Object manuals	Document codes	Items	Pages
S1C17M01Technical Manual	412361701	8.4.2 Real-Time Clock Counter Operations	8-4
S1C17M10Technical Manual	413180200	9.4.2 Real-Time Clock Counter Operations	9-4
S1C17M20/M21/M22/M23/M24/M25Techni cal Manual	413557000	9.4.2 Real-Time Clock Counter Operations	9-4
S1C17M30/M31/M32/M33/M34Technical Manual	413495601	9.4.2 Real-Time Clock Counter Operations	9-4
S1C17M40Technical Manual	413895200	9.4.2 Real-Time Clock Counter Operations	9-4
S1C17W03/W04Technical Manual	412925001	9.4.2 Real-Time Clock Counter Operations	9-4
S1C17W12/13Technical Manual	413520201	9.4.2 Real-Time Clock Counter Operations	9-4
S1C17W14/W16Technical Manual	412910300	9.4.2 Real-Time Clock Counter Operations	9-4
S1C17W15Technical Manual	412645702	9.4.2 Real-Time Clock Counter Operations	9-4
S1C17W18Technical Manual	413129601	9.4.2 Real-Time Clock Counter Operations	9-4
S1C17W22/W23Technical Manual	412690402	9.4.2 Real-Time Clock Counter Operations	9-4
S1C17W34/W35/W36Technical Manual	413237901	9.4.2 Real-Time Clock Counter Operations	9-4
S1C17F63Technical Manual	413942900	21.4.2Real-Time Clock Function	21-6

(Error)

Corrective operation when a value out of the effective range is set

When a value out of the effective range is set to the year, day of the week, or hour (in 24H mode) counter, the counter will be cleared to 0 at the next count-up timing. When a such value is set to the month, day, or hour (in 12H mode) counter, the counter will be set to 1 at the next count-up timing.

(Correct)

Corrective operation when a value out of the effective range is set

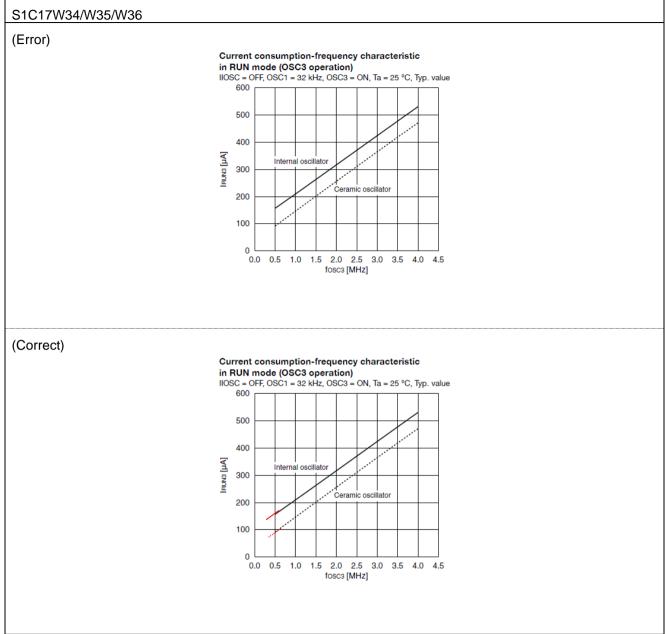
When a value out of the effective range is set to the year, day of the week, or hour (in 24H mode) counter, the counter will be cleared to 0 at the next count-up timing <u>of the counter</u>. When a such value is set to the month, day, or hour (in 12H mode) counter, the counter will be set to 1 at the next count-up timing <u>of the counter</u>.

Note: <u>RTCMON.RTCMOH bits=0 & RTCMON.RTCMOL[3:0] bits=0x0 are prohibited.</u>

ITEM: Current consumption-frequence			
Object manuals	Document codes	Items	Pages
S1C17W18 Technical Manual	413129601	23.3 Current Consumption	23-3
S1C17W34/W35/W36 Technical	413237901	23.3 Current Consumption	23-3
Manual			
S1C17W12/W13 Technical Manual	413520201	21.3 Current Consumption	21-3
S1C17W12/W13/W18 (Error)			
	D Internal oscillator	5 3.0 3.5 4.0 4.5	
in RUN IOSC = 600 400 [[[] [] []] []] 200 100 (]] (]] (]] (]] (]]]]] (]	D Internal oscillator	N, Ta = 25 °C, Typ. value	

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ITEM: Real-Time Clock (RT	CA) Theoretical	Regulation Function	
Object manuals	Document codes	Items	Pages
S1C17M01Technical Manual	412361701	8.3.2 Theoretical Regulation Function	8-2
S1C17M10Technical Manual	413180200	9.3.2 Theoretical Regulation Function	9–2
S1C17M20/M21/M22/M23/M24 /M25 Technical Manual	413557000 9.3.2 Theoretical Regulation Function		9-2
S1C17M30/M31/M32/M33/M34 Technical Manual	413495600	9.3.2 Theoretical Regulation Function	9–2
S1C17W03/W04Technical Manual	412925001	9.3.2 Theoretical Regulation Function	9–2
S1C17W12/W13Technical Manual	413520201	9.3.2 Theoretical Regulation Function	9-2
S1C17W14/W16Technical Manual	412910200	9.3.2 Theoretical Regulation Function	9–2
S1C17W15Technical Manual	412645602	9.3.2 Theoretical Regulation Function	9–2
S1C17W18Technical Manual	413129501	9.3.2 Theoretical Regulation Function	9–2
S1C17W22/W23Technical Manual	412690302	9.3.2 Theoretical Regulation Function	9–2
S1C17W34/W35/W36Technical Manual	413237401	9.3.2 Theoretical Regulation Function	9–2

(Error)

9.3.2 Theoretical Regulation Function

The time-of-day clock loses accuracy if the OSC1 frequency fosc1 has a frequency tolerance from 32.768 kHz. To correct this error without changing any external part, RTCA provides a theoretical regulation function. Follow the procedure below to perform theoretical regulation.

1. Measure the frequency tolerance "m [ppm]" of fosc1.

2. Determine the theoretical regulation execution cycle time "n seconds."

3. Determine the value to be written to the RTCCTL.RTCTRM[6:0] bits from the results in Steps 1 and 2.

4. Write the value determined in Step 3 to the RTCCTL.RTCTRM[6:0] bits periodically in n-second cycles using an RTCA alarm or second interrupt.

5. Monitor the RTC1S signal to check that every n-second cycle has no error included.

The correction value for theoretical regulation can be specified within the range from -64 to +63 and it should be written to the RTCCTL.RTCTRM[6:0] bits as a two's-complement number. Use Eq. 9.1 to calculate the correction value.

n: Theoretical regulation execution cycle time [second] (time interval to write the correct value to the RTCCTL. RTCTRM[6:0] bits periodically via software)

m: OSC1 frequency tolerance [ppm]

(Correct)

9.3.2 Theoretical Regulation Function

The time-of-day clock loses accuracy if the OSC1 frequency fosc1 has a frequency tolerance from 32.768 kHz. To correct this error without changing any external part, RTCA provides a theoretical regulation function. Follow the procedure below to perform theoretical regulation.

1. Determine the correction value of frequency tolerance "m [ppm] =- {(fOSC1-32768[Hz]) /

<u>32768[Hz]}×10⁶" by measuring the fosc1.</u>

2. Determine the theoretical regulation execution cycle time "n seconds."

3. Determine the value to be written to the RTCCTL. RTCTRM[6:0] bits from the results in Steps 1 and 2.

4. Write the value determined in Step 3 to the RTCCTL.RTCTRM[6:0] bits periodically in n-second cycles using an RTCA alarm or second interrupt.

5. Monitor the RTC1S signal to check that every n-second cycle has no error included.

The correction value for theoretical regulation can be specified within the range from -64 to +63 and it should be written to the RTCCTL.RTCTRM[6:0] bits as a two's-complement number. Use Eq. 9.1 to calculate the correction value.

n: Theoretical regulation execution cycle time [second] (time interval to write the correct value to the RTCCTL.

RTCTRM[6:0] bits periodically via software)

m: OSC1's correction value of frequency tolerance [ppm]

ITEM: Reset hold circuit charac	cteristics		
Object manuals	Document codes	Items	Pages
S1C17M10Technical Manual	413180200	19.4 System Reset Controller (SRC) Characteristics	19-3
S1C17M20/M21/M22/M23/M24 /M25 Technical Manual	413557000	21.4 System Reset Controller (SRC) Characteristics	21-4
S1C17M30/M31/M32/M33/M34 Technical Manual	413495600	23.4 System Reset Controller (SRC) Characteristics	23-4
S1C17W03/W04Technical Manual	412925001	21.4 System Reset Controller (SRC) Characteristics	21-4
S1C17W12/W13Technical Manual	413520201	21.4 System Reset Controller (SRC) Characteristics	21-4
S1C17W14/W16Technical Manual	412910200	22.4 System Reset Controller (SRC) Characteristics	22-4
S1C17W15Technical Manual	412645602	20.4 System Reset Controller (SRC) Characteristics	20-4
S1C17W18Technical Manual	413129501	23.4 System Reset Controller (SRC) Characteristics	23-4
S1C17W22/W23Technical Manual	412690302	23.4 System Reset Controller (SRC) Characteristics	23-4
S1C17W34/W35/W36Technical Manual	413237401	23.4 System Reset Controller (SRC) Characteristics	23-4
S7C17M11Technical Manual	413393900	21.4 System Reset Controller (SRC) Characteristics	21-4

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S1C17M10/M20/M21/M22	2/M23/M24/M25/M3(0/M31/M32/M33/M34/	S7C17M11			
(Error)						
ltem	Symbol	Condition	Min.	Тур.	Max.	Unit
Reset hold time*1	tRSTR		-	-	200	uS
(Correct)						
				1	1	[
Item	Symbol	Condition	Min.	Тур.	Max.	Unit
Reset hold time*1	tRSTR		<u>0.5</u>	-	<u>0.9</u>	mS
Error)	Symbol	Condition	Min.	Тур.	Max.	Unit
Reset hold time*1	tRSTR	Contaition	-		1.7	mS
(Correct)				L		
ltem	Symbol	Condition	Min.	Тур.	Max.	Unit
Item Reset hold time*1	Symbol tRSTR	Condition	Min.	Тур.	Мах. <u>0.9</u>	Unit mS

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Pages

17-1

	<u>51017 M</u>	anual errata
ITEM: Absolute Maximum Rati	ngs of #RESET p	in
Object manuals	Document codes	Items
S1C17M01Technical Manual	412361701	17.1 Absolute Maximum Ratings
S1C17M10Technical Manual	413180200	19.1 Absolute Maximum Ratings
S1C17M20/M21/M22/M23/M24		21.1 Absolute Maximum Ratings

S1C17 Manual errata

S1C17M10Technical Manual	413180200 19.1 Absolute Maximum Ratings		19-1
S1C17M20/M21/M22/M23/M24 /M25 Technical Manual	413557000	21.1 Absolute Maximum Ratings	21-1
S1C17M30/M31/M32/M33/M34 Technical Manual	413495600	23.1 Absolute Maximum Ratings	23-1
S1C17W03/W04Technical Manual	412925001	21.1 Absolute Maximum Ratings	21-1
S1C17W12/W13Technical Manual	413520201	21.1 Absolute Maximum Ratings	21-1
S1C17W14/W16Technical Manual	412910200	22.1 Absolute Maximum Ratings	22-1
S1C17W15Technical Manual	412645602	20.1 Absolute Maximum Ratings	20-1
S1C17W18Technical Manual	413129501	23.1Absolute Maximum Ratings	23-1
S1C17W22/W23Technical Manual	412690302	23.1Absolute Maximum Ratings	23-1
S1C17W34/W35/W36Technical Manual	413237401	23.1Absolute Maximum Ratings	23-1
S7C17M11Technical Manual	413393900	21.1Absolute Maximum Ratings	21-1

(Error)

Item	Symbol	Condition	Rated value	Unit
Input voltage	Vi	Pxx	-0.3~7.0	V
		Руу	-0.3~Vdd+0.5	V

(Correct)

		Unit
Pxx	-0.3~7.0	V
Pyy, <u>#RESET</u>	-0.3~Vdd+0.5	V

ITEM: Debugger Prohibitior	n of pull-down for	DSIO pin	
Object manuals	Document codes	Items	Pages
S1C17M01Technical Manual	412361701	3.3.3 List of debugger input/output pins	3-3
S1C17M10Technical Manual	413180200	3.3.3 List of debugger input/output pins	3-3
S1C17M20/M21/M22/M23/M24 /M25 Technical Manual	413557000	3.3.3 List of debugger input/output pins	3-3
S1C17M30/M31/M32/M33/M34 Technical Manual	413495600	3.3.3 List of debugger input/output pins	3-3
S1C17W03/W04Technical Manual	412925001	3.3.3 List of debugger input/output pins	3-3
S1C17W12/W13Technical Manual	413520201	3.3.3 List of debugger input/output pins	3-3
S1C17W14/W16Technical Manual	412910200	3.3.3 List of debugger input/output pins	3-3
S1C17W15Technical Manual	412645602	3.3.3 List of debugger input/output pins	3-3
S1C17W18Technical Manual	413129501	3.3.3 List of debugger input/output pins	3-3
S1C17W22/W23Technical Manual	412690302	3.3.3 List of debugger input/output pins	3-3
S1C17W34/W35/W36Technical Manual	413237401	3.3.3 List of debugger input/output pins	3-3
S7C17M11Technical Manual	413393900	3.3.3 List of debugger input/output pins	3-3

(Error)

3.3.3 List of Debugger Input/Output Pins

The debugger input/output pins are shared with general-purpose I/O ports and are initially set as the debug pins. If the debugging function is not used, these pins can be switched to general-purpose I/O port pins. For details, refer to the "I/O Ports" chapter.

Note: Do not drive the DCLK pin with a high level from outside (e.g. pulling up with a resistor). Also, do not connect (short-circuit) between the DCLK pin and another GPIO port. In the both cases, the IC may not start up normally due to unstable pin input/output status at power on.

(Correct)

3.3.3 List of Debugger Input/Output Pins

The debugger input/output pins are shared with general-purpose I/O ports and are initially set as the debug pins. If the debugging function is not used, these pins can be switched to general-purpose I/O port pins. For details, refer to the "I/O Ports" chapter.

- Do not drive the DCLK pin with a high level from outside (e.g. pulling up with a resistor). Also, do not connect (short-circuit) between the DCLK pin and another GPIO port. In the both cases, the IC may not start up normally due to unstable pin input/output status at power on.
- <u>Do not drive the DSIO pin with a low level from outside. Then the CPU enters DEBUG</u> mode by a debug interrupt.

ITEM: Real-Time Clock (RT	CA) Notice of R	ГС Month Register	
Object manuals	Document codes	Items	Pages
S1C17M01Technical Manual	412361701	8.6 Control Registers	8-6
S1C17M10Technical Manual	413180200	9.6 Control Registers	9-11
S1C17M20/M21/M22/M23/M24	413557000	9.6 Control Registers	9–11
/M25 Technical Manual			
S1C17M30/M31/M32/M33/M34 Technical Manual	413495600	9.6 Control Registers	9–11
S1C17W03/W04Technical	412925001	9.6 Control Registers	9-11
Manual			
S1C17W12/W13Technical Manual	413520201	9.6 Control Registers	9–11
S1C17W14/W16Technical	412910200	9.6 Control Registers	9-11
Manual			
S1C17W15Technical Manual	412645602	9.6 Control Registers	9-11
S1C17W18Technical Manual	413129501	9.6 Control Registers	9-11
S1C17W22/W23Technical	412690302	9.6 Control Registers	9–11
Manual S1C17W34/W35/W36Technical Manual	413237401	9.6 Control Registers	9–11

(Error)

RTC Month/Day Register Bit 12 RTCMOH

Bits 11–8 RTCMOL[3:0]

The RTCMON.RTCMOH bit and the RTCMON.RTCMOL[3:0] bits are used to set and read the 10-month digit and the 1-month digit of the month counter, respectively. The setting/read values are a BCD code within the range from 1 to 12. **Note**: Be sure to avoid writing to the RTCMON.RTCMOH/RTCMOL[3:0] bits while the RTCCTL.RTCBSY bit = 1.

(Correct)

RTC Month/Day Register

Bit 12 RTCMOH Bits 11–8 RTCMOL[3:0]

The RTCMON.RTCMOH bit and the RTCMON.RTCMOL[3:0] bits are used to set and read the 10-month digit and the 1-month digit of the month counter, respectively. The setting/read values are a BCD code within the range from 1 to 12.

- Be sure to avoid writing to the RTCMON.RTCMOH/RTCMOL[3:0] bits while the RTCCTL.RTCBSY bit = 1.
- Be sure to avoid setting 0x00 to the RTCMON.RTCMOH/RTCMOL[3:0] bits.

•		Condition	s LCD power supp		aye		
Object manuals	Docum	ent codes	Items			Pa	ages
S1C17M10Technical Manual		413180200	19.2 Recommended O	perating	Conditio	ns 19)—1
S1C17W12/W13Technical			21.2 Recommended O	perating	Conditio	ns 21	-1
Manual		413520201					
S1C17W14/W16Technical			21.2 Recommended O	perating	Conditio	ns 22	2-1
Manual		412910200					
S1C17W15Technical Manual		412645602	21.2 Recommended O	perating	Conditio	ns 20)—1
S1C17W18Technical Manual		413129501	21.2 Recommended O	perating	Conditio	ns 23	8–1
S1C17W22/W23Technical			21.2 Recommended O	perating	Conditio	ns 23	8-1
Manual		412690302					
S1C17W34/W35/W36Technical			21.2 Recommended O	perating	Conditio	ns 23	8-1
Manual		413237401					
S1C17W12/W13/W14/W16							
(Error)							
項目	記号		条件	Min.	Тур.	Max.	単位
LCD power supply voltage	Vc1	When an ex Vc1≦Vc2≦Vc	tternal voltage is applied, 3	-	1.0	1.8	V
	Vc2 Vc3	•		-	2.0 3.0	3.6 5.4	V V
(Correct)	1	1				I	1
<u> </u>							
項目	記号		条件	Min.	Тур.	Max.	単位
LCD power supply voltage	Vc1	When an ex Vc1≦Vc2≦Vc	tternal voltage is applied, ₃, Vc1≦Vpp	-	1.0	1.8	V
	Vc2			-	2.0	3.6	V

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(Error)

項目	記号	条件	Min.	Тур.	Max.	単位
LCD power supply voltage (1/3bias)	Vc1	When an external voltage is applied,	-	1.0	1.8	V
	Vc2	Vc1≦VDD≦Vc2≦Vc3(=Vc4)	-	2.0	3.6	V
	Vc3/Vc4		-	3.0	5.4	V
LCD power supply voltage(1/4bias)	Vc1	When an external voltage is applied, Vc1≤Vpp≤Vc2≤Vc3≤Vc4	-	1.0	1.4	V
	Vc2		-	2.0	2.8	V
	Vc3		-	3.0	4.2	V
	Vc4		-	4.0	5.6	V

(Correct)

項目	記号	条件	Min.	Тур.	Max.	単位
LCD power supply voltage (1/3bias)	Vc1	When an external voltage is applied,	-	1.0	1.8	V
	Vc2	<u>Vc1≦Vc2≦Vc3(=Vc4), Vc1≦Vpp</u>	-	2.0	3.6	V
	Vc3/Vc4		-	3.0	5.4	V
LCD power supply voltage (1/4bias)	Vc1	When an external voltage is applied, Vc1≦Vc2≦Vc3≦Vc4. Vc1≦Vpp	-	1.0	1.4	V
	Vc2	$\frac{VC1 \ge VC2 \ge VC3 \ge VC4, \ VC1 \ge VDD}{VC1 \ge VDD}$	-	2.0	2.8	V
	Vсз		-	3.0	4.2	V
	Vc4		-	4.0	5.6	V

S1C17M10/W34/W35/W36

(Error)

項目	記号	条件	Min.	Тур.	Max.	単位
LCD power supply voltage(1/4bias)	Vc1	When an external voltage is applied,	-	1.0	1.2	V
	Vc2	Vc1≦VDD≦Vc2≦Vc3≦Vc4(=Vc5)	-	2.0	2.4	V
	Vсз		-	3.0	3.6	V
	VC4/VC5		-	4.0	4.8	V
LCD power supply voltage (1/5bias)	Vc1	When an external voltage is applied, Vc1≤Vpp≤Vc2≤Vc3≤Vc4≤Vc5	-	1.0	1.2	V
	Vc2		-	2.0	2.4	V
	Vc3			3.0	3.6	V
	VC4]	-	4.0	4.8	V
	Vc5		-	5.0	6.0	V

(Correct)

項目	記号	条件	Min.	Тур.	Max.	単位
LCD power supply voltage (1/4bias)	Vc1	When an external voltage is applied,	-	1.0	1.2	V
	Vc2	$\frac{V_{C1} \leq V_{C2} \leq V_{C3} \leq V_{C4} (= V_{C5}), V_{C2} \leq V_{DD}}{V_{C1} \leq V_{C2} \leq V_{DD}}$	-	2.0	2.4	V
	Vсз		-	3.0	3.6	V
	VC4/VC5		-	4.0	4.8	V
LCD power supply voltage (1/5bias)	Vc1	When an external voltage is applied, Vc1≦Vc2≦Vc3≦Vc4≦Vc5.Vc2≦Vpp	-	1.0	1.2	V
	Vc2		-	2.0	2.4	V
	Vсз			3.0	3.6	V
	VC4		-	4.0	4.8	V
	Vc5		-	5.0	6.0	V

ITEM: LCD Driver List of Output	ut Pins		-
Object manuals	Document	Items	Pages
	codes		
S1C17M10Technical Manual	413180100	17.2.1 List of Output Pins	17-2
S1C17M30/M31/M32/M33/M34Tec hnical Manual	413495501	18.2.1 List of Output Pins	18-3
S1C17W13Technical Manual	413180301	18.2.1 List of Output Pins	18-2
S1C17W14/W16Technical Manual	412910200	16.2.1 List of Output Pins	18-2
S1C17W15Technical Manual	412645602	17.2.1 List of Output Pins	17-2
S1C17W18Technical Manual	413129501	18.2.1 List of Output Pins	18-2
S1C17W22/W23Technical Manual	412690302	18.2.1 List of Output Pins	18-2
S1C17W34/W35/W36Technical Manual	413237401	18.2.1 List of Output Pins	18-2
S7C17M11Technical Manual	413393800	17.2.1 List of Output Pins	17-2
S1C17M10Technical Manual			

(Error)

The COM8-15 outputs and SEG87-80 outputs share the pins and selecting a drive duty switches the pins to COM pins or SEG pins. For the pin configuration, refer to "Drive Duty Switching."

Note: Be sure to avoid using the VC1 to VC5 pin outputs for driving external circuits.

(Correct)

The COM8-15 outputs and SEG87-80 outputs share the pins and selecting a drive duty switches the pins to COM pins or SEG pins. For the pin configuration, refer to "Drive Duty Switching."

- Be sure to avoid using the VC1 to VC5 pin outputs for driving external circuits.
- When LCD panel is connected, LCD16CTLLCDDIS bit should be set to 1. If it has been set to 0, there is a possibility that LCD panel's characteristics is fluctuated.

S1C17M30/M31/M32/M33/M34 Technical Manual, S7C17M11 Technical Manual

(Error)

The COM4-7 outputs and SEG0-4 outputs share the pins and selecting a drive duty switches the pins to COM pins or SEG pins. For the pin configuration, refer to "Drive Duty Switching."

Note: Be sure to avoid using the VC1 to VC3 pin outputs of the model with an embedded LCD power supply for driving external circuits.

(Correct)

The COM4-7 outputs and SEG0-4 outputs share the pins and selecting a drive duty switches the pins to COM pins or SEG pins. For the pin configuration, refer to "Drive Duty Switching."

Note:

- Be sure to avoid using the VC1 to VC3 pin outputs of the model with an embedded LCD power supply for driving external circuits.
- When LCD panel is connected, LCD8CTLLCDDIS bit should be set to 1. If it has been set to 0, there is a possibility that LCD panel's characteristics is fluctuated.

S1C17W13 Technical Manual

(Error)

If the port is shared with the LCD4A pin and other functions, the LCD4A output function must be assigned to the port before activating the LCD4A. For more information, refer to the "I/O Ports" chapter.

Note: Be sure to avoid using the VC1 to VC3 pin outputs for driving external circuits.

(Correct)

If the port is shared with the LCD4A pin and other functions, the LCD4A output function must be assigned to the port before activating the LCD4A. For more information, refer to the "I/O Ports" chapter.

Note:

- Be sure to avoid using the VC1 to VC3 pin outputs for driving external circuits.
- When LCD panel is connected, LCD4CTL.LCDDIS bit should be set to 1. If it has been set to 0, there is a possibility that LCD panel's characteristics is fluctuated.

S1C17W14/W16Technical Manual, S1C17W18Technical Manual

(Error)

The COM4-7 outputs and SEG0-4 outputs share the pins and selecting a drive duty switches the pins to COM pins or SEG pins. For the pin configuration, refer to "Drive Duty Switching."

Note: Be sure to avoid using the VC1 to VC3 pin outputs for driving external circuits

(Correct)

The COM4-7 outputs and SEG0-4 outputs share the pins and selecting a drive duty switches the pins to COM pins or SEG pins. For the pin configuration, refer to "Drive Duty Switching."

Note:

- Be sure to avoid using the VC1 to VC3 pin outputs for driving external circuits
- When LCD panel is connected, LCD8CTLLCDDIS bit should be set to 1. If it has been set to 0, there is a possibility that LCD panel's characteristics is fluctuated.

S1C17W15Technical Manual

(Error)

The COM4-7 outputs and SEG0-4 outputs share the pins and selecting a drive duty switches the pins to COM pins or SEG pins. For the pin configuration, refer to "Drive Duty Switching."

Note: Be sure to avoid using the VC1 to VC4 pin outputs for driving external circuits.

(Correct)

The COM4-7 outputs and SEG0-4 outputs share the pins and selecting a drive duty switches the pins to COM pins or SEG pins. For the pin configuration, refer to "Drive Duty Switching."

Note:

- Be sure to avoid using the VC1 to VC4 pin outputs for driving external circuits.
- When LCD panel is connected, LCD8CTLMODEN bit should be set to 1. If it has been set to 0, there is a possibility that LCD panel's characteristics is fluctuated.

S1C17W22/W23Technical Manual

(Error)

If the port is shared with the LCD24A pin and other functions, the LCD24A output function must be assigned to the port before activating the LCD24A. For more information, refer to the "I/O Ports" chapter.

Note: Be sure to avoid using the VC1 to VC4 pin outputs for driving external circuits.

(Correct)

f the port is shared with the LCD24A pin and other functions, the LCD24A output function must be assigned to the port before activating the LCD24A. For more information, refer to the "I/O Ports" chapter.

- Be sure to avoid using the VC1 to VC4 pin outputs for driving external circuits.
- When LCD panel is connected, LCD24CTLMODEN bit should be set to 1. If it has been set to 0, there is a possibility that LCD panel's characteristics is fluctuated.

S1C17W34/W35/W36Technical Manual

(Error)

The COM16-31 outputs and SEG0-15 or SEG79-64 outputs share the pins. Selecting a drive duty and COM[31:16] pin location switches the pins to COM pins or SEG pins. For the pin configuration, refer to "Drive Duty Switching."

Note: Be sure to avoid using the VC1 to VC5 pin outputs for driving external circuits.

(Correct)

The COM16-31 outputs and SEG0-15 or SEG79-64 outputs share the pins. Selecting a drive duty and COM[31:16] pin location switches the pins to COM pins or SEG pins. For the pin configuration, refer to "Drive Duty Switching."

- Be sure to avoid using the VC1 to VC5 pin outputs for driving external circuits.
- When LCD panel is connected, LCD32CTLMODEN bit should be set to 1. If it has been set to 0, there is a possibility that LCD panel's characteristics is fluctuated.

ITEM: LCD Driver List of Output	ut Pins		
Object manuals	Document codes	Items	Pages
S1C17M01Technical Manual	412361601	14.2.1 List of Output Pins	14-2
S1C17M10Technical Manual	413180100	17.2.1 List of Output Pins	17-2
S1C17M30/M31/M32/M33/M34Tec hnical Manual	413495501	18.2.1 List of Output Pins	18-3
S1C17W13Technical Manual	413180301	18.2.1 List of Output Pins	18-2
S1C17W14/W16Technical Manual	412910200	16.2.1 List of Output Pins	18-2
S1C17W15Technical Manual	412645602	17.2.1 List of Output Pins	17-2
S1C17W18Technical Manual	413129501	18.2.1 List of Output Pins	18-2
S1C17W22/W23Technical Manual	412690302	18.2.1 List of Output Pins	18-2
S1C17W34/W35/W36Technical Manual	413237401	18.2.1 List of Output Pins	18-2
S7C17M11Technical Manual	413393800	17.2.1 List of Output Pins	17-2

rror)				
,		Table	9 14.2.1.1 Li	st of LCD8A Pins
Pin name	I/O	* Init	ial status*	Function
SEG31-0	0		O (L)	Segment data output pin
COM7-0	0		O (L)	Common data output pin
LFRO	0		0 (L)	Frame signal monitoring output pin
Vc1	Р		-	LCD panel drive power supply pin
Vc2	P		-	LCD panel drive power supply pin
Vc3	P		-	LCD panel drive power supply pin
CP1	A		_	LCD voltage booster capacitor connecting pin
CP2	A		-	LCD voltage booster capacitor connecting pin
orrect)		Table	e 14.2.1.1 Li	st of LCD8A Pins
Pin name	I/O	* Init	ial status*	Function
SEG31-0	A		O (L)	Segment data output pin
COM7-0	A		O (L)	Common data output pin
LFRO	0		O (L)	Frame signal monitoring output pin
Vc1	P		-	LCD panel drive power supply pin
Vc2	Р		-	LCD panel drive power supply pin
				Lob partor arro portor supply pin
Vc3	P		-	LCD panel drive power supply pin
			-	LCD panel drive power supply pin
Vc3	P		-	LCD panel drive power supply pin LCD voltage booster capacitor connecting pin LCD voltage booster capacitor connecting pin
Vc3 CP1 CP2 1C17M10 Technical M	P A A		-	LCD panel drive power supply pin LCD voltage booster capacitor connecting pin LCD voltage booster capacitor connecting pin
Vc3 CP1 CP2 1C17M10 Technical M	P A A	Table	*	LCD panel drive power supply pin LCD voltage booster capacitor connecting pin LCD voltage booster capacitor connecting pin Indicates the status when the pin is configured for LCD8A
VC3 CP1 CP2 1C17M10 Technical M rrror) Pin name	P A A lanual	Table	- * 17.2.1.1 Lis	LCD panel drive power supply pin LCD voltage booster capacitor connecting pin LCD voltage booster capacitor connecting pin Indicates the status when the pin is configured for LCD8A t of LCD16A Pins Function
VC3 CP1 CP2 IC17M10 Technical M rror) Pin name COM0-7	P A A lanual	Table Initial status*1 Hi-Z / O (L)*2	- * 17.2.1.1 Lis Common d	LCD panel drive power supply pin LCD voltage booster capacitor connecting pin LCD voltage booster capacitor connecting pin Indicates the status when the pin is configured for LCD8A t of LCD16A Pins Function ata output pins
VC3 CP1 CP2 IC17M10 Technical M rror) Pin name COM0-7 COM8-15/SEG87-80	P A A lanual	Table Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2	- * 17.2.1.1 Lis Common d General pu	LCD panel drive power supply pin LCD voltage booster capacitor connecting pin LCD voltage booster capacitor connecting pin Indicates the status when the pin is configured for LCD8A t of LCD16A Pins Function ata output pins pose IO/common data output/segment data output pins
Vc3 CP1 CP2 IC17M10 Technical M irror) Pin name COM0-7 COM8-15/SEG87-80 SEG0-68 SEG0-68	P A A lanual	Table Initial status ⁺¹ Hi-Z / O (L) ⁺² Hi-Z / O (L) ⁺² Hi-Z / O (L) ⁺²	- * 17.2.1.1 Lis Common d General pur Segment da	LCD panel drive power supply pin LCD voltage booster capacitor connecting pin LCD voltage booster capacitor connecting pin Indicates the status when the pin is configured for LCD8A t of LCD16A Pins Function ata output pins pose IO/common data output/segment data output pins ata output pins
Vc3 CP1 CP2 1C17M10 Technical M rror) Pin name COM0-7 COM8-15/SEG87-80 SEG0-68 SEG0-68 SEG69-79	A A lanual 0 0 0 0	Table Initial status ⁺¹ Hi-Z / O (L) ⁺² Hi-Z / O (L) ⁺² Hi-Z / O (L) ⁺² Hi-Z / O (L) ⁺²	- * 17.2.1.1 Lis Common d General pui Segment da General pui	LCD panel drive power supply pin LCD voltage booster capacitor connecting pin LCD voltage booster capacitor connecting pin Indicates the status when the pin is configured for LCD8A t of LCD16A Pins Function ata output pins pose IO/common data output/segment data output pins pose IO/segment data output pins
VC3 CP1 CP2 CP2 IC17M10 Technical M rror) Pin name COM0-7 COM8-15/SEG87-80 SEG0-68 SEG69-79 LFRO	A A lanual	Table Initial status ⁺¹ Hi-Z / O (L)+2 Hi-Z / O (L)+2 Hi-Z / O (L)+2 O (L)	- * 17.2.1.1 Lis Common d General pui Segment da General pui Frame signa	LCD panel drive power supply pin LCD voltage booster capacitor connecting pin LCD voltage booster capacitor connecting pin Indicates the status when the pin is configured for LCD8A t of LCD16A Pins Function ata output pins pose IO/common data output/segment data output pins pose IO/common data output/segment data output pins ata output pins pose IO/segment data output pins al monitoring output pin
Vc3 CP1 CP1 CP2 1C17M10 Technical M rror) Pin name COM0-7 COM8-15/SEG87-80 SEG0-68 SEG69-79 LFRO Vc1-5	P A A lanual 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Table Initial status ⁺¹ Hi-Z / O (L) ⁺² Hi-Z / O (L) ⁺² Hi-Z / O (L) ⁺² Hi-Z / O (L) ⁺²	- * 17.2.1.1 Lis Common d General pur Segment da General pur Frame signa LCD panel	LCD panel drive power supply pin LCD voltage booster capacitor connecting pin LCD voltage booster capacitor connecting pin Indicates the status when the pin is configured for LCD8A t of LCD16A Pins Function ata output pins pose IO/common data output/segment data output pins pose IO/common data output/segment data output pins ata output pins pose IO/segment data output pins al monitoring output pin drive power supply pins
Vc3 CP1 CP2 1C17M10 Technical M rror) Pin name COM0-7 COM8-15/SEG87-80 SEG0-68 SEG0-68 SEG69-79 LFRO Vc1-5 CP1-5 CP1-5	A A lanual 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Table Initial status ⁺¹ Hi-Z / O (L)+2 Hi-Z / O (L)+2 Hi-Z / O (L)+2 O (L) - -	- * 17.2.1.1 Lis Common d General pur Segment da General pur Frame sign LCD panel LCD voltag	LCD panel drive power supply pin LCD voltage booster capacitor connecting pin LCD voltage booster capacitor connecting pin Indicates the status when the pin is configured for LCD8A indicates the status when the pin is configured for LCD8A Function ata output pins pose IO/common data output/segment data output pins pose IO/segment data output pins al monitoring output pin drive power supply pins e booster capacitor connecting pins
Vica CP1 CP2 CP2 1C17M10 Technical M irror) Pin name COM0-7 COM8-15/SEG87-80 SEG60-68 SEG69-79 LFRO Vc1-5 CP1-5 *1: Indica	A A lanual 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Table Initial status ⁺¹ Hi-Z / O (L)+2 Hi-Z / O (L)+2 Hi-Z / O (L)+2 O (L) - -	- * 17.2.1.1 Lis Common d General pur Segment da General pur Frame sign LCD panel LCD voltag	LCD panel drive power supply pin LCD voltage booster capacitor connecting pin LCD voltage booster capacitor connecting pin Indicates the status when the pin is configured for LCD8A indicates the status when the pin is configured for LCD8A Function ata output pins pose IO/common data output/segment data output pins pose IO/segment data output pins al monitoring output pin drive power supply pins e booster capacitor connecting pins
VC3 CP1 CP2 CP2 1C17M10 Technical M rror) Pin name COM0-7 COM0-7 COM8-15/SEG87-80 SEG0-68 SEG69-79 LFRO Vc1-5 CP1-5 *1: Indica	A A A lanual	Table Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) - - - status when the	- * 17.2.1.1 Lis Common d General pui Segment da General pui Frame signa LCD panel LCD panel LCD voltag	LCD panel drive power supply pin LCD voltage booster capacitor connecting pin LCD voltage booster capacitor connecting pin Indicates the status when the pin is configured for LCD8A indicates the status when the pin is configured for LCD8A Function ata output pins pose IO/common data output/segment data output pins ata output pins pose IO/segment data output pins al monitoring output pin drive power supply pins e booster capacitor connecting pins gured for LCD16A. *2: When LCD16CTL.LCDDIS bit = 1 t of LCD16A Pins
Vc3 CP1 CP2 IC17M10 Technical M rror) Pin name COM0–7 COM8–15/SEG87–80 SEG60–68 SEG69–79 LFRO Vc1-5 CP1-5 *1: Indica Correct) Pin name	P A A Ianual	Table Initial status ⁺¹ Hi-Z / O (L) ⁺² Hi-Z / O (L) ⁺² Hi-Z / O (L) ⁺² O (L) - - status when the Table Initial status ⁺¹	- * 17.2.1.1 Lis Common d General pun Segment da General pun Frame signa LCD panel LCD voltag pin is config	LCD panel drive power supply pin LCD voltage booster capacitor connecting pin LCD voltage booster capacitor connecting pin Indicates the status when the pin is configured for LCD8A indicates the status when the pin is configured for LCD8A Function ata output pins pose IO/common data output/segment data output pins ata output pins pose IO/segment data output pins al monitoring output pin drive power supply pins e booster capacitor connecting pins gured for LCD16A. *2: When LCD16CTL.LCDDIS bit = 1 t of LCD16A Pins Function
VG3 CP1 CP2 1C17M10 Technical M rror) Pin name COM0-7 COM8-15/SEG87-80 SEG60-68 SEG69-79 LFRO VC1-5 CP1-5 *1: Indica Correct) Pin name COM0-7	P A A Ianual	Table Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) - status when the Table Initial status*1 Hi-Z / O (L)*2	- * 17.2.1.1 Lis Common d General pui Segment da General pui Frame sign LCD panel LCD voltag pin is config 17.2.1.1 Lis Common d	LCD panel drive power supply pin LCD voltage booster capacitor connecting pin LCD voltage booster capacitor connecting pin Indicates the status when the pin is configured for LCD8A indicates the status when the pin is configured for LCD8A Function at output pins pose IO/common data output/segment data output pins at output pins pose IO/segment data output pins al monitoring output pin drive power supply pins e booster capacitor connecting pins gured for LCD16A. *2: When LCD16CTL.LCDDIS bit = 1 t of LCD16A Pins Function at output pins
Vc3 CP1 CP2 CP2 IC17M10 Technical M rror) Pin name COM0-7 COM8-15/SEG87-80 SEG60-68 SEG69-79 LFRO Vc1-5 CP1-5 *1: Indica Correct) Pin name COM0-7 COM0-7	P A A Ianual	Table Initial status ⁺¹ Hi-Z / O (L) ⁺² Hi-Z / O (L) ⁺² Hi-Z / O (L) ⁺² O (L) - - status when the Table Initial status ⁺¹ Hi-Z / O (L) ⁺²	- * 17.2.1.1 Lis Common d General puu Segment da General puu Frame sigm LCD panel LCD voltag pin is config 17.2.1.1 Lis Common d General puu	LCD panel drive power supply pin LCD voltage booster capacitor connecting pin LCD voltage booster capacitor connecting pin Indicates the status when the pin is configured for LCD8A indicates the status when the pin is configured for LCD8A Function ata output pins pose IO/common data output/segment data output pins pose IO/segment data output pins al monitoring output pin drive power supply pins e booster capacitor connecting pins gured for LCD16A. *2: When LCD16CTL.LCDDIS bit = 1 t of LCD16A Pins Function ata output pins pose IO/common data output/segment data output pins
Vica CP1 CP2 CP2 1C17M10 Technical M rror) Pin name COM0-7 COM8-15/SEG87-80 SEG60-68 SEG69-79 LFRO Vc1-5 CP1-5 *1: Indica Correct) Pin name COM0-7 COM0-7 Sorrect)	P A A A Ianual	Table Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) - - status when the Table Initial status*1 Hi-Z / O (L)*2	- * 17.2.1.1 Lis Common d General puu Segment da General puu Frame sigm LCD voltag pin is config 17.2.1.1 Lis Common d General puu Segment da	LCD panel drive power supply pin LCD voltage booster capacitor connecting pin LCD voltage booster capacitor connecting pin Indicates the status when the pin is configured for LCD8A indicates the status when the pin is configured for LCD8A Function ata output pins pose IO/common data output/segment data output pins pose IO/segment data output pins al monitoring output pin drive power supply pins e booster capacitor connecting pins gured for LCD16A. *2: When LCD16CTL.LCDDIS bit = 1 t of LCD16A Pins Function ata output pins pose IO/common data output/segment data output pins ata output pins pose IO/common data output/segment data output pins ata output pins pose IO/common data output/segment data output pins ata output pins
Vc3 CP1 CP2 CP2 IC17M10 Technical M rror) Pin name COM0-7 COM8-15/SEG87-80 SEG60-68 SEG69-79 LFRO Vc1-5 CP1-5 *1: Indica Correct) Pin name COM0-7 COM0-79 LFRO Vc1-5 CP1-5 \$2000000000000000000000000000000000000	P A A A Ianual	Table Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) - - status when the Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2	- * 17.2.1.1 Lis Common d General puu Segment da General puu Frame sigm LCD voltag pin is config 17.2.1.1 Lis Common d General puu Segment da General puu	LCD panel drive power supply pin LCD voltage booster capacitor connecting pin LCD voltage booster capacitor connecting pin Indicates the status when the pin is configured for LCD8A indicates the status when the pin is configured for LCD8A Function ata output pins pose IO/common data output/segment data output pins ata output pins pose IO/segment data output pins al monitoring output pin drive power supply pins e booster capacitor connecting pins gured for LCD16A. *2: When LCD16CTL.LCDDIS bit = 1 t of LCD16A Pins Function ata output pins pose IO/common data output/segment data output pins pose IO/segment data output pins
Vc3 CP1 CP2 CP2 IC17M10 Technical M rror) Pin name COM0-7 COM8-15/SEG87-80 SEG60-68 SEG69-79 LFRO Vc1-5 CP1-5 *1: Indica correct) Pin name COM0-7 COM0-7 LFRO Scorrect) Pin name COM0-7 LFRO FIN NAME COM0-7 COM0-7 LFRO	$ /O^{-1} $ $ /$	Table Initial status ⁺¹ Hi-Z / O (L) ⁺² Hi-Z / O (L) ⁺² Hi-Z / O (L) ⁺² O (L) - - status when the Table Initial status ⁺¹ Hi-Z / O (L) ⁺² Hi-Z / O (L) ⁺² Hi-Z / O (L) ⁺² Hi-Z / O (L) ⁺² Hi-Z / O (L) ⁺² O (L)	- * 17.2.1.1 Lis Common d General puu Segment da General puu Frame signa LCD voltag pin is config 17.2.1.1 Lis Common d General puu Segment da General puu Frame signa	LCD panel drive power supply pin LCD voltage booster capacitor connecting pin LCD voltage booster capacitor connecting pin Indicates the status when the pin is configured for LCD8A indicates the status when the pin is configured for LCD8A Function ata output pins pose IO/common data output/segment data output pins pose IO/segment data output pins al monitoring output pin drive power supply pins e booster capacitor connecting pins gured for LCD16A. *2: When LCD16CTL.LCDDIS bit = 1 t of LCD16A Pins Function ata output pins pose IO/common data output/segment data output pins pose IO/common data output/segment data output pins ata output pins pose IO/segment data output pins ata output pins pose IO/segment data output pins al monitoring output pin
Vica CP1 CP1 CP2 IC17M10 Technical M irror) Pin name COM0-7 COM8-15/SEG87-80 SEG60-68 SEG69-79 LFRO Vc1-5 CP1-5 *1: Indica Correct) Pin name COM0-7 Segeo-68 SEG69-79 LFRO Vc1-5 CP1-5 *1: Indica Segeo-68 SEG0-68 SEG0-79	P A A A Ianual	Table Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) - - status when the Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2	- * 17.2.1.1 Lis Common d General puu Segment da General puu Frame signa LCD voltag pin is config 17.2.1.1 Lis Common d General puu Segment da General puu Segment da General puu Segment da	LCD panel drive power supply pin LCD voltage booster capacitor connecting pin LCD voltage booster capacitor connecting pin Indicates the status when the pin is configured for LCD8A indicates the status when the pin is configured for LCD8A Function ata output pins pose IO/common data output/segment data output pins ata output pins pose IO/segment data output pins al monitoring output pin drive power supply pins e booster capacitor connecting pins gured for LCD16A. *2: When LCD16CTL.LCDDIS bit = 1 t of LCD16A Pins Function ata output pins pose IO/common data output/segment data output pins pose IO/segment data output pins

ror)				
				Table 18.2.1.1 List of LCD8A Pins
Pin nam	е	I/O*1	Initial status	1 Function
COM0-3		Α	Hi-Z / O (Vss)*2 Common data output pins
COM4-7/SE	G0–3	Α	Hi-Z / O (Vss)*2 Common data output/segment data output pins
SEG4-49		Α	Hi-Z / O (Vss)*2 Segment data output pins (See Table 18.2.1.2.)
LFRO		0	O (L)	Frame signal monitoring output pin
Vc1		Р	-	LCD panel drive power supply pin
VC2		Р	-	LCD panel drive power supply pin
Vсз		Р	-	LCD panel drive power supply pin
CP1		Α	-	LCD voltage booster capacitor connecting pin (S1C17M31/M33/M34)
CP2		А	_	LCD voltage booster capacitor connecting pin (S1C17M31/M33/M34)
				when the pin is configured for LCD8A. *2: When LCD8CTL.LCDDIS bit = 1
orrect)				Table 18.2.1.1 List of LCD8A Pins
Pin nam	е	_I/0 ¹	Initial status	Function
COM0-3		A	Hi-Z / O (Vss)*2 Common data output pins
COM4-7/SE	G0-3	A	Hi-Z / O (Vss)*2 Common data output/segment data output pins
SEG4-49		A	Hi-Z / O (Vss)*2 Segment data output pins (See Table 18.2.1.2.)
LFRO		0	O (L)	Frame signal monitoring output pin
VC1		Р	_	LCD panel drive power supply pin
Vc2		Р	-	LCD panel drive power supply pin
Vсз		Р	_	LCD panel drive power supply pin
CP1		A	_	LCD voltage booster capacitor connecting pin (S1C17M31/M33/M34)
CP2		A	_	LCD voltage booster capacitor connecting pin (S1C17M31/M33/M34)
	+1-		es ine status	when the pin is configured for LCD8A. *2: When LCD8CTL.LCDDIS bit = 1
	*1:	Indicat		
C17W13 Te rror)	echnic	al Manı		Table 18.2.1.1 List of LCD4A Pins
ror) Pin name	echnic:	al Manu Initial s	tatus*1	Function
ror) Pin name COM0–3	echnica I/O+1 O	al Manu Initial s Hi-Z / (tatus*1 O (L)*2 Comm	Function on data output-only pins
Pin name COM0-3 SEG0-1	echnica I/O+1 O O	al Manu Initial s Hi-Z / (Hi-Z / (tatus⁺1 O (L)⁺2 Comm O (L)⁺2 Segme	Function on data output-only pins ent data output-only pins (Not available in the SQFN7-48pin package)
Pin name COM0-3 SEG0-1 SEG2-7	I/O*1 0 0	al Manu Initial s Hi-Z / 0 Hi-Z / 0 Hi-Z / 0	tatus*1 O (L)*2 Comm O (L)*2 Segme O (L)*2 Segme	Function on data output-only pins ent data output-only pins (Not available in the SQFN7-48pin package) ent data output-only pins
Pin name COM0-3 SEG0-1 SEG2-7 SEG8-19	1/0*1 0 0 0	al Manu Initial s Hi-Z / (Hi-Z / (Hi-Z / (Hi-Z / (tatus*1 O (L)*2 Comm O (L)*2 Segme O (L)*2 Segme O (L)*2 Genera	Function on data output-only pins ent data output-only pins (Not available in the SQFN7-48pin package) ent data output-only pins al-purpose IO/segment data output pins
Pin name COM0-3 SEG0-1 SEG2-7 SEG8-19 SEG20-21	1/0*1 0 0 0	Initial s Hi-Z / 0 Hi-Z / 0 Hi-Z / 0 Hi-Z / 0 Hi-Z / 0	tatus*1 O (L)*2 Comm O (L)*2 Segme O (L)*2 Segme O (L)*2 Genera O (L)*2 Segme	Function on data output-only pins ent data output-only pins (Not available in the SQFN7-48pin package) ent data output-only pins al-purpose IO/segment data output pins ent data output-only pins (Not available in the 48-pin package)
Pin name COM0-3 SEG0-1 SEG2-7 SEG8-19 SEG20-21 SEG22-25	2000-11 00 00 00 00 00	al Manu Initial s Hi-Z / 0 Hi-Z / 0 Hi-Z / 0 Hi-Z / 0 Hi-Z / 0	tatus*1 O (L)*2 Comm O (L)*2 Segme O (L)*2 Segme O (L)*2 Genera O (L)*2 Segme O (L)*2 Genera	Function on data output-only pins ent data output-only pins (Not available in the SQFN7-48pin package) ent data output-only pins al-purpose IO/segment data output pins ent data output-only pins (Not available in the 48-pin package) al-purpose IO/segment data output pins (Not available in the 48-pin package)
Pin name COM0-3 SEG0-1 SEG2-7 SEG8-19 SEG20-21 SEG22-25 LFRO	2000-1 0 0 0 0 0 0 0 0 0	Initial s Hi-Z / (Hi-Z / (Hi-Z / (Hi-Z / (Hi-Z / (Hi-Z / (O (tatus*1 Comm O (L)*2 Comm O (L)*2 Segme O (L)*2 Segme O (L)*2 General O (L)*2 Frame	Function on data output-only pins ent data output-only pins (Not available in the SQFN7-48pin package) ent data output-only pins al-purpose IO/segment data output pins ent data output-only pins (Not available in the 48-pin package) al-purpose IO/segment data output pins (Not available in the 48-pin package) signal monitoring output pin (Not available in the TQFP12-48pin package)
Pin name COM0-3 SEG0-1 SEG2-7 SEG8-19 SEG20-21 SEG22-25 LFRO Vc1	echnica 0 0 0 0 0 0 0 0 0 0 0 0	al Manu Initial s Hi-Z / 0 Hi-Z / 0 Hi-Z / 0 Hi-Z / 0 (tatus*1 Comm O (L)*2 Comm O (L)*2 Segme O (L)*2 Segme O (L)*2 Genera L) Frame LCD p LCD p	Function non data output-only pins ent data output-only pins (Not available in the SQFN7-48pin package) ent data output-only pins al-purpose IO/segment data output pins ent data output-only pins (Not available in the 48-pin package) al-purpose IO/segment data output pins (Not available in the 48-pin package) al-purpose IO/segment data output pins (Not available in the 48-pin package) signal monitoring output pin (Not available in the TQFP12-48pin package) anel drive power supply pin
Pin name COM0-3 SEG0-1 SEG2-7 SEG8-19 SEG20-21 SEG22-25 LFRO Vc1 Vc2	echnica 0 0 0 0 0 0 0 0 P P	al Manu Initial s Hi-Z / 0 Hi-Z / 0 Hi-Z / 0 Hi-Z / 0 (tatus*1 Comm O (L)*2 Comm O (L)*2 Segme O (L)*2 Segme O (L)*2 Genera L) Frame LCD p LCD p	Function non data output-only pins ent data output-only pins (Not available in the SQFN7-48pin package) ent data output-only pins al-purpose IO/segment data output pins ent data output-only pins (Not available in the 48-pin package) al-purpose IO/segment data output pins (Not available in the 48-pin package) al-purpose IO/segment data output pins (Not available in the 48-pin package) signal monitoring output pin (Not available in the TQFP12-48pin package) anel drive power supply pin anel drive power supply pin
Pin name COM0-3 SEG0-1 SEG2-7 SEG8-19 SEG20-21 SEG22-25 LFRO Vc1	echnica 0 0 0 0 0 0 0 0 0 0 0 0	al Manu Initial s Hi-Z / 0 Hi-Z / 0 Hi-Z / 0 Hi-Z / 0 (tatus*1 O (L)*2 Comm O (L)*2 Segme O (L)*2 Segme O (L)*2 Genera L) Frame L LCD p L LCD p	Function non data output-only pins ent data output-only pins (Not available in the SQFN7-48pin package) ent data output-only pins al-purpose IO/segment data output pins ent data output-only pins (Not available in the 48-pin package) al-purpose IO/segment data output pins (Not available in the 48-pin package) al-purpose IO/segment data output pins (Not available in the 48-pin package) signal monitoring output pin (Not available in the TQFP12-48pin package) anel drive power supply pin
Pin name COM0-3 SEG0-1 SEG2-7 SEG8-19 SEG20-21 SEG22-25 LFRO Vc1 Vc2 Vc3	echnica 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	al Manu Initial s Hi-Z / 0 Hi-Z / 0 Hi-Z / 0 Hi-Z / 0 (tatus*1 O (L)*2 Comm O (L)*2 Segme O (L)*2 Segme O (L)*2 Genera L) Frame L LCD p L LCD p L LCD p	Function non data output-only pins ent data output-only pins (Not available in the SQFN7-48pin package) ent data output-only pins al-purpose IO/segment data output pins ent data output-only pins (Not available in the 48-pin package) al-purpose IO/segment data output pins (Not available in the 48-pin package) al-purpose IO/segment data output pins (Not available in the 48-pin package) signal monitoring output pin (Not available in the TQFP12-48pin package) anel drive power supply pin anel drive power supply pin
Pin name COM0-3 SEG0-1 SEG2-7 SEG8-19 SEG20-21 SEG22-25 LFRO Vc1 Vc2 Vc3	echnica 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	al Manu Initial s Hi-Z / 0 Hi-Z / 0 Hi-Z / 0 Hi-Z / 0 (tatus*1 O (L)*2 Comm O (L)*2 Segme O (L)*2 Segme O (L)*2 Genera L (L) Frame L (L) LCD p L (L) LCD v (Not at LCD v L (L) LCD v	Function non data output-only pins ent data output-only pins (Not available in the SQFN7-48pin package) ent data output-only pins al-purpose IO/segment data output pins ent data output-only pins (Not available in the 48-pin package) al-purpose IO/segment data output pins (Not available in the 48-pin package) al-purpose IO/segment data output pins (Not available in the 48-pin package) signal monitoring output pin (Not available in the TQFP12-48pin package) anel drive power supply pin anel drive power supply pin oltage booster capacitor connecting pin

Correct)				
·				Table 18.2.1.1 List of LCD4A Pins
		Initial s		Function
COM0-3	_A			on data output-only pins
SEG0-1	_A			nt data output-only pins (Not available in the SQFN7-48pin package)
SEG2-7	_A			ent data output-only pins
SEG8-19	_A			al-purpose IO/segment data output pins
SEG20-21	_A <u></u>			ent data output-only pins (Not available in the 48-pin package)
SEG22-25	A	Hi-Z/		al-purpose IO/segment data output pins (Not available in the 48-pin package)
LFRO	0	0(signal monitoring output pin (Not available in the TQFP12-48pin package)
VC1	Р	_		anel drive power supply pin
VC2	Р	-	LCD pa	anel drive power supply pin
Vсз	Р	-	LCD pa	anel drive power supply pin
CP1	Α	-		oltage booster capacitor connecting pin /ailable in the TQFP12-48pin package)
CP2	Α	-	LCD vo	oltage booster capacitor connecting pin
			(Not av	ailable in the TQFP12-48pin package)
1C17W14/W1	6 To	abrical	Manual	
	0 10	cnnical	wanuai	
Error)				
				Table 18.2.1.1 List of LCD8B Pins
Pin name		I/O +1	Initial status*1	Function
COM0-3		0		Common data output-only pin
COM4-7/SEG	i0–3	0	Hi-Z / O (L)*2	Common data output/segment data output pin
SEG4-41(W14 SEG4-46(W16	· ·	0	Hi-Z / O (L)*2	Segment data output-only pin
SEG42-53(W1 SEG47-59(W1		0	Hi-Z / O (L)*2	General-purpose IO/segment data output pin
LFRO		0	O (L)	Frame signal monitoring output pin
Vc1		Р	- (-)	LCD panel drive power supply pin
Vc2		P	_	LCD panel drive power supply pin
Vc3		P		LCD panel drive power supply pin
			_	
CP1		Α	-	LCD voltage booster capacitor connecting pin
CP2		Α	-	LCD voltage booster capacitor connecting pin
Correct) Pin name			Initial status*1	Table 18.2.1.1 List of LCD8B Pins
COM0-3		_!/0 <u>1</u>		
COM0-3 COM4-7/SEG	0.0	A		Common data output-only pin
		A		Common data output/segment data output pin
SEG4-41(W14 SEG4-46(W16	· ·	A		Segment data output-only pin
SEG42-53(W1 SEG47-59(W1		À	Hi-Z / O (L)*2	General-purpose IO/segment data output pin
LFRO		0	O (L)	Frame signal monitoring output pin
		<u>Р</u>	(⊔)	LCD panel drive power supply pin
Vci			_	
Vc2		P	-	LCD panel drive power supply pin
Vc3		Р	-	LCD panel drive power supply pin
CP1		Α	-	LCD voltage booster capacitor connecting pin
CP2		Α	-	LCD voltage booster capacitor connecting pin
	*1:	Indicate	es the status v	when the pin is configured for LCD8B. *2: When LCD8CTL.LCDDIS bit = 1

M4-7/SEG0-3 0 Hi-Z / O (L) ² Common data output/segment data output pin 34-15 0 Hi-Z / O (L) ² Segment data output-only pin G16-23 0 0 (L) General-purpose IO/segment data output pin G24-27 0 Hi-Z / O (L) ² Segment data output-only pin (Not available in the 64-pin package) G28-29 0 Hi-Z / O (L) ² Segment data output-only pin (Not available in the 64-pin package) G30-33 0 Hi-Z / O (L) ² Segment data output-only pin (Not available in the 64-pin package) G30-33 0 Hi-Z / O (L) ² Segment data output-only pin (Not available in the 64-pin package) G30-33 0 Hi-Z / O (L) ² Segment data output-only pin (Not available in the 64-pin package) G30-3 0 Hi-Z / O (L) ² Segment data output-only pin (Not available in the 64-pin package) G1 P - LCD panel drive power supply pin - G1 A - LCD voltage booster capacitor connecting pin - G1 A - LCD voltage booster capacitor connecting pin - setter base - LCD voltage booster capacitor connecting pin -	COM0-3 COM4-7/SEG0-3 SEG4-15 SEG16-23 SEG24-27 SEG28-29 SEG30-33 Vc1 Vc2 Vc2 Vc3 Vc4	0 0 0 0 0 0 P P	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) Hi-Z / O (L)*2 Hi-Z / O (L)*2	Function Common data output-only pin	
M0-3 O Hi-Z / O (L)-2 Common data output-only pin M4-7/SEG0-3 O Hi-Z / O (L)-2 Common data output/segment data output pin G4-15 O Hi-Z / O (L)-2 Segment data output-only pin (Not available in the 64-pin package) G24-27 O Hi-Z / O (L)-2 Segment data output-only pin (Not available in the 64-pin package) G28-29 O Hi-Z / O (L)-2 Segment data output-only pin (Not available in the 64-pin package) G30-33 O Hi-Z / O (L)-2 Segment data output-only pin (Not available in the 64-pin package) G30-33 O Hi-Z / O (L)-2 Segment data output-only pin (Not available in the 64-pin package) G30-33 O Hi-Z / O (L)-2 Segment data output-only pin (Not available in the 64-pin package) G30-33 O Hi-Z / O (L)-2 Segment data output-only pin (Not available in the 64-pin package) G30-33 O Hi-Z / O (L)-2 Common data output-only pin G30 A - LCD panel drive power supply pin G30 A - LCD voltage booster capacitor connecting pin G31 A - LCD voltage booster capacitor connecting pin G31 A	COM0-3 COM4-7/SEG0-3 SEG4-15 SEG16-23 SEG24-27 SEG28-29 SEG30-33 Vc1 Vc2 Vc2 Vc3 Vc4	0 0 0 0 0 0 P P	Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) Hi-Z / O (L)*2 Hi-Z / O (L)*2	Common data output-only pin	
M4-7/SEG0-3 0 Hi-Z / O (L)*2 Common data output/segment data output pin G4-15 0 Hi-Z / O (L)*2 Gemeral-purpose IO/segment data output pin G28-27 0 Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) G28-29 0 Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) G28-29 0 Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) G28-29 0 Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) G28-29 0 Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) G28-29 0 Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) G28-29 0 Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) G28-29 0 Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) G28-29 A - LCD voltage booster capacitor connecting pin G28-20 A - LCD voltage booster capacitor connecting pin *1: Indicates the status when the pin is configured for LCD88. *2: When L	COM4-7/SEG0-3 SEG4-15 SEG16-23 SEG24-27 SEG28-29 SEG30-33 Vc1 Vc2 Vc2 Vc3 Vc4	0 0 0 0 0 P P	Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) Hi-Z / O (L)*2 Hi-Z / O (L)*2		
G4-15 O Hi-Z / O (L)-2 Segment data output-only pin G16-23 O O (L) General-purpose IO/segment data output pin G24-27 O Hi-Z / O (L)-2 Segment data output-only pin (Not available in the 64-pin package) G38-33 O Hi-Z / O (L)-2 Segment data output-only pin (Not available in the 64-pin package) G30-33 O Hi-Z / O (L)-2 Segment data output-only pin (Not available in the 64-pin package) G30-33 O Hi-Z / O (L)-2 Segment data output-only pin (Not available in the 64-pin package) G30-33 O Hi-Z / O (L)-2 Segment data output-only pin (Not available in the 64-pin package) G30-33 O Hi-Z / O (L)-2 Segment data output-only pin (Not available in the 64-pin package) G30-33 P - LCD panel drive power supply pin G4 - LCD voltage booster capacitor connecting pin G4 - LCD voltage booster capacitor connecting pin status - LCD voltage booster capacitor connecting pin *1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = 1 M0-3 Ai Hi-Z / O (L)-2 Common data output-only pin	SEG4–15 SEG16–23 SEG24–27 SEG28–29 SEG30–33 Vc1 Vc2 Vc2 Vc3 Vc4	0 0 0 0 P P	Hi-Z / O (L)*2 O (L) Hi-Z / O (L)*2 Hi-Z / O (L)*2	Common data output bognont data output pin	
316-23 0 0 (L) General-purpose IO/segment data output pin 324-27 0 Hi-Z / 0 (L)-2 Segment data output-only pin (Not available in the 64-pin package) 328-29 0 Hi-Z / 0 (L)-2 Segment data output-only pin (Not available in the 64-pin package) 330-33 0 Hi-Z / 0 (L)-2 Segment data output-only pin (Not available in the 64-pin package) 330-33 0 Hi-Z / 0 (L)-2 Segment data output-only pin (Not available in the 64-pin package) 330-33 0 Hi-Z / 0 (L)-2 Segment data output-only pin (Not available in the 64-pin package) 330 P - LCD panel drive power supply pin 1 P - LCD panel drive power supply pin 1 A - LCD voltage booster capacitor connecting pin 2 A - LCD voltage booster capacitor connecting pin 1 A - LCD voltage booster capacitor connecting pin *1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = ' *1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = ' M0-3 Av Hi-Z / 0 (L)-2 Common data output-only pin	SEG16-23 SEG24-27 SEG28-29 SEG30-33 Vc1 Vc2 Vc2 Vc3 Vc4	0 0 0 0 P P	O (L) Hi-Z / O (L)* ² Hi-Z / O (L)* ²	Segment data output-only pin	
G24-27 O Hi-Z / O (L)-2 Segment data output-only pin (Not available in the 64-pin package) G28-29 O Hi-Z / O (L)-2 Segment data output-only pin (Not available in the 64-pin package) G30-33 O Hi-Z / O (L)-2 Segment data output-only pin (Not available in the 64-pin package) G30-33 O Hi-Z / O (L)-2 Segment data output-only pin (Not available in the 64-pin package) G30-33 O Hi-Z / O (L)-2 Segment data output-only pin (Not available in the 64-pin package) G30-33 O Hi-Z / O (L)-2 Segment data output-only pin (Not available in the 64-pin package) G30-31 P - LCD panel drive power supply pin G30-31 P - LCD voltage booster capacitor connecting pin G30-31 A - LCD voltage booster capacitor connecting pin G30-31 A - LCD voltage booster capacitor connecting pin *1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = ' M0-3 Ai Hi-Z / O (L)-2 Common data output-only pin M4-7/SEG0-3 Ai Hi-Z / O (L)-2 Common data output-only pin G316-23 Ai O (L)	SEG24-27 SEG28-29 SEG30-33 Vc1 Vc2 Vc3 Vc3 Vc4	0 0 0 P P	Hi-Z / O (L)*2 Hi-Z / O (L)*2		
G28-29 O Hi-Z / O (L)-2 Segment data output-only pin (Not available in the 64-pin/80-pin package) G30-33 O Hi-Z / O (L)-2 Segment data output-only pin (Not available in the 64-pin package) G30-33 P - LCD panel drive power supply pin CD A - LCD voltage booster capacitor connecting pin *1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = ' *1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = ' M0-3 A Hi-Z / O (L)-2 Common data output-only pin M4-7/SEG0-3 Hi-Z / O (L)-2 Common data output-only pin M4-7/2 A) Hi-Z / O (L)-2 Segment data output-only pin G31-53 A) O (L) General-purpose IO/segment data output pin<	SEG28-29 SEG30-33 Vc1 Vc2 Vc3 Vc4	0 0 P P	Hi-Z / O (L)*2		
G30-33 O Hi-Z / O (L)-2 Segment data output-only pin (Not available in the 64-pin package) P - LCD panel drive power supply pin A - LCD voltage booster capacitor connecting pin *1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = ' *1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = ' M0-3 A Hi-Z / O (L)-2 Common data output-only pin M4-7/SEG0-3 A Hi-Z / O (L)-2 Common data output/segment data output pin G31-5 A) Hi-Z / O (L)-2 Segment data output/segment data output pin G34-23 A) O (L) General-purpose IO/segment data output pin G324-27 A) Hi-Z / O (L)-2 Segment data output-only pin (Not available in the 64-pin package)	SEG30-33 Vc1 Vc2 Vc3 Vc4	O P P			
P - LCD panel drive power supply pin P - LCD panel drive power supply pin P - LCD panel drive power supply pin P - LCD voltage booster capacitor connecting pin A - LCD voltage booster capacitor connecting pin *1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = ' *1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = ' M0-3 A Hi-Z/O (L)-2 Common data output-only pin M4-7/SEG0-3 A Hi-Z/O (L)-2 Common data output-only pin M4-7/SEG0-3 A) Hi-Z/O (L)-2 Segment data output-only pin G24-27 A) Hi-Z/O (L)-2 Segment data output-only pin G34-33 A) Hi-Z/O (L)-2 Segment data output-only pin (Not available in the 64-pin package) G28-29 A) Hi-Z/O (L)	Vc1 Vc2 Vc3 Vc4	P P			
P - LCD panel drive power supply pin P - LCD panel drive power supply pin P - LCD panel drive power supply pin A - LCD voltage booster capacitor connecting pin *1 Indicates the status when the pin is configured for LCD88. *2: When LCD8CTL.MODEN bit = ' *1: Indicates the status when the pin is configured for LCD88. *2: When LCD8CTL.MODEN bit = ' M0-3 A) Hi-Z / O (L)-2 Common data output-only pin M4-7/SEG0-3 A Hi-Z / O (L)-2 Common data output-only pin G4-15 A) Hi-Z / O (L)-2 Segment data output-only pin G24-27 A) Hi-Z / O (L)-2 Segment data output-only pin G24-27 A) Hi-Z / O (L)-2 Segment data output-only pin (Not available in the 64-pin package) G30-33 A) Hi-Z / O (L)-2 Segment data output-only pin (Not available in the 64-pin package)	Vc2 Vc3 Vc4	P	-		
P - LCD panel drive power supply pin A P - LCD voltage booster capacitor connecting pin A - LCD voltage booster capacitor connecting pin *1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = ' *1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = ' *1: Indicates the status when the pin is configured for LCD8B Pins *2: When LCD8CTL.MODEN bit = ' M0-3 A Hi-Z / O (L) ² Common data output-only pin M4-7/SEG0-3 A Hi-Z / O (L) ² Common data output-only pin M4-7/SEG0-3 A Hi-Z / O (L) ² Common data output-only pin G4-15 A) Hi-Z / O (L) ² Segment data output-only pin G24-27 A) Hi-Z / O (L) ² Segment data output-only pin (Not available in the 64-pin package) G24-27 A) Hi-Z / O (L) ² Segment data output-only pin (Not available in the 64-pin package) G30-33	Vc3 Vc4	-	_		
P - LCD panel drive power supply pin A - LCD voltage booster capacitor connecting pin *1 A - LCD voltage booster capacitor connecting pin *1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = 1 *1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = 1 *1000000000000000000000000000000000000	Vc4	Р			
A - LCD voltage booster capacitor connecting pin * A - LCD voltage booster capacitor connecting pin *1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = ' *1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = ' *1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = ' *1: Indicates the status when the pin is configured for LCD8B Pins *1: Pin name I/Q^1 Initial status'1 Function M0-3 A) Hi-Z / O (L)*2 Common data output-only pin M4-7/SEG0-3 Ai Hi-Z / O (L)*2 Common data output-only pin G4-15 A) Hi-Z / O (L)*2 Segment data output-only pin G4-23 Ai O (L) General-purpose IO/segment data output pin G28-29 Ai Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) G28-29 Ai Hi-Z / O (L)*2		Р	_		
a A - LCD voltage booster capacitor connecting pin a A - LCD voltage booster capacitor connecting pin a A - LCD voltage booster capacitor connecting pin *1: A - LCD voltage booster capacitor connecting pin *1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = ' *1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = ' *1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = ' *1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = ' *1: Indicates the status when the pin is configured for LCD8B Pins * Pin name I/Q ¹ Initial status'1 Function M0-3 A) Hi-Z / O (L)'2 Common data output-only pin M4-7/SEG0-3 A) Hi-Z / O (L)'2 Common data output-only pin G16-23 A) O (L) General-purpose IO/segment data output pin G24-27 A) Hi-Z / O (L)'2 Segment data output-only pin (Not available in the 64-pin package) G24-27 A)	CP1	A	-		
A - LCD voltage booster capacitor connecting pin A - LCD voltage booster capacitor connecting pin *1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = ' *1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = ' rect) Table 17.2.1.1 List of LCD8B Pins Pin name I/Q ¹ M0-3 A) Hi-Z / O (L) ² Common data output-only pin M4-7/SEG0-3 A) Hi-Z / O (L) ² Common data output-only pin G16-23 A) A) O (L) General-purpose IO/segment data output pin G24-27 A) Hi-Z / O (L) ² Segment data output-only pin (Not available in the 64-pin package) G28-29 A) G30-33 A) Hi-Z / O (L) ² Segment data output-only pin (Not available in the 64-pin package) G32-33 A) Hi-Z / O (L) ² Segment data output-only pin (Not available in the 64-pin package) G32-33 A) Hi-Z / O (L) ² Segment data output-only pin (Not available in the 64-pin package) G32-33 A)	CP2		_		
A - LCD voltage booster capacitor connecting pin *1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = ' *1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = ' ** Table 17.2.1.1 List of LCD8B Pins Pin name I/Q ¹ Initial status ⁺¹ M0-3 A) Hi-Z / O (L) ⁻² A Hi-Z / O (L) ⁻² Common data output-only pin M4-7/SEG0-3 A) Hi-Z / O (L) ⁻² Ad4-15 A) Hi-Z / O (L) ⁻² Segment data output-only pin Gat-15 G16-23 A) O (L) General-purpose IO/segment data output pin Gat-27 G24-27 A) Hi-Z / O (L) ⁻² Segment data output-only pin (Not available in the 64-pin package) Gat-28 G30-33 A) Hi-Z / O (L) ⁻² Segment data output-only pin (Not available in the 64-pin package) Gat-29 G30-33 A) Hi-Z / O (L) ⁻² Segment data output-only pin (Not available in the 64-pin package) P B P - LCD panel drive power supply pin LCD panel drive power sup	Срз	А	_		
*1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = * *1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = * Table 17.2.1.1 List of LCD8B Pins Function M0-3 A) Hi-Z / O (L)*2 Common data output-only pin M4-7/SEG0-3 A) Hi-Z / O (L)*2 Common data output-only pin Gate-state output for a state output pin Gate-state output for available in the 64-pin package) G24-27 A) Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) G24-27 A) Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) G28-29 A) Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) G28-29 A) <td cols<="" td=""><th>CP4</th><td></td><td>_</td><td>· · · · · · · · · · · · · · · · · · ·</td></td>	<th>CP4</th> <td></td> <td>_</td> <td>· · · · · · · · · · · · · · · · · · ·</td>	CP4		_	· · · · · · · · · · · · · · · · · · ·
Pin name $ /O^1$ Initial status*1FunctionM0-3A)Hi-Z / O (L)*2Common data output-only pinM4-7/SEG0-3A)Hi-Z / O (L)*2Common data output/segment data output pinG4-15A)Hi-Z / O (L)*2Segment data output-only pinG16-23A)O (L)General-purpose IO/segment data output pinG24-27A)Hi-Z / O (L)*2Segment data output-only pin (Not available in the 64-pin package)G28-29A)Hi-Z / O (L)*2Segment data output-only pin (Not available in the 64-pin/80-pin package)G30-33A)Hi-Z / O (L)*2Segment data output-only pin (Not available in the 64-pin package)G20-33A)Hi-Z / O (L)*2Segment data output-only pin (Not available in the 64-pin package)G30-33A)Hi-Z / O (L)*2Segment data output-only pin (Not available in the 64-pin package)G20-33A)Hi-Z / O (L)*2Segment data output-only pin (Not available in the 64-pin package)G30-33A)Hi-Z / O (L)*2Segment data output-only pin (Not available in the 64-pin package)CD panel drive power supply pinP-LCD panel drive power supply pinCD panel drive power supply pin-LCD panel drive power supply pinCD panel drive power supply pin-LCD panel drive power supply pin					
M0-3 A Hi-Z / O (L)*2 Common data output-only pin M4-7/SEG0-3 A Hi-Z / O (L)*2 Common data output/segment data output pin G4-15 A Hi-Z / O (L)*2 Segment data output-only pin G16-23 A O (L) General-purpose IO/segment data output pin G24-27 A Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) G28-29 A Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin/80-pin package) G30-33 A Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) G30-33 A Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) G30-33 A Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) P - LCD panel drive power supply pin P - LCD panel drive power supply pin P - LCD panel drive power supply pin	orrect)				
M4-7/SEG0-3 A) Hi-Z / O (L)*2 Common data output/segment data output pin G4-15 A) Hi-Z / O (L)*2 Segment data output-only pin G16-23 A) O (L) General-purpose IO/segment data output pin G24-27 A) Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) G28-29 A) Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin/80-pin package) G30-33 A) Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) G20-29 A) Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin/80-pin package) G30-33 A) Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) CD P - LCD panel drive power supply pin P - LCD panel drive power supply pin P - LCD panel drive power supply pin	orrect)			Table 17.2.1.1 List of LCD8B Pins	
G4-15 A) Hi-Z / O (L)*2 Segment data output-only pin G16-23 A) O (L) General-purpose IO/segment data output pin G24-27 A) Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) G28-29 A) Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin/80-pin package) G30-33 A) Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) G30-33 A) Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) P - LCD panel drive power supply pin	Pin name		Initial status*1	Function	
G16-23 A) O (L) General-purpose IO/segment data output pin G24-27 A) Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) G28-29 A) Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin/80-pin package) G30-33 A) Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) G30-33 A) Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) P - LCD panel drive power supply pin P - LCD panel drive power supply pin P - LCD panel drive power supply pin	Pin name COM0-3	A)	Initial status*1 Hi-Z / O (L)*2	Function Common data output-only pin	
G24-27 A) Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) G28-29 A) Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin/80-pin package) G30-33 A) Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin/80-pin package) G30-33 A) Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) P - LCD panel drive power supply pin	Pin name COM0-3 COM4-7/SEG0-3	A) A)	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2	Function Common data output-only pin Common data output/segment data output pin	
G28-29 A) Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin/80-pin package) G30-33 A) Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) P - LCD panel drive power supply pin	Pin name COM0-3 COM4-7/SEG0-3 SEG4-15	A) A) A)	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2	Function Common data output-only pin Common data output/segment data output pin Segment data output-only pin	
G30-33 A) Hi-Z / O (L)*2 Segment data output-only pin (Not available in the 64-pin package) P - LCD panel drive power supply pin	Pin name COM0-3 COM4-7/SEG0-3 SEG4-15 SEG16-23	A) A) A) A)	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L)	Function Common data output-only pin Common data output/segment data output pin Segment data output-only pin General-purpose IO/segment data output pin	
P - LCD panel drive power supply pin P - LCD panel drive power supply pin P - LCD panel drive power supply pin	Pin name COM0-3 COM4-7/SEG0-3 SEG4-15 SEG16-23 SEG24-27	A) A) A) A) A) A)	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) Hi-Z / O (L)*2	Function Common data output-only pin Common data output/segment data output pin Segment data output-only pin General-purpose IO/segment data output pin Segment data output-only pin (Not available in the 64-pin package)	
P - LCD panel drive power supply pin B P - LCD panel drive power supply pin	Pin name COM0-3 COM4-7/SEG0-3 SEG4-15 SEG16-23 SEG24-27 SEG28-29	A) A) A) A) A) A) A)	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) Hi-Z / O (L)*2 Hi-Z / O (L)*2	Function Common data output-only pin Common data output/segment data output pin Segment data output-only pin General-purpose IO/segment data output pin Segment data output-only pin (Not available in the 64-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package)	
P – LCD panel drive power supply pin	Pin name COM0-3 COM4-7/SEG0-3 SEG4-15 SEG16-23 SEG24-27 SEG28-29 SEG30-33	A) A) A) A) A) A) A) A)	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2	Function Common data output-only pin Common data output/segment data output pin Segment data output-only pin General-purpose IO/segment data output pin Segment data output-only pin (Not available in the 64-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin package)	
	Pin name COM0-3 COM4-7/SEG0-3 SEG4-15 SEG16-23 SEG24-27 SEG28-29 SEG30-33 Vc1	A) A) A) A) A) A) A) A) A) P	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 -	Function Common data output-only pin Common data output-segment data output pin Segment data output-only pin General-purpose IO/segment data output pin Segment data output-only pin (Not available in the 64-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) LCD panel drive power supply pin	
P – I CD papel drive power supply pin	Pin name COM0-3 COM4-7/SEG0-3 SEG4-15 SEG16-23 SEG24-27 SEG28-29 SEG30-33 Vc1 Vc2	A) A) A) A) A) A) A) A) P P	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 -	Function Common data output-only pin Common data output/segment data output pin Segment data output-only pin General-purpose IO/segment data output pin Segment data output-only pin (Not available in the 64-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin package) LCD panel drive power supply pin LCD panel drive power supply pin	
	Pin name COM0-3 COM4-7/SEG0-3 SEG4-15 SEG16-23 SEG24-27 SEG28-29 SEG30-33 Vc1 Vc2 Vc3	A) A) A) A) A) A) A) A) P P P	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 - - -	Function Common data output-only pin Common data output/segment data output pin Segment data output-only pin General-purpose IO/segment data output pin Segment data output-only pin (Not available in the 64-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) LCD panel drive power supply pin LCD panel drive power supply pin LCD panel drive power supply pin	
A – LCD voltage booster capacitor connecting pin	Pin name COM0-3 COM4-7/SEG0-3 SEG4-15 SEG16-23 SEG24-27 SEG28-29 SEG30-33 Vc1 Vc2 Vc3 Vc4	A) A) A) A) A) A) A) P P P P	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 - - - -	Function Common data output-only pin Common data output/segment data output pin Segment data output-only pin General-purpose IO/segment data output pin Segment data output-only pin (Not available in the 64-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) LCD panel drive power supply pin	
	Pin name COM0-3 COM4-7/SEG0-3 SEG4-15 SEG16-23 SEG24-27 SEG28-29 SEG30-33 Vc1 Vc2 Vc3 Vc4 CP1	A) A) A) A) A) A) A) P P P P A	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 	Function Common data output-only pin Common data output/segment data output pin Segment data output-only pin General-purpose IO/segment data output pin Segment data output-only pin (Not available in the 64-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) LCD panel drive power supply pin	
A – LCD voltage booster capacitor connecting pin	Pin name	A) A) A) A) A) A) A) P P P P P A A	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 	Function Common data output-only pin Common data output/segment data output pin Segment data output-only pin General-purpose IO/segment data output pin Segment data output-only pin (Not available in the 64-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) LCD panel drive power supply pin LCD voltage booster capacitor connecting pin	
	COM0-3	A)	Initial status*1 Hi-Z / O (L)*2	Function Common data output-only pin	
A – LCD voltage booster capacitor connecting pin	Pin name COM0-3 COM4-7/SEG0-3 SEG4-15 SEG16-23 SEG24-27 SEG28-29 SEG30-33 /c1 /c2 /c3	A) A) A) A) A) A) A) P P P P	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 - - - -	Function Common data output-only pin Common data output/segment data output pin Segment data output-only pin General-purpose IO/segment data output pin Segment data output-only pin (Not available in the 64-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin package) LCD panel drive power supply pin LCD panel drive power supply pin LCD panel drive power supply pin	
	Pin name COM0-3 COM4-7/SEG0-3 SEG4-15 SEG16-23 SEG24-27 SEG28-29 SEG30-33 /c1 /c2 /c3 /c4 CP1	A) A) A) A) A) A) A) P P P P A	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 	Function Common data output-only pin Common data output/segment data output pin Segment data output-only pin General-purpose IO/segment data output pin Segment data output-only pin (Not available in the 64-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) LCD panel drive power supply pin	
A – LCD voltage booster capacitor connecting pin	Pin name COM0-3 COM4-7/SEG0-3 SEG4-15 SEG16-23 SEG24-27 SEG28-29 SEG30-33 /c1 /c2 /c3 /c4 CP1	A) A) A) A) A) A) A) P P P P A	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 	Function Common data output-only pin Common data output/segment data output pin Segment data output-only pin General-purpose IO/segment data output pin Segment data output-only pin (Not available in the 64-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) LCD panel drive power supply pin LCD power supply pin LCD voltage booster capacitor connecting pin	
A – LCD voltage booster capacitor connecting pin A – LCD voltage booster capacitor connecting pin	Pin name COM0-3 COM4-7/SEG0-3 SEG4-15 SEG16-23 SEG24-27 SEG28-29 SEG30-33 Vc1 Vc2 Vc3 Vc4 CP1 CP2	A) A) A) A) A) A) A) A) A) P P P A A A A) A)	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 	Function Common data output-only pin Common data output/segment data output pin Segment data output-only pin General-purpose IO/segment data output pin Segment data output-only pin (Not available in the 64-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin package) LCD panel drive power supply pin LCD voltage booster capacitor connecting pin LCD voltage booster capacitor connecting pin	

rror)			
			Table 18.2.1.1 List of LCD8B Pins
Pin name	I/O*1	Initial status*1	Function
COM0-3	0		General-purpose IO/Common data output-only pin
COM4-7/SEG0-3 SEG4-23	0		General-purpose IO/Common data output/segment data output pin
SEG24-23 SEG24-27	0		General-purpose IO/segment data output pin Segment data output-only pin (Not available in the 64-pin package)
SEG28-34	0		Segment data output-only pin (Not available in the 64-pin/80-pin package)
SEG35-38	0		Segment data output-only pin (Not available in the 64-pin package) Segment data output-only pin (Not available in the 64-pin package)
SEG39-47	0		Segment data output only pin (Not available in the 64-pin/80-pin package)
LFRO	ŏ	O (L)	Frame signal monitoring output pin
Vci	P	_	LCD panel drive power supply pin
Vc2	Р	-	LCD panel drive power supply pin
Vсз	Р	-	LCD panel drive power supply pin
Vc4	Р	-	LCD panel drive power supply pin
Cp1	Α	-	LCD voltage booster capacitor connecting pin
CP2	Α	-	LCD voltage booster capacitor connecting pin
Срз	Α	-	LCD voltage booster capacitor connecting pin
CP4	Α	-	LCD voltage booster capacitor connecting pin
orrect)			
orrect)			Table 18.2.1.1 List of LCD8B Pins
orrect) Pin name	II/O1	Initial status*1	Table 18.2.1.1 List of LCD8B Pins
Pin name	I/O1 A	Initial status*1	
Pin name COM0–3		Initial status*1 Hi-Z / O (L)*2	Function
Pin name COM0-3 COM4-7/SEG0-3 SEG4-23		Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2	Function General-purpose IO/Common data output-only pin General-purpose IO/Common data output/segment data output pin General-purpose IO/segment data output pin
Pin name COM0-3 COM4-7/SEG0-3 SEG4-23 SEG24-27	A A A A	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2	Function General-purpose IO/Common data output-only pin General-purpose IO/Common data output/segment data output pin General-purpose IO/segment data output pin Segment data output-only pin (Not available in the 64-pin package)
Pin name COM0-3 COM4-7/SEG0-3 SEG4-23 SEG24-27 SEG28-34	A A A A A	$\begin{array}{c} \mbox{Initial status}^{*1} \\ \mbox{Hi-Z / O (L)}^{*2} \end{array}$	Function General-purpose IO/Common data output-only pin General-purpose IO/Common data output/segment data output pin General-purpose IO/segment data output pin Segment data output-only pin (Not available in the 64-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package)
Pin name COM0-3 COM4-7/SEG0-3 SEG4-23 SEG24-27 SEG28-34 SEG35-38		$\begin{array}{c} \mbox{Initial status}^{*1} \\ \mbox{Hi-Z} / O (L)^{*2} \end{array}$	Function General-purpose IO/Common data output-only pin General-purpose IO/Common data output/segment data output pin General-purpose IO/segment data output pin Segment data output-only pin (Not available in the 64-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin package)
Pin name COM0-3 COM4-7/SEG0-3 SEG4-23 SEG24-27 SEG28-34 SEG35-38 SEG39-47	A A A A A A A A	$\begin{array}{c} \mbox{Initial status}^{*1} \\ \mbox{Hi-Z} / O (L)^{*2} \end{array}$	Function General-purpose IO/Common data output-only pin General-purpose IO/Common data output/segment data output pin General-purpose IO/segment data output pin Segment data output-only pin (Not available in the 64-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin package) Segment data output-only pin (Not available in the 64-pin package) Segment data output-only pin (Not available in the 64-pin package)
Pin name COM0-3 COM4-7/SEG0-3 SEG4-23 SEG24-27 SEG28-34 SEG35-38 SEG39-47 LFRO		$\begin{array}{c} \mbox{Initial status}^{*1} \\ \mbox{Hi-Z} / O (L)^{*2} \end{array}$	Function General-purpose IO/Common data output-only pin General-purpose IO/Common data output/segment data output pin General-purpose IO/segment data output pin Segment data output-only pin (Not available in the 64-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Frame signal monitoring output pin
Pin name COM0-3 COM4-7/SEG0-3 SEG4-23 SEG24-27 SEG28-34 SEG35-38 SEG35-38 SEG39-47 LFRO Vc1	A A A A A A A A A O P	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) -	Function General-purpose IO/Common data output-only pin General-purpose IO/Common data output/segment data output pin General-purpose IO/segment data output pin Segment data output-only pin (Not available in the 64-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Frame signal monitoring output pin LCD panel drive power supply pin
Pin name COM0-3 COM4-7/SEG0-3 SEG4-23 SEG24-27 SEG28-34 SEG35-38 SEG39-47 LFRO Vc1 Vc2	A A A A A A A A A A A A A A A A A A A	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) -	Function General-purpose IO/Common data output-only pin General-purpose IO/Common data output/segment data output pin General-purpose IO/segment data output pin Segment data output-only pin (Not available in the 64-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Frame signal monitoring output pin LCD panel drive power supply pin
Pin name COM0-3 COM4-7/SEG0-3 SEG4-23 SEG24-27 SEG28-34 SEG35-38 SEG39-47 LFRO Vc1 Vc2 Vc3	A A Ai Ai Ai Ai Ai Ai O P P P	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) -	Function General-purpose IO/Common data output-only pin General-purpose IO/Common data output/segment data output pin General-purpose IO/segment data output pin Segment data output-only pin (Not available in the 64-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Frame signal monitoring output pin LCD panel drive power supply pin LCD panel drive power supply pin
Pin name COM0-3 COM4-7/SEG0-3 SEG4-23 SEG24-27 SEG28-34 SEG35-38 SEG39-47 LFRO Vc1 Vc2 Vc3 Vc4	A A Ai Ai Ai Ai Ai O P P P P	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) - - -	Function General-purpose IO/Common data output-only pin General-purpose IO/Common data output/segment data output pin General-purpose IO/segment data output pin Segment data output-only pin (Not available in the 64-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Frame signal monitoring output pin LCD panel drive power supply pin LCD panel drive power supply pin LCD panel drive power supply pin
Pin name COM0-3 COM4-7/SEG0-3 SEG4-23 SEG24-27 SEG28-34 SEG35-38 SEG39-47 LFRO Vc1 Vc2 Vc3 Vc4 CP1	A A Ai Ai Ai Ai Ai Ai O P P P P P A	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) - - -	Function General-purpose IO/Common data output-only pin General-purpose IO/Common data output/segment data output pin General-purpose IO/Segment data output pin Segment data output-only pin (Not available in the 64-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Frame signal monitoring output pin LCD panel drive power supply pin LCD panel drive power supply pin LCD panel drive power supply pin LCD voltage booster capacitor connecting pin
Pin name COM0-3 COM4-7/SEG0-3 SEG4-23 SEG24-27 SEG28-34 SEG35-38 SEG39-47 LFRO Vc1 Vc2 Vc3 Vc4 CP1 CP2	A A Ai Ai Ai Ai Ai O P P P P	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) 	Function General-purpose IO/Common data output-only pin General-purpose IO/Common data output/segment data output pin General-purpose IO/Segment data output pin Segment data output-only pin (Not available in the 64-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Frame signal monitoring output pin LCD panel drive power supply pin LCD panel drive power supply pin LCD panel drive power supply pin LCD voltage booster capacitor connecting pin LCD voltage booster capacitor connecting pin
COM0-3 COM4-7/SEG0-3 SEG4-23 SEG24-27 SEG28-34 SEG35-38 SEG39-47 LFRO Vc1 Vc2 Vc3 Vc4 CP1 CP2 CP3 CP4	A A Ai Ai Ai Ai Ai Ai P P P P P A A A A	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) - - - - - - - - - - - -	Function General-purpose IO/Common data output-only pin General-purpose IO/Common data output/segment data output pin General-purpose IO/Segment data output pin Segment data output-only pin (Not available in the 64-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Segment data output-only pin (Not available in the 64-pin/80-pin package) Frame signal monitoring output pin LCD panel drive power supply pin LCD panel drive power supply pin LCD panel drive power supply pin LCD voltage booster capacitor connecting pin

Error)								
		Table 1	8211 Lis	st of LCD24A Pins				
Pin name	I/O*1		I status*1	Function				
SEG53-0	0		/ O (L)*2	Segment data output-only pin				
COM7-0	0		/ O (L)*2	Common data output-only pin				
SEG71-54	0		0 (L)	General-purpose IO/segment data output pin				
COM23-8	0	(0 (L)	General-purpose IO/common data output pin Frame signal monitoring output pin LCD panel drive power supply pin				
LFRO	0	(0 (L)					
Vc1	Р		-					
Vc2	Р		-					
Vc3	Р		-					
VC4	P		-					
CP1	A		-	LCD voltage booster capacitor connecting pin				
CP2	A		LCD voltage booster capacitor connecting pin					
Срз	A		-	LCD voltage booster capacitor connecting pin				
CP4	A		-	LCD voltage booster capacitor connecting pin				
Correct) P in name	II/0 ¹		8.2.1.1 Lis	st of LCD24A Pins				
SEG53-0	<u> /0</u> /0		/ O (L)*2	Segment data output-only pin				
COM7-0	<u>A</u>		. / O (L)*2	Common data output only pin				
SEG71-54			0 (L)	General-purpose IO/segment data output pin				
COM23-8	A		0 (L)	General-purpose IO/common data output pin				
LFRO	0		0 (L)	Frame signal monitoring output pin				
Vc1	Р		_	LCD panel drive power supply pin				
Vc2	Р		_	LCD panel drive power supply pin				
Vсз	Р		-	LCD panel drive power supply pin				
Vc4	Р		-	LCD panel drive power supply pin				
CP1	A		 LCD voltage booster capacitor connecting pin 					
CP2	Α		LCD voltage booster capacitor connecting pin					
Срз	A		-	LCD voltage booster capacitor connecting pin				
CP4	A		_	LCD voltage booster capacitor connecting pin				
OF4	A							
		atus when the p	oin is confi					
*1: Ind	licates the sta		pin is confi					
*1: Inc 1C17W34/W35/W3	licates the sta	Manual		gured for LCD24A. *2: When LCD24CTL.MODEN bit = 1				
*1: Inc 1C17W34/W35/W3 Error)	dicates the sta	Manual Table 1	18.2.1.1 Li	gured for LCD24A. *2: When LCD24CTL.MODEN bit = 1				
*1: Inc 1C17W34/W35/W3 Error) Pin name	36 Technical	Manual Table 1 Initial status*1	8.2.1.1 Li	gured for LCD24A. *2: When LCD24CTL.MODEN bit = 1 st of LCD32B Pins Function				
*1: Inc 1C17W34/W35/W3 Error) <u>Pin name</u> COM0-15	36 Technical	Manual Table 1 Initial status*1 Hi-Z / O (L)*2	8.2.1.1 Lis Common	gured for LCD24A. *2: When LCD24CTL.MODEN bit = 1 st of LCD32B Pins Function data output-only pins				
*1: Inc 1C17W34/W35/W3 Error) Pin name COM0-15 SEG0-15/COM16-3	36 Technical 1/0*1 0 31 0	Manual Table 1 Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2	8.2.1.1 Li Common Segment	gured for LCD24A. *2: When LCD24CTL.MODEN bit = 1 st of LCD32B Pins Function data output-only pins data output/common data output pins				
*1: Inc 1C17W34/W35/W3 Error) Pin name COM0-15 SEG0-15/COM16-3 SEG16-63	I/O*1 0 31 0	Manual Table 1 Initial status ¹¹ Hi-Z / O (L)* ² Hi-Z / O (L)* ² Hi-Z / O (L)* ²	8.2.1.1 Li Common Segment Segment	gured for LCD24A. *2: When LCD24CTL.MODEN bit = 1 st of LCD32B Pins Function data output-only pins data output/common data output pins data output-only pin				
*1: Inc 1C17W34/W35/W3 Error) Pin name COM0–15 SEG0–15/COM16-3 SEG16–63 SEG64–79/COM31-	I/O*1 0 31 0 -16	Manual Table 1 Initial status ¹¹ Hi-Z / O (L)* ² Hi-Z / O (L)* ² Hi-Z / O (L)* ² Hi-Z / O (L)* ²	8.2.1.1 Li Common Segment Segment Segment	gured for LCD24A. *2: When LCD24CTL.MODEN bit = 1 st of LCD32B Pins Function data output-only pins data output/common data output pins data output-only pin data output/common data output pins				
*1: Inc 1C17W34/W35/W3 Error) Pin name COM0–15 SEG0–15/COM16–3 SEG16–63 SEG64–79/COM31- LFRO	I/O*1 0 31 0 -16 0	Manual Table 1 Initial status ¹¹ Hi-Z / O (L)* ² Hi-Z / O (L)* ² Hi-Z / O (L)* ² O (L)	8.2.1.1 Lis Common Segment Segment Segment Frame sig	gured for LCD24A. *2: When LCD24CTL.MODEN bit = 1 st of LCD32B Pins Function data output-only pins data output/common data output pins data output-only pin data output/common data output pins nal monitoring output pin				
*1: Inc 1C17W34/W35/W3 Error) Pin name COM0–15 SEG0–15/COM16–3 SEG16–63 SEG64–79/COM31- LFRO Vc1–Vc5	I/O*1 0 31 0 -16 0 P	Manual Table 1 Initial status ¹¹ Hi-Z / O (L)* ² Hi-Z / O (L)* ² Hi-Z / O (L)* ² Hi-Z / O (L)* ²	8.2.1.1 Lis Common Segment Segment Frame sig LCD pane	gured for LCD24A. *2: When LCD24CTL.MODEN bit = 1 st of LCD32B Pins Function data output-only pins data output/common data output pins data output-only pin data output/common data output pins nal monitoring output pin el drive power supply pins				
*1: Inc 1C17W34/W35/W3 Error) Pin name COM0–15 SEG0–15/COM16–3 SEG16–63 SEG64–79/COM31- LFRO Vc1–Vc5 CP1–CP5	I/O*1 0 31 0 -16 0 P A	Manual Table 1 Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) -	8.2.1.1 Li Common Segment Segment Segment Frame sig LCD pane LCD volta	gured for LCD24A. *2: When LCD24CTL.MODEN bit = 1 st of LCD32B Pins Function data output-only pins data output/common data output pins data output/common data output pins nal monitoring output pin el drive power supply pins ge booster capacitor connecting pins				
*1: Inc 1C17W34/W35/W3 Error) Pin name COM0–15 SEG0–15/COM16–3 SEG16–63 SEG64–79/COM31- LFRO Vc1–Vc5 CP1–CP5	I/O*1 0 31 0 -16 0 P A	Manual Table 1 Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) -	8.2.1.1 Li Common Segment Segment Segment Frame sig LCD pane LCD volta	gured for LCD24A. *2: When LCD24CTL.MODEN bit = 1 st of LCD32B Pins Function data output-only pins data output/common data output pins data output/common data output pins nal monitoring output pin el drive power supply pins ge booster capacitor connecting pins				
*1: Inc *1: Inc *1: Inc *1: Inc *1: Inc *1: Inc *1: Inc *1: Inc	I/O*1 0 31 0 -16 0 P A	Manual Table 1 Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) - - atus when the	8.2.1.1 Li Common Segment Segment Frame sig LCD pane LCD volta pin is confi	gured for LCD24A. *2: When LCD24CTL.MODEN bit = 1 st of LCD32B Pins Function data output-only pins data output/common data output pins data output/common data output pins nal monitoring output pin el drive power supply pins ge booster capacitor connecting pins				
*1: Inc *1: Inc *1: Inc *1: Inc *1: Inc *1: Inc *1: Inc *1: Inc	I/O*1 0 31 0 -16 0 P A	Manual Table 1 Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) - - atus when the	8.2.1.1 Li Common Segment Segment Frame sig LCD pane LCD volta pin is confi	gured for LCD24A. *2: When LCD24CTL.MODEN bit = 1 st of LCD32B Pins Function data output-only pins data output/common data output pins data output/common data output pins nal monitoring output pin el drive power supply pins ge booster capacitor connecting pins igured for LCD32B. *2: When LCD32CTL.LCDDIS bit =				
*1: Inc 1C17W34/W35/W3 Error) Pin name COM0-15 SEG0-15/COM16-3 SEG16-63 SEG64-79/COM31- LFRO Vc1-Vc5 CP1-CP5 *1: Inc Correct) Pin name	I/O*1 36 Technical 36 Technical 36 Technical 37 O 31 O 31 O -16 O P A dicates the state	Manual Table 1 Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L) - - atus when the Table 1 Initial status*1	8.2.1.1 Li Common Segment Segment Frame sig LCD pane LCD volta pin is confi 8.2.1.1 Li	gured for LCD24A. *2: When LCD24CTL.MODEN bit = 1 st of LCD32B Pins Function data output-only pins data output/common data output pins data output/common data output pins data output/common data output pins el drive power supply pins ge booster capacitor connecting pins igured for LCD32B. *2: When LCD32CTL.LCDDIS bit =				
*1: Inc 1C17W34/W35/W3 Error) Pin name COM0-15 SEG0-15/COM16-3 SEG16-63 SEG64-79/COM31- LFRO Vc1-Vc5 CP1-CP5 *1: Inc Correct) Pin name COM0-15	I/O*1 36 Technical 36 Technical 36 Technical 31 O 31 O -16 O P A	Manual Table 1 Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) - - atus when the Table 1 Initial status*1 Hi-Z / O (L)*2	8.2.1.1 Li Common Segment Segment Frame sig LCD pane LCD volta pin is confi 8.2.1.1 Li Common	gured for LCD24A. *2: When LCD24CTL.MODEN bit = 1 st of LCD32B Pins Function data output-only pins data output/common data output pins data output/common data output pins nal monitoring output pin el drive power supply pins ge booster capacitor connecting pins igured for LCD32B. *2: When LCD32CTL.LCDDIS bit = st of LCD32B Pins Function				
*1: Inc i1C17W34/W35/W3 Error) Pin name COM0-15 SEG0-15/COM16-3 SEG16-63 SEG64-79/COM31- LFRO Vc1-Vc5 CP1-CP5 *1: Inc Correct)	I/O*1 36 Technical 36 Technical 36 Technical 31 O 31 O -16 O P A	Manual Table 1 Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) - atus when the Table 1 Initial status*1 Hi-Z / O (L)*2 - - - - Hi-Z / O (L)*2 - Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2	8.2.1.1 Li Common Segment Segment Frame sig LCD pane LCD volta pin is confi 8.2.1.1 Li Common Segment	gured for LCD24A. *2: When LCD24CTL.MODEN bit = 1 st of LCD32B Pins Function data output-only pins data output-common data output pins data output-common data output pins data output-common data output pins nal monitoring output pin d drive power supply pins ge booster capacitor connecting pins igured for LCD32B. *2: When LCD32CTL.LCDDIS bit = st of LCD32B Pins Function data output-only pins				
*1: Inc *1: Inc Correct) *1: Inc Com0-15 SEG0-15/COM16-3 SEG0-15/COM16-3	I/O*1 36 Technical 36 Technical 36 Technical 37 O 31 O 31 O -16 O 0 -16 O 0 4 A 31 A	Manual Table 1 Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) - atus when the Table 1 Initial status*1 Hi-Z / O (L)*2	8.2.1.1 Li Common Segment Segment Frame sig LCD pane LCD volta pin is confi 8.2.1.1 Li Common Segment Segment	gured for LCD24A. *2: When LCD24CTL.MODEN bit = 1 st of LCD32B Pins Function data output-only pins data output-only pin data output-only pin data output/common data output pins nal monitoring output pin d drive power supply pins ge booster capacitor connecting pins igured for LCD32B. *2: When LCD32CTL.LCDDIS bit = st of LCD32B Pins Function data output-only pins data output-only pins data output-only pins				
*1: Inc *1: Inc *1: Inc *1: Inc *1: Inc *1: Inc *1: Inc *1: Inc *1: Inc *1: Inc Correct) *1: Inc Correct) *1: Inc Com0-15 SEG0-15/COM16-3 SEG0-15/COM16-3 SEG16-63	I/O*1 36 Technical 36 Technical 36 Technical 37 O 31 O 31 O -16 O 0 -16 O 0 4 0 1 0 -16 O 0 1 0 1 0 1 0 1 1 1 1 1 1 1 1 1	Manual Table 1 Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) - atus when the Table 1 Initial status*1 Hi-Z / O (L)*2	8.2.1.1 Li Common Segment Segment Frame sig LCD pane LCD volta pin is confi 8.2.1.1 Li Common Segment Segment	gured for LCD24A. *2: When LCD24CTL.MODEN bit = 1 st of LCD32B Pins Function data output-only pins data output-only pin data output-only pin data output/common data output pins nal monitoring output pin d drive power supply pins ge booster capacitor connecting pins igured for LCD32B. *2: When LCD32CTL.LCDDIS bit = st of LCD32B Pins Function data output-only pins				
*1: Inc *1:	I/O*1 36 Technical 36 Technical 36 Technical 37 O 31 O 31 O -16 O P A Jicates the state II/O1 A 31 A A A A A A A A A A A A A A A A A	Manual Table 1 Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2 O (L) - atus when the Table 1 Initial status*1 Hi-Z / O (L)*2	8.2.1.1 Li Common Segment Segment Frame sig LCD pane LCD volta pin is confi 8.2.1.1 Li Common Segment Segment Frame sig	gured for LCD24A. *2: When LCD24CTL.MODEN bit = 1 st of LCD32B Pins Function data output-only pins data output-only pin data output-only pin data output/common data output pins nal monitoring output pin d drive power supply pins ge booster capacitor connecting pins igured for LCD32B. *2: When LCD32CTL.LCDDIS bit = st of LCD32B Pins Function data output-only pins data output-only pin data output-only pin				

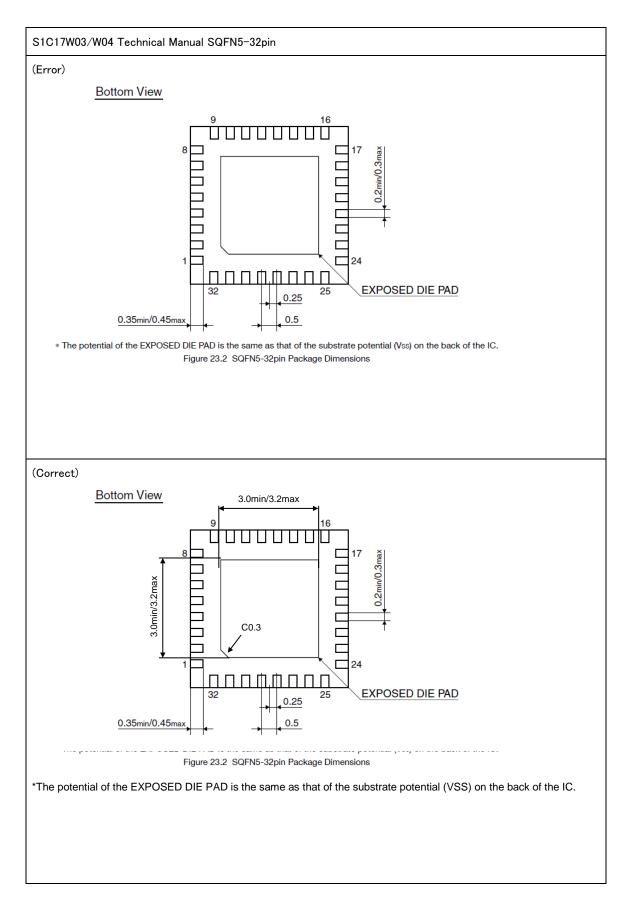
Error)			Table 17.2.1.1 List of LCD8A Pins			
Pin name	I/O+1	Initial status*1	Function			
COM0-3	0	Hi-Z / O (L)*2				
COM4-7/SEG0-3	Ö		Common data output/segment data output pin			
SEG4-33	0		Segment data output pin			
LFRO	0	O (L)	Frame signal monitoring output pin			
Vc1	Р		LCD panel drive power supply pin			
Vc2	Р	-	LCD panel drive power supply pin			
Vсз	Р	-	LCD panel drive power supply pin			
CP1	Α	-	LCD voltage booster capacitor connecting pin			
CP2	Α	_	LCD voltage booster capacitor connecting pin			
	Indicat	es the status w	when the pin is configured for LCD8A. *2: When LCD8CTL.LCDDIS bit = 1			
*1: Correct)	Indicat		when the pin is configured for LCD8A. *2: When LCD8CTL.LCDDIS bit = 1			
	Indicat					
Correct) Pin name			Table 17.2.1.1 List of LCD8A Pins			
Correct) Pin name COM0-3	I/O ⁺¹	Initial status*1 Hi-Z / O (L)*2	Table 17.2.1.1 List of LCD8A Pins			
Correct) Pin name COM0–3 COM4–7/SEG0–3	I/O-1 A)	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2	Table 17.2.1.1 List of LCD8A Pins Function Common data output pin			
Correct) Pin name COM0–3 COM4–7/SEG0–3 SEG4–33	A) A)	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2	Table 17.2.1.1 List of LCD8A Pins Function Common data output pin Common data output/segment data output pin			
Correct)	[/O ⁺¹ A) A) A)	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2	Table 17.2.1.1 List of LCD8A Pins Function Common data output pin Common data output/segment data output pin Segment data output pin			
Correct) Pin name COM0–3 COM4–7/SEG0–3 SEG4–33 LFRO	A) A) A) A) O	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2	Table 17.2.1.1 List of LCD8A Pins Function Common data output pin Common data output/segment data output pin Segment data output pin Frame signal monitoring output pin			
Correct) Pin name COM0–3 COM4–7/SEG0–3 SEG4–33 LFRO Vc1 Vc2	A) A) A) A) O P	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L)*2	Table 17.2.1.1 List of LCD8A Pins Function Common data output pin Common data output/segment data output pin Segment data output pin Frame signal monitoring output pin LCD panel drive power supply pin			
Pin name COM0–3 COM4–7/SEG0–3 SEG4–33 LFRO Vc1 Vc2 Vc2 Vc3	/O ⁻¹ A) A) A) O P P	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L) - - -	Table 17.2.1.1 List of LCD8A Pins Function Common data output pin Common data output/segment data output pin Segment data output pin Frame signal monitoring output pin LCD panel drive power supply pin LCD panel drive power supply pin			
Correct) Pin name COM0–3 COM4–7/SEG0–3 SEG4–33 LFRO Vc1	[/O ^{:1} A) A) A) P P P	Initial status*1 Hi-Z / O (L)*2 Hi-Z / O (L)*2 Hi-Z / O (L) - - - -	Table 17.2.1.1 List of LCD8A Pins Function Common data output pin Common data output/segment data output pin Segment data output pin Frame signal monitoring output pin LCD panel drive power supply pin LCD panel drive power supply pin LCD panel drive power supply pin			

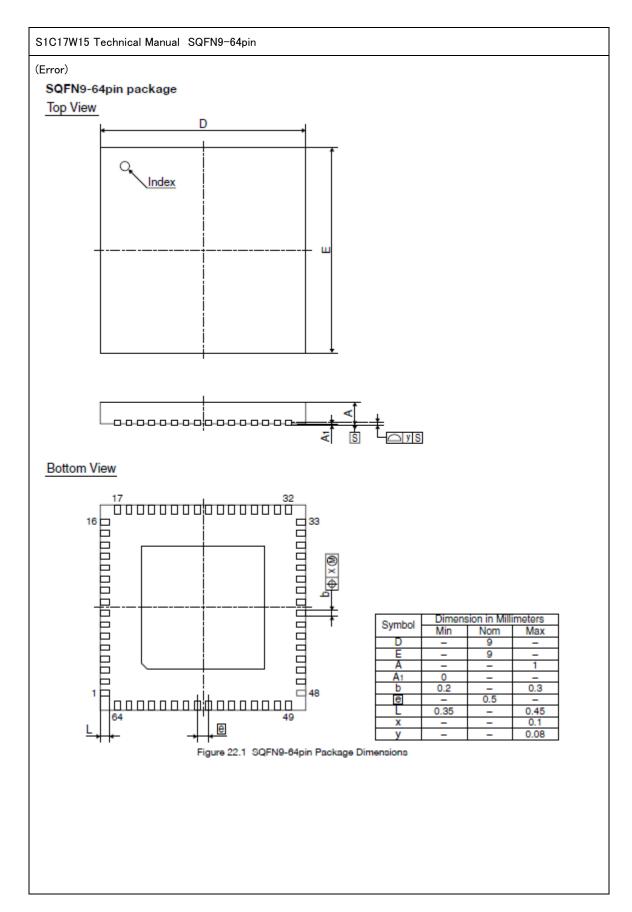
ITEM: Treatment of exposed	die pad		
Object manuals	Document codes	Items	Pages
S1C17M01 Technical Manual	412361601	6.7.7 Pd Port Group Appendix A List of Peripheral Circuit Control Registers	6-16 AP-A-9
S1C17M10 Technical Manual	413180100	6.7.5 Pd Port Group Appendix A List of Peripheral Circuit Control Registers	6-15 AP-A-9
S1C17M12/M13 Technical Manual	413454200	6.7.6 Pd Port Group Appendix A List of Peripheral Circuit Control Registers	6-16 AP-A-7
S1C17M30/M31/M32/M33/M34 Technical Manual	413495501	6.7.9 Pd Port Group Appendix A List of Peripheral Circuit Control Registers	6-31 AP-A-23
S1C17W03/W04 Technical Manual	412924900	6.7.6 Pd Port Group Appendix A List of Peripheral Circuit Control Registers	6-16 AP-A-10
S1C17W13 Technical Manual	413180301	6.7.6 Pd Port Group Appendix A List of Peripheral Circuit Control Registers	6-17 AP-A-10
S1C17W14/W16 Technical Manual	412910200	6.7.6 Pd Port Group Appendix A List of Peripheral Circuit Control Registers	6-17 AP-A-11
S1C17W15 Technical Manual	412645602	6.7.5 Pd Port Group Appendix A List of Peripheral Circuit Control Registers	6-14 AP-A-9
S1C17W18 Technical Manual	413129501	6.7.10 Pd Port Group Appendix A List of Peripheral Circuit Control Registers	6-20 AP-A-12
S1C17W22/W23 Technical Manual	412690302	6.7.6 Pd Port Group Appendix A List of Peripheral Circuit Control Registers	6-16 AP-A-10

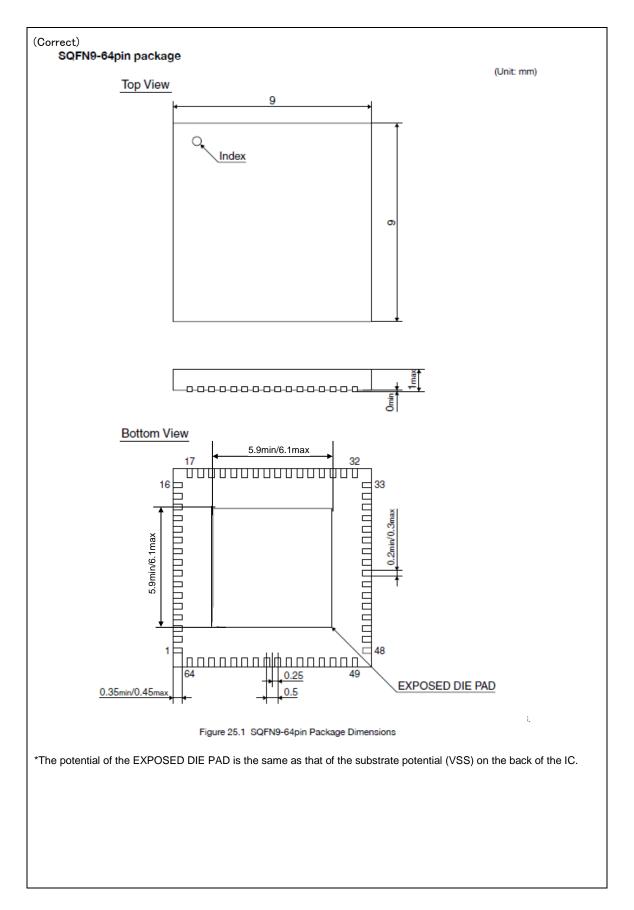
S1C17W34/W35/W36 Technical Manual	413237401	6.7.7 Pd Port Group Appendix A List of Peripheral Circuit Control Registers	6-17 AP-A-8
S7C17M11 Technical Manual	413393800	6.7.7 Pd Port Group Appendix A List of Peripheral Circuit Control Registers	6-17 AP-A-8
S1C17589 Technical Manual	412959000	6.7.12 Pd Port Group Appendix A List of Peripheral Circuit Control Registers	6-22 AP-A-7

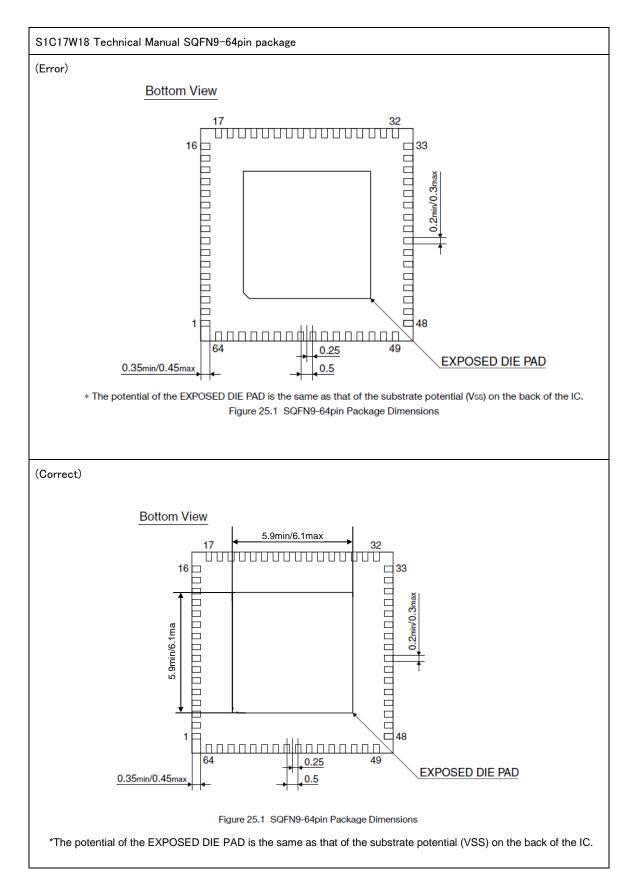
PDIOEN	15-13	-	0x00	-	R	-
(PD Port Enable	12-8	PDIEN[4:3]	0x0	H0	R/W	
Register)	10	(reserved)	0	H0	R/W	
	9-8	PDIEN[1:0]	0x0	H0	R/W	
	7-5	-	0x00	-	R	
	4-3	PDOEN[4:3]	0x0	H0	R/W	
	2	(reserved)	0	H0	R/W	
	1-0	PDOEN[1:0]	0x0	H0	R/W	
	1 1-0		0.00	110	F\/ W	
(Correct)		-DUEN[1.0]				
PDIOEN	15-13	-	0x00	_	R	-
PDIOEN (PD Port Enable		- PDIEN[4:3]				-
PDIOEN	<u>15–13</u> 12–8	-	0x00 0x0	– H0	R R/W	-
PDIOEN (PD Port Enable	15-13 12-8 10	– PDIEN[4:3] (reserved)	0x00 0x0 0	– H0 H0	R R/W R/W	-

ITEM: Package			
Object manuals	Document codes	Items	Pages
S1C17W03/W04 Technical Manual	412925001	23 Package	23-2
S1C17W15 Technical Manual	412645702	23 Package	23-2
S1C17W18 Technical Manual	413129601	25 Package	25-1









ed die pad		
Document codes	Items	Pages
412925001	Appendix C Mounting Precautions	AP-C-2
412645702	Appendix C Mounting Precautions	AP-C-2
413129601	Appendix C Mounting Precautions	AP-C-2
413393900	Appendix C Mounting Precautions	AP-C-2
	Document codes 412925001 412645702 413129601	Document codes Items 412925001 Appendix C Mounting Precautions 412645702 Appendix C Mounting Precautions 413129601 Appendix C Mounting Precautions

(Additon)

Treatment of exposed die pad

The exposed die pad of the packages such as QFN has the same potential as that of the substrate on the back of the IC. When mounting these packages on a circuit board, please note the following:

(1) When soldering exposed die pad to mounting board

Connect the exposed die pad with a wiring pattern that has the same potential as the substrate potential on the back of the IC, or do not connect it electrically (leave it open electrically). Even if connected to the same potential on the back of the IC, the power supply pins must be connected to the power source (the exposed die pad cannot be used as a power supply pad).

(2) When not soldering exposed die pad to mounting board

Do not place any signal wiring pattern on the exposed die pad area of the mounting board.

		Items	Pages
S1C17W03/W04	412925001	10.4.1 SVD Control	10-3
Fechnical Manual			
S1C17W13 Technical Manual	413180401	10.4.1 SVD Control	10-3
S1C17W14/W16	412910300	10.4.1 SVD Control	10-3
Technical Manual			
S1C17W15 Technical Manual	412645702	10.4.1 SVD Control	10-3
S1C17W18 Technical Manual	413129601	10.4.1 SVD Control	10-3
S1C17W22/W23	412690402	10.4.1 SVD Control	10-3
Technical Manual			
S1C17W34/W35/W36	413237901	10.4.1 SVD Control	10-3
Fechnical Manual			
S1C17M01 Technical Manual	412361701	9.4.1 SVD Control	9-3
S1C17M10 Technical Manual	413180200	10.4.1 SVD3 Control	10-3
S7C17M11 Technical Manual	413393900	9.4.1 SVD3 Control	9-3
S1C17589 Technical Manual	412959200	10.4.1 SVD Control	10-3
S1C17M10 Technical Manual,	S7C17M11 Technica	al Manual	
(Error)			
 Set the following bits wh 	en using the inter	rupt:	
- Write 1 to the SVDINTF	•	•	
- Set the SVDINTE.SDVI	Υ.	1 0,	
(Correct)			
4. Set the following bits wh	en using the inter	rupt:	
- Write 1 to the SVDINTF	SVDIF bit. (Clear	interrupt flag)	
- Set the SVDINTE. <u>SVDI</u>	<u>E</u> bit to 1. (Enable	SVD3 interrupt)	

(Error)

- 4. Set the following bits when using the interrupt:
- Write 1 to the SVDINTF.SVDIF bit. (Clear interrupt flag)
- Set the SVDINTE.SDVIE bit to 1. (Enable SVD interrupt)

(Correct)

- 4. Set the following bits when using the interrupt:
- Write 1 to the SVDINTF.SVDIF bit. (Clear interrupt flag)
- Set the SVDINTE.<u>SVDIE</u> bit to 1. (Enable SVD interrupt)

errata_c17w18_6 are revised.

Dbject manual	Do	cument code	Object item			P	age
			23.2 Recommended	Operati	ing	2	3-1
			Conditions			2	3-18
S1C17W18 Technical Manual		413129601	23.15 Temperature S	ensor/			
			Reference Voltage				
			C C				
			Generator(TSRVR) C	Charact	eristics		
			23.2 Recommended	Operati	ing	2	3-1
			Conditions			2	3-16
S1C17W34/W35/W36		413237901	23.15 Temperature S	ensor/			
Technical Manual		1020/001	-	01001/			
			Reference Voltage				
			Generator(TSRVR) C	Charact	eristics		
(Error) 23.2 Recommende	ed Op	perating C	conditions				
Item	Symbol		Condition	Min.	Тур.	Max.	Unit
Hower elipply voltage	1Vpp	Eor pormal oporati	on	0 1 0	1	28	1 W
Capacitor between Vss and VPP	CVPP			-	0.1	-	μF
Capacitor between Vss and VREFA	CVREFA	*6		_	1	-	uF

23.15 Temperature Sensor/Reference Voltage Generator (TSRVR) Characteristics

Item	Symbol	Condition	Min.	Тур.	Max.	Unit
VREFA (2.5 V) output voltage	Vvo25	VDD = 2.7 to 3.6 V, Iload = 0 µA	2.4	2.5	2.6	V
VREFA (2.0 V) output voltage	Vvo20	VDD = 2.2 to 3.6 V, Iload = 0 µA	1.9	2.0	2.1	V
Vrefa (Vdd) output voltage	Vvodd	VDD = 1.8 to 3.6 V, Iload = 0 µA	Vdd - 0.1	Vdd	VDD + 0.1	V
VREFA (2.5/2.0 V) operating current	Ivo1	VDD = 3.6 V, Ta = 25 °C, Iload = 0 µA	25	40	55	μA
VREFA (VDD) operating current	Ivo2	VDD = 3.6 V, Ta = 25 °C, Iload = 0 µA	-	0.0	0.1	μA
VREFA output voltage stabilization time	tvrefa	CVREFA = 1 µF	-	-	200	μs
Temperature sensor output voltage	VTEMP	VDD = 2.2 to 3.6 V, Ta = 25 °C	1.04	1.07	1.1	V
Temperature sensor output voltage temperature coefficient	ΔVtemp	VDD = 2.2 to 3.6 V	-	3.6 ± 3%	3.7 ± 6%	mV/°C
Temperature sensor operating current	IVTEMP	VDD = 3.6 V, Ta = 25 °C	10	16	22	μA
Temperature sensor output stabilization time	TTEMP		-	-	200	us

(Correct)

23.2 Recommended Operating Conditions

Item	Symbol	Condition	Min.	Тур.	Max.	Unit
Powor supply voltage	Voo	For normal operation	10		36	M
Capacitor between Vss and Vpp	CVPP		-	0.1	-	μF

*1 The Cv1-Cv2 pins can be left open when super economy mode is not used.
*2 The Vc1-Vc4 and CP1-CP4 pins can be left open when the LCD driver is not used.

23.15 Temperature Sensor/Reference Voltage Generator (TSRVR) Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
VREFA (2.5 V) output voltage	Vvo25	VDD = 2.7 to 3.6 V, Iload = 0 µA	2.4	2.5	2.6	V
VREFA (2.0 V) output voltage	Vvo20	VDD = 2.2 to 3.6 V, Iload = 0 µA	1.9	2.0	2.1	V
Vrefa (Vdd) output voltage	Vvodd	VDD = 1.8 to 3.6 V, Iload = 0 µA	Vdd - 0.1	Vdd	VDD + 0.1	V
VREFA (2.5/2.0 V) operating current	Ivo1	VDD = 3.6 V, Ta = 25 °C, Iload = 0 μA	25	40	55	μA
VREFA (VDD) operating current	Ivo2	VDD = 3.6 V, Ta = 25 °C, Iload = 0 μA	-	0.0	0.1	μA
VREFA output voltage stabilization time	t VREFA	CVREFA = 0.1uF	-	1.5	5	ms
Temperature sensor output voltage	VTEMP	VDD = 2.2 to 3.6 V, Ta = 25 °C	1.04	1.07	1.1	V
Temperature sensor output voltage temperature coefficient	ΔV temp	VDD = 2.2 to 3.6 V	-	3.6 ± 3%	3.7 ± 6%	mV/°C
Temperature sensor operating current	IVTEMP	VDD = 3.6 V, Ta = 25 °C	10	16	22	μA
Temperature sensor output stabilization time	TTEMP		-	-	200	μs

Object manual		Document code	Object item			P	age
S7C17W03/W04 Technical	Manual	412925001	21.9 UART (UART)		21	-9
			Characterist	ics			
			21.9 UART (UART2)	21	-10
S1C17W13 Technical Man	ual	413180401	Characterist	ics			
			22.9 UART (22	2-9
S1C17W14/16 Technical M	lanual	412910300		. ,			
			Characterist				
S1C17W15 Technical Man	ual	412645702	20.9 UART (UART)		20)-9
			Characterist	ics			
			23.9 UART ((UART)		23	8-9
S1C17W18 Technical Man	ual	413129601	Characterist	ics			
			23.9 UART (UART)		23	3-9
S1C17W22/W23 Technical	Manual	412690402	Characterist				-
			Characterist	105			
S1C17W13 Technical Man	ual	1	l			I	
Error) Unless otherwise specified: Vod =	1.2 to 3.6 V, Vss	s = 0 V, T a = -40 to 85 °C					
Item	Symbol			Min.	Тур.	Max.	Unit
Transfer baud rate	UBRT1	Normal mode	1.6 to 3.6 V 1.2 to 1.6 V	150 150	-	230,400 57,600	bps bps
	UBRT2	IrDA mode	1.6 to 3.6 V	150	-	57,600	bps
			1.2 to 1.6 V	150	-	14,400	bps
Correct)							
Unless otherwise specified: Vop =							
Item	Symbol		VDD	Min.	Ţγp.	Max.	Unit
Transfer baud rate	UBRT1	Normal mode	1.6 to 3.6	150	-	460,800	bps
	UBRT2	IrDA mode	1.2 to 1.6 \ 1.6 to 3.6 \	150 150	-	<u>57,600</u> 115,200	bps bps
	UBR12	I DA HIUGE	1.2 to 1.6 \	150	_	57.600	bps
			1.2 to 1.0	100			_ pps

Item	Symbol	Condition	VDD	Min.	Typ.	Max.	Unit
Transfer baud rate	UBRT1	Normal mode	1.6 to 3.6 V	150	-	230,400	bps
			1.2 to 1.6 V	150	-	57,600	bps
	UBRT2	IrDA mode	1.6 to 3.6 V	150	-	57,600	bps
			1.2 to 1.6 V	150	-	14,400	bps
,	= 1.2 to 3.6 V, Vss	s = 0 V, Ta = -40 to 85 °C	I I		1		
/	= 1.2 to 3.6 V, Vss		VDD	Min.	Typ.	Max.	
Inless otherwise specified: Voo Item	-		V DD 1.6 to 3.6 V	Min. 150	Typ.		Unit
Inless otherwise specified: Voo Item	Symbol	Condition				Max.	Uni bps
Correct) Inless otherwise specified: Voo Item Iransfer baud rate	Symbol	Condition	1.6 to 3.6 V	150		Max. 230,400	Unit bps bps

Object manual	Document code	Object item	Page
S1C17M01 Technical Manual	412361701	14.4.3 External Voltage Application Mode 2	14-4
S7C17M11 Technical Manual	413393900	17.4.3 External Voltage Application Mode 2	17-4
S1C17W13 Technical Manual	413180401	18.4.3 External Voltage Application Mode 2	18-4
S1C17W14/16 Technical Manual	412910300	18.4.3 External Voltage Application Mode 2	18-4
S1C17W15 Technical Manual	412645702	17.4.3 External Voltage Application Mode 2	17-4
S1C17W18 Technical Manual	413129601	18.4.3 External Voltage Application Mode 2	18-4
S1C17W22/W23 Technical Manual	412690402	18.4.3 External Voltage Application Mode 2	18-4

(Error)

In this mode, one of the LCD drive voltages VC1 to VC4 are applied from outside the IC and other voltages are internally generated. To put LCD24A into external voltage application mode 2, set the LCD24PWR.VCEN bit to 0 to turn the LCD voltage regulator off and the LCD24PWR.BSTEN bit to 1 to turn the LCD voltage booster on.

(Correct)

In this mode, one of the LCD drive voltages VC1 to <u>VC2</u> are applied from outside the IC and other voltages are internally generated. To put LCD24A into external voltage application mode 2, set the LCD24PWR.VCEN bit to 0 to turn the LCD voltage regulator off and the LCD24PWR.BSTEN bit to 1 to turn the LCD voltage booster on.

S1C17W14/W16, S1C17M01, S7C17M11 Technical Manual

(Error)

In this mode, one of the LCD drive voltages VC1 to VC3 are applied from outside the IC and other voltages are internally generated. To put LCD8B into external voltage application mode 2, set the LCD8PWR.VCEN bit to 0 to turn the LCD voltage regulator off and the LCD8PWR.BSTEN bit to 1 to turn the LCD voltage booster on.

(Correct)

In this mode, one of the LCD drive voltages VC1 to <u>VC2</u> are applied from outside the IC and other voltages

are internally generated. To put LCD8B into external voltage application mode 2, set the LCD8PWR.VCEN bit to 0 to turn the LCD voltage regulator off and the LCD8PWR.BSTEN bit to 1 to turn the LCD voltage booster on.

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(Error)

In this mode, all the LCD drive voltages VC1 to VC3 are applied from outside the IC. To put LCD4A into external voltage application mode 1, set the LCD4PWR.EXVCSEL bit to 1 and set both the LCD4PWR.VCEN and LCD4PWR.BSTEN bits to 0 to turn both the LCD voltage regulator and LCD voltage booster off.

(Correct)

In this mode, all the LCD drive voltages VC1 to <u>VC2</u> are applied from outside the IC. To put LCD4A into external voltage application mode 1, set the LCD4PWR.EXVCSEL bit to 1 and set both the LCD4PWR.VCEN and LCD4PWR.BSTEN bits to 0 to turn both the LCD voltage regulator and LCD voltage booster off.

ITEM 16bits PWM timer (T16B)			
Object manual	Document code	Object item	Page
S1C17589 Technical Manual	412959200	16bits PWM timer (T16B)	15-5
S1C17M10 Technical Manul	413180200		16-5
S1C17W03/W04Technical manual	412925001		15-5
S1C17W13 Technical Manual	413180401		15-5
S1C17W14/16Technical Manual	412910300		15-5
S1C17W15Technical Manual	412645702		15-5
S1C17W18Technical Manual	413129601		15-5
S1C17W22/W23 Technical Manual	412690402		15-5
S1C17W34/W35/W36 Technical Manual	413237901		15-5
S7C17M11 Technical Manual	413393900		15-5

1.1 Features

(Error)

MAX counter data register

The MAX counter data register (T16BnMC.MC[15:0] bits) is used to set the maximum value of the counter (hereafter referred to as MAX value). This setting limits the count range to 0x0000–MAX value and determines the count and interrupt cycles. When the counter is set to repeat mode, the MAX value can be rewritten in the procedure shown below even if the counter is running.

- 1. Check to see if the T16BnCTL.MAXBSY bit is set to 0.
- 2. Write the MAX value to the T16BnMC.MC[15:0] bits.

(Correct)

Add note statement (underlined).

MAX counter data register

The MAX counter data register (T16BnMC.MC[15:0] bits) is used to set the maximum value of the counter (hereafter referred to as MAX value). This setting limits the count range to 0x0000–MAX value and determines the count and interrupt cycles. When the counter is set to repeat mode, the MAX value can be rewritten in the procedure shown below even if the counter is running.

- 1. Check to see if the T16BnCTL.MAXBSY bit is set to 0.
- 2. Write the MAX value to the T16BnMC.MC[15:0] bits.

Note: When rewriting the MAX value, the new MAX value should be written after the counter has been reset to

the previously set MAX value.

S1C17 Family Technical Manual Errata

Object manual	Document code	Object item	Page
S1C17W13 Technical Manual	413180401	1.1 Features	1-2
		4.3.3 Flash Programming	4-3
		21.2 Recommended	21-1
		Operating Conditions	
		21.6 Flash Memory Characteristics	21-7
S1C17W18 Technical Manual	413129601	1.1 Features	1-2
		4.3.3 Flash Programming	4-3
		23.2 Recommended	23-1
		Operating Conditions	
		23.6 Flash Memory Characteristics	23-7
S1C17W34/W35/W36	413237901	1.1 Features	1-2
Technical Manual		4.3.3 Flash Programming	4-3
		23.2 Recommended	23-1
		Operating Conditions	
		23.6 Flash Memory Characteristics	23-7
S1C17M10 Technical Manual	413180200	1.1 Features	1-2
		4.3.3 Flash Programming	4-3
		19.2 Recommended	19-1
		Operating Conditions	
		19.6 Flash Memory Characteristics	19-7
Power supply voltage			
Power supply voltage VDD operating voltage for Flash prog	gramming 1.8 to 3.6 V	(VPP = 7.5 V external power supply is req	uired.)
Power supply voltage VDD operating voltage for Flash prog (Correct)	gramming 1.8 to 3.6 V	(VPP = 7.5 V external power supply is req	uired.)
Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage			
Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog	gramming 2.4 to 3.6 V	(VPP = 7.5 V external power supply is req (VPP = 7.5 V external power supply is req	
Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog 1.1 Features : S1C17W18, S1C17	gramming 2.4 to 3.6 V		
VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog 1.1 Features : S1C17W18, S1C17 (Error)	gramming 2.4 to 3.6 V		
Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog 1.1 Features : S1C17W18, S1C17 (Error) Power supply voltage	gramming 2.4 to 3.6 V W34/W35/W36	(VPP = 7.5 V external power supply is req	uired.)
Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog 1.1 Features : S1C17W18, S1C17 (Error)	gramming 2.4 to 3.6 V W34/W35/W36 gramming 1.8 to 3.6 V		uired.)
Power supply voltage <u>VDD operating voltage for Flash prog</u> (Correct) Power supply voltage <u>VDD operating voltage for Flash prog</u> 1.1 Features : S1C17W18, S1C17 (Error) Power supply voltage VDD operating voltage for Flash prog	gramming 2.4 to 3.6 V W34/W35/W36 gramming 1.8 to 3.6 V	(VPP = 7.5 V external power supply is req (VPP = 7.5 V external power supply is req	uired.)
Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog 1.1 Features : S1C17W18, S1C17 (Error) Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage for Flash prog	ramming 2.4 to 3.6 V W34/W35/W36 gramming 1.8 to 3.6 V 2.7 to 3.6 V	(VPP = 7.5 V external power supply is req (VPP = 7.5 V external power supply is req (When VPP is generated internally)	uired.) uired.)
Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog 1.1 Features : S1C17W18, S1C17 (Error) Power supply voltage VDD operating voltage for Flash prog (Correct)	ramming 2.4 to 3.6 V W34/W35/W36 gramming 1.8 to 3.6 V 2.7 to 3.6 V gramming 2.4 to 3.6 V	(VPP = 7.5 V external power supply is req (VPP = 7.5 V external power supply is req	uired.) uired.)
Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog 1.1 Features : S1C17W18, S1C17 (Error) Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog	ramming 2.4 to 3.6 V W34/W35/W36 gramming 1.8 to 3.6 V 2.7 to 3.6 V gramming 2.4 to 3.6 V	(VPP = 7.5 V external power supply is req (VPP = 7.5 V external power supply is req (When VPP is generated internally) (VPP = 7.5 V external power supply is req	uired.) uired.)
Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog 1.1 Features : S1C17W18, S1C17 (Error) Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog (Lage for Supply voltage) VDD operating voltage for Flash prog (Lage for Supply voltage) VDD operating voltage for Flash prog	ramming 2.4 to 3.6 V W34/W35/W36 gramming 1.8 to 3.6 V 2.7 to 3.6 V gramming 2.4 to 3.6 V	(VPP = 7.5 V external power supply is req (VPP = 7.5 V external power supply is req (When VPP is generated internally) (VPP = 7.5 V external power supply is req	uired.) uired.)
Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog 1.1 Features : S1C17W18, S1C17 (Error) Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog	ramming 2.4 to 3.6 V W34/W35/W36 gramming 1.8 to 3.6 V 2.7 to 3.6 V gramming 2.4 to 3.6 V	(VPP = 7.5 V external power supply is req (VPP = 7.5 V external power supply is req (When VPP is generated internally) (VPP = 7.5 V external power supply is req	uired.) uired.)
Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog 1.1 Features : S1C17W18, S1C17 (Error) Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog (Lage for Supply voltage) VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog (Lage for Flash prog (Lage for Flash prog (Correct) Power supply voltage for Flash prog (Lage for Flash	gramming 2.4 to 3.6 V W34/W35/W36 gramming 1.8 to 3.6 V 2.7 to 3.6 V gramming 2.4 to 3.6 V 2.7 to 3.6 V 2.7 to 3.6 V 1.8 to 5.5 V	(VPP = 7.5 V external power supply is req (VPP = 7.5 V external power supply is req (When VPP is generated internally) (VPP = 7.5 V external power supply is req	uired.) uired.) uired.)
Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog 1.1 Features : S1C17W18, S1C17 (Error) Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog 1.1 Features : S1C17M10 (Error) Power supply voltage VDD operating voltage for Flash prog	gramming 2.4 to 3.6 V W34/W35/W36 gramming 1.8 to 3.6 V 2.7 to 3.6 V gramming 2.4 to 3.6 V 2.7 to 3.6 V 2.7 to 3.6 V 1.8 to 5.5 V	(VPP = 7.5 V external power supply is req (VPP = 7.5 V external power supply is req (When VPP is generated internally) (VPP = 7.5 V external power supply is req (When VPP is generated internally)	uired.) uired.) uired.)
Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog 1.1 Features : S1C17W18, S1C17 (Error) Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog (Lage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog (Lage for Flash prog (Error) Power supply voltage	gramming 2.4 to 3.6 V W34/W35/W36 gramming 1.8 to 3.6 V 2.7 to 3.6 V gramming 2.4 to 3.6 V 2.7 to 3.6 V 2.7 to 3.6 V 1.8 to 5.5 V	(VPP = 7.5 V external power supply is req (VPP = 7.5 V external power supply is req (When VPP is generated internally) (VPP = 7.5 V external power supply is req (When VPP is generated internally)	uired.) uired.) uired.)
Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog 1.1 Features : S1C17W18, S1C17 (Error) Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog (Lage for Flash prog (Correct) Power supply voltage VDD operating voltage for Flash prog 1.1 Features : S1C17M10 (Error) Power supply voltage VDD operating voltage for Flash prog (Correct) Power supply voltage for Flash prog	gramming 2.4 to 3.6 V W34/W35/W36 gramming 1.8 to 3.6 V gramming 2.7 to 3.6 V gramming 2.4 to 3.6 V gramming 2.7 to 3.6 V gramming 2.7 to 3.6 V gramming 2.7 to 5.5 V gramming 1.8 to 5.5 V gramming 1.8 to 5.5 V gramming 2.4 to 5.5 V	(VPP = 7.5 V external power supply is req (VPP = 7.5 V external power supply is req (When VPP is generated internally) (VPP = 7.5 V external power supply is req (When VPP is generated internally)	uired.) uired.) uired.)

4.3.3 Flash Programming : S1C17W13				
(Error)				
Note: The Flash programming requires a 1.8 V or higher VDD volta	ge.			
(Correct)				
Note: The Flash programming requires a 2.4 V or higher VDD volta	ge.			
4.3.3 Flash Programming : S1C17W18, S1C17W34/W35/W36				
(Error)				
Notes: • The Flash programming requires a 1.8 V or higher VDD vo	ltage whe	n the VPF	voltage i	s
supplied externally.	-		-	
(Correct)				
Notes: • The Flash programming requires a 2.4 V or higher VDD vo	ltage whe	n the VPF	voltage i	S
supplied externally.	0		C	
4.3.3 Flash Programming : S1C17M10				
(Error)				
Notes: • The Flash programming requires a VDD voltage within 2.2	V to 5.5 \	/ when the	e VPP vol	tage is
generated internally.				
(Correct)				
Notes: • The Flash programming requires a 2.4 V or higher VDD vo	ltago who	n the VPE	2 voltage i	ie.
	maye whe		voltage	0
supplied externally.				in momental
The Flash programming requires a 2.7 V or higher VDD v	oltage who	en the VP	P voltage	is generated
internally.				
21.2 Recommended Operating Conditions : S1C17W13				
(Error)				
Item Symbol Condition Power supply voltage VDD For Flash programming	Min. 1.8	Тур.	Max. 3.6	Unit V
	1.0		3.0	
(Correct) Item Symbol Condition	Min.	Typ.	Max.	Unit
Power supply voltage VDD For Flash programming	2.4	тур. —	3.6	V
23.2 Recommended Operating Conditions : S1C17W18, S1C17W34	1/W35/W3	6		
		•		
(Error) Item Symbol Condition	Min.	Typ.	Max.	Unit
Power supply voltage VDD For Flash When VPP is supplied externally	1.8	-	3.6	V
programming When VPP is generated internally	2.7	-	3.6	V
(Correct)	-			
Item Symbol Condition	Min.	Тур.	Max.	Unit
Power supply voltage VDD For Flash When VPP is supplied externally programming When VPP is generated internally	2.4	-	3.6 3.6	V
19.2 Recommended Operating Conditions : S1C17M10	÷		•	
(Error) Item Symbol Condition	Min.	Typ.	Max.	Unit
Power supply voltage VDD For Flash When VPP is supplied externally	1.8	тур. —	5.5	V
programming When VPP is generated internally	2.7	-	5.5	V
(Correct)				
Item Symbol Condition	Min.	Тур.	Max.	Unit
Power supply voltage VDD For Flash <u>When VPP is supplied externally</u> programming When VPP is generated internally	2.4	-	5.5 5.5	

21.6 Flash Memory Characteristics : S1C17W13

23.6 Flash Memory Characteristics : S1C17W18, S1C17W34/W35/W36

(Error)

Unless otherwise specified: VDD = 1.8 to 3.6 V, VSS = 0 V, Ta = -40 to 85 °C

(Correct)

Unless otherwise specified: VDD = 2.4 to 3.6 V, VSS = 0 V, Ta = -40 to 85 $^{\circ}$ C

19.6 Flash Memory Characteristics : S1C17M10

(Error)

Unless otherwise specified: VDD = 1.8 to 5.5 V, VSS = 0 V, Ta = -40 to 85 °C

(Correct)

Unless otherwise specified: VDD = 2.4 to 5.5 V, VSS = 0 V, Ta = -40 to 85 $^{\circ}$ C

<u>S1C17 Fa</u>	amily I	CUIII					
TEM Electrical Characteristic	cs		1				
Dbject manual	Docum	ent code	Object item			Page	
S1C17W18 Technical Manual	413129		23.15			23-18	
	413123	001	Temperature Sens	or/Pofor		23-10	
			Voltage Generator				
			Characteristics				
S1C17W34/W35/W36	413237	Q <u>01</u>	23.15		/	23-16	
Technical Manual	410207	501	Temperature Sens	or/Refer	ance	23-10	
rechinear Manual			Voltage Generator				
			Characteristics				
			Characteristics	/			
Error) S1C17W18			/				
Item	Symbo		Condition	Min.	Тур.	Max.	Unit
VREFA (2.5 V) output voltage	Vvo25		o 3.6 V, lioad = 0 µA	2.4	2.5	2.6	V
VREFA (2.0 V) output voltage	Vvo20	Vpp = 2.2 to	o 3.6 V, Iload = 0 µA	1.9	2.0	2.1	V
VREFA (VDD) output voltage	VVODD		ο 3.6 V, Iload = 0 μA	VDD - 0.1	VDD	VDD + 0.1	V
VREFA (2.5/2.0 V) operating current	Ivo1		f , Ta = 25 °C, f load = 0 μ A	25	40	55	μΑ
VREFA (VDD) operating current VREFA output voltage stabilization time	IVO2 TVREFA	VDD = 3.6 V CVREFA = 1	, Ta = 25 °C, Iload = 0 μΑ	-	0.0	0.1	µA µs
				-	_		
	VTEMP		µг o 3.6 V, Ta = 25 °С	- 1.04	1.07	1.1	v
Temperature sensor output voltage Temperature sensor output voltage			o 3.6 V. Ta = 25 °C		- 1.07 3.6 ± 3%	1.1	v
Temperature sensor output voltage Temperature sensor output voltage temperature coefficient	Vtemp ΔVtemp	VDD = 2.2 to VDD = 2.2 to	o 3.6 V Ta = 25 °C o 3.6 V	1.04	3.6 ± 3%	1.1 3.7±6%	V mV/°C
Temperature sensor output voltage Temperature sensor output voltage temperature coefficient Temperature sensor operating current Temperature sensor output stabilization	Vtemp ΔVtemp	VDD = 2.2 to VDD = 2.2 to	o 3.6 V. Ta = 25 °C			1.1	v
Temperature sensor output voltage Temperature sensor output voltage temperature coefficient Temperature sensor operating current Temperature sensor output stabilization S1C17W34/W35/W36	VTEMP ΔVTEMP IVTEMP time tTEMP	Vod = 2.2 to Vod = 2.2 to Vod = 3.6 V	0 3.6 V/Ia = 25 °C 0 3.6 V V/Ia = 25 °C Condition	1.04 - 10 - Min.	3.6 ± 3% 16 - Typ.	1.1 3.7±6% 22 200 Max.	V mV/°C μA μs
Temperature sensor output voltage Temperature sensor output voltage temperature coefficient Temperature sensor operating ourrent Temperature sensor output stabilization S1C17W34/W35/W36 Item VREFA (2.5 V) output voltage	VTEMP ΔVTEMP Ivtemp itime tremp	Vod = 2.2 to Vod = 2.2 to Vod = 3.6 V Vod = 2.7 to	0 3.6 V/Ia = 25 °C 0 3.6 V 1 a = 25 °C Condition 0 3.6 V, licad = 0.5 mA	1.04 - 10 - Min. 2.4	3.6 ± 3% 16 - Typ. 2.5	1.1 3.7 ± 6% 22 200 Max. 2.6	V mV/°C μA μs Unit
Temperature sensor output voltage Temperature sensor output voltage temperature coefficient Temperature sensor operating current Temperature sensor output stabilization S1C17W34/W35/W36 Item VREFA (2.5 V) output voltage VREFA (2.0 V) output voltage	VTEMP ΔVTEMP Ivtemp itime tremp	VDD = 2.2 tc VDD = 2.2 tc VDD = 3.6 V VDD = 3.6 V VDD = 2.7 tc VDD = 2.7 tc	0 3.6 V Ia = 25 °C 0 3.6 V 1a = 25 °C Condition 0 3.6 V, lioad = 0.5 mA 0 3.6 V, lioad = 0.1 mA	1.04 - 10 - Min. 2.4 1.9	3.6 ± 3% 16 - Typ. 2.5 2.0	1.1 3.7 ± 6% 22 200 Max. 2.6 2.1	V mV/°C μA μs Unit V
Temperature sensor output voltage Temperature sensor output voltage temperature coefficient Temperature sensor operating ourrent Temperature sensor output stabilization S1C17W34/W35/W36 Item VREFA (2.5 V) output voltage	VTEMP ΔVTEMP Ivtemp itime tremp	VDD = 2.2 tc VDD = 2.2 tc VDD = 3.6 V VDD = 2.7 tc VDD = 2.7 tc VDD = 2.2 tc VDD = 1.8 tc	0 3.6 V Ia = 25 °C 0 3.6 V 1a = 25 °C Condition 0 3.6 V, lioad = 0.5 mA 0 3.6 V, lioad = 0.1 mA 0 3.6 V, lioad = 0.3 mA	1.04 - 10 - Min. 2.4	3.6 ± 3% 16 - Typ. 2.5	1.1 3.7 ± 6% 22 200 Max. 2.6	V mV/°C μA μs Unit
Temperature sensor output voltage Temperature sensor output voltage temperature coefficient Temperature sensor operating current Temperature sensor output stabilization S1C17W34/W35/W36 Item VREFA (2.5 V) output voltage VREFA (2.0 V) output voltage VREFA (VDD) output voltage VREFA (2.5/2.0 V) operating current VREFA (VDD) operating current	VTEMP ΔVTEMP Ivtemp itime tremp Symbo Vvo25 Vvo20	VDD = 2.2 tc VDD = 2.2 tc VDD = 3.6 V VDD = 2.7 tc VDD = 2.7 tc VDD = 2.2 tc VDD = 1.8 tc VDD = 3.6 V	0 3.6 V Ia = 25 °C 0 3.6 V 1a = 25 °C Condition 0 3.6 V, lioad = 0.5 mA 0 3.6 V, lioad = 0.1 mA	1.04 - 10 - Min. 2.4 1.9 Vdd - 0.1	3.6 ± 3% 16 - Typ. 2.5 2.0 VDD	1.1 3.7 ± 6% 22 200 Max. 2.6 2.1 Vod + 0.1 55 0.1	V mV/°C μA μs Unit V V
Temperature sensor output voltage Temperature sensor output voltage temperature coefficient Temperature sensor operating current Temperature sensor output stabilization S1C17W34/W35/W36 Item VREFA (2.5 V) output voltage VREFA (2.5 V) output voltage VREFA (2.0 V) output voltage VREFA (VDD) output voltage VREFA (2.5/2.0 V) operating current VREFA (VDD) operating current VREFA (VDD) operating current VREFA output voltage stabilization time	VTEMP ΔVTEMP Ivtemp itime tremp Symbo Vv025 Vv020 Vv020 Ivg Ivg Ivg Ivg Ivg	VDD = 2.2 tc VDD = 2.2 tc VDD = 3.6 V VDD = 3.6 V VDD = 2.7 tc VDD = 2.2 tc VDD = 1.8 tc VDD = 3.6 V	0 3.6 V Ia = 25 °C 0 3.6 V 1a = 25 °C Condition 0 3.6 V, lload = 0.5 mA 0 3.6 V, lload = 0.1 mA 0 3.6 V, lload = 0.1 mA 0 3.6 V, lload = 0.3 mA 1 Ta = 25 °C, lload = 0 μA 1 Ta = 25 °C, lload = 0 μA	1.04 - 10 - - Min. 2.4 1.9 VDD - 0.1 25 - -	3.6 ± 3% 16 - Typ. 2.5 2.0 Vod 40 0.0 -	1.1 3.7 ± 6% 22 200 Max. 2.6 2.1 VDD + 0.1 55 0.1 200	V mV/°C μA μs V V V V V V μA μA
Temperature sensor output voltage Temperature sensor output voltage temperature coefficient Temperature sensor operating current Temperature sensor output stabilization S1C17W34/W35/W36 Item VREFA (2.5 V) output voltage VREFA (2.5 V) output voltage VREFA (2.0 V) output voltage VREFA (VDD) output voltage VREFA (2.5/2.0 V) operating current VREFA (VDD) operating current VREFA output voltage stabilization time Temperature sensor output voltage	VTEMP ΔVTEMP Ivtemp itime tremp Symbo Vv025 Vv020 Vv020 Ivg Ivg V02 Vv02 Vv020 Vv020 Vv020 Vv020 Vv020 Vv020 Vv020 Vv020	VDD = 2.2 tc VDD = 2.2 tc VDD = 3.6 V VDD = 2.7 tc VDD = 2.2 tc VDD = 3.6 V VDD = 3.6 V VDD = 3.6 V VDD = 2.2 tc	b 3.6 V/Ia = 25 °C b 3.6 V b 3.6 V c	1.04 - 10 - Min. 2.4 1.9 VDD - 0.1 25 - 1.04	3.6 ± 3% 16 - Typ. 2.5 2.0 VDD 40 0.0 - 1.07	1.1 3.7 ± 6% 22 200 Max. 2.6 2.1 Vod + 0.1 55 0.1 200 1.1	V mV/°C μA μs V V V V V V V V V V V V V V
Temperature sensor output voltage Temperature sensor output voltage temperature coefficient Temperature sensor operating current Temperature sensor output stabilization S1C17W34/W35/W36 Item VREFA (2.5 V) output voltage VREFA (2.5 V) output voltage VREFA (2.0 V) output voltage VREFA (VDD) output voltage VREFA (2.5/2.0 V) operating current VREFA (VDD) operating current VREFA output voltage stabilization time Temperature sensor output voltage	VTEMP ΔVTEMP Ivtemp itime tremp Symbo Vv025 Vv020 Vv020 Ivg Ivg Ivg Ivg Ivg	VDD = 2.2 tc VDD = 2.2 tc VDD = 3.6 V VDD = 3.6 V VDD = 2.7 tc VDD = 2.2 tc VDD = 1.8 tc VDD = 3.6 V	b 3.6 V/Ia = 25 °C b 3.6 V b 3.6 V c	1.04 - 10 - - Min. 2.4 1.9 VDD - 0.1 25 - -	3.6 ± 3% 16 - Typ. 2.5 2.0 Vod 40 0.0 -	1.1 3.7 ± 6% 22 200 Max. 2.6 2.1 VDD + 0.1 55 0.1 200	V mV/°C μA μs V V V V V V V V V V V V V
Temperature sensor output voltage Temperature sensor output voltage temperature coefficient Temperature sensor operating current Temperature sensor output stabilization S1C17W34/W35/W36 Item VREFA (2.5 V) output voltage VREFA (2.5 V) output voltage VREFA (2.5 V) output voltage VREFA (2.5/2.0 V) operating current VREFA (VDD) output voltage VREFA (VDD) operating current VREFA (VDD) operating current VREFA output voltage stabilization time Temperature sensor output voltage temperature sensor output voltage temperature sensor operating current	VTEMP ΔVTEMP IVTEMP IVTEMP time tremp VV025 VV020 IVTEMP IVTEMP	VDD = 2.2 tc VDD = 2.2 tc VDD = 2.2 tc VDD = 3.6 V VDD = 2.2 tc VDD = 3.6 V VDD = 3.6 V VDD = 2.2 tc VDD = 2.2 tc VDD = 3.6 V VDD = 2.2 tc VDD = 2.2 tc VDD = 2.2 tc VDD = 2.2 tc	b 3.6 V/Ia = 25 °C b 3.6 V b 3.6 V c	1.04 - 10 - Min. 2.4 1.9 VDD - 0.1 25 - 1.04	3.6 ± 3% 16 - Typ. 2.5 2.0 VDD 40 0.0 - 1.07	1.1 3.7 ± 6% 22 200 Max. 2.6 2.1 Vod + 0.1 55 0.1 200 1.1	V mV/°C μA μs V V V V V V V V V V V V V
Temperature sensor output voltage Temperature sensor output voltage temperature coefficient Temperature sensor operating current Temperature sensor output stabilization S1C17W34/W35/W36 Item VREFA (2.5 V) output voltage VREFA (2.0 V) output voltage VREFA (2.0 V) output voltage VREFA (2.5/2.0 V) operating current VREFA (VDD) output voltage VREFA (VDD) operating current VREFA (VDD) operating current VREFA output voltage stabilization time Temperature sensor output voltage Temperature sensor output voltage	VTEMP ΔVTEMP IVTEMP IVTEMP time tremp VV025 VV020 IVTEMP IVTEMP	VDD = 2.2 tc VDD = 2.2 tc VDD = 2.2 tc VDD = 3.6 V VDD = 2.2 tc VDD = 3.6 V VDD = 3.6 V VDD = 2.2 tc VDD = 2.2 tc VDD = 3.6 V VDD = 2.2 tc VDD = 2.2 tc VDD = 2.2 tc VDD = 2.2 tc	$\begin{array}{c} \begin{array}{c} \text{o} 3.6 \text{ V} \text{ Ia} = 25 \ ^{\circ}\text{C} \\ \text{o} 3.6 \text{ V} \\ \text{o} 3.6 \text{ V} \\ \text{Ia} = 25 \ ^{\circ}\text{C} \\ \end{array}$	1.04 - 10 - Min. 2.4 1.9 VDD - 0.1 25 - 1.04 -	3.6 ± 3% 16 - Typ. 2.5 2.0 Vod 40 0.0 - 1.07 3.6	1.1 3.7 ± 6% 22 200 Max. 2.6 2.1 VDD + 0.1 55 0.1 200 1.1 3.7 ± 6%	V mV/°C μA μs V V V μA μA μs V V W/°C
Temperature sensor output voltage Temperature sensor output voltage temperature sensor operating current Temperature sensor operating current Temperature sensor output stabilization S1C17W34/W35/W36 Item VREFA (2.5 V) output voltage VREFA (2.5 V) output voltage VREFA (2.0 V) output voltage VREFA (VDD) output voltage VREFA (VDD) operating current VREFA (VDD) operating current VREFA output voltage stabilization time Temperature sensor output voltage temperature sensor output voltage temperature sensor operating current Temperature sensor operating current	VTEMP ΔVTEMP IVTEMP IVTEMP time tremp VV025 VV020 IVTEMP IVTEMP	VDD = 2.2 tc VDD = 2.2 tc VDD = 2.2 tc VDD = 3.6 V VDD = 2.2 tc VDD = 3.6 V VDD = 3.6 V VDD = 2.2 tc VDD = 2.2 tc VDD = 3.6 V VDD = 2.2 tc VDD = 2.2 tc VDD = 2.2 tc VDD = 2.2 tc	$\begin{array}{c} \begin{array}{c} \text{o} 3.6 \text{ V} \text{ Ia} = 25 \ ^{\circ}\text{C} \\ \text{o} 3.6 \text{ V} \\ \text{o} 3.6 \text{ V} \\ \text{Ia} = 25 \ ^{\circ}\text{C} \\ \end{array}$	1.04 - 10 - Min. 2.4 1.9 VDD - 0.1 25 - 1.04 -	3.6 ± 3% 16 - Typ. 2.5 2.0 Vod 40 0.0 - 1.07 3.6	1.1 3.7 ± 6% 22 200 Max. 2.6 2.1 VDD + 0.1 55 0.1 200 1.1 3.7 ± 6% 22	V mV/°C μA μs Unit V V V V V MA μs MV/°C μA μs V V MA μs V mV/°C
Temperature sensor output voltage Temperature sensor output voltage temperature coefficient Temperature sensor operating current Temperature sensor output stabilization S1C17W34/W35/W36 Item VREFA (2.5 V) output voltage VREFA (2.5 V) output voltage VREFA (2.5 V) output voltage VREFA (2.5/2.0 V) operating current VREFA (VDD) output voltage VREFA (VDD) operating current VREFA (VDD) operating current VREFA output voltage stabilization time Temperature sensor output voltage temperature sensor output voltage temperature sensor operating current	VTEMP ΔVTEMP IVTEMP IVTEMP time tremp VV025 VV020 IVTEMP IVTEMP	VDD = 2.2 tc VDD = 2.2 tc VDD = 3.6 V VDD = 2.7 tc VDD = 2.7 tc VDD = 2.2 tc VDD = 3.6 V VDD = 2.2 tc VDD = 2.2 tc	$\begin{array}{c} \begin{array}{c} \text{o} 3.6 \text{ V} \text{ Ia} = 25 \ ^{\circ}\text{C} \\ \text{o} 3.6 \text{ V} \\ \text{o} 3.6 \text{ V} \\ \text{Ia} = 25 \ ^{\circ}\text{C} \\ \end{array}$	1.04 - 10 - Min. 2.4 1.9 VDD - 0.1 25 - 1.04 -	3.6 ± 3% 16 - Typ. 2.5 2.0 Vod 40 0.0 - 1.07 3.6	1.1 3.7 ± 6% 22 200 Max. 2.6 2.1 VDD + 0.1 55 0.1 200 1.1 3.7 ± 6% 22	V mV/°C μA μs Unit V V V V V V MA μs V V V V MA μs V mV/°C μA μA μA
Temperature sensor output voltage Temperature sensor output voltage temperature sensor operating current Temperature sensor output stabilization S1C17W34/W35/W36 Item VREFA (2.5 V) output voltage VREFA (2.0 V) output voltage VREFA (2.0 V) output voltage VREFA (2.0 V) output voltage VREFA (2.5/2.0 V) operating current VREFA (VDD) output voltage VREFA (VDD) operating current VREFA (S.5 V) output voltage temperature sensor output voltage temperature sensor output stabilization Temperature sensor output stabilization Correct) Item VREFA (2.5 V) output voltage	VTEMP ΔVTEMP IVTEMP Itime tremp Symbo Vv025 Vv020 Symbo Vv025	VDD = 2.2 tc VDD = 2.2 tc VDD = 2.2 tc VDD = 3.6 V VDD = 2.2 tc VDD = 3.6 V VDD = 2.2 tc VDD = 2.2 tc VDD = 3.6 V VDD = 3.6 V VDD = 3.6 V VDD = 3.6 V VDD = 2.2 tc VDD = 2.2 tc VDD = 2.2 tc VDD = 2.7 tc	0 3.6 V Ia = 25 °C 0 3.6 V 1a = 25 °C Condition 0 3.6 V, Iload = 0.5 mA 0 3.6 V, Iload = 0.1 mA 0 3.6 V, Iload = 0.1 mA 0 3.6 V, Iload = 0.3 mA (Ta = 25 °C, Iload = 0 µA (Ta = 25 °C, Iload = 0 µA 0 3.6 V, Ta = 25 °C 0 3.6 V (Ta = 25 °C 0 3.6 V	1.04 - 10 - Min. 2.4 1.9 VDD - 0.1 25 - 1.04 - 1.04 - 10 - 1.04 - Min. 2.4 3.4 - 1.9 VDD - 0.1 25 - 1.9 VDD - 0.1 - 1.9 VDD - 0.1 - 1.9 VDD - 0.1 - 1.04 - - 1.04 - - 1.04 - - - 1.04 - - - - - - - - - - - - -	3.6 ± 3% 16 - Typ. 2.5 2.0 VDD 40 0.0 - 1.07 3.6 16 - Typ. 2.5 2.0 VDD 40 0.0 - 1.07 3.6	1.1 3.7 ± 6% 22 200 Max. 2.6 2.1 Vod + 0.1 55 0.1 200 1.1 3.7 ± 6% 22 200 Max. 2.6	V mV/°C μA μs V V V V V V μA μs V mV/°C μA μs V V Unit
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(Error)

The debugger input/output pins are shared with general-purpose I/O ports and are initially set as the debug pins. If the debugging function is not used, these pins can be switched to general-purpose I/O port pins. For details, refer to the "I/O Ports" chapter.

(Correct)

The debugger input/output pins are shared with general-purpose I/O ports and are initially set as the debug pins. If the debugging function is not used, these pins can be switched to general-purpose I/O port pins. For details, refer to the "I/O Ports" chapter.

Note: The DCLK pin can't drive by high level input from external. (E.g. The pin is done pull-up etc.) Also, the DCLK pin and the other general purpose I/O pins can't connect by a short. Because in both cases, it has possibility that the IC can't work normally by the effect of unstable I/O at power-on.

ITEM I ² C(I2C)			
Object manual	Document code	Object item	Page
S1C17M01 Technical Manual	412361701	8.6 Control Registers	8-6
S1C17F13 Technical Manual	412486301	8.6 Control Registers	8-6
S1C17W22/W23 Technical Manual	412690402	9.6 Control Registers	9-6
S1C17W15 Technical Manual	412645702	9.6 Control Registers	9-6
S1C17589 Technical Manual	412959200	9.6 Control Registers	9-6
S1C17W14/W16 Technical Manual	412910300	9.6 Control Registers	9-6
S1C17W03/W04 Technical Manual	412925001	9.6 Control Registers	9-6
S1C17W18 Technical Manual	413129601	9.6 Control Registers	9-6
S1C17M10 Technical Manual	413180200	9.6 Control Registers	9-6
S1C17W13 Technical Manual	413180401	9.6 Control Registers	9-6
S1C17W34/W35/W36 Technical	413237901	9.6 Control Registers	9-6
Manual			

(Error)

14.4.3 Data Reception in Master Mode

A data receiving procedure in master mode and the I2C Ch.n operations are shown below. Figures 14.4.3.1 and 14.4.3.2 show an operation example and a flowchart, respectively.

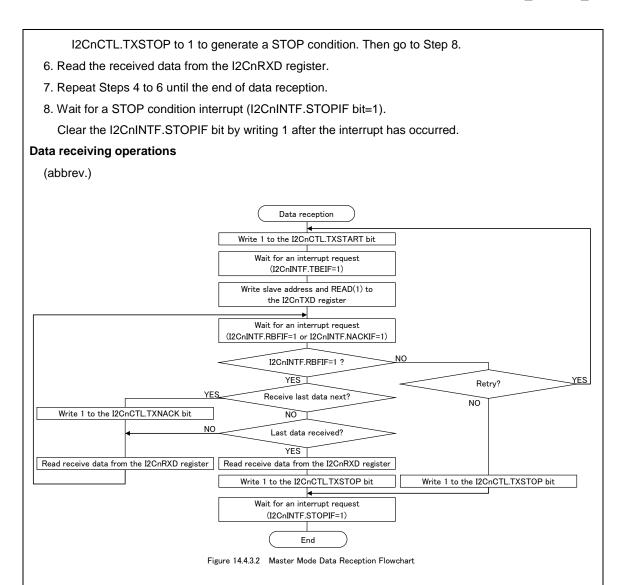
Data receiving procedure

- 1. Issue a START condition by setting the I2CnCTL.TXSTART bit to 1.
- 2. Wait for a transmit buffer empty interrupt (I2CnINTF.TBEIF bit=1) or a START condition interrupt (I2CnINTF.STARTIF bit=1).

Clear the I2CnINTF.STARTIF bit by writing 1 after the interrupt has occurred.

- 3. Write the 7-bit slave address to the I2CnTXD.TXD[7:1] bits and 1 that represents READ as the data transfer direction to the I2CnTXD.TXD0 bit.
- 4. Wait for a receive buffer full interrupt (I2CnINTF.RBFIF bit=1) generated when a one-byte reception has completed or a NACK reception interrupt (I2CnINTF.NACKIF bit=1) generated when a NACK is received.
 - i. Go to Step 5 when a receive buffer full interrupt has occurred.
 - ii. Clear the I2CnINTF.NACKIF bit and issue a STOP condition by setting the I2CnCTL.TXSTOP bit to 1 when a NACK reception interrupt has occurred. Then go to Step 8 or Step 1 if making a retry.
- 5. Perform one of the operations below when the last or next-to-last data is received.
 - i. When the next-to-last data is received, write 1 to the I2CnCTL.TXNACK bit to send a NACK after the last data is received, and then go to Step 6.
 - ii. When the last data is received, read the received data from the I2CnRXD register and set the

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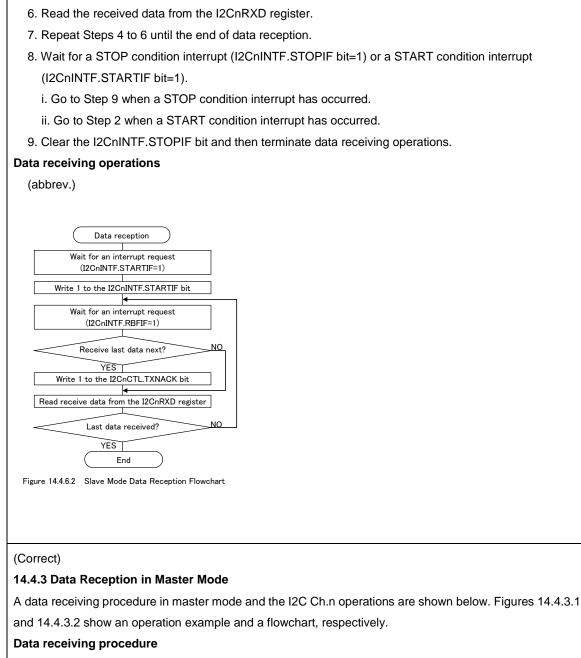


14.4.6 Data Reception in Slave Mode

A data receiving procedure in slave mode and the I2C Ch.n operations are shown below. Figures 14.4.6.1 and 14.4.6.2 show an operation example and a flowchart, respectively.

Data receiving procedure

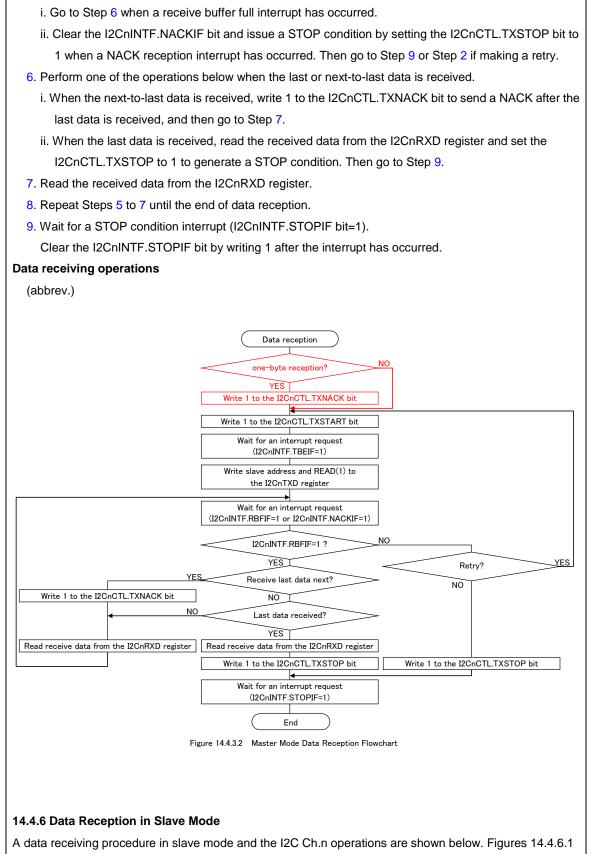
- 1. Wait for a START condition interrupt (I2CnINTF.STARTIF bit=1).
- 2. Check to see if the I2CnINTF.TR bit=0 (reception mode). (Start a data sending procedure if I2CnINTF.TR bit=1.)
- 3. Clear the I2CnINTF.STARTIF bit by writing 1.
- 4. Wait for a receive buffer full interrupt (I2CnINTF.RBFIF bit=1) generated when a one-byte reception has completed or an end of transfer interrupt (I2CnINTF.BYTEENDIF bit=1). Clear the I2CnINTF.BYTEENDIF bit by writing 1 after the interrupt has occurred.
- 5. If the next receive data is the last one, write 1 to the I2CnCTL.TXNACK bit to send a NACK after it is received.



- 1.When a one-byte reception, write 1 to the I2CnCTL.TXNACK bit.
- 2. Issue a START condition by setting the I2CnCTL.TXSTART bit to 1.
- 3. Wait for a transmit buffer empty interrupt (I2CnINTF.TBEIF bit=1) or a START condition interrupt (I2CnINTF.STARTIF bit=1).

Clear the I2CnINTF.STARTIF bit by writing 1 after the interrupt has occurred.

- 4. Write the 7-bit slave address to the I2CnTXD.TXD[7:1] bits and 1 that represents READ as the data transfer direction to the I2CnTXD.TXD0 bit.
- 5. Wait for a receive buffer full interrupt (I2CnINTF.RBFIF bit=1) generated when a one-byte reception has completed or a NACK reception interrupt (I2CnINTF.NACKIF bit=1) generated when a NACK is received.



and 14.4.6.2 show an operation example and a flowchart, respectively.

Data receiving procedure

1.When a one-byte reception, write 1 to the I2CnCTL.TXNACK bit.

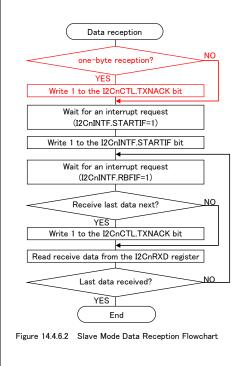
- 2. Wait for a START condition interrupt (I2CnINTF.STARTIF bit=1).
- Check to see if the I2CnINTF.TR bit=0 (reception mode).
 (Start a data sending procedure if I2CnINTF.TR bit=1.)
- 4. Clear the I2CnINTF.STARTIF bit by writing 1.
- 5. Wait for a receive buffer full interrupt (I2CnINTF.RBFIF bit=1) generated when a one-byte reception has completed or an end of transfer interrupt (I2CnINTF.BYTEENDIF bit=1).

Clear the I2CnINTF.BYTEENDIF bit by writing 1 after the interrupt has occurred.

- If the next receive data is the last one, write 1 to the I2CnCTL.TXNACK bit to send a NACK after it is received.
- 7. Read the received data from the I2CnRXD register.
- 8. Repeat Steps 5 to 7 until the end of data reception.
- Wait for a STOP condition interrupt (I2CnINTF.STOPIF bit=1) or a START condition interrupt (I2CnINTF.STARTIF bit=1).
 - i. Go to Step 10 when a STOP condition interrupt has occurred.
 - ii. Go to Step 3 when a START condition interrupt has occurred.
- 10. Clear the I2CnINTF.STOPIF bit and then terminate data receiving operations.

Data receiving operations

(abbrev.)



ITEM Real-Time Clock (RTCA)			•
Object manual	Document code	Object item	Page
S1C17M01 Technical Manual	412361701	8.6 Control Registers	8-6
S1C17F13 Technical Manual	412486301	8.6 Control Registers	8-6
S1C17W22/W23 Technical Manual	412690402	9.6 Control Registers	9-6
S1C17W15 Technical Manual	412645702	9.6 Control Registers	9-6
S1C17589 Technical Manual	412959200	9.6 Control Registers	9-6
S1C17W14/W16 Technical Manual	412910300	9.6 Control Registers	9-6
S1C17W03/W04 Technical Manual	412925001	9.6 Control Registers	9-6
S1C17W18 Technical Manual	413129601	9.6 Control Registers	9-6
S1C17M10 Technical Manual	413180200	9.6 Control Registers	9-6
S1C17W13 Technical Manual	413180401	9.6 Control Registers	9-6
S1C17W34/W35/W36 Technical	413237901	9.6 Control Registers	9-6
Manual			

(Error)

Bits14–8 RTCTRM[6:0]

Write the correction value for adjusting the 1 Hz frequency to these bits to execute theoretical regulation.For a calculation method of correction value, refer to "Theoretical Regulation Function." Note: When the RTCCTL.RTCTRMBSY bit = 1, the RTCCTL.RTCTRM[6:0] bits cannot be rewritten.

(Correct)

Bits14–8 RTCTRM[6:0]

Write the correction value for adjusting the 1 Hz frequency to these bits to execute theoretical regulation.For a calculation method of correction value, refer to "Theoretical Regulation Function."

Notes: When the RTCCTL.RTCTRMBSY bit = 1, the RTCCTL.RTCTRM[6:0] bits cannot be rewritten.
When 0x00 is written to the RTCCTL.RTCTRM[6:0] bits, the RTCCTL.RTCTRMBSY bit goes 1, but the time-of-day clock is not corrected.

	Document code	Object item	Page
S1C17M01 Technical Manual	412361701	7.4 Control Registers	7-3~4
S1C17F13 Technical Manual	412486301	7.4 Control Registers	7-3~4
S1C17W22/W23 Technical Manual	412690402	8.4 Control Registers	8-3~4
S1C17W15 Technical Manual	412645702	8.4 Control Registers	8-3~4
S1C17589 Technical Manual	412959200	8.4 Control Registers	8-3~4
S1C17W14/W16 Technical Manual	412910300	8.4 Control Registers	8-3~4
S1C17W03/W04 Technical Manual	412925001	8.4 Control Registers	8-3~4
S1C17W18 Technical Manual	413129601	8.4 Control Registers	8-3~4
0xa (R/WP): Str Values other than 0xa (R/WP): Ru Always 0x0 is read if a value other	n		
Values other than 0xa (R/WP): Ru	n r than 0xa is written. nmediately after run	ning depending on the counter	value, WDT
Values other than 0xa (R/WP): Ru Always 0x0 is read if a value other Since a reset may be generated in should also be reset concurrently (Correct) Bits 3–0 WDTRUN[3:0]	n than 0xa is written. nmediately after run when running WDT.	ning depending on the counter	value, WDT
Values other than 0xa (R/WP): Ru Always 0x0 is read if a value other Since a reset may be generated in should also be reset concurrently (Correct) Bits 3–0 WDTRUN[3:0] These bits control WDT to run and	n than 0xa is written. nmediately after run when running WDT.	ning depending on the counter	value, WDT
Values other than 0xa (R/WP): Ru Always 0x0 is read if a value other Since a reset may be generated in should also be reset concurrently (Correct) Bits 3–0 WDTRUN[3:0]	n than 0xa is written. nmediately after run when running WDT.	ning depending on the counter	value, WDT
Values other than 0xa (R/WP): Ru Always 0x0 is read if a value other Since a reset may be generated in should also be reset concurrently (Correct) Bits 3–0 WDTRUN[3:0] These bits control WDT to run and 0xa (WP): Stop	n than 0xa is written. nmediately after run when running WDT.	ning depending on the counter	value, WDT

			Deeure	nt code	Ohiast	itom		Dage
Object manual			Docume	ni code	Object	liem		Page
S1C17W18 Techr	nical Ma	anual	4131296	01	20.6 Co	ontrol Re	egister	20-6, 20-7
					AP.A L	ist of Pe	ripheral Circuit	AP-A-29
						ontrol R	-	
							egisters	
20.6 Control Regis	ster							
(Error)								
ADC12A Ch	.n Co	ontrol Re	egister					
Register name	Bit	Bit na	ame	Initial	Reset	R/W	Remarks	
ADC12_nCTL	15	-	-	0	-	R		
		ADSTAT[2:0)]	0x0	HO	R	-	
	11 10	- BSYSTAT		0	- H0	R R	-	
	9-8	_		0x0	-	R	-	
	7-2	_		0x00	_	R	-	
	1	ADST		0	HO	R/W	-	
	0	MODEN		0	HO	R/W	-	
1 (R/W): A/ 0 (R/W): Idl Note: The	D conv e ADC1:	2_nCTL.BS	SYSTAT b	it is clear	red to 0 w		on or not. clock is supplied to ADC	C12A by
1 (R/W): A/ 0 (R/W): Idl Note: The settin (Correct)	D conv e ADC1 ng the <i>i</i>	erting 2_nCTL.BS ADC12_nC	SYSTAT b TL.MODE	it is clear N bit to 1	red to 0 w			C12A by
1 (R/W): A/ 0 (R/W): Idl Note: The settin (Correct) ADC12A Ch	D conv e ADC1 ng the <i>i</i>	erting 2_nCTL.BS ADC12_nC	TL.MODE	it is clear N bit to 1	red to 0 w			C12A by
1 (R/W): A/ 0 (R/W): Idl Note: The settin (Correct)	D conve le ADC1: ng the <i>i</i>	erting 2_nCTL.BS ADC12_nC Ontrol Re	TL.MODE	it is clear N bit to 1	ed to 0 w	hen the	clock is supplied to AD	C12A by
1 (R/W): A/ 0 (R/W): Idl Note: The settin (Correct) ADC12A Ch Register name	D conve e ADC1: ng the / .n Cc Bit 15 14–12	erting 2_nCTL.BS ADC12_nC Ontrol Re	SYSTAT b TL.MODE egister	it is clear N bit to 1 Initial 0 0x0	ed to 0 w	/hen the R/W R R	clock is supplied to AD	C12A by
1 (R/W): A/ 0 (R/W): Idl Note: The setti (Correct) ADC12A Ch Register name	D conve e ADC1: ng the / .n Cc Bit 15 14-12 11	erting 2_nCTL.BS ADC12_nC ontrol Re Bit no - ADSTAT[2:0 -	SYSTAT b TL.MODE egister	it is clear N bit to 1 Initial 0 0x0 0	Reset	/hen the R/W R R R	clock is supplied to AD	C12A by
1 (R/W): A/ 0 (R/W): Idl Note: The setti (Correct) ADC12A Ch Register name	D conve e ADC1: ng the / .n Cc Bit 15 14-12 11 10	erting 2_nCTL.BS ADC12_nC DATCOL Re Bit na	SYSTAT b TL.MODE egister	it is clear N bit to 1 Initial 0 0x0 0 0	red to 0 w	/hen the R/W R R R R R	clock is supplied to AD	C12A by
1 (R/W): A/ 0 (R/W): Idl Note: The setti (Correct) ADC12A Ch Register name	D conve e ADC1: ng the <i>i</i> .n Cc Bit 15 14-12 11 10 9-8	erting 2_nCTL.BS ADC12_nC ontrol Re Bit no - ADSTAT[2:0 -	SYSTAT b TL.MODE egister	it is clear N bit to 1 Initial 0 0 0 0 0 0 0 0 0 0	Reset	/hen the R/W R R R R R R	clock is supplied to AD	C12A by
1 (R/W): A/ 0 (R/W): Idl Note: The settin (Correct) ADC12A Ch Register name	D conve e ADC1: ing the <i>J</i> Bit 15 14–12 11 10 9–8 7–2	erting 2_nCTL.BS ADC12_nC ontrol Re Bit no - ADSTAT[2:0 - BSYSTAT - -	SYSTAT b TL.MODE egister	it is clear N bit to 1 Initial 0 0x0 0 0x0 0 0x0 0 0x0	red to 0 w	/hen the R/W R R R R R R R	clock is supplied to AD	C12A by
1 (R/W): A/ 0 (R/W): Idl Note: The settin (Correct) ADC12A Ch Register name	D conve e ADC1: ng the <i>i</i> .n Cc Bit 15 14-12 11 10 9-8	erting 2_nCTL.BS ADC12_nC ontrol Re Bit no - ADSTAT[2:0 -	SYSTAT b TL.MODE egister	it is clear N bit to 1 Initial 0 0 0 0 0 0 0 0 0 0	red to 0 w	/hen the R/W R R R R R R	clock is supplied to AD	C12A by
1 (R/W): A/ 0 (R/W): Idl Note: The settin (Correct) ADC12A Ch Register name	D conve e ADC1: ing the <i>J</i> Bit 15 14–12 11 10 9–8 7–2 1	erting 2_nCTL.BS ADC12_nC DITTOL Re Bit na ADSTAT[2:0 - BSYSTAT - - ADSTAT -	SYSTAT b TL.MODE egister	it is clear N bit to 1 Initial 0 0x0 0 0x0 0 0x0 0 0x00 0 0x00 0 0	red to 0 w	/hen the R/W R R R R R R/W	clock is supplied to AD	C12A by
1 (R/W): A/ 0 (R/W): Idl Note: The settin (Correct) ADC12A Ch Register name ADC12_nCTL	D conve e ADC1: ing the <i>J</i> .n Cc Bit 15 14-12 11 10 9-8 7-2 1 0	erting 2_nCTL.BS ADC12_nC ontrol Re Bit no - ADSTAT[2:0 - BSYSTAT - ADST MODEN	egister	it is clear N bit to 1 Initial 0 0x0 0 0x0 0 0x0 0 0x0 0 0 0 0 0 0 0	red to 0 w	/hen the R/W R R R R R R/W R/W	clock is supplied to ADO	C12A by
1 (R/W): A/ 0 (R/W): Idl Note: The settin (Correct) ADC12A Ch Register name ADC12_nCTL	D conv e ADC1: ng the / .n Cc Bit 15 14-12 11 10 9-8 7-2 1 0	erting 2_nCTL.BS ADC12_nC ontrol Re Bit no - ADSTAT[2:0 - BSYSTAT - ADST MODEN whether the	egister	it is clear N bit to 1 Initial 0 0x0 0 0x0 0 0x0 0 0x0 0 0 0 0 0 0 0	red to 0 w	/hen the R/W R R R R R R/W R/W	clock is supplied to ADO	C12A by
1 (R/W): A/ 0 (R/W): Idl Note: The settin (Correct) ADC12A Ch Register name ADC12_nCTL Bit10 BSYSTAT This bit indi	D conve e ADC1: ing the / .n Co Bit 15 14-12 11 10 9-8 7-2 1 0	erting 2_nCTL.BS ADC12_nC ontrol Re Bit no - ADSTAT[2:0 - BSYSTAT - ADST MODEN whether the	egister	it is clear N bit to 1 Initial 0 0x0 0 0x0 0 0x0 0 0x0 0 0 0 0 0 0 0	red to 0 w	/hen the R/W R R R R R R/W R/W	clock is supplied to ADO	C12A by

setting the ADC12_nCTL.MODEN bit to 1.

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Error)							
Address	Register name	Bit	Bit name	Initial	Reset	R/W	Remarks
0x54a2	ADC12_0CTL	15	-	0	-	R	-
	(ADC12A Ch.0	14-12	ADSTAT[2:0]	0x0	H0	R	
	Control Register)	11	-	0	-	R	
		10	BSYSTAT	1	HO	R]
		9–8	-	0x0	-	R	
		7–2	-	0x00	-	R	
		1	ADST	0	HO	R/W	
		-	MODEN		HO	D 44/	
		0	MODEN	0		R/W	
Correct							Pemarks
Address	Register name	Bit	Bit name	Initial	Reset	R/W	Remarks
Address		Bit 15	Bit name	Initial 0	Reset	R/W	Remarks
Correct) Address 0x54a2	Register name ADC12_0CTL	Bit 15		Initial		R/W	Remarks
Address	Register name ADC12_0CTL (ADC12A Ch.0	Bit 15 14–12 11	Bit name	Initial 0 0x0	Reset - H0	R/W R R	Remarks -
Address	Register name ADC12_0CTL (ADC12A Ch.0	Bit 15 14–12 11 10	Bit name - ADSTAT[2:0] -	Initial 0 0x0 0	Reset - H0 -	R/W R R R	Remarks
Address	Register name ADC12_0CTL (ADC12A Ch.0	Bit 15 14–12 11 10	Bit name - ADSTAT[2:0] - BSYSTAT	Initial 0 0x0 0 0	Reset H0 H0	R/W R R R R	Remarks
Address	Register name ADC12_0CTL (ADC12A Ch.0	Bit 15 14–12 11 10 9–8 7–2	Bit name - ADSTAT[2:0] - BSYSTAT	Initial 0 0x0 0 0 0 0 0 0 0	Reset H0 H0 	R/W R R R R R	Remarks