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S1C17 Manual errata

ITEM: LCD Driver List of Output Pins

Object manuals	Document codes	Items	Pages
S1C17M10Technical Manual	413180100	17.2.1 List of Output Pins	17-2
S1C17M30/M31/M32/M33/M34Technical 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."

Note:

- **Be sure to avoid using the VC1 to VC5 pin outputs for driving external circuits.**
- **When LCD panel is connected, LCD16CTL.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.**

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, LCD8CTL.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.**

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(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, LCD8CTL.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.**

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, LCD8CTL.MODEN 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.

Note:

- **Be sure to avoid using the VC1 to VC4 pin outputs for driving external circuits.**
- **When LCD panel is connected, LCD24CTL.MODEN 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."

Note:

- **Be sure to avoid using the VC1 to VC5 pin outputs for driving external circuits.**
- **When LCD panel is connected, LCD32CTL.MODEN bit should be set to 1. If it has been set to 0, there is a possibility that LCD panel's characteristics is fluctuated.**

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ITEM: LCD Driver List of Output 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/M34Technical 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

S1C17M01 Technical Manual

(Error)

Table 14.2.1.1 List of LCD8A Pins

Pin name	I/O*	Initial status*	Function
SEG31–0	O	O (L)	Segment data output pin
COM7–0	O	O (L)	Common data output pin
LFRO	O	O (L)	Frame signal monitoring output pin
V_{C1}	P	–	LCD panel drive power supply pin
V_{C2}	P	–	LCD panel drive power supply pin
V_{C3}	P	–	LCD panel drive power supply pin
C_{P1}	A	–	LCD voltage booster capacitor connecting pin
C_{P2}	A	–	LCD voltage booster capacitor connecting pin

* Indicates the status when the pin is configured for LCD8A.

(Correct)

Table 14.2.1.1 List of LCD8A Pins

Pin name	I/O*	Initial status*	Function
SEG31–0	A	O (L)	Segment data output pin
COM7–0	A	O (L)	Common data output pin
LFRO	O	O (L)	Frame signal monitoring output pin
V_{C1}	P	–	LCD panel drive power supply pin
V_{C2}	P	–	LCD panel drive power supply pin
V_{C3}	P	–	LCD panel drive power supply pin
C_{P1}	A	–	LCD voltage booster capacitor connecting pin
C_{P2}	A	–	LCD voltage booster capacitor connecting pin

* Indicates the status when the pin is configured for LCD8A.

S1C17M10 Technical Manual

(Error)

Table 17.2.1.1 List of LCD16A Pins

Pin name	I/O*1	Initial status*1	Function
COM0–7	O	Hi-Z / O (L)*2	Common data output pins
COM8–15/SEG87–80	O	Hi-Z / O (L)*2	General purpose IO/common data output/segment data output pins
SEG0–68	O	Hi-Z / O (L)*2	Segment data output pins
SEG69–79	O	Hi-Z / O (L)*2	General purpose IO/segment data output pins
LFRO	O	O (L)	Frame signal monitoring output pin
$V_{C1–5}$	P	–	LCD panel drive power supply pins
$C_{P1–5}$	A	–	LCD voltage booster capacitor connecting pins

*1: Indicates the status when the pin is configured for LCD16A. *2: When LCD16CTL.LCDDIS bit = 1

(Correct)

Table 17.2.1.1 List of LCD16A Pins

Pin name	I/O*1	Initial status*1	Function
COM0–7	A	Hi-Z / O (L)*2	Common data output pins
COM8–15/SEG87–80	A	Hi-Z / O (L)*2	General purpose IO/common data output/segment data output pins
SEG0–68	A	Hi-Z / O (L)*2	Segment data output pins
SEG69–79	A	Hi-Z / O (L)*2	General purpose IO/segment data output pins
LFRO	O	O (L)	Frame signal monitoring output pin
$V_{C1–5}$	P	–	LCD panel drive power supply pins
$C_{P1–5}$	A	–	LCD voltage booster capacitor connecting pins

*1: Indicates the status when the pin is configured for LCD16A. *2: When LCD16CTL.LCDDIS bit = 1

S1C17M30/M31/M32/M33/M34 Technical Manual

(Error)

Table 18.2.1.1 List of LCD8A Pins

Pin name	I/O*1	Initial status*1	Function
COM0–3	A	Hi-Z / O (V_{SS})*2	Common data output pins
COM4–7/SEG0–3	A	Hi-Z / O (V_{SS})*2	Common data output/segment data output pins
SEG4–49	A	Hi-Z / O (V_{SS})*2	Segment data output pins (See Table 18.2.1.2.)
LFRO	O	O (L)	Frame signal monitoring output pin
V_{C1}	P	–	LCD panel drive power supply pin
V_{C2}	P	–	LCD panel drive power supply pin
V_{C3}	P	–	LCD panel drive power supply pin
C_{P1}	A	–	LCD voltage booster capacitor connecting pin (S1C17M31/M33/M34)
C_{P2}	A	–	LCD voltage booster capacitor connecting pin (S1C17M31/M33/M34)

*1: Indicates the status when the pin is configured for LCD8A. *2: When LCD8CTL.LCDDIS bit = 1

(Correct)

Table 18.2.1.1 List of LCD8A Pins

Pin name	I/O*1	Initial status*1	Function
COM0–3	A	Hi-Z / O (V_{SS})*2	Common data output pins
COM4–7/SEG0–3	A	Hi-Z / O (V_{SS})*2	Common data output/segment data output pins
SEG4–49	A	Hi-Z / O (V_{SS})*2	Segment data output pins (See Table 18.2.1.2.)
LFRO	O	O (L)	Frame signal monitoring output pin
V_{C1}	P	–	LCD panel drive power supply pin
V_{C2}	P	–	LCD panel drive power supply pin
V_{C3}	P	–	LCD panel drive power supply pin
C_{P1}	A	–	LCD voltage booster capacitor connecting pin (S1C17M31/M33/M34)
C_{P2}	A	–	LCD voltage booster capacitor connecting pin (S1C17M31/M33/M34)

*1: Indicates the status when the pin is configured for LCD8A. *2: When LCD8CTL.LCDDIS bit = 1

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(Error)

Table 18.2.1.1 List of LCD4A Pins

Pin name	I/O*1	Initial status*1	Function
COM0–3	O	Hi-Z / O (L)*2	Common data output-only pins
SEG0–1	O	Hi-Z / O (L)*2	Segment data output-only pins (Not available in the SQFN7-48pin package)
SEG2–7	O	Hi-Z / O (L)*2	Segment data output-only pins
SEG8–19	O	Hi-Z / O (L)*2	General-purpose IO/segment data output pins
SEG20–21	O	Hi-Z / O (L)*2	Segment data output-only pins (Not available in the 48-pin package)
SEG22–25	O	Hi-Z / O (L)*2	General-purpose IO/segment data output pins (Not available in the 48-pin package)
LFRO	O	O (L)	Frame signal monitoring output pin (Not available in the TQFP12-48pin package)
V_{C1}	P	–	LCD panel drive power supply pin
V_{C2}	P	–	LCD panel drive power supply pin
V_{C3}	P	–	LCD panel drive power supply pin
C_{P1}	A	–	LCD voltage booster capacitor connecting pin (Not available in the TQFP12-48pin package)
C_{P2}	A	–	LCD voltage booster capacitor connecting pin (Not available in the TQFP12-48pin package)

*1: Indicates the status when the pin is configured for LCD4A. *2: When LCD4CTL.LCDDIS bit = 1

(Correct)

Table 18.2.1.1 List of LCD4A Pins

Pin name	I/O*1	Initial status*1	Function
COM0–3	A	Hi-Z / O (L)*2	Common data output-only pins
SEG0–1	A	Hi-Z / O (L)*2	Segment data output-only pins (Not available in the SQFN7-48pin package)
SEG2–7	A	Hi-Z / O (L)*2	Segment data output-only pins
SEG8–19	A	Hi-Z / O (L)*2	General-purpose IO/segment data output pins
SEG20–21	A	Hi-Z / O (L)*2	Segment data output-only pins (Not available in the 48-pin package)
SEG22–25	A	Hi-Z / O (L)*2	General-purpose IO/segment data output pins (Not available in the 48-pin package)
LFRO	O	O (L)	Frame signal monitoring output pin (Not available in the TQFP12-48pin package)
V_{C1}	P	–	LCD panel drive power supply pin
V_{C2}	P	–	LCD panel drive power supply pin
V_{C3}	P	–	LCD panel drive power supply pin
C_{P1}	A	–	LCD voltage booster capacitor connecting pin (Not available in the TQFP12-48pin package)
C_{P2}	A	–	LCD voltage booster capacitor connecting pin (Not available in the TQFP12-48pin package)

*1: Indicates the status when the pin is configured for LCD4A. *2: When LCD4CTL.LCDDIS bit = 1

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(Error)

Table 18.2.1.1 List of LCD8B Pins

Pin name	I/O*1	Initial status*1	Function
COM0–3	O	Hi-Z / O (L)*2	Common data output-only pin
COM4–7/SEG0–3	O	Hi-Z / O (L)*2	Common data output/segment data output pin
SEG4–41(W14) SEG4–46(W16)	O	Hi-Z / O (L)*2	Segment data output-only pin
SEG42–53(W14) SEG47–59(W16)	O	Hi-Z / O (L)*2	General-purpose IO/segment data output pin
LFRO	O	O (L)	Frame signal monitoring output pin
V_{C1}	P	–	LCD panel drive power supply pin
V_{C2}	P	–	LCD panel drive power supply pin
V_{C3}	P	–	LCD panel drive power supply pin
C_{P1}	A	–	LCD voltage booster capacitor connecting pin
C_{P2}	A	–	LCD voltage booster capacitor connecting pin

*1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.LCDDIS bit = 1

(Correct)

Table 18.2.1.1 List of LCD8B Pins

Pin name	I/O*1	Initial status*1	Function
COM0–3	A	Hi-Z / O (L)*2	Common data output-only pin
COM4–7/SEG0–3	A	Hi-Z / O (L)*2	Common data output/segment data output pin
SEG4–41(W14) SEG4–46(W16)	A	Hi-Z / O (L)*2	Segment data output-only pin
SEG42–53(W14) SEG47–59(W16)	A	Hi-Z / O (L)*2	General-purpose IO/segment data output pin
LFRO	O	O (L)	Frame signal monitoring output pin
V_{C1}	P	–	LCD panel drive power supply pin
V_{C2}	P	–	LCD panel drive power supply pin
V_{C3}	P	–	LCD panel drive power supply pin
C_{P1}	A	–	LCD voltage booster capacitor connecting pin
C_{P2}	A	–	LCD voltage booster capacitor connecting pin

*1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.LCDDIS bit = 1

S1C17W15 Technical Manual

(Error)

Table 17.2.1.1 List of LCD8B Pins

Pin name	I/O*1	Initial status*1	Function
COM0–3	O	Hi-Z / O (L)*2	Common data output-only pin
COM4–7/SEG0–3	O	Hi-Z / O (L)*2	Common data output/segment data output pin
SEG4–15	O	Hi-Z / O (L)*2	Segment data output-only pin
SEG16–23	O	O (L)	General-purpose IO/segment data output pin
SEG24–27	O	Hi-Z / O (L)*2	Segment data output-only pin (Not available in the 64-pin package)
SEG28–29	O	Hi-Z / O (L)*2	Segment data output-only pin (Not available in the 64-pin/80-pin package)
SEG30–33	O	Hi-Z / O (L)*2	Segment data output-only pin (Not available in the 64-pin package)
V_{C1}	P	–	LCD panel drive power supply pin
V_{C2}	P	–	LCD panel drive power supply pin
V_{C3}	P	–	LCD panel drive power supply pin
V_{C4}	P	–	LCD panel drive power supply pin
C_{P1}	A	–	LCD voltage booster capacitor connecting pin
C_{P2}	A	–	LCD voltage booster capacitor connecting pin
C_{P3}	A	–	LCD voltage booster capacitor connecting pin
C_{P4}	A	–	LCD voltage booster capacitor connecting pin

*1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = 1

(Correct)

Table 17.2.1.1 List of LCD8B Pins

Pin name	I/O*1	Initial status*1	Function
COM0–3	A)	Hi-Z / O (L)*2	Common data output-only pin
COM4–7/SEG0–3	A)	Hi-Z / O (L)*2	Common data output/segment data output pin
SEG4–15	A)	Hi-Z / O (L)*2	Segment data output-only pin
SEG16–23	A)	O (L)	General-purpose IO/segment data output pin
SEG24–27	A)	Hi-Z / O (L)*2	Segment data output-only pin (Not available in the 64-pin package)
SEG28–29	A)	Hi-Z / O (L)*2	Segment data output-only pin (Not available in the 64-pin/80-pin package)
SEG30–33	A)	Hi-Z / O (L)*2	Segment data output-only pin (Not available in the 64-pin package)
V_{C1}	P	–	LCD panel drive power supply pin
V_{C2}	P	–	LCD panel drive power supply pin
V_{C3}	P	–	LCD panel drive power supply pin
V_{C4}	P	–	LCD panel drive power supply pin
C_{P1}	A	–	LCD voltage booster capacitor connecting pin
C_{P2}	A	–	LCD voltage booster capacitor connecting pin
C_{P3}	A	–	LCD voltage booster capacitor connecting pin
C_{P4}	A	–	LCD voltage booster capacitor connecting pin

*1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.MODEN bit = 1

S1C17W18 Technical Manual

(Error)

Table 18.2.1.1 List of LCD8B Pins

Pin name	I/O*1	Initial status*1	Function
COM0–3	O	Hi-Z / O (L)*2	General-purpose IO/Common data output-only pin
COM4–7/SEG0–3	O	Hi-Z / O (L)*2	General-purpose IO/Common data output/segment data output pin
SEG4–23	O	Hi-Z / O (L)*2	General-purpose IO/segment data output pin
SEG24–27	O	Hi-Z / O (L)*2	Segment data output-only pin (Not available in the 64-pin package)
SEG28–34	O	Hi-Z / O (L)*2	Segment data output-only pin (Not available in the 64-pin/80-pin package)
SEG35–38	O	Hi-Z / O (L)*2	Segment data output-only pin (Not available in the 64-pin package)
SEG39–47	O	Hi-Z / O (L)*2	Segment data output-only pin (Not available in the 64-pin/80-pin package)
LFRO	O	O (L)	Frame signal monitoring output pin
V_{C1}	P	–	LCD panel drive power supply pin
V_{C2}	P	–	LCD panel drive power supply pin
V_{C3}	P	–	LCD panel drive power supply pin
V_{C4}	P	–	LCD panel drive power supply pin
C_{P1}	A	–	LCD voltage booster capacitor connecting pin
C_{P2}	A	–	LCD voltage booster capacitor connecting pin
C_{P3}	A	–	LCD voltage booster capacitor connecting pin
C_{P4}	A	–	LCD voltage booster capacitor connecting pin

*1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.LCDDIS bit = 1

(Correct)

Table 18.2.1.1 List of LCD8B Pins

Pin name	I/O*1	Initial status*1	Function
COM0–3	A	Hi-Z / O (L)*2	General-purpose IO/Common data output-only pin
COM4–7/SEG0–3	A	Hi-Z / O (L)*2	General-purpose IO/Common data output/segment data output pin
SEG4–23	A	Hi-Z / O (L)*2	General-purpose IO/segment data output pin
SEG24–27	A	Hi-Z / O (L)*2	Segment data output-only pin (Not available in the 64-pin package)
SEG28–34	A	Hi-Z / O (L)*2	Segment data output-only pin (Not available in the 64-pin/80-pin package)
SEG35–38	A	Hi-Z / O (L)*2	Segment data output-only pin (Not available in the 64-pin package)
SEG39–47	A	Hi-Z / O (L)*2	Segment data output-only pin (Not available in the 64-pin/80-pin package)
LFRO	O	O (L)	Frame signal monitoring output pin
V_{C1}	P	–	LCD panel drive power supply pin
V_{C2}	P	–	LCD panel drive power supply pin
V_{C3}	P	–	LCD panel drive power supply pin
V_{C4}	P	–	LCD panel drive power supply pin
C_{P1}	A	–	LCD voltage booster capacitor connecting pin
C_{P2}	A	–	LCD voltage booster capacitor connecting pin
C_{P3}	A	–	LCD voltage booster capacitor connecting pin
C_{P4}	A	–	LCD voltage booster capacitor connecting pin

*1: Indicates the status when the pin is configured for LCD8B. *2: When LCD8CTL.LCDDIS bit = 1

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(Error)

Table 18.2.1.1 List of LCD24A Pins

Pin name	I/O*1	Initial status*1	Function
SEG53–0	O	Hi-Z / O (L)*2	Segment data output-only pin
COM7–0	O	Hi-Z / O (L)*2	Common data output-only pin
SEG71–54	O	O (L)	General-purpose IO/segment data output pin
COM23–8	O	O (L)	General-purpose IO/common data output pin
LFRO	O	O (L)	Frame signal monitoring output pin
V_{C1}	P	–	LCD panel drive power supply pin
V_{C2}	P	–	LCD panel drive power supply pin
V_{C3}	P	–	LCD panel drive power supply pin
V_{C4}	P	–	LCD panel drive power supply pin
C_{P1}	A	–	LCD voltage booster capacitor connecting pin
C_{P2}	A	–	LCD voltage booster capacitor connecting pin
C_{P3}	A	–	LCD voltage booster capacitor connecting pin
C_{P4}	A	–	LCD voltage booster capacitor connecting pin

*1: Indicates the status when the pin is configured for LCD24A. *2: When LCD24CTL.MODEN bit = 1

(Correct)

Table 18.2.1.1 List of LCD24A Pins

Pin name	I/O*1	Initial status*1	Function
SEG53–0	A	Hi-Z / O (L)*2	Segment data output-only pin
COM7–0	A	Hi-Z / O (L)*2	Common data output-only pin
SEG71–54	A	O (L)	General-purpose IO/segment data output pin
COM23–8	A	O (L)	General-purpose IO/common data output pin
LFRO	O	O (L)	Frame signal monitoring output pin
V_{C1}	P	–	LCD panel drive power supply pin
V_{C2}	P	–	LCD panel drive power supply pin
V_{C3}	P	–	LCD panel drive power supply pin
V_{C4}	P	–	LCD panel drive power supply pin
C_{P1}	A	–	LCD voltage booster capacitor connecting pin
C_{P2}	A	–	LCD voltage booster capacitor connecting pin
C_{P3}	A	–	LCD voltage booster capacitor connecting pin
C_{P4}	A	–	LCD voltage booster capacitor connecting pin

*1: Indicates the status when the pin is configured for LCD24A. *2: When LCD24CTL.MODEN bit = 1

S1C17W34/W35/W36 Technical Manual

(Error)

Table 18.2.1.1 List of LCD32B Pins

Pin name	I/O*1	Initial status*1	Function
COM0–15	O	Hi-Z / O (L)*2	Common data output-only pins
SEG0–15/COM16–31	O	Hi-Z / O (L)*2	Segment data output/common data output pins
SEG16–63	O	Hi-Z / O (L)*2	Segment data output-only pin
SEG64–79/COM31–16	O	Hi-Z / O (L)*2	Segment data output/common data output pins
LFRO	O	O (L)	Frame signal monitoring output pin
V_{C1}–V_{C5}	P	–	LCD panel drive power supply pins
C_{P1}–C_{P5}	A	–	LCD voltage booster capacitor connecting pins

*1: Indicates the status when the pin is configured for LCD32B. *2: When LCD32CTL.LCDDIS bit = 1

(Correct)

Table 18.2.1.1 List of LCD32B Pins

Pin name	I/O*1	Initial status*1	Function
COM0–15	A	Hi-Z / O (L)*2	Common data output-only pins
SEG0–15/COM16–31	A	Hi-Z / O (L)*2	Segment data output/common data output pins
SEG16–63	A	Hi-Z / O (L)*2	Segment data output-only pin
SEG64–79/COM31–16	A	Hi-Z / O (L)*2	Segment data output/common data output pins
LFRO	O	O (L)	Frame signal monitoring output pin
V_{C1}–V_{C5}	P	–	LCD panel drive power supply pins
C_{P1}–C_{P5}	A	–	LCD voltage booster capacitor connecting pins

*1: Indicates the status when the pin is configured for LCD32B. *2: When LCD32CTL.LCDDIS bit = 1

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(Error)

Table 17.2.1.1 List of LCD8A Pins

Pin name	I/O*1	Initial status*1	Function
COM0–3	O	Hi-Z / O (L)*2	Common data output pin
COM4–7/SEG0–3	O	Hi-Z / O (L)*2	Common data output/segment data output pin
SEG4–33	O	Hi-Z / O (L)*2	Segment data output pin
LFRO	O	O (L)	Frame signal monitoring output pin
V_{C1}	P	–	LCD panel drive power supply pin
V_{C2}	P	–	LCD panel drive power supply pin
V_{C3}	P	–	LCD panel drive power supply pin
C_{P1}	A	–	LCD voltage booster capacitor connecting pin
C_{P2}	A	–	LCD voltage booster capacitor connecting pin

*1: Indicates the status when the pin is configured for LCD8A. *2: When LCD8CTL.LCDDIS bit = 1

(Correct)

Table 17.2.1.1 List of LCD8A Pins

Pin name	I/O*1	Initial status*1	Function
COM0–3	A)	Hi-Z / O (L)*2	Common data output pin
COM4–7/SEG0–3	A)	Hi-Z / O (L)*2	Common data output/segment data output pin
SEG4–33	A)	Hi-Z / O (L)*2	Segment data output pin
LFRO	O	O (L)	Frame signal monitoring output pin
V_{C1}	P	–	LCD panel drive power supply pin
V_{C2}	P	–	LCD panel drive power supply pin
V_{C3}	P	–	LCD panel drive power supply pin
C_{P1}	A	–	LCD voltage booster capacitor connecting pin
C_{P2}	A	–	LCD voltage booster capacitor connecting pin

*1: Indicates the status when the pin is configured for LCD8A. *2: When LCD8CTL.LCDDIS bit = 1

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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

(Error)

PDIOEN (PD Port Enable Register)	15-13	-	0x00	-	R	-
	12-8	PDIEN[4:3]	0x0	H0	R/W	
	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	

(Correct)

PDIOEN (PD Port Enable Register)	15-13	-	0x00	-	R	-
	12-8	PDIEN[4:3]	0x0	H0	R/W	
	10	(reserved)	0	H0	R/W	
	9-8	PDIEN[1:0]	0x0	H0	R/W	
	7-5	-	0x00	-	R	
	4-0	PDOEN[4:0]	0x0	H0	R/W	

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ITEM: SVD Control

Object manuals	Document codes	Items	Pages
S1C17W03/W04 Technical Manual	412925001	10.4.1 SVD Control	10-3
S1C17W13 Technical Manual	413180401	10.4.1 SVD Control	10-3
S1C17W14/W16 Technical Manual	412910300	10.4.1 SVD Control	10-3
S1C17W15 Technical Manual	412645702	10.4.1 SVD Control	10-3
S1C17W18 Technical Manual	413129601	10.4.1 SVD Control	10-3
S1C17W22/W23 Technical Manual	412690402	10.4.1 SVD Control	10-3
S1C17W34/W35/W36 Technical Manual	413237901	10.4.1 SVD Control	10-3
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 Technical Manual

(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 SVD3 interrupt)

(Correct)

4. Set the following bits when using the interrupt:
  - Write 1 to the SVDINTF.SVDIF bit. (Clear interrupt flag)
  - Set the SVDINTE.SVDIE bit to 1. (Enable SVD3 interrupt)

Others

(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.SVDIE bit to 1. (Enable SVD interrupt)

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S1C17 Family Technical Manual Errata

ITEM UART (UART) Characteristics

Object manual	Document code	Object item	Page
S7C17W03/W04 Technical Manual	412925001	21.9 UART (UART) Characteristics	21-9
S1C17W13 Technical Manual	413180401	21.9 UART (UART2) Characteristics	21-10
S1C17W14/16 Technical Manual	412910300	22.9 UART (UART) Characteristics	22-9
S1C17W15 Technical Manual	412645702	20.9 UART (UART) Characteristics	20-9
S1C17W18 Technical Manual	413129601	23.9 UART (UART) Characteristics	23-9
S1C17W22/W23 Technical Manual	412690402	23.9 UART (UART) Characteristics	23-9

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(Error)

Unless otherwise specified: V_{DD} = 1.2 to 3.6 V, V_{SS} = 0 V, Ta = -40 to 85 °C

Item	Symbol	Condition	V_{DD}	Min.	Typ.	Max.	Unit
Transfer baud rate	U_{BRT1}	Normal mode	1.6 to 3.6 V	150	–	230,400	bps
			1.2 to 1.6 V	150	–	57,600	bps
	U_{BRT2}	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: V_{DD} = 1.2 to 3.6 V, V_{SS} = 0 V, Ta = -40 to 85 °C

Item	Symbol	Condition	V_{DD}	Min.	Typ.	Max.	Unit
Transfer baud rate	U_{BRT1}	Normal mode	1.6 to 3.6 V	150	–	460,800	bps
			1.2 to 1.6 V	150	–	57,600	bps
	U_{BRT2}	IrDA mode	1.6 to 3.6 V	150	–	115,200	bps
			1.2 to 1.6 V	150	–	57,600	bps

Others

(Error)

Unless otherwise specified: V_{DD} = 1.2 to 3.6 V, V_{SS} = 0 V, Ta = -40 to 85 °C

Item	Symbol	Condition	V_{DD}	Min.	Typ.	Max.	Unit
Transfer baud rate	U_{BRT1}	Normal mode	1.6 to 3.6 V	150	–	230,400	bps
			1.2 to 1.6 V	150	–	57,600	bps
	U_{BRT2}	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: V_{DD} = 1.2 to 3.6 V, V_{SS} = 0 V, Ta = -40 to 85 °C

Item	Symbol	Condition	V_{DD}	Min.	Typ.	Max.	Unit
Transfer baud rate	U_{BRT1}	Normal mode	1.6 to 3.6 V	150	–	230,400	bps
			1.2 to 1.6 V	150	–	57,600	bps
	U_{BRT2}	IrDA mode	1.6 to 3.6 V	150	–	115,200	bps
			1.2 to 1.6 V	150	–	57,600	bps

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ITEM Appendix A List of Peripheral Circuit Control Registers			
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

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(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 VC2 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.

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(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 VC2 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 VC2 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.

Mar/13/2017

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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 (T16B*n*MC.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 T16B*n*CTL.MAXBSY bit is set to 0.
2. Write the MAX value to the T16B*n*MC.MC[15:0] bits.

(Correct)

Add note statement (underlined).

MAX counter data register

The MAX counter data register (T16B*n*MC.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 T16B*n*CTL.MAXBSY bit is set to 0.
2. Write the MAX value to the T16B*n*MC.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.

Dec/07/2016

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ITEM **DCLK pin precautions**

Object manual	Document code	Object item	Page
S1C17W03/W04 Technical Manual	412925001	3.3.3 List of debugger input/output pins	3-3
S1C17W13 Technical Manual	413180401	3.3.3 List of debugger input/output pins	3-3
S1C17W14/W16 Technical Manual	412910300	3.3.3 List of debugger input/output pins	3-3
S1C17W15 Technical Manual	412645702	3.3.3 List of debugger input/output pins	3-3
S1C17W18 Technical Manual	413129601	3.3.3 List of debugger input/output pins	3-3
S1C17W22/W23 Technical Manual	412690402	3.3.3 List of debugger input/output pins	3-3
S1C17W34/W35/W36 Technical Manual	413237901	3.3.3 List of debugger input/output pins	3-3
S1C17M01 Technical Manual	412361701	3.3.3 List of debugger input/output pins	3-3
S1C17M10 Technical Manual	413180200	3.3.3 List of debugger input/output pins	3-3
S1C17589 Technical Manual	412959200	3.3.3 List of debugger input/output pins	3-3

(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.

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ITEM **I²C(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 Manual	413237901	9.6 Control Registers	9-6

(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

I2CnCTL.TXSTOP to 1 to generate a STOP condition. Then go to Step 8.

6. Read the received data from the I2CnRXD register.
7. Repeat Steps 4 to 6 until the end of data reception.
8. Wait for a STOP condition interrupt (I2CnINTF.STOPIF bit=1).
   Clear the I2CnINTF.STOPIF bit by writing 1 after the interrupt has occurred.

Data receiving operations

(abbrev.)

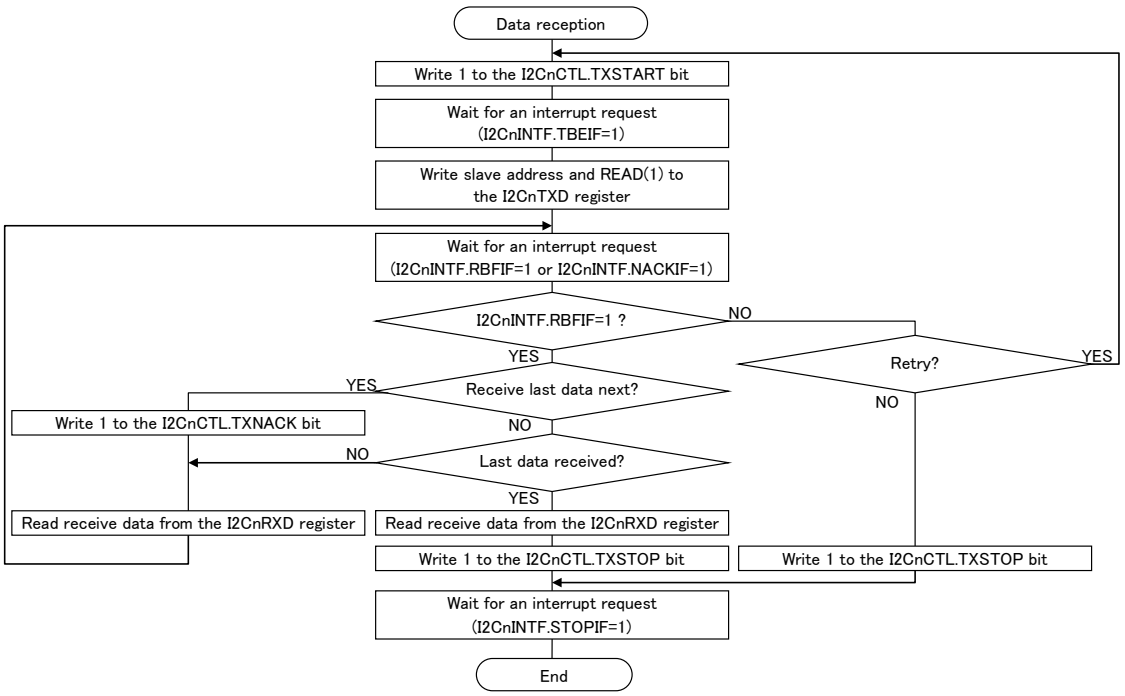

Figure 14.4.3.2 Master Mode Data Reception Flowchart

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.

6. Read the received data from the I2CnRXD register.
7. Repeat Steps 4 to 6 until the end of data reception.
8. Wait for a STOP condition interrupt (I2CnINTF.STOPIF bit=1) or a START condition interrupt (I2CnINTF.STARTIF bit=1).
   i. Go to Step 9 when a STOP condition interrupt has occurred.
   ii. Go to Step 2 when a START condition interrupt has occurred.
9. Clear the I2CnINTF.STOPIF bit and then terminate data receiving operations.

Data receiving operations

(abbrev.)

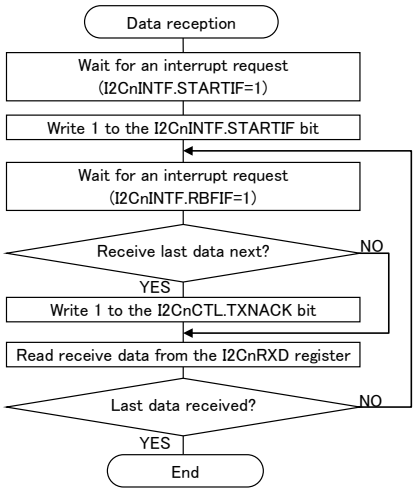

Figure 14.4.6.2 Slave Mode Data Reception Flowchart

(Correct)

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.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.

i. Go to Step 6 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 9 or Step 2 if making a retry.

6. 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 7.

ii. When the last data is received, read the received data from the I2CnRXD register and set the I2CnCTL.TXSTOP to 1 to generate a STOP condition. Then go to Step 9.

7. Read the received data from the I2CnRXD register.

8. Repeat Steps 5 to 7 until the end of data reception.

9. Wait for a STOP condition interrupt (I2CnINTF.STOPIF bit=1).
Clear the I2CnINTF.STOPIF bit by writing 1 after the interrupt has occurred.

Data receiving operations

(abbrev.)

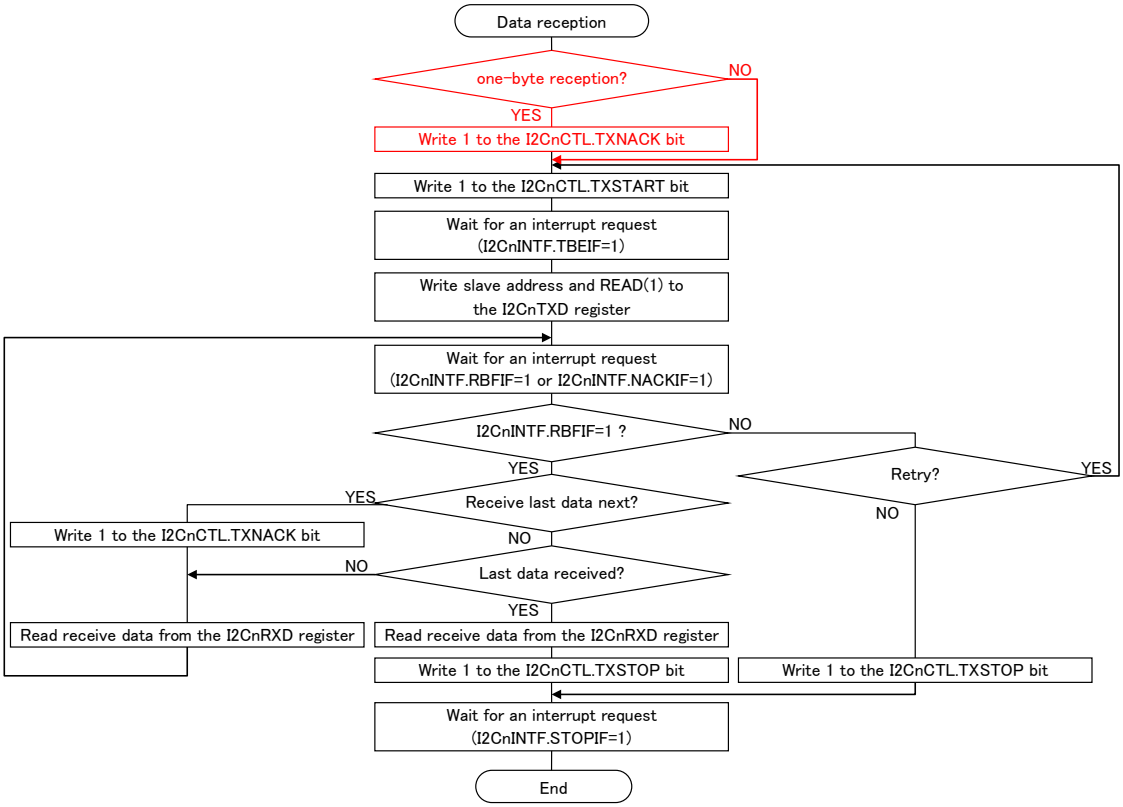

Figure 14.4.3.2 Master Mode Data Reception Flowchart

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

2. Wait for a START condition interrupt (I2CnINTF.STARTIF bit=1).

3. 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.

6. 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.

9. 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.)

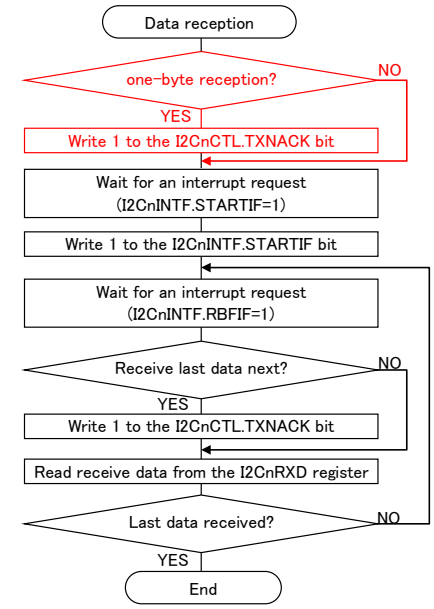

Figure 14.4.6.2 Slave Mode Data Reception Flowchart

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S1C17 Family Technical Manual Errata

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 Manual	413237901	9.6 Control Registers	9-6

(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.

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S1C17 Family Technical Manual Errata

ITEM **Watchdog Timer (WDT)**

Object manual	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

(Error)

Bits 3–0 WDTRUN[3:0]

These bits control WDT to run and stop.

0xa (R/WP): Stop

Values other than 0xa (R/WP): Run

Always 0x0 is read if a value other than 0xa is written.

Since a reset may be generated immediately after running depending on the counter value, WDT should also be reset concurrently when running WDT.

(Correct)

Bits 3–0 WDTRUN[3:0]

These bits control WDT to run and stop.

0xa (WP): Stop

Values other than 0xa (WP): Run

0xa (R): Stopping

0x0 (R): Running

Always 0x0 is read if a value other than 0xa is written.

Since a reset may be generated immediately after running depending on the counter value, WDT should also be reset concurrently when running WDT.

S1C17 Family Technical Manual Errata

ITEM **External connection for VPP**			
Object manual	Document code	Object item	Page
S1C17M01 Technical Manual	412361701	**4.3.3 Flash Programming** **17.2 Recommended Operating Conditions** **18 Basic External Connection Diagram**	4-3 17-1 18-1
S1C17W03/04 Technical Manual	412925001	**4.3.3 Flash Programming** **21.2 Recommended Operating Conditions** **22 Basic External Connection Diagram**	4-3 21-1 22-1
S1C17W14/16 Technical Manual	412910300	**4.3.3 Flash Programming** **22.2 Recommended Operating Conditions** **23 Basic External Connection Diagram**	4-3 22-1 23-1
S1C17W15 Technical Manual	412645702	**4.3.3 Flash Programming** **20.2 Recommended Operating Conditions** **21 Basic External Connection Diagram**	4-3 20-1 21-1
S1C17W22/23 Technical Manual	412690402	**4.3.3 Flash Programming** **23.2 Recommended Operating Conditions** **24 Basic External Connection Diagram**	4-3 23-1 24-1
S1C17589 Technical Manual	412959200	**4.3.3 Flash Programming** **19.2 Recommended Operating Conditions** **20 Basic External Connection Diagram**	4-3 19-1 20-1
S1C17656 Technical Manual	412745100	**3.2.2 Flash Programming**	3-2

Flash Programming

(Error)

(S1C17M01)

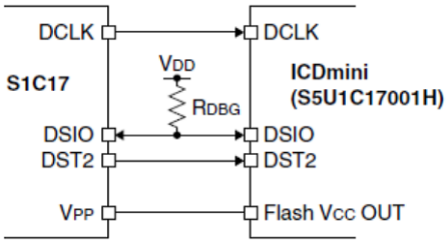


Figure 4.3.3.1 External Connection

(Exclude S1C17M01,S1C17656)

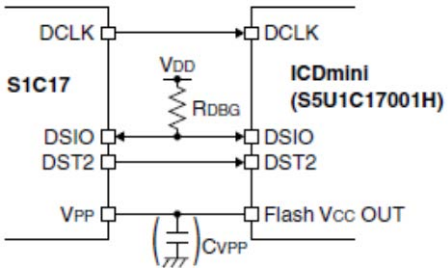


Figure 4.3.3.1 External Connection

The VPP pin must be left open except when programming the Flash memory. However, it is not necessary to disconnect the wire when using ICDmini to supply the VPP power, as ICDmini controls the power supply so that it will be supplied during Flash programming only. CVPP should be connected if the VPP voltage is not

stable due to the effect of the distance between the VPP and Flash VCC OUT or other causes.

(Correct)

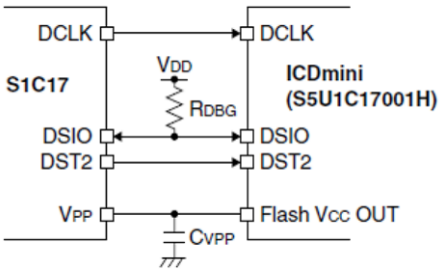


Figure 4.3.3.1 External Connection

The VPP pin must be left open except when programming the Flash memory. However, it is not necessary to disconnect the wire when using ICDmini to supply the VPP voltage, as ICDmini controls the power supply so that it will be supplied during Flash programming only. Be sure to connect CVPP for stabilizing the voltage when the VPP voltage is supplied externally.

Flash Programming (Only S1C17656)

(Error)

The S1C17656 supports on-board programming of the Flash memory, it makes it possible to program the Flash memory with the application programs/data by using the debugger through an ICDmini.

(Correct)

The S1C17656 supports on-board programming of the Flash memory, it makes it possible to program the Flash memory with the application programs/data by using the debugger through an ICDmini. Be sure to connect CVPP for stabilizing the voltage when the VPP voltage is supplied externally.

Recommended Operating Conditions

(Error)

(S1C17M01)

No description

(Exclude S1C17M01)

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Capacitor between VSS and VPP	CVPP	* ※	–	0.1	–	μF

*※ CVPP should be connected only when the VPP voltage is not stable.

(※ is 4-6)

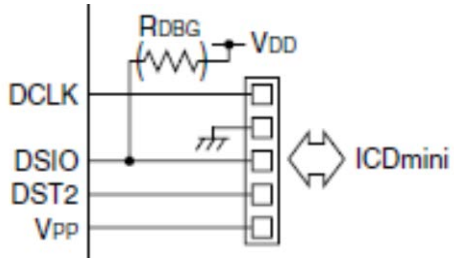
(Correct)

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Capacitor between VSS and VPP	CVPP		–	0.1	–	μF

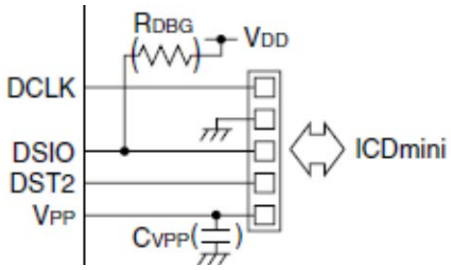
Basic External Connection Diagram

(Error)

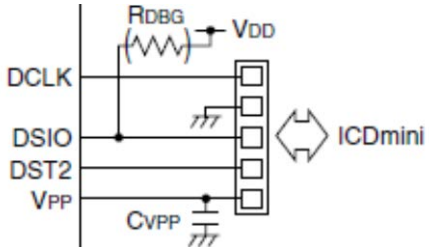
(S1C17M01)



(Exclude S1C17M01)



(Correct)



April/14/2015

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S1C17 Family Technical Manual Errata

ITEM **The operation when "Display Off" is selected**			
Object manual	Document code	Object item	Page
S1C17M01 Technical Manual	412361701	17.5.2 Display On/Off	17-6
S1C17W22/W23 Technical Manual	412690402	18.5.2 Display On/Off	18-7
S1C17W15 Technical Manual	412645702	17.5.2 Display On/Off	17-6
S1C17W14/W16 Technical Manual	412910300	18.5.2 Display On/Off	18-6

(Error)

When "Display off" is selected, the drive voltage supply stops and the LCD driver pin outputs are all set to VSS level.

Since "All on" and "All off" directly control the driving waveform output by the LCD driver, data in the display data RAM is not altered. The common pins are set to dynamic drive for "All on" and to static drive for "All off." This function can be used to make the display flash on and off without altering the display memory.

(Correct)

When "Display off" is selected, the drive voltage supply stops and the LCD driver pin outputs are all set to VSS level.

Since "All on" and "All off" directly control the driving waveform output by the LCD driver, data in the display data RAM is not altered. The common pins are set to dynamic drive for "All on" and to static drive for "All off." This function can be used to make the display flash on and off without altering the display memory.

Note:

When "Display off" is selected, VC4 (or VC3)'s electric charge must be discharged with the procedure shown below.

<Using Internal Generation Mode>

1. Set the LCD8PWR.VCEN bit to 0. (Disable LCD voltage regulator)
2. Set the LCD8PWR.HVLD bit to 1. (Enable heavy load protection mode)
3. When CLK_LCDxx is stopped, it must be stopped after VC4 (or VC3)'s electric potential became less than VDD – 1V.

<Using External Voltage Application Mode>

1. Disable the external voltage.
2. Set the LCD8PWR.HVLD bit to 1. (Enable heavy load protection mode)
3. When CLK_LCDxx is stopped, it must be stopped after VC4 (or VC3)'s electric potential became less

than VDD – 1V.

When “Display on” is selected again, it should be in a reverse procedure of the above description.