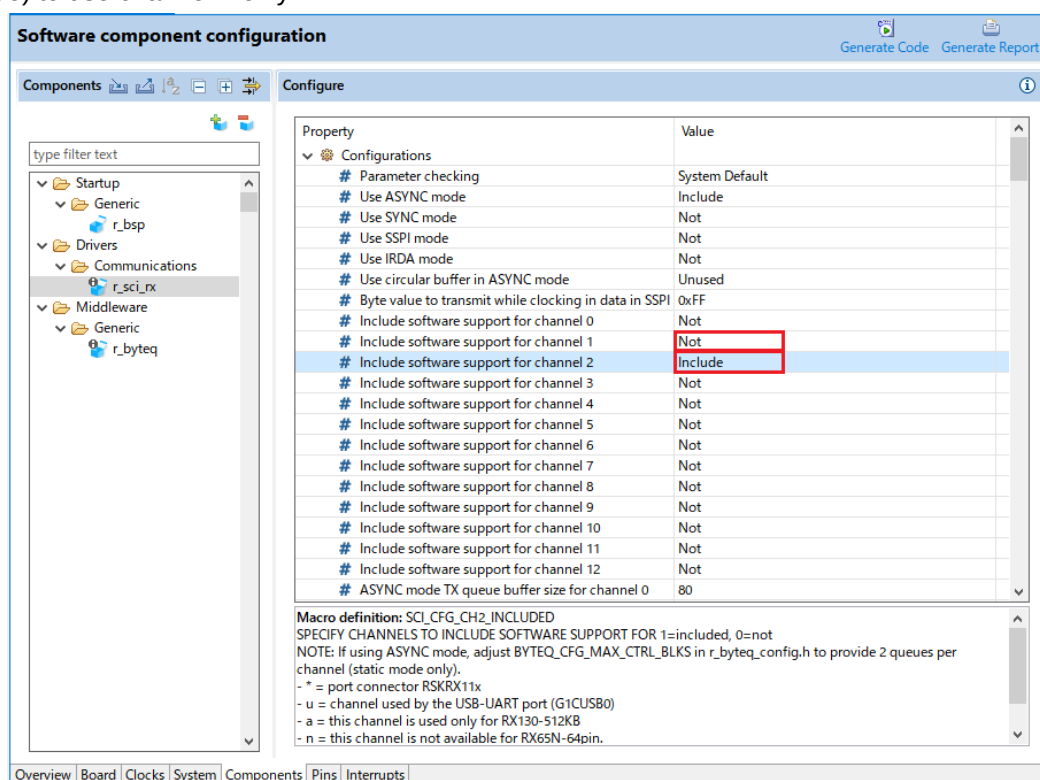
(2) On the Software component configuration screen, click the icon for adding components (icon in the red frame below) to display the component selection screen.



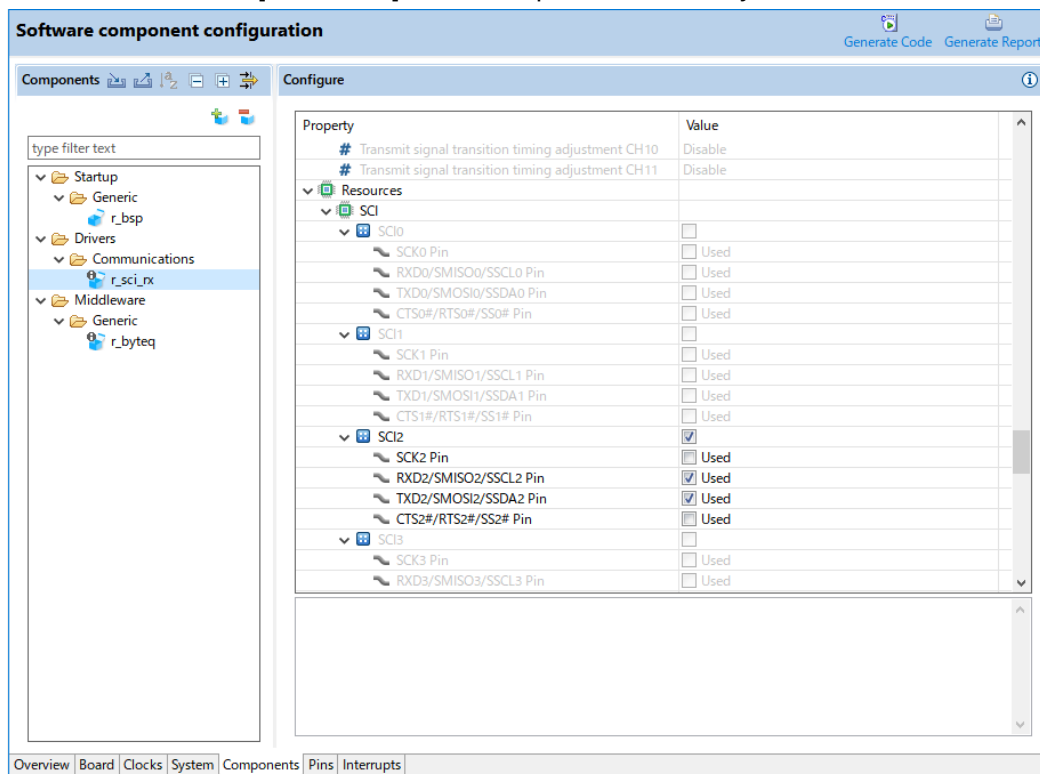
- (3) Select “SCI Driver” from the list of components. Confirm that the type is “Firmware Integration Technology”.



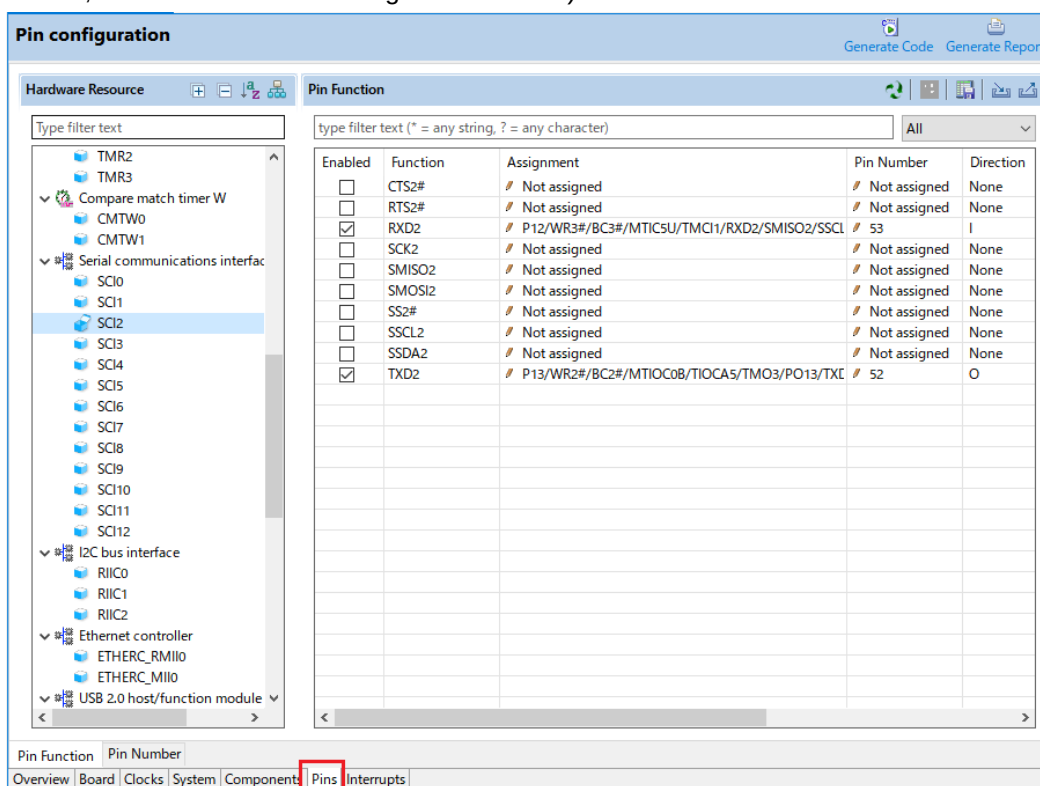
- (4) Select “Drivers”, “Communications”, and then “r_sci_rx”. Then, specify the SCI settings under [Property]. In this example, the settings have been changed to disable channel 1 (Not) and enable channel 2 (Include) to use channel 2 only.



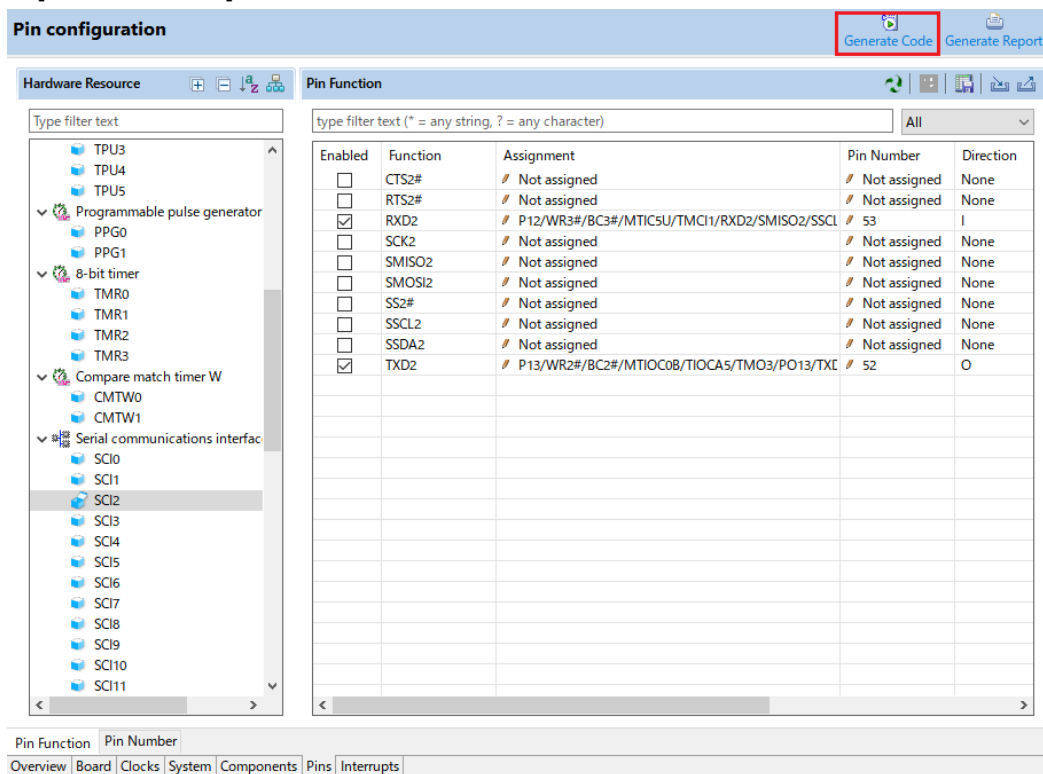
(5) On the same screen, under [Resources], select the pins to be used by SCI2.



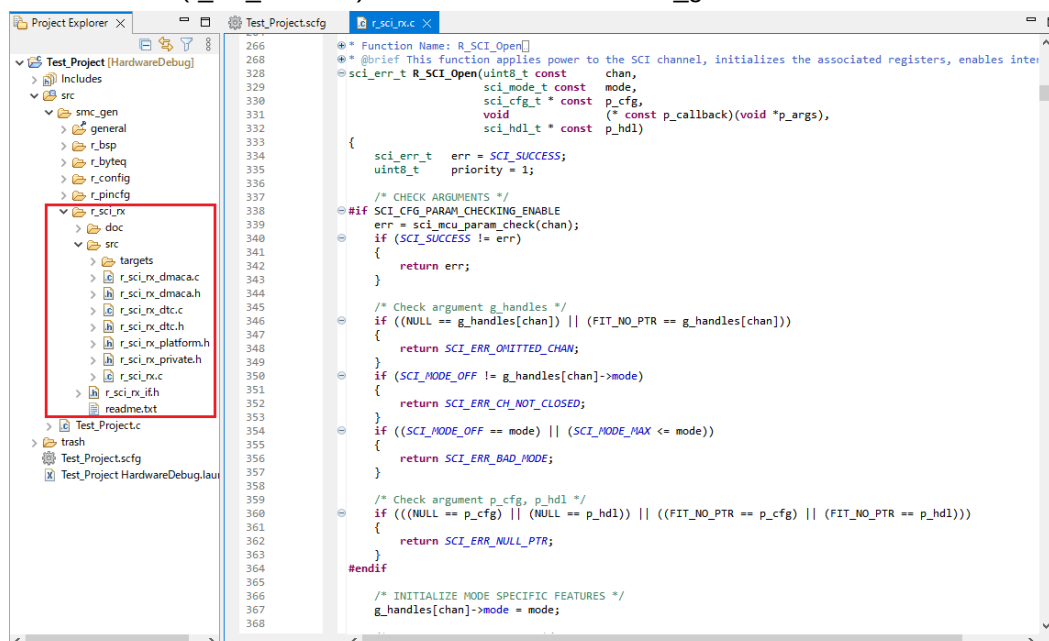
(6) Select the [Pins] tab, and then select the ports to be used for the SCI2 pins.
(To use SCI2, there is no need to change the defaults.)



(7) Click the [Generate Code] button.



(8) The SCI FIT module (r_sci_rx folder) is installed under the smc_gen folder.



4. Reference Documents

User's manuals: Hardware

RX65N Group, RX651 Group User's Manual: Hardware

Rev.2.30 (R01UH0590EJ0230)

(The latest version can be downloaded from the Renesas Electronics website.)

RX65W-A Group User's Manual: Hardware

Rev.1.00 (R01UH0993EJ0100)

(The latest version can be downloaded from the Renesas Electronics website.)

User's Manual: Development Tools

RX Smart Configurator User's Guide: e² studio (R20AN0451)

(The latest information can be downloaded from the Renesas Electronics website.)

Technical updates and technical news

(The latest information can be downloaded from the Renesas Electronics website.)

Related Technical Updates

This module reflects the content of the following technical updates:

- TN-RX*-A0261A/E
- TN-RX*-A0257A/E
- TN-RX*-A0250A/E
- TN-RX*-A0248A/E
- TN-RX*-A0236B/E
- TN-RX*-A0235B/E
- TN-RX*-A0233A/E
- TN-RX*-A0227A/E
- TN-RX*-A0224B/E
- TN-RX*-A0223A/E
- TN-RX*-A0215A/E

Revision History

Rev.	Date	Description	
		Page	Summary
1.00	Oct.20.22	—	First edition issued

General Precautions in the Handling of Microprocessing Unit and Microcontroller Unit Products

The following usage notes are applicable to all Microprocessing unit and Microcontroller unit products from Renesas. For detailed usage notes on the products covered by this document, refer to the relevant sections of the document as well as any technical updates that have been issued for the products.

1. Precaution against Electrostatic Discharge (ESD)

A strong electrical field, when exposed to a CMOS device, can cause destruction of the gate oxide and ultimately degrade the device operation. Steps must be taken to stop the generation of static electricity as much as possible, and quickly dissipate it when it occurs. Environmental control must be adequate. When it is dry, a humidifier should be used. This is recommended to avoid using insulators that can easily build up static electricity.

Semiconductor devices must be stored and transported in an anti-static container, static shielding bag or conductive material. All test and measurement tools including work benches and floors must be grounded. The operator must also be grounded using a wrist strap. Semiconductor devices must not be touched with bare hands. Similar precautions must be taken for printed circuit boards with mounted semiconductor devices.

2. Processing at power-on

The state of the product is undefined at the time when power is supplied. The states of internal circuits in the LSI are indeterminate and the states of register settings and pins are undefined at the time when power is supplied. In a finished product where the reset signal is applied to the external reset pin, the states of pins are not guaranteed from the time when power is supplied until the reset process is completed. In a similar way, the states of pins in a product that is reset by an on-chip power-on reset function are not guaranteed from the time when power is supplied until the power reaches the level at which resetting is specified.

3. Input of signal during power-off state

Do not input signals or an I/O pull-up power supply while the device is powered off. The current injection that results from input of such a signal or I/O pull-up power supply may cause malfunction and the abnormal current that passes in the device at this time may cause degradation of internal elements. Follow the guideline for input signal during power-off state as described in your product documentation.

4. Handling of unused pins

Handle unused pins in accordance with the directions given under handling of unused pins in the manual. The input pins of CMOS products are generally in the high-impedance state. In operation with an unused pin in the open-circuit state, extra electromagnetic noise is induced in the vicinity of the LSI, an associated shoot-through current flows internally, and malfunctions occur due to the false recognition of the pin state as an input signal become possible.

5. Clock signals

After applying a reset, only release the reset line after the operating clock signal becomes stable. When switching the clock signal during program execution, wait until the target clock signal is stabilized. When the clock signal is generated with an external resonator or from an external oscillator during a reset, ensure that the reset line is only released after full stabilization of the clock signal. Additionally, when switching to a clock signal produced with an external resonator or by an external oscillator while program execution is in progress, wait until the target clock signal is stable.

6. Voltage application waveform at input pin

Waveform distortion due to input noise or a reflected wave may cause malfunction. If the input of the CMOS device stays in the area between V_{IL} (Max.) and V_{IH} (Min.) due to noise, for example, the device may malfunction. Take care to prevent chattering noise from entering the device when the input level is fixed, and also in the transition period when the input level passes through the area between V_{IL} (Max.) and V_{IH} (Min.).

7. Prohibition of access to reserved addresses

Access to reserved addresses is prohibited. The reserved addresses are provided for possible future expansion of functions. Do not access these addresses as the correct operation of the LSI is not guaranteed.

8. Differences between products

Before changing from one product to another, for example to a product with a different part number, confirm that the change will not lead to problems. The characteristics of a microprocessing unit or microcontroller unit products in the same group but having a different part number might differ in terms of internal memory capacity, layout pattern, and other factors, which can affect the ranges of electrical characteristics, such as characteristic values, operating margins, immunity to noise, and amount of radiated noise. When changing to a product with a different part number, implement a system-evaluation test for the given product.

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(Rev.5.0-1 October 2020)

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